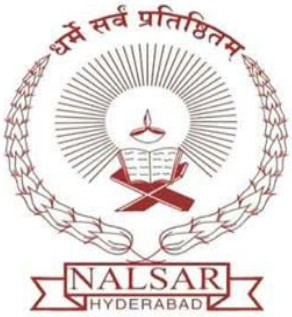

Centre for Aerospace & Defence Laws (CADL)
Directorate of Distance Education
NALSAR University of Law, Hyderabad

Course Material

M.A. (SECURITY AND DEFENCE LAWS)

1.2.5. DEFENCE MANAGEMENT AND STRATEGIC STUDIES

Compiled by:
Prof. (Dr.) V. Balakista Reddy

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MODULE-I

Principles of Management

INTRODUCTION

Backdrop to Management

To understand the principles of management, it is important to understand the concept of an organization and its various subsystems. An organization is made of a group of people with some specific goals, objectives, and activities. Organization is also defined as the relations among the components of a sys-tem. Organization structure denotes the components and relations that bind the people working within the organization.

The three major kinds of issues in an organization relate to the people, the organization itself, and the technology it uses. People issues encompass education, training, and attitudes. Organization issues cover strategy, policy, culture, and bureaucracy. Technology issues encompass hardware, software, tele-communications, and information systems.

The three different levels of organization structure are strategic, tactical, and operational. The strategic level represents decision making, that is, the corporate or the top level of an organization. The tactical or business level is the level of middle management where strategic decisions are transformed into tactics to achieve the strategic intents of the organization. The operational level represents actual implementation where first-level employees and workers execute the tactics, adopting the action plan of the organization.

The success of an organization largely depends on the management practices prevalent in the organization. This chapter, therefore, introduces the basics of management to lay the foundation for subsequent chapters.

Management as a Unifying Force

Management is needed whenever people work together in an organisation. The managerial functions must be performed by anyone who manages organised efforts, whether it is a business enterprise, religious organisation, military outfit or a social institution - such as planning, organising, directing and controlling. These functions are performed at all levels in an organisation, regardless of its type or size. The services of management are essential in all cooperative endeavours.

Definition of Management by different authors

F.W. Taylor: Art of knowing what you want to do and then seeing that it is done the best and cheapest way. Henry Fayol: To Manage is to forecast, to plan, to organise, to command, to co-ordinate and to control. Peter F.Drucker: Management is work and as such it has its own skills, its own tools and its own techniques.Lawrence A. Appley: Management is the art of getting things done through and with people.Terry. G: Management is a process of planning, organising, actuating and controlling to determine and accomplish the objectives by the use of people and resources. Mc. Farland: Management is the process by which managers create, direct, maintain and operate purposive organisations through systematic, coordinated, cooperative human effort.

HISTORY OF MANAGEMENT

The history of management can be traced back to the mid-1700s, that is, the period when the Industrial Revolution took place in Europe. Before the Industrial Revolution, economic activities used to be man-aged through home-centre production systems. During this period, since the owner of the means of capital and the owner of the labour services was the same, participation in work was more spontaneous and limited to family members. Self-motivated family members used to do their best to achieve excel-lence in their work and optimize their gains.

With the Industrial Revolution and its cascading effect, significant advancements took place in technology, communication, transportation, and market expansion. Traditional market areas were confined to areas near family-managed production centres. Subsequent to the Industrial Revolution, though, the market domain expanded, resulting in an increased demand for produced goods in family-run production systems. It was not possible to cater to the increased demands through the family-run production systems. Improved technology and other infrastructural support systems resulted in a major transition from family-centred to home-centred production systems. Such organized production activities needed engagement of people who were not family members, and who would render their services against some economic consideration.

The evolving complexity of technology supported production systems resulted in the need for people to work in groups to accomplish the jobs and the goals of an organization. A separation of the two entities, one the owner of the means of capital and the other the owner of labour services, made it difficult and impractical to manage on the basis of spontaneous participation in work. It was then important to use management principles and practices to coordinate individual efforts and translate these to a group effort.

Gradually, the need was felt for a separate group of professional managers in organizations to achieve results. With the spread of globalization and advancements in technology, the task of the manager not only became important but also started to require institutionalized knowledge. The principles of man-agement provide such basic and institutionalized knowledge to prepare individuals to take responsibil-ity as future managers of organizations.

Business management includes the following branches:

1. Financial management
2. Human Resource Management
3. Information Technology Management (responsible for management information systems)
4. Marketing Management
5. Operations Management and Production Management
6. Strategic Management

SCOPE OF MANAGEMENT

The scope of management is very wide. Basically it refers to three distinct ideas. According to Herbison and Myers, management may be understood as -

1. **An Economic Resource**: Management is one of the factors of production along with land, labour and capital. In modern organisations, the effective use of the five M's of management (money, materials, manpower, machinery and methods or ways of doing things) depends to a great extent on the quality of management. In other words, how effectively and economically the five M's are combined together to produce desired results. According to Newman, management is required to convert the disorganised resources of men, materials, money and machines into a productive, useful, ongoing concern.
2. **Management as a system of authority**: According to Herbison and Myers, management is the rule-making and rule-enforcing body. It is bound together by a web of relationships between superiors and subordinates, that i, people are bound by authority relationships. Managers working at top levels enjoy more authority than people working at lower levels. Top management determines objectives and provides direction to enterprise activities. Middle management (departmental heads like work manager, finance management, personnel manager etc.,) interprets and explains the policies framed by the top management. They transmit orders, instructions and decisions downward and carry the problems and suggestions upward. Lower management is concerned with routine, day-to-day works.
3. **Management as a class or elite**: Sociologists view management as a distinct class in society having its own value system. The managerial class has become very important in modern organisations owing to its contribution to business success. As a separate group, the term management refers to the group of individuals occupying managerial positions. All the managers from the chief executive to the first line supervisors are collectively addressed as 'Management', which refers to the group.

CHARACTERISTICS OF MANAGEMENT

The various interpretations of management emphasis three things:

- Management is a process and involves a series of continuing and related activities.
- It tries to concentrate on reaching organisational goals.
- It reaches these goals by working with and through other people and other organisational resources.

The important features which reveal the nature of management may be stated thus:

1. **Management is intangible**: Is intangible. Cannot be seen. Unseen force. Management presence can be felt by the results of its efforts in the form of production, sales and profits.
2. **Management is goal oriented**: Seeks to achieve goals. Goals may be economic or non-economic. The primary goal is to produce and distribute goods with a view to earn profit.
3. **Management is universal**: Is an all-pervasive activity and it is needed in all types of organisations.

4. **Management is a social process**: Is a social process because it deals with people and make the best use of human efforts. Managers have to create close cooperation among employees in an organisation.
5. **Management is a group activity**: Is concerned with getting things done through people. People join groups in order to achieve results collectively
6. **Management is a system of authority**: A manager is supposed to get things done, rather than doing things himself, by using authority. Management is a multi-purpose organ that manages a business, manages managers and manages workers and work.
7. **Management is an activity**: is a distinct activity (like playing, teaching, studying). It can be studied, knowledge about it obtained and skill in its applications acquired.
8. **Management is dynamic**: It tries to visualise problems before they turn into emergencies and takes suitable steps. Tries to adapt itself to the environmental changes quickly. Proposes to take actions to make the desired results to come to pass.
9. **Management is a science as well as an art**: Is a systematised body of knowledge based on certain principles capable of general application. Management is an art because it involves the use of know-how and skills like any other art such as music, painting etc.
10. **Management is multidisciplinary**: Managers utilise the scare resources at their disposal in a rational way. They make things happen in a desired manner. They convert the disorganised resources of men, materials and machines into a useful, productive enterprise. They create a whole that is greater than the sum of results, achieve results in an efficient and effective manner.

IMPORTANCE OF MANAGEMENT

According to Drucker, management is the dynamic life-giving element in every organisation. It is the activating force that gets things done through people. Without management, an organisation is merely a collection of men, machines, money and material. In its absence, the resources of production remain resources and never become production. The importance of management can be understood from the following points.

1. **Optimum use of resources**: Management ensures optimum utilisation of resources by attempting to avoid wastage of all kinds. It helps in putting the resources to the best advantage within the limitations set by the organisation and its environment. The right climate is created for workers to put in their best and show superior performance.
2. **Effective leadership and motivation**: In the absence of management, the working of an enterprise will become random and haphazard in nature. Employees feel a sense of security when they find a body of individuals working day and night for the continued growth of an organisation. It enables employees to move with cooperation and achieve goals in a coordinated manner. Creates teamwork and motivates employees to work harder and better by providing necessary guidance, counseling and effective leadership.
3. **Establishes sound industrial relations:** Management minimises industrial disputes and contributes to sound industrial relations in an undertaking. Industrial peace is an essential requirement for increasing productivity. To this end, managers try to strike a happy

balance between the demands of employees and organisational requirements. They initiate prompt actions whenever workers express dissatisfaction over organisational rules, methods, procedures and reward systems.

4. **Achievement of goals**: Management plays an important role in the achievement of objectives of an organisation. Objectives can be achieved only when the human and non-human resources are combined in a proper way. Management is goal-oriented. With a view to realise the predetermined goals, managers plan carefully, organise the resources properly, hire competent people and provide necessary guidance. They try to put everything on the right track. Thus, unnecessary deviations, overlapping efforts and waste motions are avoided. In the final analysis, all these help in realising goals with maximum efficiency.

MANAGEMENT VS. ADMINISTRATION

There has been a controversy over the meaning of the terms 'management' and 'administration'. Some take management and administration as one; some consider administration broader than management and some hold the view that management and administration are different. Let's examine the opinions of various writers before trying to resolve this controversy.

1. Administration is broader than management
2. Administration is part of management
3. Management & administration are identical

Administration is above Management

Administration is that phase of business enterprise that concerns itself with the overall determination of institutional objectives & the policies necessary to be followed in achieving those objectives. Management on the other hand, is an executive function which is primarily concerned with carrying out broad policies laid down by the administration.

Administration is a part of Management

Management is a generic name for the total process of executive control in industry or commerce. It is a social process entailing responsibility for the executive & economic planning & regulation of the operation of an enterprise, in the fulfillment of a given purpose or task. Administration is that part of management which is concerned with the installation & carrying out the procedures by which it is laid down & communicated, & the process of activities regulated & checked against plans.

Management & Administration are identical

Management & administration are synonymous; the difference between the two terms lies mostly in their usage in different countries or different fields of human organizations. The distinction between the two terms may be drawn by analyzing the origin of the word "administration". The government often uses the word administrator, instead of manager, to handle & manage its affairs

Distinction between Administration and Management

Point of distinction	Administration	Management
Nature	Thinking function (What is to be done and when)	Doing function (Who should do it and how)
Scope	Determines broad objectives and policies	Implements plans and achieves goals through people
Level	Top level function	Middle and lower level function
Skills needed	Conceptual and human skills	Technical and human skills
Represents	Owners who invest capital and receive profits	Paid individuals who work for remuneration
Usage	Mostly in government, military, educational, social and cultural organizations	Mostly in business organisations

PRINCIPLES OF MANAGEMENT

A principle is a basic statement or a fundamental truth that provides understanding and guidance to thinking and practise. A principle represents a basic element of knowledge is that it explains the relationship and helps in predicting what would happen if the principles were applied. Over the years, a number of principles have been developed in management to aid executive thinking and action.

Nature of Management principles

Management principles can never be stated as rigorously as that of physical sciences because human beings behave more erratically than physical phenomena. Management principles have been developed out of experience and analysis only. The empirical support for most of these principles is woefully inadequate. In the absence of a scientific analysis, these principles must be taken as general ideas on which sound and effective action can be based. They are, thus, not absolute truths or infallible laws. Managers should not conclude that principles are rigid and that there is some definite list chiseled in stone. Moreover, management principles are ever-changing.

Principles of management:

1. **Henry Fayol's 14 principles** derive from the circumstance that Fayol's felt that management was not well defined. In his striving to change this circumstance he suggested the 14 principles of management.

Division of work: This is the specialization that economists consider necessary for efficiency in the use of labor. Fayol's applies the principle to all kinds of work, managerial as well as technical.

Authority & responsibility: Here Fayol finds authority and responsibility to be related, with the later arising from the former. He sees authority as a combination of official factors, deriving from the manager's position and personal factors.

Discipline: Seeing discipline as "respect for agreements which are directed at achieving obedience, application, energy, and the outward marks of respect. Fayol declares that discipline requires good superiors at all levels.

Unity of command: This means that employees should receive orders from one superior only.

Unity of direction: According to this principle, each group of actives with the same objective must have one head and one plan.

Subordination of individual to general interest: This is self-explanatory when the two are found to differ, management must reconcile them.

Remuneration and methods**:** Employees should be paid fairly in accordance with their contribution.

Centralization: The relationship between centralisation and decentralisation is a matter of proportion; the optimum balance must be found for each organisation

Scalar chain: subordinates should observe the formal chain of command unless expressly authorised by their respective superiors to communicate with each other

Order: Both material things and people should be in their proper places.

Equity: Loyalty and devotion should be elicited from personnel by a combination of kindliness and justice on the part of managers when dealing with subordinators.

Stability of tenure: People need time to learn their jobs

Initiative: One of the greatest satisfactions is formulating and carrying out a plan.

Esprit de corps: This is the principle that "in union there is strength" as well as an extension of the principle of unity of command, emphasizing the need for teamwork and the importance of communication in obtaining it.

2. **Mooney and Reiley staff principle**: According to this principle, staff units must be created in order to provide service and expert advice to the line managers.
3. **Taylor's principle of management by exception**: Routine work, according to this principle, must be handled by subordinates and management must concentrate on strategic, key and importance issues.
4. **Weber's principles**: Organisation work must be performed according to rules. All administrative actions must be recorded in writing so as to have a ready reference in

future; a hierarchy of positions should be provided for supervision of each unit by a higher official etc.

5. **Likert's principle of supportive relationship**: According to this principle, manages should provide psychological and moral support to subordinates. The basic purpose should be to improve the subordinate's sense of personal usefulness and dignity and secure commitment to organisational goals.
6. **Human Relations:** Human relationsists and behavioural scientists have avoided providing prescriptions and have suggested ideas and concepts to describe some fundamental guides to managerial thought and action. These concepts are largely aimed at improving the 'quality of life' rather than achieving organisational goals. The importance of human element is recognised and efforts are made to make human life more interesting, meaningful and challenging in an organisation.
7. **Modern organisation theories and principles of management:** Systems and contingency theories advocate that, a manager should know and understand the existence of certain fundamental concepts advanced by theorists from time to time and use them judiciously. Managers should understand that there is a way to apply these concepts. The principles must be applied in a flexible way, keeping the changing circumstances in mind.

FUNCTIONS OF MANAGEMENT

Managers are known by the work they do, the functions they perform. According to the functional approach, originated by Henry Fayol, in every organisation managers perform certain basic functions in order to achieve results. These functions may be broadly classified into five categories: Planning, organising, directing, staffing and controlling. Managers perform these functions within the limits established by the external environment and must consider the interests of such diverse groups as government, employees, unions, customers, shareholders, competitors and the public.

Figure: Functions of Management

1. **Planning**
   - Deciding in advance:
     What to do
     How to do

When to do

Who is going to do it

- Bridges a gap between where we are today and where we want to reach.
- Sets the goal of an organization.

It is the basic function of management. It deals with chalking out a future course of action & deciding in advance the most appropriate course of actions for achievement of pre-determined goals.

It is an exercise in problem solving & decision making. Planning is determination of courses of action to achieve desired goals.

Thus, planning is a systematic thinking about ways & means for accomplishment of pre-determined goals. Planning is necessary to ensure proper utilization of human & non-human resources. It is all pervasive, it is an intellectual activity and it also helps in avoiding confusion, uncertainties.

2. Organising

It is the process of bringing together physical, financial and human resources and developing productive relationship amongst them for achievement of organizational goals.

According to Henry Fayol, "To organize a business is to provide it with everything useful or its functioning i.e. raw material, tools, capital and personnel's". To organize a business involves determining & providing human and non-human resources to the organizational structure.

Establishing the framework of working:

How many units or sub-units or departments are needed.

How many posts or designations are needed in each department.

How to distribute authority and responsibility among employees

Once these decisions are taken, organizational structure gets set up.

Organizing as a process involves:

- Identification of activities.
- Classification of grouping of activities.
- Assignment of duties.
- Delegation of authority and creation of responsibility.
- Coordinating authority and responsibility relationships.

3. Staffing

Recruiting, selecting, appointing the employees, assigning duties, maintaining cordial relationship and taking care of grievances of employees.

Training and Development of employees, deciding their remuneration, promotion and increments. Evaluating their performance.

It is the function of manning the organization structure and keeping it manned.

Staffing has assumed greater importance in the recent years due to advancement of technology, increase in size of business, complexity of human behavior etc. The main

purpose of staffing is to put right man on right job i.e. square pegs in square holes and round pegs in round holes.

Staffing involves:

- Manpower Planning (estimating manpower in terms of searching, right person at right place).
- Recruitment, selection & placement.
- Training & development.
- Remuneration.
- Performance appraisal.
- Promotions & transfer.

4. Directing

- Giving directions or instructions to employees to get the job done.
- Leadership qualities are required.
- Motivating employees by providing monetary and non-monetary incentives.
- Communicating with them at regular intervals.

It is that part of managerial function which actuates the organizational methods to work efficiently for achievement of organizational purposes. It is considered life-spark of the enterprise which sets it in motion the action of people because planning, organizing and staffing are the mere preparations for doing the work. Direction is that inert-personnel aspect of management which deals directly with influencing, guiding, supervising, motivating subordinates for the achievement of organizational goals.

Direction involves -

- Supervision: implies overseeing the work of subordinates by their superiors. It is the act of watching & directing work & workers.
- Motivation: means inspiring, stimulating or encouraging the sub-ordinates with zeal to work. Positive, negative, monetary, non-monetary incentives may be used for this purpose.
- Leadership: may be defined as a process by which manager guides and influences the work of subordinates in desired direction.
- Communications: is the process of passing information, experience, opinion etc from one person to another. It is a bridge of understanding

5. Controlling

Controlling is -

a. Matching actual performance with the planned goal.
b. If problem, tries to find out the reasons of deviation.
c. Suggesting corrective measures come on the path of plan.

It implies measurement of accomplishment against the standards and correction of deviation if any to ensure achievement of organizational goals. The purpose of controlling is to ensure that everything occurs in conformity with the standards. An efficient system of control helps to predict deviations before they actually occur. According to Theo Haimann, “Controlling is

the process of checking whether or not proper progress is being made towards the objectives and goals and acting if necessary, to correct any deviation".

Therefore controlling has following steps-

- Establishment of standard performance.
- Measurement of actual performance.
- Comparison of actual performance with the standards and finding out deviation if any.
- Corrective action.

LEVELS OF MANAGEMENT

All managers positions involve performance of management functions (planning, organising, directing, staffing and controlling). But there are differences among managerial jobs. The differences arise because of the existence of various levels of management in a typical organisation. The term '**levels of management'** refers to a line of demarcation between various managerial positions. In a large organisation, three levels of management are usually identified.

1. Top level management
2. Middle level management
3. Lower level management

The functions performed by top managers, middle managers, and lower level managers respectively may be briefly stated thus:

1. **Top level management**
    - Determines objectives and policies
    - Designs the basic operating and financial structure of an organisation
    - Provides guidance and direction
    - Lays down standards of performance
    - Maintains good public relations

2. **Middle level Management**
    - Interprets and explains the policies formed by the top
    - Issues detailed instructions
    - Participates in operating decisions
    - Trains other managers

3. **Lower Level Management**
    - Plans day-to-day operations
    - Assigns jobs to workers
    - Provides supervision and control over work
    - Arranges material tools and equipment
    - Maintains discipline

Differences in the levels of Management

Point of distinction	Top Level Management	Middle Level Management	Lower Level Management
Action focus	A small group of policy makers deciding the fate of an organisation	Act as a connecting link between top and lower level people and manage the activities of other managers	These managers are in direct contact with employees
Representation	CEO, President, Chairman, Managing Director etc	Managers and immediate subordinates	Section Head, Supervisor, First-line managers
Nature of work	They generally spend more time peers, outsiders and to a lesser extent, subordinates	Less physical active and far more involved in paper work and meeting	Physically active, experience frequent interruption, often shift back and forth between tasks and spend most of their time with subordinates and peers caring for monetary problems

INSTITUTION BUILDING SKILLS

Top executives are usually thought of as the people who make the major decisions in an organisation. They often have disjointed and widely varied tasks, ranging from figure head duties to conducting meetings, They also have external duties, including such varied ones as testifying at legislative hearings, greeting important customers, presiding at retirement luncheons and serving on the board of directors of agencies, such as a local college. The major duty of the top executive is to deal with broad organisational matters and major projects, such as long-range planning and the development of organisation's strategy. Decisions such as expanding a plant, dropping a major product, or purchasing another company are made at this level. According to Prof. Pareek (1981), top level executives perform eight key roles while building institutions of lasting value, as indicated below:

1. **Identity creating role:** Top level executives must create an identity for their organisation in the market place. Such an impact can be created by serving employees through excellent welfare measures, developing enviable marketing skills or fostering technological innovations. In short, they must carve out a niche' for themselves in the market place.
2. **Enabling role:** Top level executives must develop their resources (men, materials, equipment and other facilities) in the service of an organisation. A good work

atmosphere must be created where employees would feel like contributing their best to the organisation.

3. **Synergising role:** Synergy means that the whole is greater than the sum of the parts. In organisational terms, synergy means that as separate departments within an organisation cooperate and interact, they become more productive than if each had acted in isolation. For example, it is more efficient for each department in a small firm to deal with one financing department than for each department to have a separate financing department of its own. Top executives must try to combine their human as well as non-human resources in such a way that the goals of the organisation are met in an effective and efficient manner.
4. **Balancing role:** the top executive must be able to strike a harmonious balance between conformity and creativity within the organisation. Conformity to rules and regulations is required to ensure consistent and orderly execution of work. Conformity, when carried out in a rigid and scrupulous manner, may affect employee behaviour in a negative way and destroy the creative potential of employees. The chief executive, therefore, must encourage his employees to move in a dynamic way instead of merely applying rules and regulations in a mechanical manner.
5. **Linkage building role:** The chief executive must be able to develop appropriate linkages between the organisation and outside constituencies such as government, financial institutions, community and society at large. Without enlisting support from these outside constituencies, it might be difficult for the organisation to obtain licenses, to expand business activity, to carry out research and to initiate rural development programmes.
6. **Futuristic role:** The chief executive must prepare the organisation for future challenges. To this end, the organisation must look into market opportunities and encash these in a prudent way. The chief executive must be able to steer the ship to safety, facing the turbulent environments in a bold manner.
7. **Creating an impact:** This means making an impact of one's organisation on others, by way of superior technology, marketing skills, innovative abilities etc.
8. **Provide super ordination:** The chief executive must be able to create a sense of pride and importances in the subordinates - making them feel that they are working in a very important field of work which is very useful for the society.

Management is an art of getting things done through people:

One fortunate version of management that has gained wide currency among management thinkers and practitioners is that management is the art of getting things done through others. On the face of it, the statement seems to be an apt summation of what a manager does in an organisation. But underneath this apparent simplicity, the manipulative character of the management functions should not go unnoticed. If we were to examine the statement from close quarters, three things clearly emerge:

1. **Management means getting things done:** The determination and accomplishment of goals is a praiseworthy activity of management. Management, in fact, is purposeful and goal-oriented activity. Goal-orientation and action-focus provide the basis for managerial operations. The question of how managers get things done is totally discounted in the formative stages of management thinking and development. Imbued with feelings of showing results, managers often skilfully manipulated human resources in the service of the organisation. Such things as money is a powerful motivator; the average human being has an inherent dislike of work; the human element must be coerced, controlled and directed in order to get the work done; providing carrots for successful workers and employing the stick against those falling behind work schedules, etc,., permeated management thinking.
2. **Use authority:** Traditional writers like Fayol viewed authority as the right to give orders and the power to exact obedience from subordinates. Ends must be achieved through the exercise of authority. The employee must be punished ruthlessly for turning out poor performance, for not meeting standards, or for going off the tract. Severe punishment is meted out even for negligible deviations from standards. Managers used to breathe so closely down the necks of their subordinates that they made effective action virtually impossible. Rigorous standards, strict controls, severe punishments, autocratic rules and regulations permeated management thinking and the atmosphere was too suffocating for subordinates to work effectively toward organisational goals with zeal and enthusiasm.
3. **Results through people:** Obtaining results through people presents the toughest challenge to all managers. Inability to obtain results is one of the principal reasons for managerial incompetence and failure. As we have seen, in the day gone by, results were obtained through people by employing carrot and stick policies. Employees were viewed as mere means to accomplish goals. They were treated as inert instruments in the production process labelled as 'glorified machine tools'. The primary job of management is to convert the disorganised resources of men, machines and materials into a useful enterprise. The focus is on achieving organisational objectives: the individual objectives are completely ignored and totally discounted. The whole exercise proved to be self-defeating and frustrating for managers because even after injecting additional doses of incentives, worker performance remains remarkably constant. The use of threats and punishment prove to be ineffective after a point.

Thus, in order to accomplish results, management must create opportunities, remove obstacles, encourage growth and development of employees and provide guidance and assistance wherever necessary. All this demands skilful application of the basic principles to the science of management. Managers must be conceptual, technical, administrative and social skills in translating the abstract organisational philosophy into concrete action. Achieving results implies mobilisation, integration and judicious employment of resources, human as well as physical and financial, in a disciplined manner . The results obtained must

ultimately be compatible with the demands of the society within which the organisation operates.

Management deals with ideas, things and people:

1. **Management is concerned with ideas, things and people:** Management is the dynamic life giving element in every organisation. It is the activating element that gets things done through people. It provides the dynamic force necessary to transform the resources of a business organisation into a productive, operating concern. The primary job of management is to convert the disorganised resources of men, machines and materials into a useful, productive organisation. No wonder, call management, rather tritely, as the process of marshalling resources, ideas and things to obtain results through people.
2. **Generating ideas: the creative process in management:** From the very start of the business, ideas play a crucial role in deciding the competitive standing and prospects of the business. It is the working out of new ideas that can keep the business ever growing in stature and importance. Every organisation gains vitality through new and constructive ideas only. One of the hallmarks of successful management is the generation of innovative ideas that dramatically change the course of history. Managers cannot afford to wait for future-they have to make future by their creative abilities. They must provide new ideas, new imaginations and visions to the group working and integrate its efforts in a fruitful manner leading to better performance.

   Example: The idea that consumers want a detergent powder that is cheap but has got requisite quality helped the manufacturers of 'Nirma' washing powder to capture the market and cut down the influence of a multinational firm, Hindustan Lever Limited (surf).

   It is in the realm of ideas that management acts as a creative force. Ideas help management in making organisations service, grow and succeed, through sheer innovative power. Innovations call for constructive thinking and imaginative solutions to future problems.

   Creativity in idea generation spells the difference between success and failure in managing a business. The comparative efficiency of different management teams lies in their ability to visualise problems before they turn into emergencies. Managers can weather out the toughest challenges with the help of ideas. After generating useful ideas, managers must put the entire organisation machinery in motion for working them out into full-blown plans of action.

3. **Getting things done: managing resources:** The primary job of management is to integrate the productive but passive resources into an useful enterprise. Management of resources implies managing physical, financial and human resources. To facilitate this process, managers are expected to perform certain basic functions: planning, organising , leading and controlling.

The planning functions encompasses, defining the organisation's objectives, establishing a master strategy for achieving these objectives and developing a comprehensive set of operational plans to integrate and coordinate activities.

Organising includes the determination of, what tasks are to be done, who is to do them, how the tasks are to be grouped, who reports to whom and where decisions are to be taken.

Leading includes motivating subordinates, directing their activities, communicating with them through effective communication channels and resolving conflicts etc.

Controlling is the process of monitoring performance by comparing actual results, with predetermined objectives.

Thus, in order to get results managers formulate plans, delineate structural arrangements; hire, train and motivate people and monitor performance by comparing with previously set goals. The statement that management is concerned with managing 'things' should be qualified in the light of the above information. Management is actually a process of efficiently getting activities completed through people. Efficiency is a vital aspect in managing things. Efficiency refers to the relationship between inputs and outputs. If a manager is able to get more output for a given input, he is said to have achieved things effectively. Management is also concerned with getting things completed. In other words, it seeks effectiveness. When managers achieve their goals, they are said to be effective.

3. **Managing people:** In the early stages of the evolution of management, managers had completely ignored the importance of managing people effectively in order to achieve results. People were treated as autonomous, machines, economic tools in the production process. People are things and things can be manipulated to serve the needs of the organisation.

COORDINATION

Introduction

All organisations establish a variety of goals and direct their energies and resources to achieve them. The human as well as non-human resources (materials, machines and money) have to be combined properly so as to achieve the goals of an organisation. The various activities and efforts must be planned, organised and carried out in a systematic manner. Each department must be informed about the activities of other departments, so that all of them work together smoothly. Coordination is the process of integrating the objectives and activities of separate units of an organisation, to achieve organisational goals.

Meaning

In every organisation, the total work is divided into convenient parts. Different departments are created to process the work quickly and efficiently. Within each department, there is division and subdivision of operations according to the nature of tasks involved. Individuals working therein are, thus, related with others and their functions affect others. In order to ensure a smooth flow of work, it is, therefore, necessary to synchronise the efforts of

individuals and groups, in a systematic way. The process by which a manager brings unity of action in an organisation is coordination.

According to Mooney and Reiley, 'Coordination is the orderly arrangement of group efforts to provide unity of action in the pursuit of a common purpose'. In the words of Henry Fayol, "To coordinate, means to unite and correlate all activities". To quote McFarland, "Coordination is the process whereby an executive develops an orderly pattern of group efforts among his subordinates and secures unity of action in the pursuit of common purpose." On the basis of these definitions, we can state the basic features of coordination, thus:

Deliberate action

Coordination implies deliberate efforts to bring unity of purpose. It is achieved by conscious managerial action; it is not automatic.

Group effort

Coordination applies to the group effort; not individual effort. It involves the orderly arrangement of group efforts. Thus, there is no need for coordination, when an individual works in isolation without affecting anyone's functioning. Coordination lays emphasis on unity of effort and unity of action.

Continuous activity

Coordination is not an one-shot deal. It starts with the very first action, the process of establishment of business and runs through unit its closure. It is a never-ending process of ensuring the achievement of objectives.

Permeates all management functions

Coordination permeates the entire process of management. It is a common thread running through all the management functions. **If plans** are not properly worked, the scarce resources are put in ineffective use. **In organising**, Managers must see that o activity remains unassigned. **In Staffing,** managers must ensure availability of competent people to handle assigned duties. The organisation should not suffer because of inadequate or excess staff. **In directing**, managers must synchronise the efforts of subordinates and motivate them through adequate rewards. **In controlling,** managers must see that activities are on the right path, doing the right things at the right time in the right manner. Thus, coordination transcends all managerial functions. That is, why, writers like, Koontz, Terry called coordination as the "quintessence of management".

Thus Coordination transcends all managerial functions.

Need for Coordination

The need for coordination arises whenever and wherever, a group of people work together to achieve common objectives. Coordination is the basic cementing force in an organisation. The need for coordination mainly arises because of the following disintegrating forces:

i. **Increase in size and complexity of operations**: Growth in the number and complexity of activities is a major factor requiring coordination. In a large organisation, a large number of people process the work at various levels. These people may work at cross

purposes if their efforts and activities are not properly coordinated. Size brings about the problems of communication as well. It may be difficult to communicate the policies, orders and managerial actions on a face-to-face basis. Personal contact is, rather, impossible and formal methods of coordination become essential. If the operations of an organisation are multiple, complex and diversified, the need for coordination is felt everywhere.

ii. **Specialisation**: Usually, in an organisation, work is divided along functional lines. Thus, we have specialists taking care of manufacturing, financing, personnel, marketing functions. Over a period of time, these specialists develop 'tunnel vision' (inability to look beyond their own narrow specialty). They are more interested in developing their own departments and thereby increase their sphere of influence, in the organisation. For example, production executives might be more interested in producing high-quality, high-priced items. In the words of Stoner and Freeman, "Without coordination, people and departments would lose sight of their roles within the organisation. They would pursue their own special interests, often at the expense of organisational goals.

iii. **Clash of interests**: People join an organisation to fulfill their personal goals, i.e., their physiological (food, shelter, clothing, entertainment) and psychological (economic security, recognition for good work, freedom to do work independently, etc.) needs. Often individuals fail to appreciate how the achievement of organisational goals will satisfy their own goals. The environment in the organisation, organisational rules and regulations may also frustrate their attempts to realise their personal goals. As a result, they are forced to pursue their narrow personal interests sacrificing organisational interests. They tend to work at cross purposes. Coordination helps to avoid conflict between individual and organisational goals. Managers can bring about harmony between individual and organisational goals by developing a closer contact with subordinates, by evolving attractive incentive schemes, recognising good work and by explaining how subordinates can achieve their own personal goals, by achieving organisational goals.

iv. **Difference in attitudes and working style**: According to Lawrence and Lorsch, the need for coordination, basically, arises owing to the differences in attitudes and different working styles of people in an organisation. Every individual has his own way of dealing with problems. The specific orientation towards particular goals might be different. To sales people, product variety may take precedence over product quality. Accountants may see cost control, as most important to the organisation's success, while marketing managers may regard product design as most essential. Further, there are differences in time orientation of people. For example, product manager may be more concerned with problems that have to be solved immediately. Others, like the members of a research and development team, may be preoccupied with problems that will take years to solve. Again, there may be differences in formality of structure. Each type of unit in the organisation, may have different methods and standards for evaluating progress, towards

objectives and for rewarding employees. In a production department, for example, the standards may be quite clearly defined in terms of cost, quality and schedule, and a control system may exist for precise measurement of these criterions. In the personnel department, however, standards of performance may be quite broadly defined, such as 'upgrading the skills of field personnel'.

Thus, the capacity, talent and speed of people differ widely. It is, therefore, essential to reconcile differences in approach, timing and effort of various departments, with a view to secure unity of action.

v. **Independence of units**: When a department depends on the activities of other departments (or units) to carry its own activity, units are said to be interdependent. In an organisation, various units depend upon one another for their successful functioning. In a restaurant, for example, waiters, cooks, supervisors and cashiers are independent. To serve the customers, each must make his own contribution, in an orderly manner. The chef must cook the meal, the waters must serve the items, the supervisors must greet the visitors in a systematic manner. All must move in unison, so that customers are satisfied. The need for coordination increases with an increase in the interdependence between organisational units.

Significance of coordination

Coordination is the epitome of management. It is important to the success of any enterprise. It helps an organisation in the following ways:

1. Increase efficiency

Coordination pulls all the functions and activities together. The human as well as non-human resources are utilised in a right manner. Activities follow a specific direction. Waste motions, overlapping and duplication of efforts, misuse of resources are, thus, prevented. Coordination enables an organisation to use its resources in an optimum way. The resources flow through productive channels, paving the way for required quality and quantity of output. Efficiency is thus improved.

2. Improves human relations

Coordination brings unity of action and direction. Members begin to work in an orderly manner, appreciating the work put in by others. They understand and adjust with each other by developing mutual trust, cooperation and understanding. They move closer to each other. In short, it improves human relations.

3. Interdepartmental harmony

According to Fayol, where activities are well-coordinated, each department works in harmony with the rest. Production knows its target; maintenance keeps equipment and tools in good order; Finance procures necessary funds; Security sees to the protection of goods and service personnel and all these activities are carried out in a smooth and systematic manner. Coordination, thus, creates a harmonious balance between departments, persons and facilities. This in turn, helps in meeting goals efficiently and effectively.

4. Key to other functions

The importance of coordination largely lies in the fact that it is the key to other functions of management like planning, organising, staffing, directing and controlling. The different elements of a plan, the various parts of an organisation and phases of a controlling operation must all be coordinated. Coordinating makes planning more purposeful, organisation more well-knit, and control more regulative and effective.

Principles of coordination

Coordination is crucial to the success of any organisation. Coordination is the process, whereby an executive develops an orderly pattern of group effort among his subordinates and secures unity of action, in the pursuit of a common purpose. Coordination is a continuous and dynamic process which emphasises unity of efforts to achieve the desired results. Coordination is essentially a managerial responsibility. Mary Parker Follet has spelt various principles of coordination in the following fashion.

1. Principle of direct contact

In the first principle, Mary Parker Follet states that coordination can be achieved by direct contact among the responsible people concerned. She believes that coordination can be easily obtained by direct interpersonal relationships and direct personal communications. Such personal contacts bring about agreement on methods, actions, and ultimate achievement of objectives. Direct contacts also help wither away the controversies and misunderstandings. It is based on the principle, that coordination is better achieved through understanding, not by force, order and coercion.

2. Early stage

Coordination should start from the very beginning of the planning process. At the time of policy formulation and objective setting, coordination can be sought from organisational participants. Obviously, when members are involved in goal-setting coordination problem is ninety percent solved. It is because participative goal-setting enables agreement and commitment to organisational goals and there is no question of conflict and incongruence of goals of individuals and organisations. Coordination, if not initiated in the early stages of planning and policy formulation, becomes difficult to exercise in the later stages of execution of plans.

3. Reciprocal relationship

As the third principle, Mary Follet states, that all factors in a situation are reciprocally related. In other words, all the parts influence and are influenced by other parts. For example, when A works with B and he in turn, works with C and D, each of the four, find themselves influenced by others that is influenced by all the people in the total situation. Follet contends that this sort of reciprocal relation and this sort of interpenetration of every part by every other part, and again by every other part, as it has been permeated by all, should be the goal of all attempts at coordination.

4. Principle of Continuity

The fourth principle, advocated by Follet, is that coordination is a continuous and never-ending process. It is something which must go on all the times in the organisation. Further, coordination is involved in every managerial function.

5. **Principle of self-coordination**

In addition to the four principles listed by Follet above, Brown has emphasised the principle of self-coordination. According to this principle, when a particular department affects other function or department, it is in turn, affected by the other department or function. This particular department may not be having control over the other departments. However, if other departments are modified in such a fashion, that it affects the particular department favourably, then self-coordination is said to be achieved. For instance, as we know, there must be coordination between the level of production and sales. When the production department alters its total production in such a way, so as to suit the sales capacity of the marketing department (even before the marketing department makes request to cut down production or to increase production), then self-coordination is said to have taken place. This, of course, requires effective communication across the departments. This principle is rarely practised in day-to-day life.

Coordination Process

Coordination cannot be achieved by force or imposed by authority. Achieving coordination through executive orders is a futile exercise. It can be achieved through person-to-person, side-by-side relationships. Achieving effective coordination is a sequential process. It is possible only when the following conditions are fulfilled.

1. Clearly defined and understood objectives

Every individual each department must understand what is expected of them by the organisation. Top management must clearly state the objectives for the enterprise, as a whole. As pointed out by Terry, "there must be commonness of purpose, in order to unity efforts". The various plans formulated in the enterprise must be interrelated and designed to fit together.

2. Proper division of work

The total work must be divided and assigned to individuals in a proper way. Here, it is worth noting the principle, 'a place for everything and everything in its place'.

3. Good organisation structure

The various departments in the organisation must be grouped in such a way that work moves smoothly from one phase to another. Too much specialisation may complicate the coordination work.

4. Clear lines of authority

Authority must be delegated in a clear way. The individual must know, what is expected of him by his supervisor(s). Once authority is accepted, the subordinate must be made account

for results, in his work area. There should be no room for overlapping of authority and wastage of effort(s).

5. Regular and timely communication

Personal contact is generally considered to be the most effective means of communication for achieving coordination. Other means of communication such as records, reports, may also be used in order to supply timely and accurate information to various groups in an organisation. As far as possible, common nomenclature may be used so that individuals communicate in the 'same language'.

6. Sound leadership

According to McFarland, real coordination can be achieved only through effective leadership. Top management must be able to provide (i) a conducive work environment, (ii) proper allocation of work, (iii) incentives for good work, etc. It must persuade subordinates, to have an identity of interests and to adopt a common outlook.

Techniques of coordination

Managers use a variety of techniques for achieving coordination. The main ones include the following:

1. **Sound planning**

Planning is the ideal stage for coordination. Every member in the organisation must understand fully how his job contributes to the overall objectives. To this end, objectives must be clearly defined. Policies, rules, procedures must be stated in precise terms, so that members are able to ensure uniformity of action. The various plans must be integrated ultimately, paving the way for coordination.

2. **Sound and simple organisation**

A sound and simple organization is an essential coordination. The lines of authority and responsibility of each individual must also be spelt out. This helps in avoiding inter-personal conflicts. Related activities must be grouped together and, departments created carefully. These steps will go a long way in facilitating coordination.

3. **Chain of command**

The chain of command states the relationship between a superior and a subordinate. Exercise of authority though the chain of command or hierarchy is a traditional means of securing coordination. The various activities are brought under the control of one boss, who has the authority to issue orders, instructions and secure compliance. He can resolve conflicts by exercising his authority. By virtue of his position, a superior is able to resolve differences and achieve coordination.

4. **Effective Communication**

Open and regular interchange of information facilitates understanding between individual and groups among whom coordination is to be achieved. Through effective communication, each and every person understands his scope of activity and limits of functioning. As a result of such understanding, one can ensure both horizontal as well as vertical coordination. Modern communication systems, such as computers, data-processing equipment, facilitate

the flow of communication across various individuals and departments quickly. This helps managers in coordinating various activities, smoothly.

5. **Special coordination**

In an organisation, where an executive finds little time to solve the problems of coordination, he can hire a specialist for doing this task. Such a person is called 'special coordinator or independent integrator'. His main task is to collect information regarding problems, analyse the same, list the various options and suggest remedial steps. He can, thus shape executive thinking and action along desired lines.

6. **Sound leadership**

Leadership is the ability of a manager to induce subordinates to work with zeal and commitment. Effective leadership ensures coordination of efforts, both at the planning and implementation stage. A good leader puts activities on the right track, and inspires subordinates to pull together for the accomplishments of common objectives. He can persuade them to adjust their behaviour voluntarily, according to the needs of the situation (voluntary or self-coordination). Through personal contact, he can bring about an atmosphere of mutual trust and cooperation within the organisation. Whenever required, he can offer incentives to members and thereby reduce conflicts. For instance, profit-sharing is helpful in promoting team-spirit and cooperation between employers and employees.

Types of coordination

On the basis of scope and flow in an organisation, coordination may be classified as internal and external; vertical and horizontal.

1. **Internal and external coordination**

Coordination between the different units of an organisation is called 'internal coordination'. It involves synchronisation of the activities and efforts of individuals, in various departments, plants and offices of an organisation. The coordination between an organisation and its external environment, consisting of government, customers, investors, suppliers, competitors, etc. is known as 'external coordination'. No organisation operates in isolation. In order to survive and succeed, it must set its house in order, and interact with outside forces in a friendly way.

2. **Vertical and horizontal coordination**

Coordination between different levels of an organisation is called 'vertical coordination'. It is achieved by top management, through delegation of authority. When coordination is brought between various positions, at the same level in the organisation (i.e., between production, sales, finance, personnel, etc.) it is called 'horizontal coordination'. Horizontal coordination is achieved through mutual consultations and cooperation.

Systems Approach to Coordination

The primary reason for coordination is that departments and workgroups are interdependent. They depend on each other for information and resources to carry out their respective activities. The greater the interdependence between departments, the more coordination, the

organisation demands, if departments are to be able to perform effectively. According to Thmpson, there are three major forms of interdependence, pooled, sequential and reciprocal. Pooled interdependence means that each department is part of the organisation and contributes to the common good, but each department is relatively independent because work does not flow between units. State Bank of India branches or Wimpy's restaurants are examples of pooled interdependence. They share financial resources from a common pol but do not interact with each other. In sequential interdependence, the output of one unit becomes the input for another, in a sequential manner. The first department must perform correctly, so that the second department can perform correctly. Coordinating long-linked units requires careful planning by the manager. It may be necessary to promote day-to-day communication among plants, so as to identify trouble spots and prevent interdepartmental conflicts. Reciprocal interdependence exists when activities flow both ways between units. This form is clearly the most complex. For example, hospitals employ resources from several departments (e.g., x-ray, nursing, surgery, physiotherapy, etc.) to restore a patient's health. Each specialist and department, supplies some of the resources required to help the patient. Doctors and professionals from each specialised area meet to discuss the patient's recovery. The method of coordination is mental adjustment, achieved through group meetings. Designing an organisation to take care of reciprocal interdependence, is not an easy task. Open communication and careful planning are essential. As Hellriegel et al., remarked, "Because management cannot easily anticipate all customer demands or solve all the problems that arise, managers must continually communicate face to face, to be sure that they understand the nature and scope of the issues and problems and to devise solutions". One useful way to integrate various departments in an organisation, is to view them as interrelated and interconnected parts of an open 'system'. The systems approach ensures better coordination by considering an organisation as a system, consisting of different sub-systems. The output will be satisfactory and effective, when the differentiated sub-systems are integrated properly through coordination. Because all the parts are interdependent, just like parts in the human body, the performance of organisation requires proper functioning of all the sub-systems. When any of the parts is not in order, then the total output is affected. Systems approach thus enables management to find out the loopholes in the system and instantaneously rectify the particular sub-part, which is not in order. Through feedback and feed-forward control system, an organisation is in a position to check the functioning of various parts in the organisation. Systems approach, thus ensures better coordination.

PLANNING AND FORECASTING

Introduction

Planning is central to the success of any company. To be useful, plans must be formulated, interpreted and implemented in a proper way, keeping the internal and external factors in mind.

Planning is a rational action mixed with a little bit of forethought. It is seen everywhere. In a business, planning is the primary of all managerial functions as it involves deciding the

future course of action. Thus, planning logically precedes the execution of all managerial functions. Planning is the process of deciding in advance what is to be done, where, how and by whom it is to be done.

Thus, it is basically a process of "thinking before doing". All these elements speak about the futurity of an action.

Koontz and O'Donnell have defined planning in terms of future course of action. They state "that Planning is the selection from among alternatives for future courses of action for the enterprise as a whole and each department within it.

"Planning involves defining the organization's goals, establishing an overall strategy for achieving goals, and developing a comprehensive set of plans to integrate and coordinate organizational work."

It is the process of establishing goals and a suitable course of action for achieving those goals. It requires decision making.

The necessity of planning arises because of the fact that business organizations have to operate, survive and progress in a highly dynamic economy where change is the rule, changes gives rise to the problems and throw countless challenges.

Features of planning

Planning has a number of characteristics:

1. **Planning is goal-oriented**

All plans arise from objectives. Objectives provide the basic guidelines for planning activities. Planning has no meaning unless it contributes in some positive manner to the achievement of predetermined goals.

2. **Planning is a primary function**

Planning is the foundation of management. It is a parent exercise in management process. It is a preface to business activities.

According to Koontz, "Planning provides the basic foundation from which all future management functions arise". Terry also supported the view, that "without planning there is nothing to organise, no one to motivate and no need to control".

The idea of primacy of planning emphasises the fact that planning takes precedence over other managerial functions like organising, directing and controlling because none of these functions can come into being until there is a plan.

3. **Planning is all-pervasive**

Planning is a function of all managers. It is needed and practised at all managerial levels. Planning is inherent in everything a manager does. Managers have to plan before launching a new business. They have to plan whenever things change. Even when they decide to close down a plan, they have to plan meticulously to avoid problems from employees. The scope of planning, however, differs at different levels and among different departments.

4. **Planning is a mental exercise**

Planning is a mental process involving imagination, foresight and sound judgement. Planning compels managers to abandon guesswork and wishful thinking. It makes them

think in a logical and systematic manner. Plans are based on a careful study of internal and external factors influencing business activities.

5. **Planning is a continuous-process**

Planning is continuous. It is a never-ending activity. Once plans for a specific period are prepared, they are translated into action. At the end of that period, there is a need for a new plan to be drawn based on new situations and conditions. Planning, is thus, an ongoing process of adjustment to change. There is always need for a new plan to be drawn on the basis of new demands and changes in the circumstances.

6. **Planning involves choice**

Planning essentially involves choice among various alternative courses of action. If there is one way of doing something, there is no need for planning. The need for planning arises only when alternatives are available. Planning presupposes the existence of alternatives. From out of these alternatives, a manager would select the best alternatives, after careful analysis and evaluation.

7. **Planning is forward looking**

Planning means looking ahead and preparing for the future. It means peeping into the future, analysing it and preparing for it. Managers plan today with a view to flourish tomorrow. Without planning, business becomes random in nature and decisions would become meaningless, ad hoc choices.

8. **Planning is flexible**

Planning is based on a forecast of future events. Since future is uncertain, plans should be reasonably flexible. The onset of colour television sets forced many a manufacturer in the West to abandon production of black and white television sets long back. When market conditions change, planners have to make necessary changes in the existing plans. According to Koontz and O'Donnell, 'effective planning requires continual checking on events and forecasts and the redrawing of plans to maintain a course towards a designed goal'.

9. **Planning is an integrated process**

Plans are structured in a logical way wherein every lower level plan serves as a means to accomplish higher level plans. They are highly interdependent and mutually supportive.

10. **Planning includes efficiency and effectiveness dimension**

Plans aim at deploying resources economically and efficiently. They also try to accomplish what has been actually targeted. The effectiveness of plans is usually dependent on how much it can contribute to the predetermined objectives.

Nature of planning:

The nature of planning can be highlighted by studying its characteristics. They are as follows

1. **Planning is a mental activity:** Planning is not a simple process. It is an intellectual exercise and involves thinking and forethought on the part of the manager.

2. **Planning is goal-oriented:** Every plan specifies the goals to be attained in the future and the steps necessary to reach them. A manager cannot do any planning, unless the goals are known.
3. **Planning is forward looking:** Planning is in keeping with the adage, "look before you leap". Thus planning means looking ahead. It is futuristic in nature since it is performed to accomplish some objectives in future.
4. **Planning pervades all managerial activities:** Planning is the basic function of managers at all levels, although the nature and scope of planning will vary at each level.
5. **Planning is the primary function:** Planning logically precedes the execution of all other managerial functions, since managerial activities in organizing; staffing, directing and controlling are designed to support the attainment of organizational goals. Thus, management is a circular process beginning with planning and returning to planning for revision and adjustment.
6. **Planning is based on facts:** Planning is a conscious determination and projection of a course of action for the future. It is based on objectives, facts and considered forecasts. Thus planning is not a guess work.
7. **Planning is flexible:** Planning is a dynamic process capable of adjustments in accordance with the needs and requirements of the situations. Thus planning has to be flexible and cannot be rigid.
8. **Planning is essentially decision making:** Planning is a choice activity as the planning process involves finding the alternatives and the selection of the best. Thus decision making is the cardinal part of planning.

Planning Questions and Steps in the planning process

There are seven essential steps in operating planning process. Managers use this process in carrying out their jobs. Steps in operating planning process:

1. **Setting Goals**

Establish the targets for the short and long range future. For example: 25 percent growth over last year sales in present financial year. To increase market share by 5 percent in next five years.

2. **Analyzing and evaluating the environment**

   Analyze the present position and resources available to achieve objectives.

   - Where are we now?
   - What are the limitations in the environment?
   - What resources do we have?
   - Are there any external factors that can influence the objectives and there accomplishment?

3. **Determining Alternatives**

   Construct a list of possible courses of action that will lead you to your goal.

4. **Evaluating the alternative**

Listing and considering the various advantages and disadvantages of each of your possible course of action.

5. **Selecting the Best solution**
   Selecting the course of action that has the most advantages and the fewest serious disadvantages.
6. **Implementing the Plan**
   Determine, who will be involved, what resources will be assigned how the plan will be evaluated, and reporting procedures.
7. **Controlling and evaluating the Results**
   Making certain that the plan is going according to expectations and making necessary adjustments.

Approaches to planning

1. **Top-down approach**
   a. The top management defines the mission, lays down strategies, specifies action plans to achieve the stated goals.
   b. The blue print is then passed on to the people working at lower levels, who have very little to contribute to the process of planning.
   c. The success of this approach is wholly dependent on the qualifications, experience and capabilities of people working at the top level.
2. **Bottom-up approach**
   a. Thinking and doing aspects in the planning process are two sides of the same coin. If lower level managers are drawn into the preparation and implementation of plans, their loyalty and commitment would go up automatically.
   b. Participation enables them to give their best to the plan document.
3. **Composite approach**
   a. In this approach, a middle path is chosen to facilitate the smooth implementation of the plans.
   b. Here the top management offers guidelines, sets boundaries and encourages the middle and lower level executives to come out with tentative plans.
4. **Team approach**
   a. In this approach, the job of planning is assigned to a team of managers having requisite experience in various functional areas. They prepare the draft plans, taking internal as well as external factors into account.
   b. The tentative plans are forwarded to the top management for approval.
   c. The expertise, experience and capabilities of functional heads is executed into action in such a participative climate.

Principles of Planning

Planning should try to incorporate some of the time-tested and inter-related principles.

1. **Principle of contribution to objectives:** Every plan should help in the achievement of organisational objectives.

2. **Principle of primacy of planning:** Planning precedes all other managerial functions. It is the first and the foremost function to be followed in the process of management.
3. **Principle of pervasiveness of planning:** Planning is an over-all pervasive function. It is important to all managers regardless of their level in the organisation.
4. **Principle of flexibility:** By flexibility of a plan is meant its ability to switch gears, change direction to adapt to changing situations without unnecessary cost.
5. **Principle of periodicity:** Plans should be integrated and interconnected in such a way as to achieve the stated objectives economically and efficiently. A manager should review events and expectations regularly; refine and redraw the plan and keep it on track.
6. **Principle of planning premises:** Every plan is based on carefully considered assumptions, known as planning premises. "The more the individuals charged with planning, understand and agree to utilise consistent planning premises, the more coordinated enterprise planning will be".
7. **Principle of limiting factor:** While choosing an appropriate course of action among different alternatives, the limiting or critical factor should be recognised and given due weightage. When ignored, the critical factor would seriously impact the process of planning and make it impossible to achieve goals.

Importance of Planning

According to G.R. Terry, "Planning is the foundation of most successful actions of all enterprises." An enterprise can achieve its objectives only through systematic planning on account of the increasing complexities of modern business.

The importance and usefulness of planning can be understood with reference to the following benefits.

a. **Minimizes uncertainty**
   The future is generally uncertain and things are likely to change with the passage of time. Planning helps in minimizing the uncertainties of the future as it anticipates future events.
b. **Emphasis on objectives**
   The first step in planning is to fix the objectives. When the objectives are clearly fixed, the execution of plans will be facilitated towards these objectives.
c. **Promotes coordination**
   Planning helps to promote the coordinated effort on account of predetermined goals.
d. **Facilitates control**
   Planning and control are inseparable in the sense that unplanned actions cannot be controlled. Control is nothing but making sure that activities conform to the plans.
e. **Improves competitive strength**
   Planning enables an enterprise to discover new opportunities, which give it a competitive edge.
f. **Economical operation**
   Since planning involves a lot of mental exercise, it helps in proper utilization of resources and elimination of unnecessary activities. This, in turn, leads to economy in operation.

g. **Encourages innovation**
Planning is basically the deciding function of management. Many new ideas come to the mind of a manager when he is planning. This creates an innovative and foresighted attitude among the managers.

h. **Tackling complexities of modern business**
With modern business becoming more and more complex, planning helps in getting a clear idea about what is to be done, when it is to be done, where it is to be done and how it is to be done.

Limitations of Planning

Planning is not always on the credit side of the ledger. It is not a panacea for all organisational ills. Mere planning does not guarantee success because it is not a substitute for human action and judgement. The limitations of planning can be examined under the following headings :

1. **Lack of accurate information:** The reliability of a plan depends upon facts & information on which it is based. If reliable information & dependable data are not available, planning is sure to lose its importance.
2. **Lack of accurate forecast:** Planning concerns future activity & its quality will be determined by the quality of forecast of future events. No manager can predict completely & accurately the events of future, the plans may cause problems in operation.
3. **Complex Process:** Planning is a complex & expensive process. It demands serious thinking, hard work & time. Some managers do not like to undergo such a complicated process as they like short-cuts. Such planning may not yield the desired results.
4. **Rigidities:** Plans put the activities of an expertise in a rigid framework. Everything is spelt out in detail and deviations are not permitted. New opportunities are often ignored or rejected because of the commitment to existing plans. Once established, policies and procedures become ingrained in an enterprise and changing them may become an impossible task. Events may change but plans may remain fixed. Managers too, would be reluctant to reorient their plans suitably. Planning, after all, is hard mental work and no executive would like to discard the old plans in favour of new ones, even when circumstances demand. So, a mindset has already been established, and maintaining a fresh and objective viewpoint is difficult.
5. **Lack of specific goals:** Qualitative objectives like social responsibility, management development, quality of work life, etc are often expressed. Planning cannot be effective unless goals are specific & clear.
6. **Lack of planning Skills:** Planning is an art & takes a special type of person to plan. Not everyone is capable of planning & solving organizational problems. A planner should not only have skill, but also intelligence & vision for long range planning & must have the ability to forecast.
7. **Resistance to change:** Resistance to change is another r factor which puts limits on planning. It is commonly experienced in the business world. Sometimes, planners

themselves do not like change & they do not think it is good & necessary to bring changes as it will create resistance on the part of workers. This attitude makes the planning process ineffective.

Effective planning

According to Koontz and O'Donnell, the following steps have to be taken in order to make planning effective:

1. **Climate:** Planning must not be left to chance. Additionally, conducive climate must be provided so that activities proceed smoothly and systematically. Top managers should remove obstacles to planning, by establishing clear cut goals, realistic planning premises and offering required information and appropriate staff assistance at various levels.
2. **Top management support:** Planning must start at the top. It must receive attention of the top management continually. They must be willing to extend a helping hand, whenever required.
3. **Participation:** Plans are implemented by people. So, it is necessary to secure acceptance and commitment from them. One way to increase commitment is to solicit subordinates participation in the planning process. Planning comes alive when employees are involved in setting goals and determining the means to reach them.
4. **Communication:** Goals, premises and policies must be properly communicated to people. People must know what they are supposed to do, when, how and where. The time limits must also be communicated in advance.
5. **Integration:** Different plans must be properly balanced and integrated. They must support each other and should not work at cross purposes. Every attempt should be made to ensure that the pay-offs of planning are more than the costs involved.
6. **Monitoring:** Plans must be subjected to regular appraisal and review, so as to take note of internal as well as external changes. Better to keep the plan flexible to the extent possible.

DECISION MAKING

Introduction

Decision making is an important part of management process. It covers every part of an enterprise. Decision making is a fundamental aspect of management because it requires choosing among alternative course of action. In addition to coping with an era of accelerating change, today's decision makers confront the challenge of dealing with complexity, uncertainty and the need for flexible thinking.

Decision making can be regarded as the mental processes resulting in the selection of a course of action among several alternatives. Every decision making process produces a final choice. The output can be an action or an opinion of choice.

In general - "Decision making is the process of making a choice between a number of options and committing to a future course of actions".

Managers scout for problems, make **decisions** for solving them and monitor the consequences to see whether additional decisions are required. Good decision-making is a

vital element of good management because decisions determine how the organisation solves its problems, allocates its resources and accomplishes its goals.

Characteristics of decision making

The important characteristics of decision-making may be listed thus:

1. **Goal-oriented**: Decision-making is a goal-oriented process. Decisions are usually made to achieve some purpose or goal. The intention is to move 'toward some desired state of affairs'.
2. **Alternatives**: A decision should be viewed as 'a point reached in a stream of action'. It is characterised by two activities - search and choice. The manager searches for opportunities, to arrive at decisions and for alternative solutions, so that action may take place. Choice leads to decision, it is the selection of a course of action needed to solve a problem. When there is no choice of action, no decision is required. The need for decision-making arises only when some uncertainty as to outcome exists.
3. **Analytical-intellectual**: Decision-making is not a purely intellectual process. It has both the intuitive and deductive logic; it contains conscious and unconscious aspects. Part of it can be learned, but part of it depends upon the personal characteristics of the decision maker. Decision-making cannot be completely quantified; nor is it based mainly on reason or intuition Many decisions are based on emotions or instincts. "A decision represents a judgement; a final resolution of a conflict of needs, means or goals; and a commitment to action made in the face of uncertainty, complexity, and even irrationality." Decision implies freedom to the decision maker regarding the final choice; it is uniquely human and is the product of deliberation, evaluation and thought.
4. **Dynamic process**: Decision-making is characterised as a process, rather than as one static entity. It is a process of using inputs effectively in the solution of selected problems and the creation of outputs that have utility. Moreover, it is a process concerned with 'identifying worthwhile thing to do in a dynamic setting. A manager for example, many hire people based on merit regularly and also pickup candidates recommended by an influenced party, at times. Depending on the situational requirements, managers take suitable decisions using discretion and judgement.
5. **Pervasive function**: Decision-making permeates all management and covers every part of an enterprise. In fact, whatever a manager does, he does through decision-making only; the end products of a manager's work are decisions and actions. Decision-making is the substance of a manager's job.
6. **Continuous activity**: The life of a manager is a perpetual choice making activity. He decides things on a continual and regular basis. It is not a one shot deal.
7. **Commitment of time, effort and money**: Decision-making implies commitment of time, effort and money. The commitment may be for short term or long-term depending on the type of decision (e.g. strategic, tactical or operating). Once a decision is made, the organisation moves in a specific direction, in order to achieve the goals.

8. **Human and social process**: Decision-making is a human and social process involving intellectual abilities, intuition and judgement. The human as well as social imparts of a decision are usually taken into account while making the choice from several alternatives. For example, in a labour surplus, capital-hungry country like India managers cannot suddenly shut down plants, lop off divisions and extend the golden handshake to thousands of workers, in the face of intense competition.
9. **Integral part of planning**: As Koontz indicated, 'decision making is the core of planning'. Both are intellectual processes, demanding discretion and judgement. Both aim at achieving goals. Both are situational in nature. Both involve choice among alternative courses of action. Both are based on forecasts and assumptions about future risk and uncertainty.

Types of decisions

The quality of decision-making skills is one of the critical factors in managerial success. Managers are evaluated by the decisions they make and more often, by the results obtained from their decisions. The different levels in the organisations are distinguished between the decisions made by the managers.

1. **Basic Decision vs Routine Decisions**

Basic decisions concerning unique problems or situations. They are one-time decisions demanding large investments. For example, decisions about launching a new product, or buying a more advanced computer system, are non-routine decisions. They require creativeness, intuition and good judgement, on the part of managers. They are strategic decisions which affect the future of an organisation. "Anyone who is a manager, has to make such strategic decisions, and the higher his level in the management hierarchy, the more of them he must make". In other words, as a manager progresses to higher levels, the number of basic decisions increase.

On the other hand, routine decisions are repetitive in nature. They require little deliberation and are generally concerned with short-term commitments. They tend to have only minor effects on the welfare of the organisation. Generally, lower-level managers look after such mechanical or operating decisions. For example, a supervisor can decide whether an employee's absence is excused or unexcused, on the basis of personnel policy guidelines. Usually, standard procedures are established to dispose of such repetitive problems quickly.

2. **Personal vs. organisational decisions**

According to Barnard, decisions can be divided on the basis of the environment in which they are made. Decisions to watch television, to study, or retire early are examples of personal decisions. Such decisions, pertain to managers as individuals. They affect the organisation, in an indirect way. For example, a personal decision to purchase a Maruti rather than an Ambassador, indirectly helps one firm due to the sale and hurts another because of the lost sale. The sudden decision of a popular singer to seek premature retirement may affect the film industry badly. In other words, personal decisions can 'have an impact beyond the immediate system on whose behalf they were made'. **Organisational**

decisions are made by managers, in their official or formal capacity as controllers and allocators of organisational resources. Unlike **personal decision**s, organisational decisions can be delegated. These decisions are aimed at furthering the interests of the organisation. Managers operate in an open environment. Results of their decisions are open for public view (subordinates, stockholders, customers, general public etc.) and such results are generally measured in terms of the firm's earnings , welfare of the employees and the economic health of the community. In other words, managerial decisions have an impact on a greater number of people. So, in order to survive and progress, managers are forced to make professional decisions, to make decisions that are based on rationality, judgement and experience. As pointed out by Levitt, the manager is judged not for what he knows about the work that is done in his field, but by how well he actually does the work. In order to protect the long-term interests of the organisation, sometimes, a manager may be forced to adopt certain decisions which may be against his personal choices. For example, a manager who abhors unethical practices may tolerate deceptive product messages in company advertisements to ward off competitive pressures. To survive, the manager must be a professional decision maker. He is expected to resolve the conflicts that take place between organisational and personal decisions in a smooth way.

3. **Programmed and Non-programmed decisions**

Herbert Simon has provided a popular classification scheme for managerial decisions-programmed and non-programmed. A programmed decision is one that is routine and repetitive. Rules and policies are established well in advance to solve recurring problems quickly. Thus, a hospital establishes a procedure for admitting new patients, a supervisor administers disciplinary actions against workers reporting late for work, a store clerk orders requisition for additional supplies, as soon as the existing stock drops below a specified level. On the basis of pre-established set of alternatives, programmed decisions can be made in a routine way. Since, programmed decisions are relatively easy and simple for managers to make, they allow and equip managers for more challenging and difficult problem solving. However, routine procedures leave little room for the manager to choose. Judgement cannot be used and freedom is affected. Programmed decisions are usually made by lower level personnel in organisations "in which the market and technology are relatively stable, and many routine, highly structured problems must be solved. "For example, in banks and insurance companies, the market and technology are relatively stable and usually routine problems confront operating personnel. Decisions are highly routinised and, the decision maker simply recognises the problem to implement the predetermined solution.

Non-programmed decisions deal with unique/unusual problems. In such cases, the decision maker has to make a decision, in a poorly structured situation-one in which there are no pre-existing, cut-and-dried solutions. Deciding whether to take over a sick unit, how to restructure an organisation to improve efficiency, where to locate a new company warehouse, whom to promote to the vacant position of Regional Manager at one of the company's plants, are examples of non-programmed decisions. The common feature in these decisions is that

they are novel and non-recurring and there are no readymade courses of action to resort to. Because, non-programmed decisions often involve broad, long-range consequences for the organisation, they are made by higher-level personnel only. Managers need to be creative when solving the infrequent problem; and such situations have to be treated de novo each time they occur. Non-programmed decisions are quite common in such organisations as research and development firms where situations are poorly structured and decisions being made are non-routine and complex.

STAFFING

Fundamentals of staffing

Introduction

Staffling is the process of attracting, developing, evaluating and compensating individuals at work. One of the important duties of human resource managers is to help the organisation reach its goals through effective and efficient utilisation of human resources.

Meaning of staffing

Staffling is the process of attracting, developing and evaluating individuals at work. It is concerned with the selection, placement, growth and development of people in an organisation.

Staffing is the process of acquiring, deploying, and retaining a workforce of sufficient quantity and quality to create positive impacts on the organization's effectiveness

Definitions:

According to McFarland, "Staffing is the function by which managers build an organization through the recruitment, selection, and development of individuals as capable employees."

According to Koontz, O'Donnell and Heinz Weihrich, "The management function of staffing is defined as filling position in the organization structure through identifying workforce requirements, inventorying the people available, recruitment, selection, placement, promotion, appraisal, compensation, and training of needed people."

The main features of staffing

1. **Staffing involves people:** Staffing is difficult because it deals with people. Unlike the other managerial functions such as planning, organising and controlling that may be totally objective and performed almost mechanically,staffing function is difficult to perform.
2. **Staffing is development-oriented :**
   a. Staffing is not simply hiring people.
   b. It aims at developing people through training.
   c. It aims at maintaining people through appropriate compensation policies.
3. **Staffing is continuous:** People join and leave organisations for a number of reasons. To meet the growing needs of an organisation, new hands have to be hired from time to time. Thus, staffing is a continuous activity and it is an integral part of management process.
4. **Staffing is a three step process:** Staffling, basically, involves three things :
   - Hiring the right kind of people to fill vacancies

- Developing their skills through training
- Maintaining them by creating favourable conditions of work

  Stated precisely, the purpose of staffing is to ensure that the right number and right type of people are working on the right jobs at the right time and place.

Importance of staffing

Nothing is more important to a firm than the qualities and abilities of the people it employs. People are indispensable in the generation of goods and services. It is the people who operate machines, design new products and services, make decisions to borrow and spend financial resources, market products and deliver services. Only an organisation that consists of the right kind of people can hope to survive and flourish in the present -day competitive environment.

HUMAN RESOURCE MANAGEMENT

Human resource management is a process of bringing people and organisations together so that the goals of each are met. It is the part of management process which is concerned with the management of human resources in an organisation. It tries to secure the best from people by winning their wholehearted cooperation.

Human resource management can be defined as –

"employing people, developing their resource, utilizing maintaining and compensating their services in tune with the job and organizational requirements"

"art of procuring, developing and maintaining competent workforce to achieve the goals of an organisation in an effective and efficient manner"

Human resource management is concerned with the most effective use of people to achieve organisational and individual goals.

Features of HRM

According to Ivancevich and Glueck, HRM is concerned with the most effective use of people to achieve organisation and individual goals. It is a way of managing people at work, so that they give their best to the organisational and individual goals.

1. **Inherent part of management**: It is a way of selecting people, training, motivating, and appraising their performance for improving their quality.
2. **Pervasive function**: HRM is pervasive in nature. It is Present in all levels in an organization
3. **Action oriented**: HRM focuses attention on action, rather than on record keeping, written procedures or rules. Solve problem through rational (balanced) policies rather than record keeping**.**
4. **People oriented**: HRM is all about people at work both as individuals and groups. It tries to put people on the assigned jobs, produce results, reward, and motivate them towards improvements in productivity.
5. **Future oriented**: Effective HRM helps organization meet its goals.
6. **Development oriented**: HRM intends to develop the full potential of employees. The reward structure is tuned to the needs of employees. Training is offered to sharpen and

improve their skills. Employees are rotated on various jobs so that they gain experience and exposure. Every attempt is made to use their talents fully in the service of organisational goals.

7. **Integrating mechanism:** HRM tries to build and also maintains cordial relationship between people working at various levels in organization. In short, it tries to integrate human assets in the best possible manner in the service of an organisation.
8. **Comprehensive function:** HRM is, to some extent, concerned with any organisational decision which has an impact on the, workforce or the potential workforce.
   The term 'Workforce' signifies people working at all levels, including workers, supervisors, middle and top managers. It is concerned with managing people at work. It covers all types of personnel. Personnel work may take different shapes and forms at each level in the organisational heirarcy but the basic objective of achieving organisational effectiveness through effective and efficient utilisation of human resources, remains the same. "It is basically a method of developing potentialities of employees so that they get maximum satisfaction out of their work and give their best efforts to the organisation" (Pigors and Myers).
9. **Continuous function:** HRM is not a one shot deal. It cannot be practised only one hour each day or one day a week. It requires constant awareness and alertness of human relations in every day operation.
10. **Based on human relation:** Every person has different need, perception and expectations. The manager should give due attention to these factors.
11. **Inter-disciplinary function :** HRM is a multi-disciplinary activity utilising knowledge, and inputs drawn from psychology, sociology, anthropology, economics, etc. To unreal the mystery surrounding the human brain, managers need to understand and appreciate the contributions of all such 'soft' disciplines.

Objectives of HRM

HRM seeks to achieve the following objectives:

1. **To help the organization reach its goals:** HR department, like other departments in an organisation, exists to achieve the goals of the organisation. If it does not meet this purpose, HR department (or for that matter any other unit) will wither and die.
2. **To employ the skills and abilities of the workforce efficiently:** The primary purpose of HRM is to make people's strengths productive and to benefit customers, stockholders and employees.
3. **To provide the organization with well trained & well motivated employees:** HRM requires that employees be motivated to exert their maximum efforts, that their performance be evaluated properly for results and that they be remunerated on the basis of their contributions to the organisation.
4. **To increase to the fullest level of employee's job satisfaction and self-actualisation:** It tries to prompt and stimulate every employee to realise his potential. To this end,

suitable programmes have to be designed, aimed at improving the quality of work life (QWL).

5. **To develop & maintain a quality of work life:** It makes employment in the organisation a desirable personal and social situation. Without improvement in the quality of work life, it is difficult to improve organisational performance.
6. **To communicate HR policies to all employees :** It is the responsibility of HRM to communicate in the fullest possible sense, both in tapping ideas, opinions and feelings of customers, non-customers, regulators and other external public as well as in understanding the views of internal human resources.
7. **To help maintain ethical policies and behaviour :** The chief personnel officer in a large American Corporation put it thus : Personnel's purpose is "to practice morality in management in preparing people for change, dealing with dissent and conflict, holding high standards of productivity, building acceptance of standards that determine progression and adhering to the spirit and letter of high professional conduct."

   Thus, HRM in short should try to

   a. Attain economically and effectively the organisational goals.
   b. Serve to the highest possible degree of individuals goals and
   c. Preserve and advance the general welfare of the community.

MODULE-II

Defence Management

INTRODUCTION TO DEFENCE MANAGEMENT

In historical terms, defence management emerged as a topic of interest for the defence sector not too long ago. It is no more than five decades since some Western nations introduced the concept of managing defence in addressing such issues as allocating financial or human resources, solving strategic or operational problems in a comprehensive approach, or using business-like tools governing the defence sector. Such an enterprise requires excellence at all levels and in every department of the defence establishment. One proven way of achieving this is to apply the managerial functions of planning, organising, leading and controlling to those segments and activities of the defence organisation that may contribute to maximising the operational performance of armed forces.

The problems in need of managerial solutions are similar throughout the entire Euro-Atlantic space, regardless of the status of each individual nation, be it a North Atlantic Treaty Organization (NATO) member or a partner. Some of these problems are decades old but became urgent in the last fifteen years or so. Among these problems, the cuts in personnel and spendings as a result of the 'peace dividends' after the end of the Cold war, as well as the increased demands for more deployable forces that operate far away from their home bases and have to be sustained for longer periods.

To consider the application of managerial approaches to these and other similar problems, they should emerge in the general context of democratic concerns on the status of defence and enquiries related to outputs and outcomes of the defence sector in general, and the defence forces in particular. This is a pre-condition of great importance, since it is very unlikely that any organisation financed with public money, including defence organisations, would ever initiate their own measures to increase efficiency, unless there are incentives or pressure exercised from above. If this observation is accepted, then any theoretical approach to defence management should be anchored in the realm of democratic control over defence and the armed forces.

Defining Defence Management

There is no universally agreed definition of 'defence management,' but it simply encapsulates the idea that defence organisations need to turn defence policies into practice, and in doing so, to develop appropriate and sustainable planning mechanisms, support systems and infrastructure.

More than half a century ago, defence was identified as a public good produced by a democratic government on behalf of the people. About the same time, the scientific world discovered that governments are by their very nature inefficient producers of public goods. The question then became how the governments can provide defence in a more efficient manner, and part of the answer was to introduce managerial practices to defence. In turn, management may be described as the science or the coherent way an organisation is acting in order to meet its objectives in given conditions, in an effective and efficient manner, by adequately performing the functions of planning, organising, leading and controlling.

The modernisation of the defence sector is another central challenge governments in the Euro-Atlantic community have been facing for at least a decade. Some nations are concentrating on transforming their armed forces to better respond to the new security challenges of the 21st Century, while others are undertaking more ambitious overhauls of the entire domain of defence under the goal of building new defence institutions, especially the nations that recently transitioned from communist to democratic regimes or that are still in the final phases of this transition. All these states have strategic expectations from security and defence sector reforms, rightfully considering the success of these reforms as facilitating their integration in the Euro-Atlantic com- munity and enhancing their people's security and prosperity.

The achievement of these strategic goals requires better distribution of constrained public resources, a more efficient way of utilising these resources and a more visible and accountable outcome of governmental programmes, including defence programmes. In more and more nations, the public administration is replacing its rather inflexible and highly bureaucratic form of working on behalf of the public with more flexible and accountable public sector management. The question then is how governments can 'produce defence' in a more efficient manner. Part of the answer is seen in the introduction of good managerial practices from the business sector into defence, where the achievement of expected results in a competitive environment is paramount for the survival of any organisation.

The NATO-EAPC (North Atlantic Treaty Organisation – Euro Atlantic Partnership Coun cil) initiative in the field of partnership cooperation entitled *Partner- ship Action Plan on Defence Institution Building* (PAP-DIB) may offer a good example of combining national incentives for reforms through better institutionalisation of defence with the international interest in supporting such a programme. Part of this initiative deals directly with the concept of defence management. One of the objectives stated in the PAP-DIB document, namely objective five, calls for the nations embarking on building defence institutions to "develop effective and transparent measures to optimise the management of defence ministries and agencies with responsibility for defence matters, and associated force structures, including procedures to promote inter-agency co-operation," while objective nine deals with the management of defence spending.

In a managerial sense, planning is different from planning for military operations, yet it still has a direct impact on force development or procurement of major military equipment. Managerial planning implies both focussing on the ultimate goals as stated in relevant policies and flexibility in achieving these goals. Also in a managerial sense, organising implies bringing flexibility to rigid structures by organising work processes within these structures instead of re-organising the structures themselves. At its turn, leading implies both assuming responsibilities and delegating elements of the decision-making process, which differs from the well established command chain in the armed forces. Controlling means mostly to keep track of developments and intervene whenever necessary to re-focus staff on objectives. On the other hand, defence management does not and cannot substitute the

specific military processes of planning and conducting military operations, or acquiring combat readiness. What defence management can do is to join up people within the defence organisations with training for missions, with equipment and support for better accomplishment of the defence objectives and missions.

Where Defence Management Stands within the Defence Sector

As an institutional process, the management of defence is situated between defence policy formulation and actual command and control of the military forces. It should address areas of action such as defence resource management, personnel management, acquisition management, where - during defence policy implementation - it is likely that inherent uncertainties require higher flexibility and subsequent decisions, and unexpected problems might occur, requiring proper identification and appropriate solutions.

Over time and in different nations, managerial systems were introduced and tested for their relevance in terms of planning, efficiency and accountability. Developed specifically for the public sector or borrowed from the business practices, systems such as Planning, Programming, Budgeting System (PPBS), Performance Management System (PMS) or Total Quality Management (TQM) have a history of successes and failures that deserve a critical treatment in a book on defence management. The main observation is that no theoretical approach to defence management in general provides for a specific management system or management philosophy. What is essential for a nation, that has identified a genuine need for improving the performance of its defence sector, is to understand that introducing a managerial culture in the sector is even more important than the managerial tools that nation chooses to implement.

From both theory and practice, we may conclude that there are only two main management approaches, and these two approaches are not mutually exclusive. One can be described as identifying problems and finding solutions to those problems, and the other one can be described as finding solutions for how to do things better.

Defence management brings clarity to areas of activity with high uncertainty as to whether the path taken to meet the objectives is the right one, or the problems encountered are properly identified and solved, while leaving other areas to function as they were. Table 1 depicts different levels of management within ministries of defence, in comparison with two other important areas of organisational activity, namely policy formulation and planning.

There is strategic defence management, which is the locus where strategic problems are identified and strategic solutions are analysed, decided and implemented. Life is full of examples of such problems. The most important ones, in strategic terms, are usually described as addressing different aspects of the question ‘how much is enough?’ Defence management may bring more coherent solutions to dilemmas like ‘guns or butter’ (dealing with the opportunity costs of defence versus other public goods, and with an optimal allocation of national resources), or national self-sufficiency in defence capabilities versus shared responsibilities with other partners or allies and the appropriate delegation of sovereignty.

Then there is an operational management, addressing the problems of defence performance, especially at the services level, but also at the general level, e.g., in dealing with manpower or logistics. And there is, of course, defence management at the current level, dealing with day-to-day problems and solutions in any defence command or unit. It is expected that these types of management be differentiated according to their level at least in terms of mechanism and procedures, while the managerial tools remain the same (they were developed regardless of their level of application). In practice, these levels might be identified more by the nature of managerial function than the mechanisms employed.

Table-1: Roles and place of management at different Defence Organizational levels:

Level	Policy	Planning	Management
Strategic	National security strategy Strategic defence concept	Defence Planning Directive Strategic Capabilities plan	-how to implement strategic policies and plans -identify and solve strategic problems
Operational	Military strategy Executive policies (i.e. personnel, procurement, public affairs) Joint service (Army, Air, Navy) doctrines	Operational plans Capability development programmes Procurement programmes Training programmes	-how to implement operational policies, strategies and doctrines -identify and solve operational problems
Current Reference	Terms of reference Organisation's mission statement Standard Operating Procedures (SOP) Job descriptions	Work plans Exercise plans Field operations plans	-how to implement organisational policies and current plans -identify and solve current problems

Institutional Requirements for Successful Defence Management

Wherever defence management emerged both as a conceptual and a practical approach to efficiency of the defence sector, there were huge expectations surrounding it but also genuine anxieties. The experience of different nations shows that some glamorous defence initiatives failed to deliver years after their implementation. As a whole, the record of delivery in key areas of defence remains inconsistent. Time and again, governments had to go back to first principles and develop new approaches to ensure an appropriate level of efficiency of public spendings on defence. They had to put actions on their agendas aimed to better clarify future directions of change, as well as key underlying concepts of management to be embedded in defence.

Be it efficiency oriented or more problem solving oriented, defence management requires certain conditions related to existing decision-making frameworks and implementation systems. Among these conditions we may name supervision, accountability, inclusiveness, legitimacy, morality and many others. Whenever such conditions are not met, actions should be taken in order to create them. Here we are facing a dilemma. Is creating the appropriate conditions part of the defence management framework, or is it a component of another domain, such as defence institutionalisation or defence planning? The obvious answer is that creating the appropriate conditions is not managerial in nature, so long as management is dealing more with implementing policies and finding solutions rather than defining requirements.

At the level of the defence sector proper, some institutional requirements should be considered in order to grant a fair chance of success to any enterprise to introduce managerial tools and practices. Ministries of defence, if they want to be successful, have to meet two conditions when developing and introducing such managerial tools and practices: they have to be part of the management framework of the general government and they should provide an organisational structure separate from the de- fence staff. In other words, a ministry of defence should adopt the same managerial philosophy as the general government, even if the domain of defence makes this ministry distinct among all others in the government. This is important for ensuring an appropriate dialogue between policy makers at all levels of government and for facilitating the flow of resources necessary for implementing the policies. Looking around the Euro-Atlantic community, we can find examples of governments that paid special attention to their ministries of defence in the process of introducing different forms of management, such as resource allocation based on programmes and multi-annual planning.

But there are also governments that kept their ministries of defence apart from the trials and experiments that characterised the implementation phase of new management in public governance. Regardless of the implementation phases, eventually all these ministries should adopt the same managerial philosophy. This implies appropriate training of all personnel involved in managerial actions, institutionalisation of managerial principles and procedures, as well as acquiring organisational experience through at least one planning cycle before considering that the management system has been implemented.

As for the separation between civilian and military leadership and their staffs, this condition is of paramount importance if we consider management as being an organisational enhancer and not a substitute for well-established military command and control procedures. That is to say that management would be the primary responsibility of civilian leaders, while military commanders would maintain their current roles and would not be transformed into managers. This separation is presented here for theoretical purposes only. In reality, we may notice a blurred demarcation between civilian and military roles in defence management, especially at the strategic level. If the key task of defence management were to steer the efforts of the defence organisation to- ward effective and efficient implementation of policy goals and

objectives, then all matters other than the conduct of military operations would fall in the remit of defence management, whether in the realm of civilians or military.

The institutionalisation of defence management bears the local specificity of every nation or defence sector. Some nations choose to establish defence management boards or councils with dedicated missions and terms of reference, while other nations make no institutional separation between organisational structures and management tasks. In this section we look only at institutionalisation requirements, or principles, leaving the appropriate structures and functions aside.

The main institutional requirements for successfully managing a ministry of defence comprise (certainly there are many more aspects that might be brought into the discussion but they may not carry the same management specificity as these ones):

- Legality of all organisational and institutional measures
- Appropriate mechanisms and procedures for managerial decisions and for supervision
- Accountability regulations
- Inclusion of all participants in the implementation phases of managerial decisions.

Legality is one of the most important institutional conditions for any organisation, and it preserves its importance for the defence organisations as well. It is expected that the introduction of any managerial framework in the defence sector will be accompanied or preceded by appropriate legislation. Such legislation should include provisions regulating organisational structures and their managerial attributes. Whenever the public domain is involved, and especially in the security and defence sectors, clear-cut legal provisions give a sense of protection against abuses and corruption but also assign responsibility to both military and civilian leaders for their decisions and actions.

Moreover, a legally established decision-making system would allow for flexibility in policy implementation. Any effective mechanism of policy formulation and implementation within the government, and in the defence sector in particular, would comprise a system of checks and balances to ensure both that the policy is consistent with the supreme goals and interests of the nation, and that it is clearly understood and effectively implemented by the appropriate organisations. Nevertheless, the implementation phase is never linear. Some of the intentions might not be fully understood, others might not be realistic, and still others may become obsolete during implementation due to changing external or internal conditions.

In a fully bureaucratic and rigid system, any such instances would require reiteration of the policy formulation process and a referral to the decision-makers at most senior levels, which in practical terms often equates to not implementing the policy at all. In most if not all cases, such situations lead to serious waste of the scarce resources already invested in such failed policy implementation efforts. If the system permits, from a legal point of view, to take corrective managerial actions in policy implementation, there would be no need to reiterate the process of policy formulation as long as the objectives remain the same. The managers would be responsible, in the name of the law, for reaching the objectives stated in the policy,

while using their discretionary powers to choose appropriate paths for implementing this policy. Also in le- gal terms, it is expected that all civil servant positions at all levels of the organisational hierarchy would have clearly stated managerial remits.

For effective and successful defence management, it is important that appropriate decision-making and supervision mechanisms and procedures are fully institutionalised. For defence purposes, the most important quality control systems are those measuring performance at the strategic level, namely matching policy goals and objectives with concrete defence outcomes such as force structures and capabilities. But supervision mechanisms should be developed at all levels. For the operational level and, especially, for the current level, this institutionalisation implies remits of supervision established in job descriptions and standard operating procedures for civilian and military personnel in executive positions, and these remits should be associated with appropriate quality control mechanisms or systems developed at the appropriate level.

Institutionalisation of supervision mechanisms implies also introducing procedures for the flows of information up and down in the defence organisation, as no real supervision can be effective in the absence of appropriate knowledge about relevant aspects and achievements in policy implementation. These supervision mechanisms should respond to questions such as:

- Is the policy fully understood by the military?
- How is the policy implemented?
- What are the results of the policy, once implemented?

The answers to these questions should be obtained by employing appropriate tools. One possible selection of such tools comprises authorisation tools (approval of implementation documents such as strategies, doctrines, concepts or regulations; authorisation of funds within budget execution; endorsement of procedures, programme supervision and so on) and verification tools (theoretical models, simulations, trials, evaluation exercises, inspections, surveys and interviews, reviews and lessons learned, auditing and others). Through the institutionalisation process, these tools would be assigned to dedicated positions within the defence organisation, accompanied by appropriate description.

Accountability should also be institutionalised. In a managerial sense, the main ac- counting mechanism that should be fully institutionalised is a comprehensive reporting system. Such a system would reveal partial and final results of programmes and actions for the implementation of policies and strategies. Moreover, the institutionalisation requires provisions and regulations for reporting within and between defence structures, and facilitating both hierarchical and peer exchange of information. Such a reporting system would by no means replace classical auditing systems.

Inclusiveness, as an institutionalisation requirement, deals with organisational relations among staff members. In a managerial sense, the members of the staff should be encouraged to participate in all processes of policy implementation. This requirement should be

translated into organisational regulations, such as standard operating procedures that guide and facilitate such participation.

The most important feature of defence management institutionalisation is the employment of managerial tools in order to enhance organisational performance in accomplishing missions and to find the best solutions to the problems identified during the process of defence policy implementation. As an applied science, the management developed a large array of tools, from overall philosophies to small problem solving mathematical instruments. Most if not all of these tools are suitable to be used in the management of defence organisations.

What tools the defence organisation actually uses may be a matter of both external and internal decisions. It is expected, however, that the defence sector adopts the same main managerial system as the general government. As mentioned above, examples of such managerial philosophies or overall management systems are Total Quality Management, Performance Management and implementation of a Planning, Programming, and Budgeting System. Within this overall managerial philosophy, the ministry of defence would decide on which main tools would be employed across de- fence organisations. Such tools are the Balanced Scorecard, Benchmarking, and Process Reengineering.

It is important to regulate the tools and mechanisms employed in defence man- agement for several reasons. Firstly, clear regulations serve the principle of unity of purpose. All members of the organisation would 'speak the same language' and would spend less time and effort trying to understand what the others are saying or doing. Secondly, the establishment of common, defence-wide tools and mechanisms facilitates training and organisational learning.

An area that does not need much regulation is the use of 'technical' tools such as charts and diagrams, calculators, pathways, graphs, brainstorming, and many others. Units within the defence organisation should have the independence to choose which of these management tools they want to employ and for what tasks.

MANAGEMENT AND 'DEFENCE MANAGEMENT'

The term 'management' historically has been and is used in a variety of ways. It can refer to the many decisions required to run a complex production or non-profit organisation, state agency or local administrative unit. This is a kind of descriptive approach used to explain management as a process and the jobs that managers and supervisors do. Alternatively, management could be applied by someone in order to direct people to achieve a concrete private aim with fewer resources and in the shortest possible time. We may use 'management' also to refer to a discipline of knowledge that has accumulated approaches based on political, economic, sociological, psychological or anthropological theory and philosophy in order to create a systematic approach (theory) of how particular aims could be achieved through 'scientifically' determined actions (strategy, policy), creating and using appropriate organisation and utilising determined (limited) resources.

The roots of modern management are in both administration and business, which should be the reference point when someone is adapting management principles and practices to other areas of public, private or personal activities. Management 'fathers' like Henri Fayol, Max Weber, and Chester Bernard have focused on total organisations, while others like Frederick W. Taylor, Henry Gantt, and Lillian and Frank Gilbreth aimed to increase productivity.10 Both directions of these early studies of management involved research and applied work and formed the so-called administrative theory and scientific management as the backbone of classical management theory. Administrative theory emphasised management functions and attempted to generate broad administrative principles to serve as guidelines for the rationalisation of organisational activities. Taylor and his followers, on the other hand, insisted that it was possible to scientifically analyze tasks performed by individual workers in order to discover those procedures that would produce the maximum output with the minimum input of energy and resources.

Building on classical views on management, contemporary theories tend to account for and help interpret the rapidly changing nature of today's organisational environments.

Contingency theory asserts that when managers make a decision, they must take into account all aspects of the current situation and act on those that are key to the situation at hand. Basically, this is the 'it depends' approach. For example, the continuing effort to identify the best leadership or management style might currently conclude that the best style depends on the situation. If one is leading troops in combat, an autocratic style might be best. If one is leading a hospital or university, a more participative and facilitative leadership style may be recommended.

Systems theory has had a significant effect on management science and understanding of organisations. A 'system' is a collection of parts unified to accomplish an overall goal. If one part of the system is removed or changed, the nature of the system is changed as well. A system can be looked at as having inputs, processes, outputs and outcomes. Systems share feedback among each of these four aspects of the systems. In an organisation, inputs would include resources such as raw materials, money, technologies and people. These inputs go through a process where they are planned, organised, motivated and controlled to meet organisational goals. Outputs would be products, such as force capabilities. Enhanced quality of life or the state of national security would be outcomes. Feedback would be the information from clients or public perception of security provided by the state. This overall system framework applies to any system, including subsystems (departments, programs, etc.) in the overall organisation.

Complexity theory recognises that events in the organisation and its outer environment are rarely controlled since, with time, systems become more complex. In this evolution they also become more volatile (or susceptible to influences with cataclysmic effects) and must therefore spend more energy to maintain that complexity. As they expend more energy, they seek more structure to maintain stability. This trend continues until the system splits, combines with another complex system or falls apart entirely.

For the purpose of this book, management can be examined as a process of planning, organising and staffing, directing, and controlling activities in an organisation in a systematic way to achieve a particular common (institutional) goal. It is both a scientific method and an art of empowering people and making an organisation more effective and efficient than it would have been without management and managers (ministers, directors, commanders). Respectively, the four pillars of management are: planning, organising and staffing, directing and leading, and monitoring and controlling. These functions are universal no matter whether a manager runs a shoe store, a department or an air force wing.

Planning is the selection and sequential ordering of tasks that are required to achieve the desired organisational goal. Plans could be strategic, long-term or short term, deliberate or contingency. The plan explains the aim and approaches (strategy, policies, principles) and is the foundation for decisions on organising and staffing.

Organising and staffing is the assignment and co-ordination of roles, tasks and du- ties to be performed by the units or members of an organisation and distribution of the necessary resources among them in order to achieve a desired goal within a specified time-frame. It includes the process of recruitment, selection, training, placement and development of the staff in accordance with their desired roles and tasks. The quality of the staff and the way it is organised determines the style of directing.

Directing and leading is the process of motivating, leading and influencing staff on the way towards achieving the common goal. Directing requires organisational sense and skills, and leadership capacity to motivate the followers through a congenial working atmosphere. Directing could be effective all the way through to the common goal if it is complemented by systematic monitoring and control.

Monitoring and controlling are the actions a manager (commander) takes to ensure that all his or her units are moving towards the objective in a coordinated manner. In other words, control is used to ensure that when the success of a unit in achieving its objective depends on an action taken by another unit, that action is taken.

These basic conceptual views, theories, principles and functions of management are applicable to a defence organisation. Obviously, the origin of the term ‘defence management’ is rooted in the understanding that the defence organisation is a large, complex and multi-layer institution as any other governmental or big business organisation.

Every big organisation needs planning, which is carried out by the manager. In one way or another s/he decides how the business will be run and/or what his/her unit will do over a period of time. In other words, the manager sets the objectives towards which s/he and all his/her subordinates will work. The big difference between industrial and military planning is that the military plans for war are all contingent, at least during peacetime – they are aimed at eventual objectives which will be pursued only in war. The industrial planner, on the other hand, is preparing for actual operations that are certain to take place within the next year or perhaps a year or two later. Defence planning that provides general preparedness for war is

closer to industrial planning, because its purpose is to prepare soldiers and material in the right combination, albeit for an eventuality.

Every manager is building, maintaining, organising and staffing his or her organisation. A manager must decide what is the most economic combination of resources that would allow planned objectives to be accomplished. The same is applicable to the military commander's vision and concept of operations. Both do this to facilitate control of individuals and units as they work towards the achievement of the planned objective.

Managers and commanders direct and lead subordinates using different skills and instruments to increase their motivation and physical and psychological mobilisation, which, during a combat mission, could come to the level of self-sacrifice. The instruments are quite different indeed but the effect on pursuing the objectives is similar.

Monitoring and controlling the performance give the manager and the commander understanding about the effectiveness and efficiency of their decisions and the necessary corrections in original plans. Whether of a market or a bureaucratic type, the control strategy must provide both managers and commanders with relevant, timely and reliable information on the progress, as well as on changes in the internal and external environment that may require corrective measures or a completely new strategy.

Nevertheless, the defence organisation differs in several specific aspects and any ambition to implement business practices and administrative techniques drawn from general examples should be carefully analysed. We do not seek artificial arguments in order to make defence a particular case. At the same time, a distinct defence management concept cannot, and should not, be detached from the approaches to managing other public and business organisations in the national democratic environment.

The relations between civilians and the military, among other factors, make defence policymaking and defence management distinct from other public policies and other established management models. Arguably, the particular model of civil-military relations in a country has a decisive impact on the defence organisation and its governance, management or command and control. The unique nature of the military—or what Samuel Huntington designates as its 'functional imperative'—is sometimes thought to be a barrier to the application of principles and practices from other disciplines such as management, administration, leadership, etc. Authoritative researchers of public administration and management note that applications of modern conceptual views from rapidly developing disciplines to defence policy "... often appear to fall short."

Richard Kohn concludes that today the civilian control of the military presents two types of challenges: for mature democracies with experience of strong civilian control and military establishments focused on external defence, the test is whether civilians can exercise supremacy in defence policy and decision-making. Civilians can face great obstacles in exercising their authority at times when the military enjoy great prestige, possess advanced bureaucratic skills, believe that their ability to fulfil its mission may be at risk, or doubts the civilian leadership.

New or newly-emerging democracies without much experience in combining popular government and civilian control face an even greater challenge: to assure that the military will not attempt to overthrow an elected government, or defy civilian authority. Then the chief requirement is to establish a tradition of civilian control, to develop a solid system of political neutrality within the military establishment and to prevent or forestall on a permanent basis any possibility of military intervention in political life.

Continuing his deliberations, Kohn argues that the task of building a modern defence institution is to establish and sustain civilian control over the formulation and the implementation of national security policy. In new democracies, the challenge is more formidable – in attempting to establish their supremacy over military affairs, civilians risk provoking disobedience of the military and—in lacking public support—perhaps even military intervention.

The difficulties in applying concepts, theories and practices from the civilian world to defence stem from the fact that war, as stated by Clausewitz and confirmed by recent experience in Yugoslavia, Afghanistan, Iraq and Chechnya, 'has its own grammar.' Modern and post-modern societies have developed a comprehensive understanding and political practices in national security policy decision-making in which defence/military policy are treated as a major component of security policy. These include administration and organisation (establishment of a defence ministry), legislation (introducing defence laws), parliamentarian control (establishing a defence committee), public transparency and accountability (enhancing civil society's capacity on defence issues) and appointment of civilians in defence institutions, etc. In such an environment, the formulation, articulation and strategic balancing of national security and defence interests, distribution of roles and overall resource allocation among formulated objectives and security sector organisations are all the responsibility of civilian political leaders, not an autonomous purview of the uniformed military.

Performing such a role, civilian leaders use practices like 'political directing,' 'administrative and organisational management,' 'strategic and political leadership,' 'resource management' and 'feedback and control,' etc. Within the same framework, militaries use terms like 'staff work' (which is different than 'administrative work'), 'command and control' (which is different than 'feedback') and 'military ethos and leadership' (which do not coincide with social moral principles and pluralism-based political leadership). An excellent illustration on this coupling is provided by Peter Feaver who states that "the civil-military challenge is to reconcile a military strong enough to do anything civilians ask them to do with a military subordinate enough to do only what civilians authorize them to do." The defence organisation (from a national or governmental perspective), its political directing and operational management, the national military chain of command and the leadership in defence should reflect these particularities to prevent degradation of the relations between civilians and the military into two mutually exclusive and contradictory groups. In any case, recognising the pivotal role of civil-military relations is critical for designing and managing

defence institutions. Accounting for these considerations, it is important to clarify what the 'ministry' (or 'department') of defence should do. In countries with a freely elected legislature, the defence institution is first and foremost a governmental body through which the elected executives issue guidance, instructions and orders to the nation's military. Second, it is also an operational headquarters where this guidance is transformed into operational plans and corresponding requirements for funding, human and material resources, legislation and other forms of support. Finally, the ministry should be the 'central administration' of national defence in general, dealing in detail with armed forces' personnel, finances, logistics, procurement, training, social support and infrastructure.

With all these functions in mind, there is a need for a proper concept of how to organise and run a defence ministry. There are three distinct areas – *political directing*, *command of operations* and everything else, which could be determined as the area of defence management. They have to be co-ordinated but require separate conceptualisation, widely different professional skills, leadership capacity and teams, and are based on different regulations and practices. It is not possible to perform all three basic functions using one and the same conceptual and procedural matrix. The objective of providing the nation with an effective, transparent, and accountable defence organisation puts a premium on the good organisation and adequate conceptualization of operations in each of those particular areas.

It has been suggested to look at a defence institution as 'a big business organisation' that could be run entirely as a business unit. Conceptually, this means implementation of a 'total defence management concept' based on respective concepts and practices of major industrial organisations, organised along functional lines. Actually, a detailed analysis of the 'defence product' from political, sociological, and social psychological point of view does not provide useful precedents. Products of defence are not only the combat capabilities of the armed forces, but also a public and political sense of security, the international status of the country, the overall national character and its disposition to those of other nations, the collective sense about democracy and democratic governance, etc. Meeting such a set of diverse requirements presumes a complex yet differentiated approach to defence organisation and operation.

It can be concluded that, while modern management theories and practices can be useful in seeking general explanations and overall guiding considerations for organizing and assessing the performance of defence institutions, the application of specific management techniques should be limited to activities outside political directing and operational command such as human resource management, financial management, weapon systems lifecycle management, material supply and service management, military installations and real property lifecycle management, as well as programme and risk management. The combined contribution of advanced management is vital for the success of defence transformation initiatives.

Towards a Concept of Defence Management

The elaboration of a coherent concept for managing a defence institution is deeply rooted in the question: how unique is national defence compared to other national civic institutions? Answers can be found throughout the wide range of theoretical options and practices –

between ‘completely different,’ ‘different in some aspects only,’ and ‘completely civic.’ If the focus is on the democratic spectrum of political organisation of societies, the answers depend on the sense of liberalism in a particular society. The three options differ in both subtle and unsubtle ways.

In the first case, ‘completely different’ could mean total exceptionalism of defence from the system of national civil service in terms of legal status, regulations, human and citizen rights, organisation of non-military segments, procedures for resource allocation, transparency and accountability.

In the second case, ‘different in some aspects only’ means that a particular society and state have a comprehensive set of national security instruments that, as a system, are designed to meet the public demands of security. Hence, defence should be distinguished from other civil institutions only in extraordinary situations or issues.

The third case, ‘completely civic,’ is usually seen in mature liberal democracies where a well-developed society has established mechanisms for full objective and subjective control and responsibility of security sector institutions. Powerful and effective civil control puts the state institutions, including national defence, on equal footing. In their recent study, Tansu Demir and Ronal Nyhan argue that the dichotomy between politics and administration continues to influence public administration, mainly because many administrators still promote the ethics of their neutral competence to protect their independence from political intrusions. This is particularly important in defence where the disassociation of the military from politics is not only important for the institution, it is even vital for the society. In any case, in the development of a modern defence institution a way should be found to resolve the strenuous relationships among the three principal functional areas of defence – the areas of politics, administration and command with distinct purposes. A clear division of authority and labour is required between politicians, managers and commanders, while maintaining the cohesion of the institution and the coordination of all organisational processes. This is very challenging and every country decides in its own way, based on historical traditions, social development and overall bureaucratic culture.

Social Systems Approach

A defence ministry is a large, highly complex organisation no matter the size of the national armed forces. Harold Leavitt has described such organisations as a “lively set of interrelated systems designed to perform complicated tasks.” Understanding the modern defence institution begins with recognising that national defence as a political and social function of the state/government is performed in a social systems context. Notwithstanding how well draft decisions on national defence are supported by information and analyses, their final version is determined by foreign policy considerations, internal politics, intra-governmental affairs, public-private relations and even individual behaviour. With the end of the former ideological and strategic struggle and the ongoing rapid advances of globalisation and informatisation, the political and social environment changes quickly and in various ways. Modern public affairs are complex, diverse and dynamic. Modern defence management is

also complex, diverse and dynamic. A useful approach to explain the scope of the governance of defence is to define it in operational terms – what is it, what does it aim for, and how does it benefit society and the defence institution itself.

Following this line of thinking and basic management theory, it is useful to consider the external and internal contexts of defence management as interacting systems of a social nature. Apparently, the defence institution is located among the most comprehensive social systems – the international political system to which the country belongs and the particular national social system. Both have distinct, and in many cases very different, types of 'input' into defence management (Figure 2).

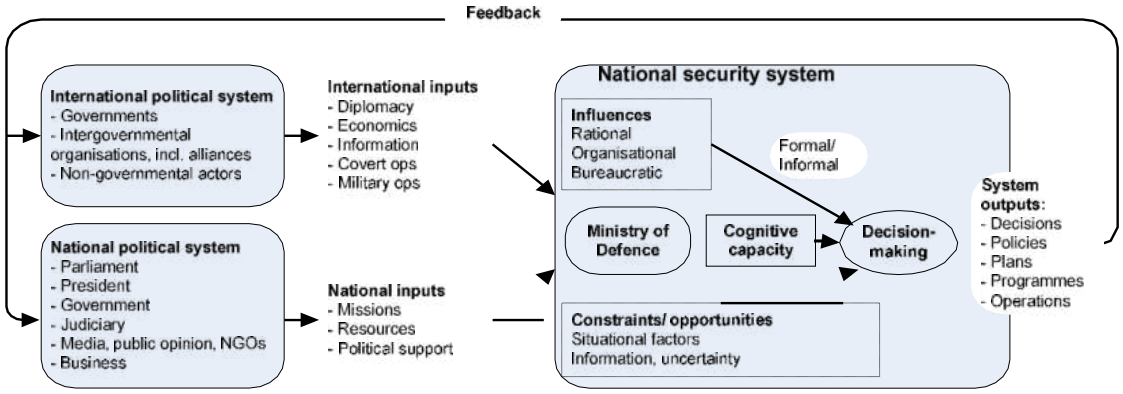


Figure 2: System Perspective on Defence Policy Decision-making.

The international system exerts influence through the spread of threat perceptions, diplomatic manoeuvres, military technology developments, and creation of alliances and ad-hoc coalitions, among others. The international system is multi-dimensional and generally there is considerable conflict within it. Nevertheless, the most important members use direct relations or international norms and organisations to limit that conflict in its nuclear, ecological, human or trade dimensions. The term 'democratic community' may seem artificial to some but it does explain the policies (including the defence policies) of those governments that share common values and threat percep- tions and contribute to the prevention, pre-emption and resolution of conflicts. While the international system is dominated by the behaviour of states, international inputs to national defence policies are also determined by the impact of international security and defence organisations and by non-governmental actors of a social (e.g., Amnesty International, Greenpeace) or business nature.

The national system defines the roles and mission of a defence institution, its strategy and organisation and provides available resources based mainly on the social perception for security-insecurity. Chronically insecure societies are suspicious, irritable and radical in terms of their social and political behaviour. Generally speaking, they are prone to making greater cutbacks of civil and democratic freedoms and radical decisions on regulations, defence budgets, and large-scale restructuring and contingency measures are adopted with

relative ease. The defence institution itself should be capable of assimilating all these inputs using its cognitive capacity and producing outputs that both the national and international system expect to be rational and adequate in the circumstances. The organisational architecture is important during the respective process but more decisive is the influence of the bureaucratic culture, organisational behaviour and the people in the institution. For these reasons, no ministry of defence is equal to another even in mature democracies. To illustrate this statement, a defence manager failing to see the people behind institutional charts is a recipe for disaster.

In summary, the international and national political systems provide complex, continuous strategic and situational inputs into the defence policy decision making process. They may also be seen as 'customers' of the national 'defence product.' Of highest importance to defence policymaking is the international security environment, the foreign policy and security profile of the country, the governmental defence policy process and the roles of different stakeholders in its formulation and implementation.

The defence institution itself can be examined as a specific social system. It possesses all characteristics of the entire society such as traditions, culture, dynamics, internal relations, including the particularities during political transformation from totalitarianism towards democracy. The defence institution is crafted by people with their particular culture, interests and priorities that vary not only from one country to another but also, depending on a certain 'historical time,' personal agendas or goals.

It has a specific organisation and operates under (frequently) unique norms, regulations and procedures in order to transform financial, material, human, and informational resources, dedicated by the society, into a 'defence product.' All this represents the internal context of defence management. Its particular aspect is that decision making on most important defence issues is not closed within the defence ministry, not even within the government.

The head of the state and especially the legislative branch play specific roles that in many cases reflect the specific national division and balance of political power, not only the rationale on defence matters. All these together represent the unique element of defence management – its fundamental civil-military character. The civil-military re- lations have pivotal role in defence management and that is exactly what makes de- fence different from any other governmental agency.

The articulation, strategic balancing and protection of the interests of national centres of political power are all responsibilities of the civilian leadership, while implementation is about the military. This sets the stage for a conflict. The conflict is essential and 'natural' for a democratic society and defence governance is dedicated to overcome it through the power of leadership and use of management skills. This is the moment to underline that only in this context the use of merely business management practices to run national defence is associated with failures. So are ambitions to apply completely bureaucratised planning and budgeting procedures that ignore advances made in business management.

In brief, the most important contextual internal shapers of defence policy are the defence institution with its human, financial and material resources, the national military doctrine and the maturity of national civil-military relations.

Integrated Context of Defence Management

In making defence management a rational instrument for defence institution-building, reform or transformation begins with recognising that all parties involved—politicians, managers and commanders—operate in specific external and internal contexts. It is important for politicians, managers, and commanders to understand and recognise how these contextual specifics influence the development of the defence institution and its performance. The continuum of defence policy formulation, implementation and evaluation describes the integrity of the external and internal context of defence institution (Figure 3).

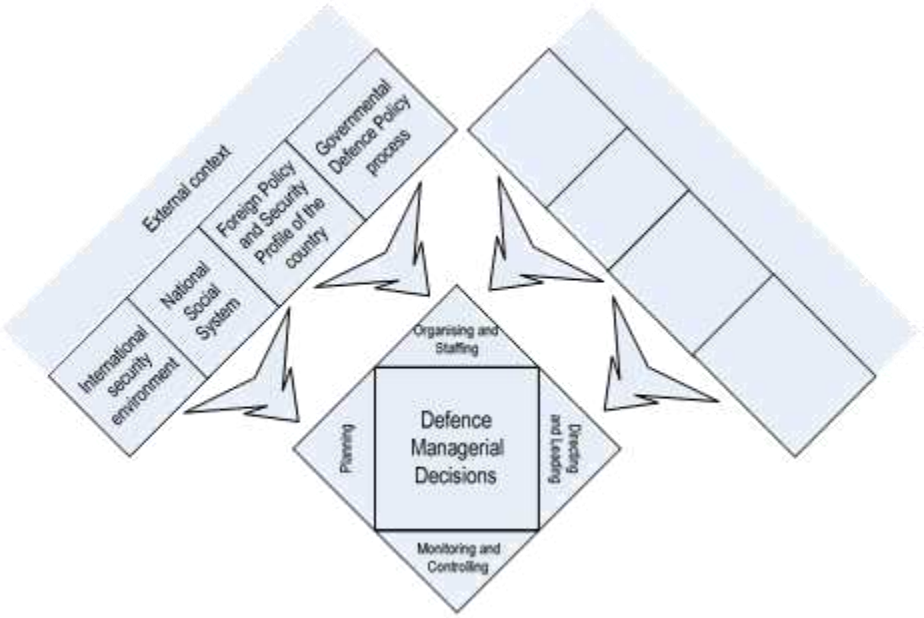


Figure 3: Internal and External Context of Defence Management

The output ('product') of the defence system in a social context is generally the public and social sense of security and the defence and military capabilities that can be used by the government in different forms for variety of purposes. The measurement of the 'defence product' is a specific management problem. The existence of multiple stakeholders prescribes different evaluators – what is good for the minister of defence may not satisfy the requirements of senior military; what satisfies the military may not be accepted by the society, and so on.

From the point of view of business management, the assessment of the defence product is also complicated by the absence of 'competitors' or a 'market test.' This is so even inside of the military system of services. The fact that each military service— Army, Navy, or Air Force—has unique capabilities, doctrine, culture, and traditions creates another stage for conflict that the leadership should manage using mainly management techniques. In a more

general context, the ambiguous relationship between organisational outputs and international outcomes makes it difficult to determine the contribution to national security of all security sector agencies. This is an area where perceptions and ideology may be as relevant as the actual data – measuring outputs is complicated by social, political, international and psychological factors.

DEFENCE MANAGEMENT IN THE USA

Introduction

The Secretary of Defense (SecDef) is the "principal assistant to the President" and has authority over the DOD. The SecDef's responsibilities include providing guidance to the military departments on priorities, programs, budgets, contingency planning, national security objectives and policies, and projected resource levels. Additionally, the SecDef is given direction from Congress and is required to submit periodic reports (usually annual) on a wide range of subjects including: assessment of threats; U.S., Allied and adversary military capabilities; the cost of stationing U.S. forces in foreign countries. The DOD is generally organized to assist the secretary in the execution of these responsibilities.

The organization of the DOD and two major processes unique to it garner and allocate resources and manage the acquisition of major equipment systems. The first is the Planning, Programming, Budgeting, and Execution System (PPBES) which exercises *program budgeting* to allocate resources over time against multi-year programs, ostensibly to deliver capabilities to the joint force on schedule and within the budget.

Organization of the DOD

The DOD is an evolving organization. Figure 4 provides a macro level view. The Office of the SecDef is a large, complex organization unto itself. Its primary roles include policy development, planning, programming, budgeting and fiscal policy, and program execution and evaluation. These responsibilities are divided functionally among five Under Secretaries and a number of Assistant Secretaries. Subordinate to OSD are 19 defense agencies and 8 DOD field activities, most of which are under direct supervision of an Under Secretary. For example, the Defense Health Agency falls under the Under Secretary for Personnel and Readiness, while the Defense Advanced Research Projects Agency answers to the Under Secretary for Acquisition, Technology, and Logistics. Of note, eight defense agencies are designated as *combat support agencies* (CSAs) and come under joint oversight by the Chairman of the Joint Chiefs of Staff.

The Joint Staff is depicted at the right of Figure 4, showing the Chairman of the Joint Chiefs of Staff over the Joint Staff. Meanwhile, ten combatant commands answer directly to the Secretary of Defense, with the Chairman having a coordinating responsibility. The combatant commands include six geographic combatant commands with responsibilities for coordinating, planning, and oversight of U.S. military activities (land, sea, and airspace) in a geographic region designated by the Unified Command Plan and four functional combatant commands with global responsibilities in a particular functional area.

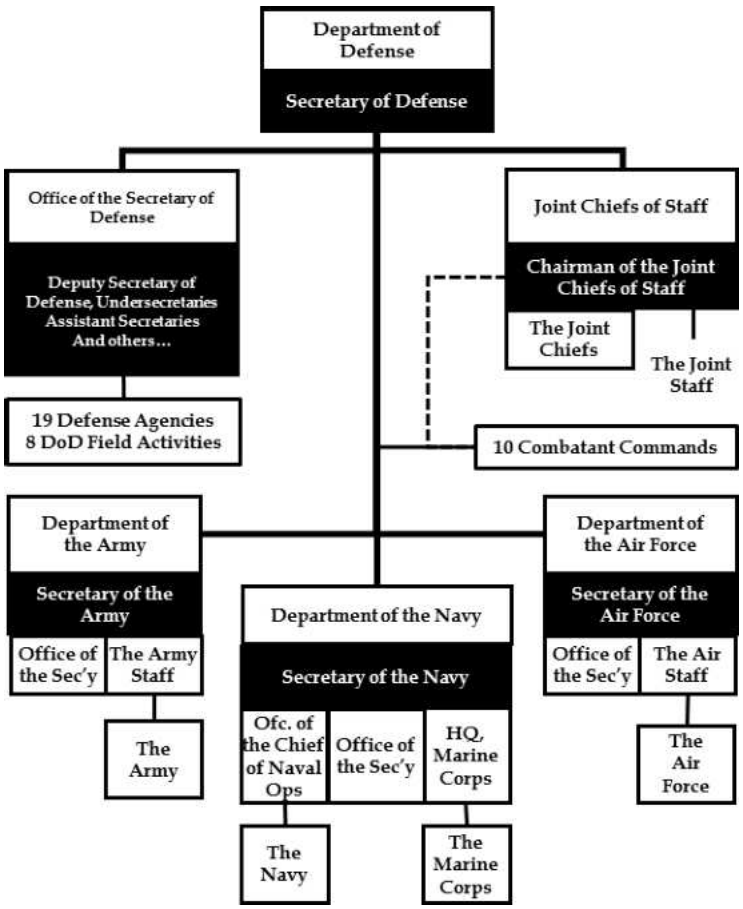


Figure 4. Department of Defense Organizational Structure

Defense Processes

Defense processes are defined as those conducted under the control of OSD as opposed to those where the primary responsibility lies with the Joint Staff (i.e., joint processes). The military departments, services and combatant commands generally participate in both defense and joint processes.

Figure 5 shows three vital decision support systems that contribute to the development of military capabiMy apologieslity—OSD owns the PPBES and the DAS while the Joint community owns the Joint Capabilities Integration Development System (JCIDS). The two OSD systems are presented in this chapter, focusing on the purposes and outputs, and the senior officials managing the processes rather than the details of the processes themselves.

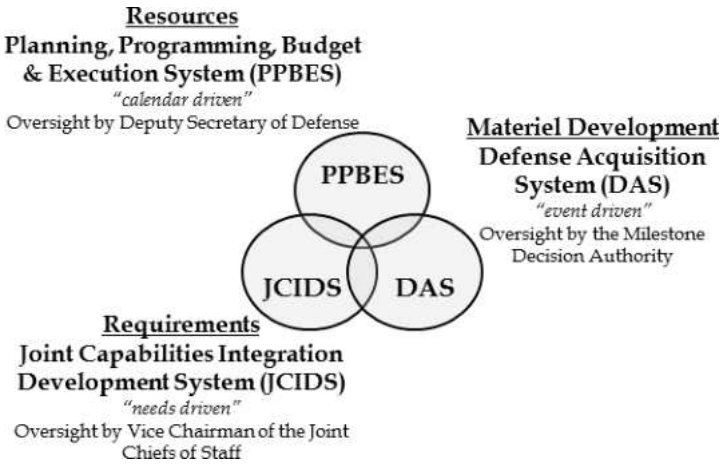


Figure 5. Three Major DOD Decision Support Systems

Planning, Programming, Budgeting, and Execution System (PPBES)

The PPBES is the current system used in OSD to align defense strategy with resources. The DOD executes this process in the context of the annual federal budgeting process. Its outputs, the DOD input to the annual President's Budget and the Future Years Defense Program (FYDP), are the basis for the annual Defense Authorizations and Appropriations Acts passed by Congress. In the late winter of each year, the Office of Management and Budget (OMB) provides each Executive Branch Department guidance and a fiscal budget allocation (referred to as the top line) based on economic and political analysis and the President's priorities for the coming year's budget to be submitted in early February of the next year. From this guidance and top line, the DOD begins its PPBES process.

Planning Phase: The Planning phase is done in the context of several strategic guidance documents that are published periodically (not annually) that may be in effect when OMB issues its budget guidance. These documents include the National Security Strategy published by the National Security Council, the *Defense Strategy Review* published by the Under Secretary of Defense for Policy (USD(P)) required by statute to be published every four years, and the *National Military Strategy* (NMS) published by the Chairman, Joint Chiefs of Staff (CJCS). There may be other formal and informal guidance given to DOD by the President or SecDef that may affect this planning effort. The CJCS provides advice to the SecDef in the form of the Chairman's Program Recommendation. This advice is based on input from Combatant Commanders and Service Chiefs through several periodic assessments. The outputs of the planning phase include the SecDef issuing the Defense Planning Guidance (DPG) and Fiscal Guidance (FG) to the Military Departments and defense agencies. The DPG is normally published by April of each year and initiates planning and programming by the subordinate departments and agencies.

Programming Phase: The Programming Phase follows the development of the Program Objective Memoranda (POM) by the departments and agencies, the review of those programs by OSD and the Chairman, and the Program Review process where issues are raised and

resolved. The Director of Cost Assessment and Program Evaluation (CAPE) oversees this phase of the PPBE. The CAPE monitors development of the departments and agencies' POMs, reviews them when submitted to OSD in September, and leads the program review for OSD. Additionally, the Chairman, through the Joint Staff, provides the *Chairman's Program Assessment* (CPA) to the SecDef where he advises the Secretary on component adherence to the DPG and FG. Another consideration concerns changes in the environment (political, threat, etc.) that have occurred since the DPG and FG were issued in April and the POMs were submitted in September. OSD has the ability during the Program Review to enact changes to the programs based on these contingencies.

Along with the their POMs, all participants can submit issues for OSD consideration—changes in the environment, appeals for changes in priorities, fiscal or other concerns affecting program execution in current or upcoming fiscal years. CAPE evaluates and sorts these issues into functional groups and manages issue teams from the military departments, agencies, OSD, and the Joint Staff that discuss and make recommendations on the issues for ultimate consideration by the SecDef.

Budgeting Phase: The Budgeting Phase begins when the Service POMs are submitted to OSD. The POMs are translated from programming language and formatted into the Congressional budget format required for submission of the President's Budget in February of each year. USD (Comptroller) has the lead in OSD for the Budgeting Phase. Once the Service POMs are finalized based on SecDef decisions, the budget is completed and submitted to OMB for inclusion in the PB.

Execution Phase: The Execution Phase begins when Congress appropriates money to DOD and the Services and technically ends when appropriated dollars are obligated, spent, and tracked by the Service and OSD comptrollers and reports are submitted to Congressional committees. During this phase, most appropriations are spent according to Congressional authorizations and for the appropriated purpose. DOD senior leaders can re-purpose appropriated money below certain modest thresholds or with Congressional approval (called re- programming). This occurs when appropriated money can no longer be spent for its intended purpose or because of changes in the circumstances or in priorities. DOD generally submits all re- programming requests for a given fiscal year to the Congress at the same time in an omnibus request.

Joint Systems and Processes

Military leaders at many levels have used systems and processes in various ways to position their organizations to respond to the demands of the current situation while simultaneously preparing to meet future challenges. This chapter will first examine the statutory responsibilities of the Chairman of the Joint Chiefs of Staff (abbreviated CJCS, also referred as "Chairman") along with an overview of the joint systems and process that help execute these responsibilities and address future challenges in concert with other leaders of the Joint Chiefs of Staff, Combatant Commanders, and Defense Department organizations. The Chairman's Joint Strategic Planning System (JSPS) is used to develop the Chairman's formal

strategic guidance and advice documents, while providing insights to shape his informal advice to the Secretary of Defense (Sec Def) and President. It then examines the Vice Chairman of the Joint Chiefs of Staff's (VCJCS or "Vice Chairman") key responsibilities and the Joint Requirements Oversight Council's (JROC) key processes. This council provides resource and acquisition advice to the Chairman and Defense leaders on key issues and makes decisions on lower level acquisition programs. Both the Chairman's planning system and JROC's processes take guidance from civilian leaders and provide direction to operationalize this guidance across the joint force. The chapter will conclude by providing three key leadership insights on the use of strategic planning systems and processes.

Chairman Joint chiefs of staff responsibilities:

Congress specified the Chairman's key responsibilities in Title 10 US Code, Section 153, under the following descriptive subheadings: (1) Strategic Direction; (2) Strategic and Contingency Planning; (3) Global Military Integration; (4) Comprehensive Joint Readiness; (5) Joint Capability Development; (6) Joint Force Development Activities and (7) Other Matters. These responsibilities were a result of the 1986 Goldwater-Nichols Act (GNA), which many consider the most significant defense legislation since the War II. The GNA served to:

- Strengthen civilian authority
- Improve military advice to civilian leaders
- Place more responsibility and authority on combatant commanders to accomplish their missions
- Increase attention on strategy formulation and contingency planning
- Provide for more efficient resource use; improve joint officer policies, and
- Enhance the effectiveness of military operations.

The 2018 Chairman's Instruction describes JSPS as, "the method by which the CJCS fulfills his statutory responsibilities, maintains a global perspective, and develops military advice." Briefly, it integrates the processes and guidance from people and organizations above the Chairman (President, Secretary of Defense, and National Security Council), and people and organizations he coordinates with (Services, Combatant Commanders and Agency Directors). The Chairman has neither control over any significant defense resources (the Secretary of Defense, Services, and Agencies control resources) nor direct control of operational military forces (Combatant Commanders control operational forces). However, orders to those forces are processed through the Chairman. The Chairman formally influences civilian leaders and those he coordinates with through the JSPS. In addition to influencing leaders, this system provides specific direction for the many staffs that support them. As such, the JSPS formally integrates the Nation's strategy, plans, and resources from a joint, integrated, and global military perspective.

A way to envision the JSPS is how it operationalizes the Chairman's six responsibilities identified in Title 10 US Code, Section 153.

Strategic Direction:

One of the most important changes to the Chairman's Joint Strategic Planning System is the importance of National Military Strategy (NMS), described in the Chairman's Instruction as "the central strategic guidance document for the Joint Force." Title 10 now provides specific guidance as to what must be addressed in this document, when it should be submitted to Congress in a classified manner with an unclassified summary, and when a risk assessment of this strategy needs to be conducted. Guidance in Title 10 further identifies five broad ways the NMS must be linked to Presidential and Secretary of Defense guidance documents, six different areas the NMS must address, six areas the risk assessment must address, and when the NMS and risk assessment must be sent to Congress through the Secretary of Defense.

Three key Presidential strategic documents that inform the NMS are the National Security Strategy, the Unified Command Plan and Contingency Planning Guidance. Three key Secretary of Defense strategic documents that shape the NMS are the National Defense Strategy, Guidance for the Employment of the Force and Defense Planning Guidance. Generally while national and defense guidance documents provide strategic advice on the *what* and the *ways* to address many strategic challenges, the NMS is more focused on the *how* in aligning the ends, ways, means, and risk to achieve U.S. national interests and objectives in the President's and Defense Secretary's strategic documents.

Strategic and Contingency Planning:

The Joint Strategic Campaign Plan (JSCP) is the key planning product. It provides detailed planning direction to prepare and integrate Joint Force campaign and contingency plans to address threats and challenges from multiple perspectives across geographic regions and warfighting domains. The JSCP directs development of four types of campaign plans: (1) Global Campaign Plans (GCPs), (2) Regional Campaign Plans (RCPs), (3) Functional Campaign Plans (FCPs), and (4) Combatant Command Campaign Plans (CCPs). As the names suggest, these types of plans focus on different areas and functions.

The GCPs are the most integrated and sophisticated of the four types of campaign plans. The Secretary of Defense designated the Chairman as the *global integrator* who determines the most pressing strategic challenges across all domains, and designates responsibilities to the geographical and functional combatant commands to develop and publish these plans. The Chairman designates one combatant commander as a coordinating authority for a specific GCP. Once the plan is developed, it undergoes a formal review process using cross-functional teams involving other combatant commanders, multiple Joint Staff directorates, and other U.S. Government Departments and Agencies as needed. The Chairman then reviews the final plan before it to the Secretary of Defense for approval. The Chairman also provides the Secretary with best military advice on "resourcing, prioritization, posture, capabilities and risk mitigation measures." This advice stems from results of multiple JSPS processes and products.

The three other plans are not formally part of JSPS, and as their titles indicated are more focused in specific areas. As expected, RCPs are assigned to geographic combatant

commanders and FCPs are assigned to functional combatant commanders for their development. In both cases regional and functional threats often require coordination across multiple combatant commands. The CCPs replaced the Theater Campaign Plans and are focused on the combatant commands' daily activities as well as objectives from the other three types of plans.

Comprehensive Joint Readiness

There are five different comprehensive joint readiness responsibilities in Title 10 US Code that are associated with: overall preparedness of the joint force to execute responsibilities in defense strategies and contingencies; assessing risks from readiness shortfalls and developing risk mitigation options; advising and assessing critical deficiencies and strengths in joint force capabilities; advising on mission and functions contractors can perform and associated risks; and evaluating preparedness of combatant commanders to carry out their missions. As the Chairman's Instruction identifies, "Comprehensive joint readiness is the ability of the Joint Force to meet immediate contingency and warfighting challenges while preparing for future challenges."

Six JSPS elements enable the Chairman to fully execute these responsibilities: (1) the Joint Military Net Assessment (JMNA), (2) the Annual Joint Assessment (AJA), (3) the Chairman's Readiness System (CRS), (4) the Joint Personnel Estimate (JPE), (5) the Joint Strategic Intelligence Estimate (JSIE), and (6) the Joint Logistics Estimate (JLE). The JMNA is an annual comprehensive readiness assessment of the ability of the Joint Force to execute the NMS; hence, it is considered a capstone readiness assessment. The AJA is a comprehensive survey that gathers data and analytical readiness insights from Services, combatant commands, the National Guard, and the Coast Guard that informs other processes and products. The CRS provides a framework for policy and procedures to assess both unit readiness to accomplish core tasks and strategic readiness associated with combatant commanders' ability to execute specific campaign plans. To accomplish this within the CRS, there is Joint Combat Capability Assessment that includes a Joint Force Readiness Review and Integrated Contingency Plan assessments. The JPE is an annual assessment by the Joint Staff J-1 of the Joint Force's ability to support the NMS from a joint personnel readiness perspective. The JSIE is an annual assessment by the Joint Staff J-2 of global threat environment from two to ten years to better inform the combatant commands and Services. The JLE is an annual assessment by the Joint Staff J-4 of the ability to project, support and sustain the Joint Force to enable it to execute its missions and identifies logistics and cross-cutting risks in Joint Capability areas with a Future Years Defense Program focus.

Joint Force Development Activities

There are six different Joint Force development responsibilities in Title 10 US Code: (1) developing joint doctrine; (2) providing guidance for joint training; (3) formulating policies for military education; (4) formulating policies for joint concept development and experimentation; (5) formulating policies associated with armed forces joint lessons learned; and (6) advising the Secretary of Defense on joint command, control, communications and

cyber capability. The Chairman executes these responsibilities by producing a Joint Operating Environment (JOE) assessment, developing a Family of Joint Concepts (FoJC), and providing annual Chairman's Joint Training Guidance (CJTG).

The JOE assessment, which is produced for a new Chairman, is a comprehensive assessment of the future operating environment and associated military implications to better prepare the Joint Force for future challenges. The FoJC identifies how the Joint Force needs to operate within the future operating environment, influences the development of new capabilities, and informs Service concepts. Important products of the FoJC are the Capstone Concept for Joint Operations (CCJO) and the many different Joint Operating Concepts (JOCs). The CCJO, which is produced about every four years, "describes the Chairman's vision for how the Joint Force will operating in the future operating Environment and guide Joint Force development." This influences the many different JOCs that describe needed joint capabilities to execute across the range of military operations that are further analyzed across many Joint Staff processes. The annual CJTG provides "guidance to the Joint Force for the planning, execution, and assessment of individual and collective joint training for a four-year period".

Joint Capability Development

There are seven different Joint Capability Force responsibilities in Title 10 US Code associated with: (1) identifying new joint military capabilities to maintain armed forces superiority and recommend investments; (2) performing military net assessments of U.S. and allies capabilities versus potential adversaries; (3) advising on priorities of combatant commanders; (4) advising on Services program recommendations and budget proposals related to defense strategy and combat commanders' requirements; (5) advising on new and alternative joint capabilities and alternative program and budget proposals; (6) assessing joint military capabilities and identifying capability gaps; and (7) recommending tradeoffs in acquiring materiel and equipment to support strategic and contingency plans. The Chairman accomplishes these responsibilities through advice from the Joint Requirements Oversight Council (JROC) on a wide variety of capability assessments, decisions associated with the Joint Capabilities and Integration and Development System (JCIDS), and the way the Chairman interfaces with the Secretary of Defense's Planning, Programming, Budgeting and Execution system.

The annual Capability Gap Assessment (CGA) is a primary activity under Joint Capability Development. This annual assessment includes a capability gap analysis, an internal portfolio review of joint and service capabilities under development plus the combatant commanders' Integrated Priority Lists (IPLs) submitted in the AJA under Comprehensive Joint Readiness. The capability gap analysis is a JROC-led review and uses inputs from the Services and combatant commanders to determine how the IPLs and other capability gaps are being addressed to close or mitigate the gap while considering the associated risk. This influences the JMNA discussed earlier in the Comprehensive Joint Readiness section and the Chairman's Program Recommendation discussed in the Global Military Integration Advice

section. IPLs provide combat commanders a voice in both the capability development and resource processes, while influencing the Chairman's resource advice document to the Secretary of Defense.

Global Military Integration Advice

There are two succinct global military integration responsibilities identified in Title 10: "(A) providing advice to the President and Secretary on ongoing military operations; and (B) advising the Secretary on the allocation and transfer of forces among geographic and functional combatant commands as necessary to address transregional, multi-domain and multifunctional threats." In addition to the NMS and GCPs, other documents that enable him to execute these responsibilities are the Chairman's Risk Assessment (CRA), Chairman's Program Recommendation (CPR), Global Force Management Implementation Guidance (GFMIG), and the Unified Campaign Plan (UCP).

The annual classified CRA, forwarded through the Secretary of Defense to Congress, is "an assessment of strategic risk to national interests and military risk to execution of the NMS." In developing this assessment, there are inputs from the Services, combatant commanders and an independent Joint Staff Risk Assessment. The CRA informs the future NMS and the JMNA discussed earlier. The annual CPR is the key resource document that provides the Chairman's military advice to the Secretary of Defense on a wide range of capability and comprehensive joint readiness investments, as well as identifying approaches in employing and sustaining the Joint Force to meet future challenges. There is no specific CPR format or required contents, but it is focused on influencing Defense Planning Guidance and resource processes associated with the PPBE system. The GFMIG is "the Chairman's advice on the global assignment, allocation, and apportionment of the Joint Force to meet transregional, multi- functional Challenges across all domains." Finally, the UCP provides guidance "to the combatant commanders; establishes broad missions and responsibilities; delineates geographic boundaries; and, specifies functional combatant commander responsibilities." The Chairman prepares the UCP every two years for Secretary of Defense review and approval by the President.

DEFENCE MANAGEMENT IN THE EUROPEAN UNION

Origins and evolution of the Defence Management in the European Union

The origins of the European security and defence architecture can be traced to the aftermath of World War II. The failure of the European Defence Community (EDC) project resulted in defence being omitted from the integration process. While economic integration was to proceed from the foundations established in the European communities, defence matters were to remain circumscribed to the transatlantic forum.

The idea of a common defence policy for Europe dates back to 1948 when the United Kingdom, France, and the Benelux countries signed the Treaty on Economic, Social and Cultural Collaboration and Collective Self-Defence, also known as the Treaty of Brussels. The agreement included a mutual defence clause laying down the foundations for the creation of the Western European Union (WEU), an international organisation and military

alliance, which remained present until the late 1990s, together with the North Atlantic Treaty Organisation (NATO), the principal forum for consultation and dialogue on security and defence in Europe. Following the end of the Cold War and subsequent conflicts in the Balkans, the EU assumed an enhanced role in the field of conflict prevention and crisis management.

The already established European Political Cooperation served as a foundation for the Common Foreign and Security Policy (CFSP) introduced in the Maastricht Treaty in 1993. Article J.4 of the Maastricht Treaty stated that the CFSP comprises 'all questions related to the security of the Union, including the eventual framing of a common defence policy, which might in time lead to a common defence.' The inclusion for the first time of defence in the Treaty of Maastricht was a historic event. The European Council decided to link the eventual framing of a common defence policy to the Western European Union (WEU), which until then had been excluded from the integration process.

The Petersberg tasks agreed upon at the Western European Union (WEU) Council of Ministers in Germany in June 1992 were incorporated into Article 17 of the Treaty of Amsterdam (adopted in June 1997 and entered into force in May 1999), defining the spectrum of military action and functions that the EU can undertake in its crisis management operations. The Petersberg tasks comprise humanitarian and rescue tasks, peacekeeping tasks and tasks of combat forces in crisis management, including peacemaking.

The implementation of these Petersberg tasks had to wait until the situation in Kosovo urged the UK and France to agree in 1998 in Saint Malo that the Union should have 'the capacity for autonomous action, backed up by credible military forces, the means to use them and a readiness to do so, in order to respond to international crises'.6 As such, the Kosovo crisis was both a catalyst and a wake-up call for the European Union to finally accept its international responsibilities. Before the entry into force of the Amsterdam Treaty on 1 May 2000, the Cologne European Council of 4-5 June 1999 was decisive to strengthen the CFSP through the development of a military crisis management capability. With this aim the EU Member States decided in Helsinki to build a Common European Security and Defense Policy (CESDP) backed by credible military forces and appropriate decision-making structures. This decision was a breakthrough in the European debate on security and defence, unthinkable in the years prior to its formation. Another key development was the adoption of the 'Berlin Plus Agreement' which gave the EU, under certain conditions, access to NATO assets and capabilities.

In the 2000 Santa Maria Da Feira meeting the European Council reaffirmed 'its commitment to building a Common European Security and Defence Policy capable of reinforcing the Union's external action through the development of a military crisis management capability as well as a civilian one, in full respect of the principles of the United Nations Charter'. The conclusions of the presidency set the initial structure of EU civilian crisis management intervention, pragmatically defining the aims of such interventions: '[...] prevent[ing] the eruption or escalation of conflicts [...] consolidating peace and internal stability in periods of

transition [...] ensuring complementarity between the military and civilian aspects of crisis management'. The civilian aspects of crisis management were developed in four priority areas: police, strengthening of the rule of law, strengthening civilian administration and civil protection.

In 2003, the first ESDP mission EUPM BiH was launched in Bosnia and Herzegovina making the aforementioned provisions operational. Shortly after, in December 2003, the European Security Strategy (ESS) entitled 'A Secure Europe in a Better World' was formulated. This was a landmark in the development of the EU's foreign and security policy as the EU, for the first time, agreed on a joint threat assessment and set clear objectives for advancing its security interests, based on the EU core values. The implementation of the document was revised in the 2008 report entitled 'Providing Security in a Changing World' which, without introducing significant changes to the ESS, mentions for the first time the concept of human security. The ESS identified terrorism, proliferation of weapons of mass destruction, regional conflicts and State failure as key security threats and it highlighted the potential of the EU to respond to these threats. It did not, however, give clear concrete indications on how to respond to these threats. The ESS also ascertains the potential EU´s actorness in conflict prevention, effective multilateralism, and to the rule of law, however none of these aims can actually be fostered without consideration of human rights.

With the entry into force of the Lisbon Treaty on 1 December 2009, the ESDP was renamed as the Common Security and Defence Policy (CSDP). The Lisbon Treaty was a cornerstone in the development of the CSDP. First, incorporated in the Treaty is the notion of political and military solidarity among EU Member States via the inclusion of a mutual assistance clause in Article 42 (7) TEU and a 'solidarity clause' in Article 222 TFEU. Second, responsibility for guidance on the CFSP, including the CSDP, was transferred from the rotating presidencies of the Council of the EU to the High Representative for Foreign Affairs and Security Policy and the Vice-President of the European Commission (HR/VP), supported by the European External Action Service (EEAS). Furthermore, the two distinct functions of the newly created post give the HR/VP the possibility to bring all necessary EU assets together to apply a 'comprehensive approach' to EU crisis management. Lastly, Article 42(1) of the TEU formally endorses and extends the so-called 'Petersberg tasks' that now include 'joint disarmament operations, humanitarian and rescue tasks, military advice and assistance tasks, conflict prevention and peacekeeping tasks, tasks of combat forces in crisis management, including peacemaking and post-conflict stabilisation'. These tasks may contribute to the fight against terrorism, by 'supporting third states in combating terrorism in their territories'. The following provides a relation of key events in the development of the rules and procedures which led to the adoption of the framework governing the Common Security and Defence Policy (CSDP).

<u>EU security objectives and interests guiding CSDP missions and operations</u>

Before considering the role of human rights and the principles of democracy and rule of law in crisis management operations, it is first necessary to identify the challenges and threats the

CSDP is responding to, as well as the EU´s strategic security objectives. The document entitled 'A Secure Europe in a Better World: European Security Strategy' (ESS), adopted by the Brussels European Council in December 2003, highlights the current global challenges and key security threats, identifies the EU's strategic objectives and draws on the policy implications for the Union. It is the European Council's first attempt to give overall strategic direction to the Union's foreign and security policy. The ESS recognises that Europe should be ready to share responsibility for global security, and in building a 'better world' should act together with the US. The ESS emphasises the strong link between security, human rights and the rule of law by stating that 'spreading good governance, supporting social and political reform, dealing with corruption and abuse of power, establishing the rule of law and protecting human rights are the best means of strengthening the international order'. In order to do so, the strategy focuses on the need to be more active, more coherent and more capable. This is a call to match its objectives with its instruments, seen in the light of the various institutional reforms and consequences of enlargement, discussed in the European Convention and that is included in the Lisbon Treaty.

The strategy points out several global challenges that 'give rise to security concerns' and others that are considered 'key threats'. Terrorism, proliferation of weapons of mass destruction, regional conflicts, failed states, state failure and organised crime are identified as being key threats. The strategy acknowledges that these five elements taken together could confront the European Union with a very radical threat. Conflict, poverty and disease - especially aids - competition for natural resources and energy dependence fall into the category of security concerns. On the basis of these security challenges the strategy identifies as its first strategic objective addressing the threats. The other two objectives are building security in its neighbourhood and effective multilateralism. In order to be more capable, the strategy points out the actions underway to transform its military forces and strengthen the CFSP's civilian and military crisis management capabilities, the CSDP. The 2008 'Report on the Implementation of the European Security Strategy: Providing Security in a Changing World' confirmed the EU's need to be 'more capable, more coherent and more active' and highlights new challenges.

While the ESS recognises the changing nature of the security environment and the link between internal and external security, it fails to encompass wider concepts of human security and its subsequent policy implications. The focus of the strategy is not long-term preventive action but short-term crisis management: 'countering the threats'. It prioritises military response and the enhancement of military capabilities over civilian soft instruments which have traditionally defined the EU´s international role. The CSDP plays an important role in countering internal security threats. The three main priorities identified in the European Agenda on Security (EAS) are closely linked to the external security strategy, ie tackling terrorism and preventing radicalization, disrupting organised crime and fighting cybercrime. This is especially the case with regards to Operation EUNAVFOR Med (later renamed Operation Sophia), launched in June 2015, to tackle human trafficking in the

Southern Central Mediterranean, or EUCAP Sahel Niger, to provide support to local authorities in the fight a against terrorism. These cases provide clear examples of where Brussels has brought its internal and external security agendas together to fight a common threat that is organised crime and the 'migration crisis', although an actual comprehensive response implies tackling the root causes, such as those pushing migrants and refugees to turn to smugglers.

The CSDP mission decision-making and planning process:

The decision to resort to CSDP action and the planning of missions should be informed by detailed conflict analysis, setting out the causes, actors and dynamics of conflicts within their context. This analysis serves to ensure that missions have a positive impact on the conflict dynamics and to minimise the risk of exacerbating existing tensions. The assessments and reports carried out within the EEAS and the European Commission are valuable sources, helping inform the planning and review of new or ongoing CSDP missions or operations. Furthermore, the EU has at its disposal early-warning tools such as the Early Warning System (EWS). Within the EEAS, the EUMS serves as a coordinating platform for Member States' military intelligence, whilst the EU Intelligence Analysis Centre (EU INTCEN) handles Member States' civilian intelligence. The periodical reports issued by the Heads of Mission or Delegation constitute valuable sources of information on human rights (and gender) in relation to their area of action.

CSDP decision-making

In the case of existing crisis situations, at the request of the UN or the initiative of one of the Member States, the Commission, the HR/VP and PSC will discuss whether, and in what way, the EU could contribute to stabilise the situation, either autonomously or by supporting international or regional actors. The Political and Security Committee (PSC), the body that ensures political control and strategic direction of crisis management operations, requests advice from the pertinent Council Working Groups, while a joint fact finding mission of the Council Secretariat and the European Commission is deployed in the respective country or region to issue recommendations on potential risks and the most appropiate form of action. In the course of these events, the EU INTCEN reports on the situation in the country or region on a daily basis while military and civilian personnel at the Council Secretariat work on the strategic planning of the CSDP mission or operation. The Crisis Management Planning Directorate (CMPD) within the Council Secretariat is tasked with drafting the Crisis Management Concept (CMC), which outlines the EU's political interests, objectives and civilian and military strategic options for responding to the crisis, supported by the relevant units within the European Commission. The integration of references to human rights, gender and IHL (when appropiate) in the CMC is crucial to ensuring that these issues will be taken into account in the subsequent planning stages. This means that if the CMC does not provide a solid and concrete basis in this regard, one can hardly expect that human rights, gender or IHL would have any significance during the operational planning as it is the CMC sets the limit of the EU's action towards a conflict or crisis.

Simultaneously, to the drafting the CMC, the PSC requests the Committee for Civilian Aspects of Crisis Management (CIVCOM) to develop Police Strategic Options (PSO) and Civilian Strategic Options (CSO). It also requests that the European Union Military Committee (EUMC) develop Military Strategic Options (MSO). The PSC evaluates all these strategic options taking into account the Commission's view. Later, the PSC agrees upon the final CMC to be forwarded to the Council of Ministers for approval.

All EU CSDP missions and operations are established by the Council of the EU acting by unanimity under Article 42 TEU and following the crisis management procedures reviewed in 2013. The 2013 crisis management procedures also introduced a 'fast track' planning process that has been used for the establishment of EUFOR RCA. Another instrument implemented to speed up the planning process is the adoption of a Political Framework Crisis Approach (PFCA) which consists of an abroad political assessment of specific situations and the appropriateness of a CSDP mission or operation in this regard. The PFCA has been drafted in four cases: Ukraine, RCA, Libya and Boko Haram. The Council adopts two formal decisions. The first establishes a mission or operation on the basis of the CMC which marks the beginning of the planning phase. The second decision, for launching the mission or operation, is adopted once the planning and force generation of the missions or operations have been concluded.

CSDP planning

A comprehensive planning procedure is crucial to ensuring the effectiveness of the CSDP, to avoid overlapping and to take advantage of synergies. The institutionalisation of the EU comprehensive approach response to crisis has brought profound changes into the crisis management structures.

The main objective at this stage of the planning process is to bridge the political aims and objectives on the one hand and the operational means and resources on the other. This dynamic also applies to the periodic reviews of missions and operations. Once the Council has adopted the decision to resort to CSDP action to respond to a conflict or crisis, the PSC initiates the operational planning phase which will be managed by different bodies depending on the military or civilian nature of the mission or operation. The operational planning phase should be understood as being subdivided into two dimensions: *advance planning* and *crisis response planning*. *Advance planning* consists of continuous planning for potential crisis scenarios and includes monitoring, early warning, drawing up generic concepts and guidelines and identifying the capabilities available for CSDP missions and operations. *Crisis response planning* concerns the development of a response to an actual crisis. Human rights, IHL, gender and the principles of democracy/rule of law are to be taken into account in both advance and crisis response planning activities. For this purpose necessary to place the necessary expertise in the planning structures and bodies. The next subsection analyses in more detail how human rights, gender and IHL are taken into account and who is responsible within the different planning bodies and structures.

The first step for military operations is to designate the Operations Headquarters and to appoint an Operations Commander. For civilian operations the Head of the CPCC acts as Civilian Operations Commander until a Head of Mission is appointed. Since the adoption of the 2013 Crisis Management Procedures, human rights and gender are to be considered systematically during the planning process in all new missions and operations. An analysis of the situation of human rights and gender issues shall be reflected in the planning documents (eg EUMAM Ukraine or EUFOR RCA). The whole planning process ends with the adoption of the Concept of Operations (CONOPS), the Operation Plan (OPLAN), and the Rules of Engagement (ROE) where appropriate. The CONOPS and the OPLAN are very similar in structure but different in meaning; the first refers to what objectives stated in the CMC are to be achieved while the second details how the HoM or Operations Commander will fulfill them.

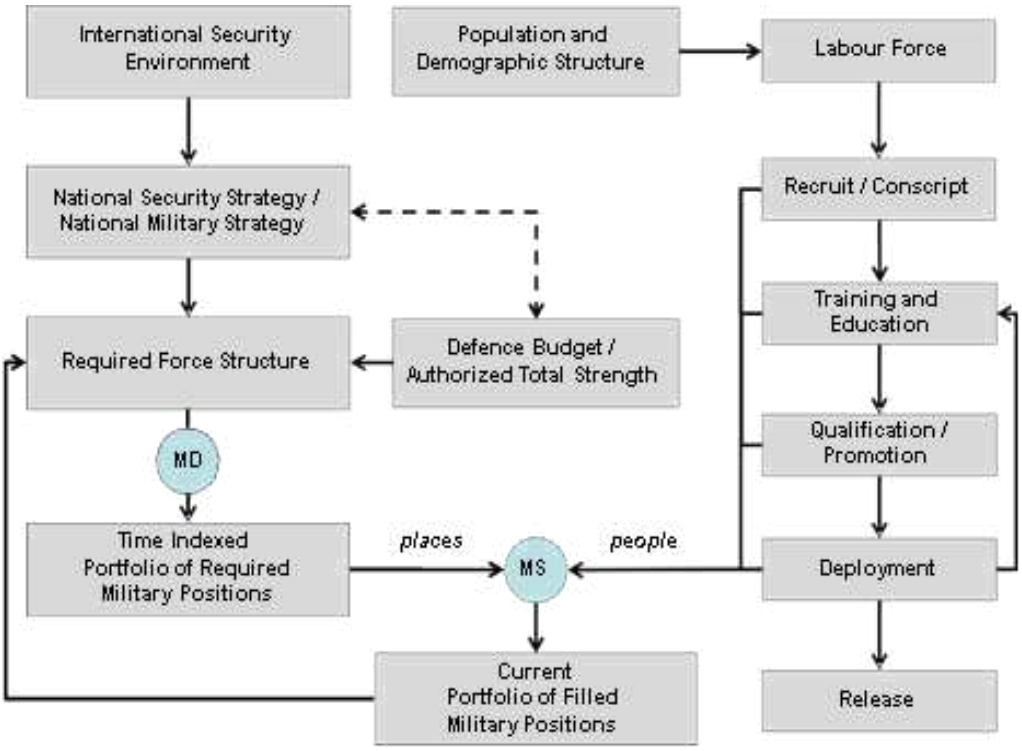
HUMAN RESOURCES MANAGEMENT IN DEFENCE

Introduction to human resources management/Manpower management:

In concept, the purpose of manpower management is quite straightforward: it is to have in place at the current moment the right numbers of people with the right mix of skills, experience, ages and rank levels necessary to sustain the required force structure. The challenge arises from the fact that required force structures are constantly evolving and transforming themselves in response to changes in the security environment, in military technologies, in national ambitions and in financial constraints. Manpower management systems, on the other hand, typically require long lead times to recruit, train, deploy, promote and release individuals in order reshape the manpower profile to satisfy force structure needs. And at each of these stages they must deal with intricate problems of human motivation.

Figure presents a stylised overview of this problem. A nation is presumed to respond to the threats and opportunities offered by the international security environment by formulating some form of national security strategy.

As part of that broader strategy it will formulate a military strategy that reflects its perception of the utility of military force in dealing with those threats and opportunities. The force structure required to support that strategy will then drive the demand for military manpower, both in terms of numbers and particular skills required. But force structures and manpower cost money, and ultimately what is required will be shaped as much by budgetary considerations as by strategic need, perhaps even more so. In addition to financial constraints, manpower requirements will also be constrained by legal and administrative limitations on total force size imposed by governments and parliaments. It may not be the case, however, that financial and force level constraints actually match expressions of national security need. As a result, the required force structure that finally emerges is always a compromise between desirability on one hand and affordability on the other. In practice, it is the outcome of continuous jousting between political and bureaucratic elements in the defence ministry on one side and those in the economic and finance ministries on the other.



Within the constraints imposed by the political process, defence planners and managers make force structure choices as they decide upon the allocation of resources at several different levels: between manpower and equipment, among the different military services, among different activities within each service, and finally among different types of manpower and equipment within each activity. But, again, force structures are not static; they are continually evolving in terms of equipment, doctrine and organisation, and hence the demand for manpower will include a dynamic element. That is, there will be a time-path for evolving military manpower requirements, both in terms of numbers and in terms of the required manpower mix. And even with the most careful planning, there will always be shocks to the system in the form of unanticipated budgetary changes, mandated increases or decreases in total force size, politically motivated equipment decisions, organisational restructuring, redeployments and simply different ways of doing business. Importantly, then, this manpower requirements portfolio has to have a time dimension such that it can depict evolving manpower requirements and provide critical lead time information to the suppliers of that manpower. Ideally, it would also have some built-in flexibility for dealing with un-expected shocks. The first major task of manpower management, indicated as MD in the diagram, is to process all these factors and arrive at a time-indexed portfolio of manpower requirements across the entire planning horizon, where each item, each place, in the portfolio is carefully defined in terms of required skills, experience, age and rank level. More simply, it must identify just exactly what places are going to have to be filled and when.

The second major task involves providing the actual people with the right mix of skills, experience, ages and rank levels to fill the required portfolio. This is the focus of the supply

side of military manpower management, marked as MS in Figure and shown as a process on the right hand side of the diagram. The task here is to decide on the number of individuals to recruit, promote, qualify and release each year. In some respects this process is of course no different from that of any other public or private institution that has to manage its labour force. But there is one crucial difference. Militaries, unlike most other institutions, are relatively closed systems. They generally take in new personnel only at the basic entry level and make no provision for lateral entry at higher levels, the basic justification being that only in this way can the unique mores, ethos and sense of corporateness necessary to the unique nature of military employment be properly cultivated. Such systems are characterised by strictly bounded entry age groups and strictly uniform career paths, usually with some explicit form of up-or- out system—promotion or release—that extends until retirement. Promotion itself depends upon the completion of well-defined tasks, including progression through milestone educational and training stages, command responsibility and a broad experience gained through frequent changes of assignment and location. By design, manpower systems of this sort encourage rapid turnover of personnel, particularly at the lower levels, and therefore keep the force relatively young and vigorous.

Continuous attrition at higher levels ensures that there are appropriate size cohorts at each level in the command hierarchy and that there is a steady flow of openings in that hierarchy to motivate younger individuals to seek promotion. Closed manpower systems of this kind thus offer several important advantages to military organisations. Nevertheless, whether they can offer the flexibility required to meet changing demands for military manpower in an age of strategic uncertainty on one hand and shifting social and economic structures and changing labour markets on the other has to be examined.

Basic Principles of Working in Defence:

Wherever we work in Defence there are certain basic principles we must follow, as set out below.

- Be aware of and act in accordance with the values and standards for Defence, set out in detail for respective Services.
- Comply with our respective people policies and rules. In particular, ensure that Defence gets the best from its people within a working environment that is free from harassment and discrimination.
- Ensure that any money we spend, or assets we use, are properly justified in support of Defence objectives. We must do so in a way which delivers best value for money, complies with relevant policies and rules and we must account properly for our activities.
- Make sure that any contractual arrangements we enter into are made and managed by authorised commercial staff. In doing so, get best value for money, including by using corporate enabling or framework contracts wherever possible.
- Manage information properly, by storing it in the right places, making it available to those who should see it and protecting it from those who shouldn't, and keeping good operational and business records. Make the best use of information, by knowing where to

find it, understanding its content and quality, adding value where needed, and communicating it clearly, quickly and securely.

- Help to communicate what Defence does, while complying with the rules on communicating with the media and public.
- Maintain a secure working environment to protect our people, the equipment, buildings and other assets we need to do our jobs, and the sensitive information entrusted to us.
- Manage our health, fitness and lifestyle to ensure that we are able to meet the demands of our employment.
- Make sure that our working environment is a safe place for everyone to use and take care of our own safety and that of others who may be affected by what we do or don't do.
- Minimise our use of energy (including travel), water and other natural resources. Reduce our pollution of the environment and creation of waste, and reuse and recycle more of the waste that we do produce. And consider the impact of our actions on local communities.
- Help to ensure the effective continuation of critical Defence capabilities and outputs in the event of a disruptive event, and act in accordance with plans for the longer-term recovery of Defence after disruption.

People:

We must comply with our respective people policies and rules. In particular, ensure that Defence gets the best from its people within a working environment that is free from harassment and discrimination.

Throughout Defence, Service and civilian staff work together. In addition to purely Service and purely civilian command and line management chains, Service personnel may manage civilians and civilians may manage Service personnel. Where appropriate, therefore, commanders and line managers need to be aware of, and comply with, not just the policies and rules of their own Service, but also those of their staff' Services.

We are all required to comply with employment legislation where appropriate (military personnel are exempt from some aspects), including equality and diversity legislation. Service personnel are also subject to the Armed Forces Act 2006 (covering military discipline) and Queen's Regulations (for the Royal Navy, Army and Royal Air Force).

We are also expected to play our respective parts in ensuring that Defence gets the best from its people through strong leadership, good management, training and development, teamwork and personal engagement.

The policies and rules of our respective Services are designed to ensure that we comply with the law and that we get the best from all our people. It is therefore incumbent on all of us to comply with them.

There are separate sets of policies and rules for each of our Services, as well as some that are joint. That said, there are some common key principles as set out below.

What we must do

- Be aware of the Defence priorities and objectives, as well as those of our respective units and teams, and understand how our own objectives contribute towards them.

- Be clear about our objectives and targets and the standards that are expected of us in our work, and do our best to meet them.
- Complete regular formal appraisals of our performance with our commanders or line managers.
- Regularly engage in feedback on our performance with our commanders or managers.
- Comply with the policies on equality and diversity and contribute towards a working environment free from harassment or discrimination in which we are all encouraged to reach our full potential and are treated on our merits.
- Take appropriate action against bullying, harassment, unlawful discrimination, prejudice, and negative attitudes displayed by others.
- Be aware of our remuneration packages and the claims processes for allowances, including our individual responsibilities to ensure we only submit claims that are properly authorised and within our entitlements.

The key drivers which guide a soldier's journey during service at a very fast pace and accentuate the problem are: the terms of engagement of service with a pyramid structure offering limited career progression opportunities; the operating environment which demands the soldier's continuous focus on professional tasks; and the socio-economic changes which have increased his responsibilities towards a family with higher aspirations.

Terms and Conditions of Service

The defence services have their respective terms and conditions for soldiers to suit their operational environment and accordingly, recruitment ages, education standards and retirements are fixed. The army, being the largest service, comprises of a number of arms and services which have a similar rank structure, but different types of entries and terms of engagement. These have evolved over the years. With a host of categories of soldiers in the army (general duty [GD]/ semi-skilled/skilled/technical/specialist/tradesmen), their selection, training and career management is a challenging proposition. A soldier joins the service at a young age between 17 ½ and 21 years, but service criteria linked with rank structure make him retire young. Tables 1 to 3 elucidate retirement ages as per ranks:

Table 1 Terms and Conditions for Sepoys

Rank	Present Criteria
GD Categories/ Semi-skilled Categories: Sepoy–Group I	17 years of service with colours, extendable by two years by screening and two years in reserve or till attainment of 42 years of age, whichever is earlier.
Skilled/Tech Categories/Specialist Categories and Tradesmen:	20 years of service with colours, extendable by two years by screening and three years in reserve or till attainment of 48 years of age,

Sepoy–Group II	whichever is earlier.

Table 2 Terms and Conditions for Non-Commissioned Officers (NCOs)

Ranks	Present Criteria
Naik	On completion of 22 years of service with colours, extendable by two years by screening or 49 years of age, whichever is earlier.
Dafadar/Havildar	On completion of 24 years of service with colours extendable by two years by screening or 49 years of age, whichever is earlier.

Note: Reserve liability of all NCOs is up to 51 years of age or two years after retirement, whichever is earlier.

Table 3 Terms and Conditions for JCOs

Ranks	Present Criteria
Naib Risaldar/ Naib Subedar	26 years of pensionable service, extendable by two years by screening or 52 years of age, whichever is earlier.
Risaldar/Subedar	28 years of pensionable service, extendable by two years by screening or 52 years of age, whichever is earlier.
Risaldar Major/ Subedar Major	32 years of pensionable service, extendable by two years by screening or four year tenure or 54 years of age, whichever is earlier.

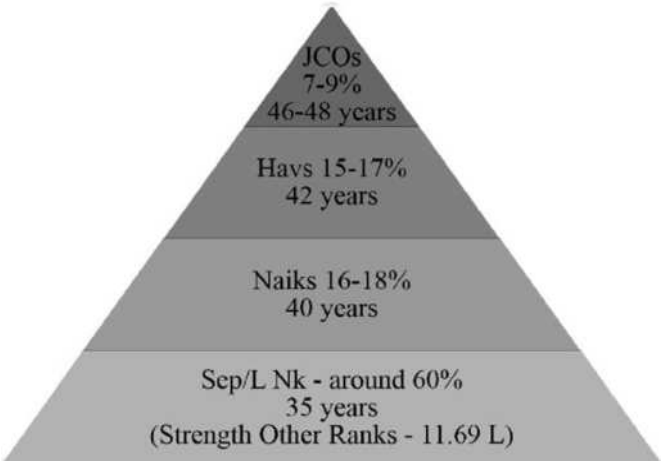
It is clear from the tables that a soldier can serve for a period of 17– 24 years (except JCOs) depending on his rank and will retire between the age of around 35–37 years for a soldier to 42–44 years for a Havildar. The recruitment ages for personnel joining IAF and IN are generally the same, but a majority of personnel (65–70 percent) take premature retirement: IAF normally after 20 years of service (around 40 years of age) and IN between 15–20 years (around 35–40 years of age). The terms of engagement of IAF give an opportunity to sergeants and above to serve up to 57 years of age (with extensions), provided they meet service conditions.

Pyramid Structure

Like other professions, a person joining the armed forces desires to excel in his career and reach the highest rank possible. Is it attainable? The promotions of personnel are within their categories and are based on vacancies, service profile, annual confidential reports and medical fitness. Even though many soldiers achieve the desired standards, the hierarchical and pyramid structure of promotions within the services lends itself to a large number of supersessions, with a corresponding loss of motivation and morale. The impact (based on army rank structure) would be clear from the following:

- Inputs obtained during interaction with ESM (including JCOs and clerks) and some training centres show that around 75–78 percent soldiers are likely to retire in the ranks up to Naik; around 15–17 percent may retire as Havildars; and the balance rise to become JCOs (premature retirements do impact percentages of promotions).
- When viewed in the overall army perspective, this reflects that more than 90 percent personnel are likely to retire very early (up to Havildar) as there are no vacancies beyond a level and also, to maintain a young profile which is an operational imperative. Figure 2.2 summarizes the impact, substantiated by a Standing Committee report which elucidates the issue:
- The jawans' problem is that since we have a narrow top, 80 percent or more than 80 percent of the PBOR [personnel below officer rank] go home after 17 years of service when their ages are between 35 and 40. Now, they suffer in two ways. Firstly because they have put in lesser years of service, and, therefore, their salary is low and, therefore, the pension will be low. Secondly, they are left in the street at a time when their financial commitments are high. Their children are going to school, their sisters are to be married or they have old parents to look after. I am talking of ex-servicemen.

Impact of Pyramid Structure on Ranks



The situation is compounded by a not-so-modern system of career planning, placement and human resource development, wherein the early exits are not factored by identifying and

augmenting the strengths of a soldier. Early retirement is inevitable, but the aspirations can be structured while in service, making for more holistic adjustments on retirement. The steeper pyramid thus accentuates the problem, resulting in the early exit of soldiers in their prime without preparing them for a second career. Though the structure is relevant to keep the armed forces young and an optimal pyramid is a myth, it impacts the aspirations of the youth, who are reeling under the societal pressures with an urge to earn well.

Operating Environment

The spectrum of warfare today ranges from sub-conventional at the lower ebb to an all-out war against a nuclear backdrop, and a soldier is expected to adapt quickly and train in evolving concepts of war fighting and deliver. The operating environment has changed, especially in the last three decades or so, with a soldier getting actively involved in counter-insurgency operations within the country. The deployment along the borders has increased manifold, thereby impacting the field/peace profiles and resulting in shorter peace tenures. Added to this is the role of humanitarian assistance and disaster relief (HADR), for which the armed forces need to be ready at all times. The operational environment and the associated commitments of the armed forces are likely to be on the increase due to geopolitics and continuously evolving capabilities of adversaries, thus demanding greater proficiency and inspiration of the human resource. A soldier endures all this with élan, with relatively no time to ponder over his approaching retirement or transition.

Lack of Authentic Planning Data on ESM

The armed forces have an estimated 24 lakh ESM, but there is no collated central database and every ESM detail is not registered. How can ESM welfare, or action on their transition/monitoring, be taken by agencies/service HQs without requisite data? The following questions thus need reasonable answers:

- What is the exact strength of ESM, preferably in different age groups?
- How many of those are employed—through DGR or otherwise?
- Details of ESM still seeking employment.
- Do we have a single nominated agency to collate the data at national/state/service level?
- Are the current lot of retiring soldiers getting registered?
- Is there a common software or networking of agencies (data portal) dealing with ESM welfare?

The answers to the above-mentioned issues raise more questions. Due to a lack of clear directives and synergy, a soldier is required to register at a number of places, that is, regimental centre, DGR, service placement agencies, RSB/ZSB, and he is not in a position to check the status of his employment from one source. Although the data are recorded with regimental centres from where the soldiers exit, collated at manpower directorates and ought to be available with RSBs/ZSBs where the soldiers visit post retirement, it is evident that no single establishment is solely responsible to ensure the creation of a statistical base and share it with other agencies. With a lack of centralized control, no agency takes the onus, thus

creating huge information gaps. The resultant impact is that retirees do not register, and the void continues.

Networking is the next important aspect. With no common software and data links amongst stakeholders, networking is not planned, and this renders it difficult for service HQs, DGR or any other placement/ monitoring agency to analyze data, identify potential job aspirants and their preferences and assess satisfaction levels. In the absence of complete or correct data, it is hard to predict the accurate employment status of ESM and plan ahead.

Poor Reservation Implementation: Central and State

Converting the reservations offered in government/other jobs into number of vacancies available in each department/organization is a cumbersome process, and the exact data are not available even with the departments. The irony is that the data on total number of central government employees/posts, which are the basis for calculating reservations, is also not sacrosanct (as observed by the Seventh Pay Commission), which in turn impacts reserved vacancies.

Current Utilization and Shortfall

To ensure follow up in filling the reserved vacancies, DESW/DGR seek details of reserved appointments authorized and held, from concerned departments. Interaction with environment, DGR and other agencies involved in transition reflects that after a lot of persuasion, data (on authorized and filled posts) against reservations are collated and made available only by 20–25 percent establishments. Within these departments, there is seemingly a shortfall of around 62 percent (vacancies not subscribed by ESM), which is likely to go up once details from remaining departments are compiled and analyzed. Even the *Annual Report* for 2014–15 of Ministry of Personnel, Public Grievances and Pensions, Government of India, reflected details of vacancies utilized for Scheduled Caste (SC)/Scheduled Tribe (ST)/Other Backward Class (OBC)/persons with disabilities under respective reservations by various ministries, but was silent on similar data on ESM reservations. The reasons for this are bewildering. A report of the Standing Committee on Defence also depicts discouraging status (data) received from departments (shared by only 14%) and resultant employment generation (only 20 percent) in 2013.

There are approximately 55 lakh Central Government Employees including in Banks, PSUs & Para Military Forces. Out of above, based on reservation policy for ESM, at least 12–15 lakh jobs should have been reserved for ESM. However, based on approximately 14% reports received for 2013, only about 2 lakh ESM are employed in Government jobs reserved for them. In 2013 alone, based on above 14% reports, while 15908 ESM should have been employed on reserved jobs, however only 3231 were actually employed. If the Central Government and States reservation policies are implemented, ESM will not have to look for jobs outside.

There is a huge statistical gap as data are not provided by all departments; and shortfall in reserved vacancies, which is a derivative of total employees (central government, banks,

CAPFs and PSUs), will be very high. The shortfalls are also corroborated by the figures cited by the Standing Committee on Defence, 14th Lok Sabha.

The Committee are surprised to note that out of approximately 60,000 defence personnel retiring every year, merely 30 per cent are absorbed in Government jobs and public Sector Undertakings despite the fact that DoP&T has exclusively issued instructions to ensure reservations for ex-servicemen in Group "C" and "D" posts. The Committee notes the efforts of DGR in regard to their placement and feels that the outcome of these efforts was unsatisfactory. The Committee feels that there is need to improve the working of this organization and monitor it closely.

It is evident that even after years of promulgation of policies, the procedures are not streamlined to have access to department-wise data on reserved vacancies and their implementation, which portrays lack of vision/will and apathy towards this important welfare issue. Lack of inputs and inadequacy of data retards planning, adversely affecting employment generation. Interaction reveals that existing appointment of ESM against reservations notwithstanding, annually around 25,000– 30,000 vacancies still get created for ESM, against routine/voluntary retirements (3–4 percent exit annually) and raising of new establishments.

State Reservations: No Uniformity

The armed forces afford employment opportunities to personnel from all states, and the states in turn must afford reservations in employment to ESM. Though existing in some form in most states, the reservations are not coherent and need to be restructured to bring them to a common platform. While most of the states are providing reservation in Groups "C" and "D" jobs from 2–10 percent (some states have an even higher percentage), they are not providing any reservations in Groups "A" and "B" posts. Some states (Bihar, Jharkhand, Kerala and Meghalaya) do not have any reservations. Also, jobs have not been provided against reserved vacancies as the subject of reservation of ESM does not have statutory backing. A ban on fresh recruitments by the states is another cause. Interaction with DGR/ KSB and analysis of available data shows that the number of unfilled vacancies against ESM reservation in all states combined is almost similar to that of the central government, and annually 20,000–25,000 vacancies are likely to be available against wastages/retirements.

Even with fixed reservations in some states, the utilization is very poor. As an example, Punjab has 13 percent vacancies reserved for ESM in Groups A, B, C and D posts. A monitoring cell also exists in the Directorate of Sainik Welfare, Punjab, to ensure implementation of the policy, but as on date just about 3 percent of the reserved vacancies have been utilized. The reasons for underutilization are:

- 13 percent reservation is sub-divided into General (7 percent), SC (4 percent) and Backward Class (BC) (2 percent) categories. The composition of armed forces being on a non-caste basis, sufficient number of candidates are not available to fill the posts and consequently, vacancies get merged with the main pool of reservation quota of the SC/BC.

- Mismatch between the qualitative requirements of the posts vis-à-vis availability of ESM with the requisite qualifications. Bulk of the ESM being from other arms (infantry/artillery/armed corps), they do not fit the bill for the technical posts.

Realigning Reserved Vacancies

The Sixth Pay Commission had recommended upgradation of Group "D" after retraining/multi-skilling to Group "C", but reservations followed in some departments are still as per earlier norms, which causes status problems. With the upgradation of Group "D" to Group "C", there is an urgent requirement to review and realign the vacancies for ESM to assist planning. The same exercise needs to be undertaken by the states as well.

Protection of Vacancies

The reservations for ESM are at present horizontal and not vertical as in case of SCs/STs/OBCs. Horizontal reservation cuts across vertical reservation (in what is called interlocking reservation) and persons selected against the quota, namely, SC/ST/OBC/General candidates, have to be placed depending upon the category to which they belong. Concern, however, is that the ESM vacancies are not protected under statutory provisions as for SCs/STs/OBCs, which outlines that when sufficient number of candidates belonging to SC/ST/OBC are not available to fill up the vacancies reserved for them in direct recruitment, the vacancies should not be filled by candidates not belonging to these communities, and a second attempt should be made for recruiting suitable candidates. If the required number of candidates are not available even then, the vacancies shall remain unfilled until the next recruitment year and treated as backlog vacancies. Backlog and unfilled vacancies in the following recruitment year will be carried forward as backlog vacancies for subsequent recruitment year(s) as long as these are not filled by SC/ST/OBC candidates. Similar provisions need to be mandated for veterans.

Entrance Tests

The jobs under various reserved categories in central government/ banks/PSUs/CAPFs and states have a mandatory entrance test/ interview, passing which is difficult due to lack of preparation and focus, leading to very little vacancy utilization. Prime Minister Modi, during his Independence Day speech on 15 August 2015, had suggested that the practice of holding interviews for recruitment at lower levels in government jobs (non-gazetted) could be done away with from 1 January 2016. This has been promulgated and will ease the problem to some extent. The departments, however, have their separate processes for exams and selection. The army, in particular, is suffering on this clause of tests as most of the personnel lack awareness, whereas servicemen in IAF and IN are better placed and qualified to exploit these opportunities. Interaction reveals a popular perception in the army of a soldier being very busy till his last days in service, and not spared for preparation for jobs after retirement/transition. In-service preparation for passing these tests is thus lacking, thereby not capitalizing on existing favourable policy parameters:

- A soldier can appear for any government reserved vacancy exam in the last year of his service. If selected, the vacancy will be retained till his retirement.

- A soldier can appear in multiple exams and has the option to switch to a better job. "It has now been decided that if an ESM applies for various vacancies before joining any civil employment, he can avail of the benefit of reservation as an ESM for any subsequent employment," according to a Department of Personnel and Training (DoPT) order.
- Upper age relaxation of length of service plus three years.

Declining Status of a Veteran

The steady decline of the status of military ranks in relation to their civil counterparts in the last five decades equally impacts veterans. What Shashi Tharoor said echoes the views of many: "The changes to the Order of Precedence and the growing disparity in salary suggests that we have commemorated their sacrifice and rewarded their efforts with a harsh and unconscionable gift of declined dignity." What then is the status of a soldier after he sheds his uniform? Is there a law or a statutory provision specifying the benefits applicable to him? While in service he is under the central list; then why does he become a subject of state post retirement despite his pension and resettlement remaining central responsibility? How does being a centre and a state subject impact the reservations and his resettlement? These are some basic questions with no easy answers, but hidden in the answer is the obligation of the state and the story of a veteran's suffering due to its apathy. The ambiguous status leads to an indifferent and at times rigid attitude on part of the policy managers, and there is a perceived mindset not according easy entry to ESM in civil jobs. This is unfortunate to say the least. What else could be the reason for a not-so-encouraging response towards veterans' genuine resettlement problem? Most of the concerns related to welfare or transition stem from this one mindset issue.

In-service Conditioning of a Soldier

Transition to a second career for service personnel is not easy as attitudes and working ethos are totally divergent. Do we have an institutional mechanism in place to condition a soldier about his exit when he is in the prime of age and responsibilities? Life in the defence services is so fast paced and professionally demanding for a soldier (especially in the army) that there is no time for his personal "post-retirement career management". There is also very little "evident intellectual progression" for a soldier during service. There are no organized sessions for briefing and perceptually preparing a soldier for his early exit, wherein the options available for transition are explained, preferences obtained, counselling undertaken and skills infused. Who is responsible to do it in an organization as big as the army, with specified roles of various directorates, is another issue to be pondered. In the absence of a structured conditioning/transition phase with full institutional support to spare, guide and prepare him, the soldier cannot be expected to crack an entrance exam for a reserved government job, compete with scarce jobs in the corporates or start a self-employment venture.

Talking about retirement/exit in the formative years of a soldier's career is actually perceived as demotivating, weaning his attention away from the main task, which is far from reality and

reflects a lack of understanding of this important issue. Detailing on a resettlement course (at times done to address an individual's personal problem along with the course) or discharge drill formalities at the regimental centre near his retirement are in no way close to psychologically and skillfully preparing a soldier for transition, which otherwise is a service obligation. Thus, an all-encompassing "exit policy", articulating the "systems", is non-existent.

Incompatible Skills and Lack of Certification

Skills and certifications, as per requirements of the government agencies/banks/PSUs/corporates, remain a major shortcoming for placements, as military training has a limited match in the civil job market, barring some commonalities with CAPFs. Personnel in IAF/IN have better skill sets being technical and computer savvy. They often acquire additional certifications demanded in the civil job market for placements. Interaction with IAF and IN placement agencies reveals that most technical personnel (around 60–70 percent), who can easily qualify for reserved jobs, prefer to opt for corporate jobs due to better pay packages. The challenge is mainly for army soldiers who lack skills. Even a security supervisor today needs to operate closed-circuit television (CCTV) cameras/security machines, manage crowds, use Internet or webpage, for which a soldier is not adapted/trained. With plenty of educated unemployed youth available for such jobs, he loses even on this front. There is seemingly very limited effort during service to hone a soldier's skills or better his educational standards. The jobs on offer in certain sectors given next require a person to possess expertise, which is wanting:

- automotive;
- telecommunications;
- tourism and hospitality;
- logistics management;
- operating heavy equipment like cranes and drilling machines;
- corporate security; and
- accountancy.

The views of Tom Tarantino, Chief Policy Officer for Iraq and Afghanistan Veterans of America, representing sentiment on skilling in the US, reflect that service members leave with unrealistic visions and expectations, not just in terms of salaries but also work–life balance, work environment and type of employee services. Tarantino reiterates: "That tells me we don't do a good job of training people leaving the military to look for work. We need to do a better job to set them up for success." He reiterates, "the civilian business community does not understand military service skills and how to translate them". The sentiments expressed here prevail in India as well, and policy makers need to take a cue from this while preparing a road map for skilling soldiers.

Certifications

There is no equivalence for army courses/training/experience with skills in civil, which prohibits selection, and if shortlisted, grant of appropriate benefits in status and emoluments

to ESM. Related to this is the issue of possessing a skill certification for jobs in PSUs or corporates. Unless it is planned during service, with choices of individuals obtained and skilling with certification from a recognized institution or National Skill Development Corporation (NSDC) done, a soldier cannot get a desirable job. Equivalence of army trades with civil jobs is another essential for corporates or the civil job market to accept experienced soldiers in jobs. Though every soldier who has passed Class 10/12 and renders a 15 year service is given an "Army Graduation Certificate", and is considered a graduate for reserved vacancies (refer to DoPT Circular No 15012/8/82, dated 12 February 1986), the certification is not readily honoured by agencies/organizations in civil on grounds of its authority or relevance. It also does not enable a soldier to be eligible to appear for all the tests for reserved vacancies. Unless a certificate is issued by a recognized institution, it will not get acceptance.

Communication Skills

Though an able administrator with proven man management abilities, a soldier lacks communication skills to interact and explain his viewpoint on civil/business matters during personal interviews or interactions. This stems from limited exposure outside his trade/service, and is seen as a weakness. Longer postings at better stations with opportunities to enhance qualification and awareness have resulted in IAF and IN personnel overcoming this weakness, and their record in transition after retirement is much better.

Flair for Self-employment-

A soldier rarely comes from a business background and remains secluded from any such activity during service life. Inadequate experience in handling financial issues independently, lack of funds and risk-taking ability, unavailability of easy loans without hidden clauses and no encouragement/guidance in entrepreneurship result in very few soldiers considering self-employment as an option.

Lack of Coordination amongst Agencies

As deliberated earlier, there are a host of agencies/organizations dealing with ESM welfare including transition, with no common chain of reporting, thus precluding accountability. These are:

National level—DESW supported by DGR, KSB, ECHS.

Defence services—personnel branches dealing with human resource development, placement agencies and regimental centres (for army) reporting to respective service HQs.

States—RSBs/ZSBs: have political appointees under no direct control of DGR or service HQs State-level ESM organizations.

There is a perceived disconnect between DGR, service placement agencies and the environment, and seemingly very little coordination with all working independently. The DESW has to coordinate a plethora of welfare activities of ESM, and transition is one of the important subsets which has not got the attention it deserves. Services placement agencies are not in sync with DESW/DGR and there is very little or no sharing of information/data, leading to erratic job creation and defeating the very purpose of creating these

establishments. The transition of a soldier needs to be the responsibility of one agency or a mechanism needs to be established to ensure accountability with desired results.

SERVICE CONDITIONS IN DEFENCE

Appointment to Commission

Types of Commission:

The following types of commission will be granted in the various branches of the regular Air Force under the regulations approved by the Government and announced in A.F.Is / A.F.Os. from time to time:-

a) Short service commission;
b) Permanent commission;
c) Temporary commission.

Short Service Commission:

A short service commission may be granted to a candidate from civil life or a serving airman in G.D, Technical and Met. Branches of the air force for the periods indicated below:-

1) **G. D. Branch:** For a period of 4 - 5 years extendable to 10 years on successful completion of training.
2) **Technical Branch:** From the date of commencement of training at the Technical Training College up to the date of expiry of the probationary period subsequent to successful completion of training.
3) **Met. Branch:** From the date of commencement of the specialised met. training up to the date of expiry of the probationary period subsequent to the successful completion of training.

Permanent Commission:

A permanent commission may be granted in any of the branches of the air force, other than medical and dental, to:-

a) a candidate from civil life or a serving airman on successful completion of training.
b) to an officer holding short service commission.

Temporary Commission:

A temporary commission may be granted to an officer of the Army Medical Corps/Army Dental Corps on secondment to the air force for the period of secondment. This commission will be superimposed on the commission in Army Medical Corps/Army Dental Corps.

Date of Commission:

a) The effective date of commissioning will be the date promulgated in the Gazette of India.
b) Officers granted permanent commission in the technical branch will be granted an ante date of two years counted backwards from the date of successful completion of training for the purposes of seniority, pay and promotion provided they possess the requisite technical qualifications prescribed for the purpose, or, in the case of airmen, had rendered before commissioning six years in the air force as airman.

Challenges of Human Resource Management in the Indian Army

Human Resource Management in the Army is an extremely vital issue because its strength has always been its soldier. It has been aptly said that institutions do not transform – its people do; platforms and organisations do not defend the country – people do. Of the Army's sanctioned strength of 47,762 officers, the held strength is only 36,790.

This shortage is not of recent vintage. The shortfall ranged from 12 to 15 per cent in the 1950s, 60s and 70s. Emergency and short service commissions spurred by wars during that period were the preferred approach to bridge the gap. The next three decades however, saw the shortage rise up to 24-25 per cent. Significantly there are no deficiencies in the higher ranks of Colonel and above. The criticality is of the prescribed annual induction in the Army of 2,240, where actual intake in the 2009, 2010 and 2011 was 1,599, 1,892 and 2,275 respectively. This corresponds to 67, 72 and 102 percentage. The upward trend is encouraging and is likely to again surpass the authorised intake in 2012. Two main areas of concern where the intake has been marginal are the Direct Entry (DE), Gentleman Cadets (GCs) in the **Indian Military Academy** (IMA), Dehradun and the Short Service Commission (Non-Technical), SSC (NT) GCs in the Officers Training Academy (OTA), Chennai – IES in the lower part of the pyramid at the level of captains, majors and lieutenant colonels. This is being redressed. Against a sanctioned strength of 1,650, 500 and 1,800 at IMA, OTA and NDA respectively, approx 1,850, 700 and 2,025 cadets are undergoing training. The Academies are overflowing by over 200 cadets each. A most informative article by the former Adjutant General.

Human Resource Development is an essential command function and, in this context, it needs to be understood that the soldier of tomorrow has to be an innovator who can combine imagination and knowledge with action – Indian Army Doctrine 2004

Some of the characteristics that are vital for soldiers of the future are:

- Quick decision making capability, greater mental mobility and adaptability
- Capacity to handle higher stress levels
- Capability to handle independent assignments
- Higher technical competence
- Greater motivational levels and higher standards of junior leadership
- Better administrative skills

The Indian Army is a highly motivated, optimally equipped, modernised and operationally ready force, capable of functioning in a joint services environment across the entire spectrum of conflict. As a major component of national power, the Army along with the Navy and the Air Force is entrusted with the primary role of preserving national interests and safeguarding the country's sovereignty, territorial integrity and unity against external threats, either by deterrence or by waging war. It also has a secondary role of assisting government agencies to cope with 'proxy war', other internal threats and also providing aid to civil authorities when requisitioned. Given the complexity of tasks it has to perform, it is imperative that it is manned by individuals who are loyal, responsible and professionally

competent. Orchestration of human resources in the Army, therefore, needs to be accorded the highest priority so as to unleash the full potential of the men and material that constitute the organisation.

Human Resource Management in the Army is an extremely vital issue because its strength has always been its soldier. It has been aptly said that institutions do not transform – its people do; platforms and organisations do not defend the country – people do; and units and formations do not sacrifice and take risks for the nation – people do! It is therefore, evident that without highly skilled, competent and dedicated soldiers in its rank and file, it matters little how lethal the weapon systems are or how strategically responsive the field formations are trained to be. More vital are the men behind the weapons, who truly execute the mission. The enormity of the task can be gauged from the fact that the Army has about 12 lakh serving soldiers3 in its rank and file and it also has to cater to the needs of over 22 lakh of its veterans who have retired from service.

What is special and distinct about the Army is the very high emphasis on delivering the goods even at the cost of laying down one's life. This makes the Army the final bastion and invariably the most reliable asset that the Nation can fall back upon during the hours of crisis.

Challenges of managing human capital

Challenges in relation to nature of conflict:

National Security in the present day environment is an aggregate of both external as well as internal threats.5 Economic compulsions and the global environment have reduced the threat of all-out wars between nations. Future wars are likely to be short and intense and will witness the employment of high-tech weapon systems with comparatively larger scales of damage and destruction. The probability of joint operations, including with other armies of the world, have also increased manifold. The world is seeing a spurt of a new kind of warfare called 'Fourth Generation Warfare 'encompassing terrorism, internal destabilisation and economic blackmail aimed to undermine the very sovereignty of a nation.

The project, which was conceptualised and initiated just about a decade back, has grown by leaps and bounds and constitutes 426 polyclinics, providing medical cover to about 12 lakh veterans and more than 27 lakh of their dependents. It also has on its rolls over 1,300 private hospitals spread over 170 stations, which have been empanelled to supplement the polyclinics that are already functional.

Given the dynamics of future conflicts, it is imperative that the Army prepares itself to meet these challenges head-on. Organisational and equipment voids, which hither-to-fore were considered acceptable, may not be the case in the future. Staffing of formations and units, including that of reserves, also need to be maintained at the optimum level at all times to ensure operational effectiveness.

The spectrum of conflict for which the Army needs to be prepared for and the demands of the future battlefield environment on the human resources element necessitate that the soldiers inducted into the Army be qualitatively superior to what was expected earlier.

Some of the characteristics that are vital for soldiers of the future are:

- Quick decision-making capability, greater mental mobility and adaptability.
- Capacity to handle higher stress levels.
- Capability to handle independent assignments.
- Higher technical competence.
- Greater motivational levels and higher standards of junior leadership.
- Better administrative skills.

Challenges in relation to the changing socio-economic environment:

The Army taps its manpower from the populace at large and perforce it needs to be sensitive to the societal changes that take place with the passage of time. A growing economy, globally interdependent, advanced technology and a flourishing private sector now offer unimaginable opportunities to India‘s youth. Overall development necessitates moving rapidly towards an educated and aware workforce. In the case of the Army it translates moving from a ‘brawn force’ to a ‘balanced brain-cum-brawn force’. With all the agencies trying to tap the cream, talent is at a premium. Attracting, retaining and motivating the best talent is a constant challenge for the Army in the present circumstances and the problem is likely to become more acute in the coming years. Some of the challenges that confront the military leadership are as follows:

Nuclear family norms: Lack of security and support hitherto provided by the joint family system and hazards of the now largely prevalent nuclear family norm has resulted in soldiers having to take on additional pressures of their domestic front. The joint family system provided inherent security, both physical and economic and invariably motivated the soldier to give his best without any apprehension. This protective shield vanished with the breakdown of the joint family norm, leaving the soldier to fend for himself and his family. The problem gets more accentuated when the families are located at places which are not within convenient commuting distance of their duty stations. A conscious effort, therefore, is being made to ensure that the interest of the soldiers in operational areas is taken care of by providing separated family accommodation in military stations within easy travelling distances.

Once inducted into Service, the aim is to retain the human resource for the optimal period, while constantly making an endeavour to enhance their professional and individual growth so as to ensure that the 1.2 million strong Army remains highly motivated and committed.

Pressures due to exigencies of service: Exigencies of service often make it difficult for men in uniform to strike a reasonable balance between their home and the professional front, at times leading to problems like depression, suicide and fratricide.8 Grant of leave at periodic intervals with liberal travel facilities and connectivity to ensure that he constantly remains connected with his loved ones is, hence, very essential.

Hazards of service life: A career in the Army is accepted in the civil street as one fraught with immense risks. The perception has been further aggravated by the increasing deployment of the Army for various tasks ranging from counter insurgency to counter

terrorism, apart from the conventional role that it is meant for along our troubled borders. What needs to be ensured is that the compensation offered to the next of kin must be adequate in terms of financial independence.

Increased aspiration levels: The present day youth look for improved quality of life, better pay and perks, assured career progression, appropriate educational and housing facilities, good medical backup, equitable status with their civilian counterparts and better post retirement benefits. The paradigm shift in the quality of intake required for the Army, both at the officers level and for JCOs / ORs warrants that adequate incentives be made available to attract the right material, motivate them to join the services and thereafter retain them in service.

Empowerment of Women in Armed Forces

The role of women has been increasing steadily in the field of national defence. Women are employed in Defence Production Units, Defence Research & Development Laboratories and in the Armed Forces. With the induction of women in various branches of the Armed Forces like flying, logistics and law, a larger role is envisaged for them.

Indian Army:

Women Officers in the Army: Women officers have been serving in the Armed Forces for about 80 years and have served with competence and distinction. They were inducted in the Military Nursing Service in 1927 and in the Medical Officers cadre in 1943. In the Armed Forces Medical Services, there are both Permanent and Short Service Commission Officers (SSCOs).

In 1992, in a significant step to open more branches for employment of women officers, they were granted commission in Army Service Corps (ASO), Army Ordnance Corps (AOC), Army Education Corps (AEC) and Judge Advocate General (JAG) Department. This Short Service Commission was granted only for 5 years initially. The tenure of engagement was further increased to 10 years in August 1996 as also other branches namely Corps of Electrical and Mechanical Engineers (EME), Intelligence Corps (IC) were opened for employment. In 2004, the service tenure was further extended to a total of 14 years. In 2007, Army Air Defence (AAD) and in 2011 Army Aviation were also opened for inducting Women Officers. In 2010, provision of Permanent Commission was made for Women Officers in JAG and AEC. As regards promotions, earlier, Women Officers were eligible for only one promotion, viz. to the rank of Captain on completion of 5 years of reckonable service. However, they are now granted time-scale substantive promotions to the rank of Captain, Major and Lt Col after 2, 6 and 13 years of reckonable service respectively at par with the promotions available to the Permanent Commission Officers. In addition, with a view to ensuring gender equality, the training period of Women Officers in the Army in Short Service Commission has also been increased from 24 weeks to 49 weeks, at per with male Short Service Commissioned Officers.

Keeping in view the role and responsibility of the Armed Forces in defending the nation and protecting the territorial integrity of the country, the future policy on induction and employment of women in Army has been enunciated in February, 2019 as under:

i. Women Officers may continue to be inducted as Short Service Commission Officers (SSCOs) in Arms/ Services where they are presently being inducted, with no change in their tenure of Short Service Commission.

ii. Women officers will be considered for grant of Permanent Commission in the eight Arms/ Services in the Indian Army viz Signals, Engineers, Army Aviation, Army Air Defence, Electronics and Mechanical Engineers (EME), Army Service Corps, Army Ordnance Corps and Intelligence Corps in addition to the existing two streams of Judge Advocate General (JAG) and Army Education Corps (AEC). Thus, women officers will be considered for grant of Permanent Commission in all the ten streams in which they are currently being commissioned as SSC officers.

iii. On completion of three years of commissioned service and before completion of four years of commissioned service, they will be required to exercise option for grant of Permanent Commission and their choices for specialization.

iv. Women SSCOs will be considered for grant of Permanent Commission based on the availability of vacancies and subject to willingness, suitability, performance, medical fitness and competitive merit. On grant of Permanent Commission, these women officers will be employed in various staff appointments only as per their qualification, professional experience, specialization if any and organizational requirement.

v. *Child Care Leave (CCL):* While earlier LTC could not be availed during Child Care Leave, now with the amendment to the extant provision by the Government of India, Women Officers of Defence Forces can now avail LTC along with CCL leave Station/HQs with the permission of leave sanctioning authority and travel abroad on CCL.

Indian Navy

Women Officers: Women are being inducted into the Navy as Short Service Commission (SSC) officers in the Executive (Observer, ATC, Law & Logistic), Education Branch and the Naval Architecture of the Engineering Branch. In March 2016, approval of MoD was accorded for induction of women Short Service Commission (SSC) officers as Pilots in Maritime Reconnaissance (MR) stream and in the Naval Armament Inspectorate (NAI) cadre. In 2019, approval has been accorded for induction of women Short Service Commission (SSC) officers in Musician and Sports Specialisation.

Permanent Commission to SSC Officers: The Government has introduced grant of Permanent Commission prospectively to the Short Service Commission Officers, for both men and women, of the Executive Branch (Law Cadre), Education Branch and Engineering Branch (Naval Architecture) w.e.f. 2008.

The Indian Navy is committed to the welfare, well-being and dignity of the women. It is a constant endeavour of Indian Navy to provide maximum support to women employees and

women family members in order to maintain high morale and motivation at all times. IN has taken concerted efforts to ensure empowerment of women employees and their active participation in activities/ work at respective units. The following measures have been implemented to ensure women empowerment and safe working environment for women employees:

i. Creation of positive environment by giving freedom for women at workplace and equal status with men which enables development of women by realising their full potential.

ii. Equal participation/ involvement of women employees in decision making or activities of the unit/ establishment at all levels.

iii. Sensitisation of all employees to acquire equal rights with men and congenial atmosphere at workplace.

iv. Elimination of violence/ all forms of harassment of women employees, whether physical or mental, at workplace.

v. Vishaka and Nirbhaya Acts: "Visakha Guidelines" and "The Sexual Harassment of Women at Workplace (Preventive, Prohibition and Redressal) Act, 2013" have been implemented at IHQ MoD (Navy), all Commands and outlying units. Committees have been constituted at the three Commands to inquire into complaints of sexual harassment of women employees at workplace. The main aim is to prohibit/ eliminate any sort of harassment/ violence against women employees at workplace. Suitable Women Officers have been nominated as the chairman of Internal Complaint Committee (ICC) cell of all units.

vi. Naval Wives Welfare Association (NWWA): In order to encourage building self-confidence amongst women and to boost morale of naval ladies, a large number of activities are organised by naval wives on a voluntary basis. The Naval Wives Welfare Association (NWWA) provides an opportunity to undertake genuine welfare and educational activities through its innumerable welfare programmes. Examples of such activities include running of play schools for children, reaching out to people outside the community, running of schools for special children, care for senior citizens and patients with chronic diseases, rehabilitation of naval widows, helping in resolution of family disharmony through professional counselling and guidance, conduct of vocational training classes for women towards other skill development and economic empowerment. NWWA also provides opportunities to the naval families to develop and showcase their talents in the field of social, cultural and sports activities through vocal and instrumental music, dance, drama, health activities, yoga and organised games and sports.

vii. Navika Sagar Parikrama: INSV Tarini returned to India on May 21, 2018, on completion of the first Indian all-women circumnavigation of the globe. This is the first-ever Indian circumnavigation of the globe by an all-women crew. The expedition titled 'Navika Sagar Parikrama', is in consonance with the National policy to empower women to attain their full potential. It also depicted 'Nari Shakti' on the world platform and helped discard the societal attitudes and mindset towards women in India by raising visibility of

their participation in challenging environs. Also, the indigenously-built 56-foot sailing vessel, INSV Tarini showcased the 'Make in India' initiative on the International forum. Further, in order to apprise the school children about the experiences of the voyage, the all women crew of INSV Tarini has visited various schools and education institutions across the country since July 2018.

Welfare activities:

Revised Spouse Co-location Policy: It has been the endeavor to post spouses serving in the Armed Forces at the same station so far as feasible, subject to Service exigencies. To outline clear modalities and conditions for spouse co-location, which meet individual aspirations, as also organisational goals, policy on Spouse co-location has been revised and provisions have been aligned with those in the Indian Army, IAF and DoP&T guidelines.

Naval Regimental System (NRS): In keeping with the traditional camaraderie and brotherhood that is prevalent in the Defence Services, Naval Regimental System (NRS) was established in January 2011 to institutionalise the support system and provide proactive and extended support to Widows/ Next of Kin (NoK) of deceased sailors. Under this system seven Command Regimental System Officers (CRSOs) and their teams reach out to every family after the demise of a naval colleague, immaterial of whether the individual was in harness or retired and ensure that their welfare and accrual of all entitled dues reach them in time. Regimental State Units (RSUs), which have their footprint on ground, reach out to the widows and educate them on related welfare issues e.g. family pension, I card, canteen cards, ECHS memberships, etc.

Reaching out to Widows and Retired Community: To facilitate early resolution of issues impinging on their well being the following have been instituted:

a) 'Directorate of Ex-Serviceman Affairs Toll Free Help Line', which provides round the clock coverage through its Integrated Voice Recording (IVR) Facility.
b) 'Commodore Bureau of Sailors (CABS) Toll Free Help Line' to resolve pension related issues.
c) Dissemination of important issues through IRFC website.
d) Publication of quarterly e-newsletter covering latest policies/ developmental issue related to welfare of veterans.
e) Interaction with Directorate of Ex-Serviceman Affairs through e-mails.
f) Widows' Hostel at Delhi: A plot measuring 2050.39 Sqm was acquired by the Navy from DDA for construction of a hostel for widows of naval personnel. Construction of the hostel is completed. It has 34 dwelling units with all amenities including parking. Obtaining of occupancy certificate from MCD is in progress.
g) International Women's Day: To commemorate International Women's Day various events were organised at various units of IN:
h) NWWA (Tamil Nadu) in association with FICCI (Federation of Indian Chamber of Commerce and Industry) conducted an event onboard IN ship Sumitra on March 9, 2018

to honour the valour of women in uniform on the occasion of International Women's Day.

i) A day-long workshop was organised for all women employees at Naval Dockyard (Vzg). The programme included talks on women empowerment, women's rights, talks on health issues and social issues delivered by eminent personalities and faculty from respective disciplines. Besides, events such as cultural programme by employees, games, competitions, etc. were also organised for women employees as part of the celebrations.

j) All Women Expedition to Mt Deo Tibba: An all women Naval Mountaineering Expedition to Mt Deo Tibba was successfully conducted from May 28 to June 10, 2018. Mt Deo Tibba is the second highest peak (6001 M) in the Pir-Panjal range of Himachal Pradesh. The expedition has laid foundation for all women mountaineering team to scale many more challenging peaks in the near future.

k) Health Clinic – Ladies: Various health clinics were conducted under the aegis of Arogya Wing of NWWA across various IN units throughout the year. The events were aimed to sensitise wives of naval personnel on the merits of positive women's health and to promote optimal health and well-being.

Indian Air Force

Induction of Women Pilots in the Fighter Stream: The Indian Air Force (IAF) has been at the vanguard of providing greater opportunities to women, and has pioneered the entry of women as officers in the flying and ground duty branches. Since 1993 women are being inducted as Short Service Commissioned officers in all branches and streams of the IAF except the fighter stream. The IAF has recently revised Short Service Commission (SSC) scheme to induct women into the fighter stream on an experimental basis for a period of five years. The first batch of three women officers has been commissioned into the fighter stream in 2016. The three women fighter pilots have gradually moved up the training ladder and have graduated to frontline fighter flying in the IAF.

Indian Coast Guard

Indian Coast Guard (ICG) has been inducting women officers since 1997 as permanent appointee Assistant Commandant in General Duty (GD) and Aviation Cadre (Pilots) since 1998. Till date 122 women officers are on the active rolls of the service consisting of permanent entry women officers in General Duty, aviation and Law cadre and as Short Service Appointee (SSA) in General Duty and aviation cadre. The strength of women officers in ICG approximates to about 10% of the total strength.

The service has taken proactive steps towards empowerment and welfare of women officers. Their experience, talent and dedication have been effectively utilized in areas where their competence is fully harnessed like Pilots, Observers and aviation support services. They are also employed in equally responsible task in coastal security mechanism. The women officers are also posted in remotely located stations at par with the male officers. In addition, Command appointments in Coast Guard store depots are held by women officers.

Continuing the pioneering efforts for women empowerment, ICG has been posting women officers as ACV operators onboard frontline ACV Squardrons. This is in addition to leadership roles being shouldered by women officers as Officer-in-Charge of Store Depots which are the hubs for operational logistics in ICG.

Department Of Ex-Servicemen Welfare (DESW)

Department of Ex-Servicemen Welfare deals with the rehabilitation and welfare of about 32 lakh Ex-servicemen including widows of Armed Forces personnel and their dependent family members. Financial assistance is being provided to the girls and women under various schemes. Kendriya Sainik Board (KSB) Secretariat provides financial assistance for education, marriage of daughters of ESM and re- marriage of widows.

Education Scholarship for professional degree courses is provided to girls under Prime Minister's Scholarship Scheme (PMSS). 5500 number of scholarships under PMSS is divided equally between boys and girls. The amount of scholarships is ` 2,000/- for boys and ` 2,250/- for girls per month and is paid annually.

Formation of Internal Complaints Committee for matter related to Sexual Harassment of Women at Workplace has been implemented in Kendriya Sainik Board (KSB) Secretariat.

Widows of ESM are eligible for Resettlement Training under Directorate General of Resettlement (DGR). A number of DGR Employment Schemes like Coal Tipper Scheme, Oil Product Agencies, Safal Booths etc. are given priority to certain categories of widows of ESM.

War widows are exempted from payment of contribution under Ex-Servicemen Contributory Health Scheme.

MODULE-III

Defence Planning, Budgeting and Supply Chain Management

DEFENCE PLANNING

Introduction

As a rising regional power, India requires a structured long-term defence planning (LTDP) process that can guarantee its safety against unpredictable and uncertain security environments. The planning process for the same is dependent upon multiple factors, such as evolving security situations, political decision-making processes, national security culture, civil-military interface and the structure of defence forces. Defence forces aspire to always remain at a technological and strategic advantage that facilitates them to deal with a full-spectrum conflict in the near future. They are also encouraged to maintain a constant state of readiness to deal with local wars at all times. All of the above notwithstanding, the phenomenon of defence planning is, fundamentally stretched between organisational intent and actual practice.

In an environment where the threat arises from state and non-state actors and the mode of warfare ranges from conventional to hybrid, the overall security situation is full of strategic unpredictability. Furthermore, this unpredictability is intensified by the fact that China is rising economically and militarily at a phenomenal pace and Pakistan is acquiring unprecedented hybrid capabilities. Given the unstable geostrategic environment and the need for defence preparedness, ambiguity in defence planning should be replaced by an institutionalised planning process. It is high time that India structures its military forces for the uncertain challenges of the future. "A strategy needs to be defined that explains how the maintenance and possible use of armed force can help reduce strategic risks, by making them less likely, less potentially destructive, or both." The LTDP is not about a budget or a technical procedure, it is a process that needs to be debated by political leadership, policymakers, defence planners and services. Against the above backdrop, all strategic defence planning must, therefore, take the long-term view.

What is Defence Planning?

It is imperative to understand and differentiate between 'national security planning' and 'defence planning'. National security refers to the responsibility of a nation to protect the values, principles, citizens, institutions, freedom and integrity of a state against external and internal threats. National security planning stems directly from an overarching national security strategy: "National security strategy is the art and science of employing the nation's political, economic and military power to achieve stated national security objectives in peace and war." The primary responsibility of securing the nation remains with all the organs of the state including the Parliament. This securing of sovereign interests is effected through a variety of tools that constitute national power, such as political, diplomatic, economic and military power. A concise definition of national security, therefore, would be: "Safeguarding the sovereignty, territorial integrity, citizenry and socioeconomic functionality of a nation from an aggressor intent on undermining a particular valued aspect of a nation through violent or unjust means." To add to this definition, some of the most appropriate objectives of national security are defined by the

New Zealand Government's *National Security System Handbook,* that states, "the objective of national security is ensuring public safety", "preserving sovereignty and territorial integrity", "sustaining economic prosperity", "maintaining democratic institutions and national values", "protecting the natural environment", "strengthening international order to promote security" and "protecting freedom of movement". Defence planning is one of the most important tools that can be employed by the government for the sake of ensuring national security.

Defence planning is largely about developing capabilities and options for mid and long term [periods]. It is a process that deals with uncertain future security challenges that may unfold due to unpredictable external and internal security challenges that hamper the stability of a country. In India, the debate surrounding capacity building is often dominated by short term views regarding the current security situation as well as the economics/politics of implementing military modernisation in a resource constrained economy. The argument put forth most often is, "if India is unlikely to fight a conventional war in the near future, then why spend so much on defence at the cost of other social development schemes?" This mind-set exists primarily due to a lack of strategic culture and an inadequate knowledge of national security issues. But the fact of the matter remains that while capability building takes time, the intent of one's adversaries can change rapidly.

In order to truly understand what defence planning means for the Indian context it would be fruitful to examine the statements made by military leadership regarding the same. The former Chief of the Army Staff, General V.P. Malik has said that "Defence planning is the process of determining the national security objectives of a nation and formulation of policies and strategies that will govern the allocation of funds and acquisitions, use and disposition of resources to achieve objectives." Former Chief of Naval Staff Admiral V.S. Shekhawat has defined the defence planning process as a subset of overall national-level planning in the political, economic and social spheres. While these statements look at the problem from a holistic lens, it is necessary to state the fact that the defence planning process is not merely a budgetary exercise, as is being advocated by some analysts. While it is true that until and unless resources are made available plans cannot fructify, there is much more than mere budget allocation that goes behind the formulation of the defence planning process. In order to develop a holistic approach to LTDP, the process should go through several stages such as political guidance, environmental assessment, analysis of the mission for the armed forces, existing capability assessment, determination of future requirement of capabilities, options for capability development, critical security concerns and timelines for development of capabilities. The process necessitates contemplating the potential nature of the operating environment in the distant future and developing a plan for attaining success. The most appropriate definition of a long-term defence plan is the nation's desire to uphold and promote its values and interests, coupled with a vision to secure vital national interests and a plan to develop capabilities through a planned budget. While there is no universally accepted

time period associated with long-term defence planning, it generally involves exploring 10 to 30 years, or more, in the future.

Objectives and Models of the Defence Planning Process:

Before examining India's defence planning process, it is imperative to analyse the various models of defence planning that are currently in place across the world. These models serve the most powerful armies, even the ones that have no immediate threat from external and internal adversaries. Many different analytical approaches have been applied to LTDP over the years. Each of these general approaches originates from a specific perspective on the problem. There is no universally accepted method for LTDP. The North Atlantic Treaty Organization's (NATO) *Handbook on Long- Term Defence Planning* broadly categorises various defence planning models that are based on three different parameters. Historically proven facts, technological optimisation and scenario based planning form the basis of the planning process of the defence plan. In fact, many of the long-term planning methods employed for the defence sector have been adapted from the commercial sector. Dejan Stojkovic and Bjørn Robert Dahl have described the defence planning process as encompassing – top-down Planning, Resource-constrained Planning, Technological Optimism, Risk Avoidance, Incremental Planning, Historical Extension, Capability-based Planning, Scenario-based Planning and Threat-based Planning.

The former President of the US, Harry S. Truman said, "Strategy, programmes and budget are all aspects of the same basic decisions." The objective of defence planning, therefore, is to deliver a strategy of defence by building requisite capabilities. The LTDP process is aimed at investigating potential operating environments and developing a force structure that can adapt to counter the evolving threats that might arise in the future. Defence planning must cater for the maintenance of modern defence forces as well as the infrastructure required to apply military power. It should also invest in developing the indigenous defence industry and maximising capabilities, in order to fulfil the nation's security requirements in a full-spectrum conflict. All things considered, it is a complex process that requires synergy among inter-ministerial and intergovernmental agencies. It is a structured process that requires long-term perspective. The process of defence planning can be categorised as under:

<u>Development of National Security Strategies and Policies</u>

Defence planning is a highly political process that is determined by national political leadership on the basis of threat perceptions and security challenges that might arise in the near and distant future. Political leadership lays down national security objectives, strategy and broad strategic goals.

<u>Strategic Defence Review</u>

A strategic defence review is essential for efficiently determining security risks, threats, available resources and constraints. It is only on the basis of accurate threat simulation that policies, priorities of defence plans, and infrastructure development can be facilitated.

Development of Long-term Defence Plans

The development of a long-term defence plan includes – assessment of existing capabilities, determination of military capabilities and options for the future, force structure plans, infrastructure development and timelines for building capabilities. The defence plan is also aimed at developing a course of action that determines how to effectively use different military capabilities in order to achieve declared goals. It also prioritizes developing the capabilities of all organs of military power that are controlled by the state. The long-term defence plan should optimise existing organizational structures and establish a link between planning and budgetary support. The LTDP, in a nutshell, is the meeting point between the vision of political leadership and the development of military capabilities.

Budgetary Support Based on Priority of Development of Capabilities

The process of defence planning is put into action once resource allocation takes place. The starting point for converting vision into action is budgetary support. The entire exercise is futile if it is not given financial support.

Development of Military Capabilities

Defence planning is primarily an act of defence resource management that aims to create military capabilities in order to fight the nation's current and future wars. It necessitates strategic and systematic planning and provides nation states with the tools required for the completion of national defence objectives as well as the transformation of available resources into a comprehensive set of military capabilities needed to ensure security in the future. Defence planning should also include force planning that consists of delineating targets for force structure, systems, infrastructure, weapons systems, development of research and development (R&D), niche technologies (indigenous and imported), command and control as well as the time frame required to achieve these goals.

Pragmatic and Flexible Planning Parameters a Pre-condition for the Implementation of Long-term Defence Plan

The global security environment is becoming increasingly dynamic and unpredictable. Increased collusion between state and non-state actors as well as hybrid warfare possess the potential to destabilise strong nations in a matter of months and days. To cater for such asymmetric threats, a long-term defence plan needs to be flexible and practical so that it can serve as a guide for developing and implementing short term plans and programmes. A long-term defence plan should also necessitate regular evaluation of the progress of short-midterm plans, and allow for adjustments when necessary.

The defence planning objectives and process described above are broad guidelines that should be followed. They are not preconditions, nor are they binding. In practice, LTDP is more commonly conducted by employing a combination of these planning approaches. Aside from the above factors, three essential components of the defence planning process that need to be noted are:

a) The defence planning process is a function of the apex political body of the nation. Inter-ministerial and inter-departmental inputs are vital for the implementation of plans as well

as the smooth functioning of the planning process. Inputs from the various ministries associated including – Foreign Affairs, Home, Finance, Defence, Communication, Railways, Road and Transport and Science and Technology – are essential for the implementation of strategic defence reviews, environmental assessment, resource allocation, infrastructure development, manpower accretion and the overall development of military capabilities.

b) Military diplomacy plays an important role in the formulation of defence plans. While there is no universal definition of defence/ military diplomacy, in broad terms, it can be defined as using uniformed diplomats and the act of diplomacy as leverage to achieve common understanding, interoperability, capability building and to develop trust between militaries. It forms an essential component of capability building, military strategy formulation, doctrine creation, force structuring and military modernisation. It also assists by providing critical inputs in the defence planning process.

c) Strategic partnerships have emerged as an important factor in defence planning and capacity building. Considering the cost involved in R&D and defence infrastructure, it is not possible for any nation to build holistic capabilities by itself. The core objectives of alliances and partnerships are collective defence, crisis management and cooperative security. Military power can be leveraged through alliances to protect vital national interests. For example, Indian military diplomacy formed an alliance with the Soviet Union post the 1965 War and leveraged it effectively during the 1971 Indo-Pak War. The strategic partnership with the Soviet Union later assisted India in building comprehensive military capabilities.

Defence Planning Process in India

The defence planning process of India, is rooted in the defence organization evolved by Lord Ismay, (chief of staff of Lord Mountbatten), and it was expected to meet the security requirements of the newly independent country. Lord Ismay had created a system that would ensure a smooth transition from the erstwhile colonial power to an independent nation that could deal with immediate security threats. Ismay recommended three committees: the Cabinet Committee on Security (CCS) (chaired by the Prime Minister), the Defence Minister's Committee (chaired by the Defence Minister) and a Chiefs of Staff Committee (COSC), (this committee would function as an overseer maintaining central coordination between each of the individual forces that were administered and operated by their respective Commanders in Chief). The COSC was established to serve as a link between various cogs in the hierarchy. It was supposed to facilitate coordination between the services on the one hand, and between the services and the Ministry of Defence (MoD) on the other. The aim was, above all, to provide quick decision-making with minimum delays caused by red tape. The idea was to create a system wherein defence planning could be undertaken in a structured manner during the formative years of nation building until India was in a position to evolve its own system.

However, Nehru trashed the very idea of a "strategic plan for a Government directive on defence policy" proposed by the then Army Chief, General Lockhart. He refused the plan by declaring that India had no enemies extrinsically and that the police was good enough to deal with the law and order situation intrinsically. Unfortunately, he was proved wrong in the subsequent years and India, who had championed the notion of non-violence as a tool for global harmony and peace, was forced to fight four conventional wars after independence, all within a span of 25 years. Contrary to the Gandhian philosophy of non-violence and the Nehruvian model of maintaining harmony, the preservation of the unity and integrity of the nation required an identification of potential threats and the capability to defend the nation and maintain sovereignty. At an earlier date, Chanakya, a master strategist, had identified military capabilities as a critical factor for nation building (at the time the role of the police and the military overlapped, and there was no distinction between the functioning of the two organisations). The first realisation regarding the need for a strong security structure came after the 1962 War with China, when Nehru admitted in the Rajya Sabha, that "If we had foresight, known exactly what would happen, we would have done something else... what India has learnt from the Chinese invasion is that in the world of today there is no place for weak nations. We have been living in an unreal world of our own creation." However, in spite of five wars and protracted internal conflicts in the North East and Jammu & Kashmir, the higher defence organisation and defence planning process saw little change. Instead of evolving an efficient system, successive formulations of the defence architecture continued adding layers to the original defence planning structure that made it cumbersome, lethargic and dysfunctional. Instead of being integrated with the MoD, the three services continue to remain attached offices to the MoD and have little say as far as policy decisions are concerned.

Post-Chinese aggression in 1962, the government introduced the Defence Planning Cell within the MoD, that undertook the task of formulating the defence five-year plan. The first five-year plan was prepared for the period between 1964-69. However, the plan "was not based on long term requirements nor [did] it have the assurance of resources to support it". Such an arrangement was bound to fail and was later dumped in favour of another Committee for Defence Planning (CDP). The problem with such committees is the lack of accountability and responsibility required for ensuring the allocation of resources and the implementation of five year plans. In 1986, the Directorate General of Defence Planning Staff (DGDPS) was established under the COSC. The inefficiency in the entire system of defence planning was exposed during the Kargil War and the then Chief of Army Staff Gen. V.P. Malik was forced to say that, "We shall fight with whatever we have." The fact of the matter is that armies do not go to war in the hope of winning, they go to war with a plan, after developing the capabilities required to win. In 2001, the DGDPS was merged with the Integrated Defence Staff (IDS) and a separate branch of Perspective Planning & Force Development was created in the IDS to formulate Long-term Integrated Perspective Plan (LTIPP). There were two objectives behind the creation of the LTIPP, one was to have 15

years' perspective plans for force development and the second was to have five-year plans for immediate requirements. In the absence of a national security strategy or national security objectives, the Raksha Mantri's operational directive is formulated to provide broad policy guidelines for capability building and operational readiness.

The defence planning process should flow from the higher defence organisation's vision. The apex body of the higher defence organisation is the CCS. The Prime Minister is the chairman and the ministers of Home Affairs, Foreign Affairs, Defence and Finance are its members. The National Security Advisor (NSA), chairman COSC, service chiefs and cabinet secretary (as well as other secretaries) also attend the meetings as and when required. The second most important committee is the National Security Council (NSC). Like the CCS, It is headed by the Prime Minister and comprises of the ministers of Defence, External Affairs, Home Affairs and Finance as members. The NSA and the deputy NSA are also members of the NSC (Earlier, the Deputy Chairman of the Planning Commission also used to be a member, but the Planning Commission stands dissolved now). Furthermore, other members from associated organisations may be invited to attend its monthly meetings, as and when required. Aside from issues of national security, the NSC also deals with internal and external security threats to India. The NSC Secretariat (NSCS) provides the NSC and the Prime Minister's Office (PMO) with inputs regarding potential courses of action; however, the advice or proposals made by the NSCS are not binding. The major difference between the two is that the CCS is a decision-making body that deals with current security issues, major decisions related to security, budgeting, approval of raising of a new Strike Corps/acquisition of major weapon systems; whereas the NSC is more concerned with the long-term planning process. It also acts as a facilitating body that assists the PMO and the apex political leadership of the country in the decision-making process. The NSA, the Strategic Policy Group (SPG), the National Security Advisory Board (NSAB) and the NSCS together constitute the NSC. Yet, in spite of such an elaborate system of committees and advisory bodies, the defence planning process is mostly left to the Services Headquarters.

The Services Headquarters work out their LTDP independently and forward the same to the IDS that is responsible for the preparation of the LTIPP. The plans are formulated on the basis of service-specific threat perceptions. In the absence of the Chief of Defence Staff (CDS)/permanent chairman COSC, there is hardly any inter-service prioritisation of plans. (It inevitably becomes a turf war where the three Services push their individual agendas as opposed to ensuring collective capability building.)

The plans are then forwarded to the MoD that presumably vets the plans without the necessary professional inputs and domain knowledge. The LTIPP is endorsed by the RM after a brief presentation by the respective Headquarters. However, given bureaucratic obfuscation, infighting within the services, and the lack of follow through, these plans are denied dedicated resource allocation and lack the PMO's approval.

There is a need to recognise that infrastructure development is vital for the application of military capabilities and it needs to be included in the LTIPP. The development of

infrastructure is an important component of capability building and requires the active participation of inter-ministerial and inter-governmental agencies. An important case in point, is the neglect of infrastructure development along the Northern Border, despite the 1962 debacle. Infrastructure development is very much a part of the defence planning process and it cannot be neglected.

Shortcomings in the Defence Planning Process

In India, there is a conspicuous absence of a structured defence planning process and the entire system appears to be in a state of flux. There are major organisational voids, functional inefficiencies and procedural gaps. India has still not evolved a functional system for defence planning. While highlighting the importance of clear objectives and directions to the armed forces, Gen. J.F.C. Fuller has said that, "The heart of the problem is not to be sought in types of weapons, but in the aim which governs their use." The application of military force should be governed by a national strategy and mission statement. Ironically, both are missing in India. There is a need to examine and analyse what planning mechanism is the most suitable for the Indian context. Analysts should concentrate on weighing the benefits and risks of various planning approaches. Whether India needs to adopt a defence planning approach that is top-down or bottom-up, resource-constrained or risk avoidance, capability based or threat based, scenario based or on the basis of technological optimisation can only be determined after an extensive survey of current conditions. Existing shortcomings in the defence planning process are as follows:

a) There are far too many advisory committees (whose advice is not binding for the PMO/CCS/NSC). The MoD is responsible for capability building and the implementation of defence plans but it is not held accountable for its failure in providing the requisite resources. The dual tasks of capability building and the implementation of defence plans are inevitably left to the Services Headquarters, and no other agencies aside from the MoD are held accountable for failures in capability building. Aside from the NSAB, the several other committees that could potentially be held accountable – including the NSC and the SPG – do not even meet or review the internal and external security situation as per mandated periodicity. The meetings of most of the important advisory bodies take place only during crises. They seldom meet during peace time to review or take stock of the implementation of defence plans. As a result, some of these committees merely exist for the sake of existence as archaic remnants of past crises and no longer serve any functional purpose.
b) Inadequacies in the defence planning process emanate from the absence of clear cut national security objectives and the lack of a national security strategy. The NSC and the NSA have been in existence since 1998, along with a host of committees, but national security objectives and strategies are yet to be formulated. In the absence of these two basic documents for national security, planning remains directionless. The country's security apparatus currently hinges on ad-hoc measures and before implementing

strategic reforms, there is a need to address the basic question of 'defence planning for what?'

c) Currently, there is a tremendous amount of debate regarding whether national security objectives and an overarching strategy should be defined based on a strategic defence review, or whether the strategic defence review should follow after the government has enunciated objectives and strategies. In the absence of welldefined national security objectives, there is a need to carry out a strategic defence review that will form the basis of the policy statements of the government. Once the national security objectives and strategy are defined, thereafter strategic defence review is a periodic process that can be conducted as and when required. Any nation that is plagued by internal and external security threats cannot side-line the importance of this document that would define whether a nation is prepared to deal with security challenges or falls short of the required threshold. At the moment, there is no institutionalised system by which the political leadership is apprised of the threat and capability mismatch. Earlier, the services chiefs use to directly apprise the Prime Minister through a demi-official letter which now stands suspended.

d) Another problem that emerges, is that defence plans are not linked to dedicated resources. A case in point is the 12th Defence Plan, 2012-17, which is about to terminate but has not received formal government approval yet. In such a fluid state defence plans remain restricted to paper and rarely get transformed on ground. The gestation period for introducing a weapons system in India is anywhere between five years to 15 years and yet the budget allocation is restricted to one year with no roll-on provisions and/ or linkages with five-year defence plans. The LTIPP is for 15 years and services plans are for 5 years, but budget allocation is based on an annual budget that isn't linked to either of these plans.

e) The PMO, NSC and NSCS have no professional military advisors in their organisations. This causes a major problem as they lack the specific professional expertise required for suitable decision making regarding the country's defence architecture. Institutional linkages between the political leadership and the military are supposed to be provided by the CDS, but for some unknown reason the political leadership has handicapped itself particularly with respect to the issue of establishing a seamless defence planning process. It would not be incorrect to state, that India's national security decision-making process so far, has been archaic. "The military high command stands divorced from national security decision making and the structure of the newly created NSC reflects this deficiency."

f) One of the main functions of the IDS is to streamline the defence planning process, but in the absence of a CDS or permanent chairman COSC, the IDS only compiles the Long Term Integrated Perspective Planning (LTIPP) and without prioritizing collaborative inter-services' needs, forwards the entire servicerelated Long Term Perspective Plan (LTPP) of each service to the MoD. The MoD has burdened itself with the housekeeping

functions of the armed forces, which are best left to them, and it has not been conditioned or trained to think through long-term international and national security issues. Neither does the MoD have qualified professionals on its staff to perform such specialist tasks nor is there any intrinsic military advice available. The plans that are eventually approved by the MoD, are not passed on the basis of professional merit/vetted by an institutional system but are instead arbitrarily approved on the basis of personal equations with individual service headquarters."

g) After a brief discussion, the LTIPP is endorsed by the RM and is neither discussed by the NSC nor approved by the apex decisionmaking body. As a result, it remains a stand-alone document that is non-binding. There is no compulsion for the MoD to implement the plan, or for the Finance Ministry to allocate its resources.
h) There is a tremendous amount of ambiguity regarding the model of the defence planning process. There is a need to adopt a model that can meet the specific requirements of the Indian context. This decision needs to be taken by the political leadership in consultation with the Integrated Defence Headquarters (Services Headquarters) and the Finance Ministry.
i) Defence Public Sector Undertakings (PSUs) and Defence Research and Development Organisation (DRDO) programmes are unable to meet the timelines of capability development as per the LTIPP or five-year defence plans. This has led to non-implementation of plans for acquisition of certain critical weapons and equipment.

Way Ahead

Given India's complex security environment and massive expenditure on national defence, the planning mechanism needs to be strengthened by the articulation of national security objectives and a streamlining of the defence planning process. This most important function of national security cannot be sustained with such a fragmented approach. Cosmetic and incremental changes will not serve any functional purpose until India shuns obsolete, fatigued ideas and organisations. The planning process needs an extensive review and transformation. Some of the recommended measures are as follows:

a) India needs its own Goldwater-Nichols Act to undertake defence reforms and to streamline the defence planning process. The act should make it binding for the President and Prime Minister to deliver national security objectives and a national security strategy. Furthermore, the apex level of political administration should also review roles and missions at least once every three years, as is mandated by the Goldwater-Nichols Act. As mentioned earlier, in the Indian context, national security is only debated when there is a crisis, and there is no fixed agenda or periodicity for NSC/CCS meetings. Until or unless these basic issues are streamlined, the question will remain, defence planning for what? To add gravitas to the process of defence planning, the Prime Minister should personally sign and approve the LTIPP and five-year defence plans and the PMO should periodically review the implementation of plans and approve the strategic defence review.

b) The defence planning process in India is a paradox, and the system is so complex that no plan can see the light of day within the given timeframe. There is a need to go back to the basics, reformulate the model motivating the planning process, and cut short the stages of the defence planning process. Clear political guidance is required in order to determine which of the above mentioned nine models would suit India best. While defining a model is not part of the defence planning process, it is nevertheless essential for the Indian context, since no model currently exists. Considering the complexities of the Indian security dilemma, the options that emerge are as follows:
    i. Resource Constrained Planning Or
    ii. Threat-cum-capability-based Planning
c) The MoD is responsible for communicating policy guidelines that have been laid down by political leadership, but it is neither accountable nor responsible for ensuring capability building or implementing defence plans. It acts as an intermediary layer between the political leadership and the Services Headquarters. Similarly, the IDS was created to integrate services with the MoD, but it has become another layer between the government and the Service Headquarters and is rarely able to integrate the two effectively. If any successful modernisation is to take place, the integration of the MoD and Services Headquarters is a necessity. Not only is the relationship a necessity but the relationship must also be one of equals as opposed to the master-servant hierarchy that currently exists. Complete integration is vital, with defence professionals serving as part of the MoD for providing specialized advice, and ensuring the efficient implementation and review of the defence planning process.
d) Integrated Planning at the level of Services Headquarters is a must, and the authority to prioritise tasks and requirements, should be with the CDS or Chairman COSC. This will remove the current anomaly of the IDS being unable to overrule the Services Headquarters.
e) The budget plays a vital role in the defence planning process. Once missions and capabilities are defined and defence plans are approved, what matters is the allocation of the budget. There are various models that can be applied, but a military that is continuously engaged in national security duties due to internal and external threats needs a budget support that caters for shortand long-term capability building. The model given in Figure 1 is a globally accepted norm.

Figure 1: Continuous Budget Support to Prevent Mismatch in Assigned Mission and Capabilities

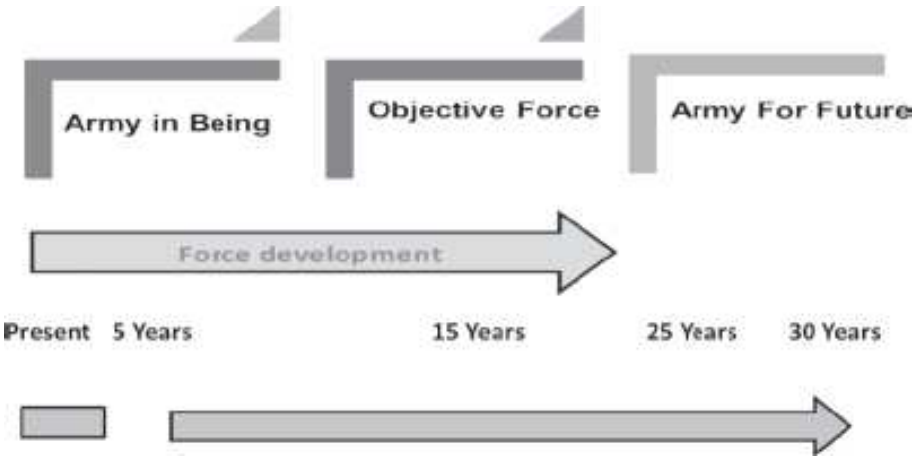


Figure 1 suggests that a nation should divide capability building and force development into three categories – i.e., existing force, objective force (that a nation should develop in the next 10-15 years) and future force (military that is required for future wars 25 to 30 years). Current threats are known and the contours of future threats can be assessed through strategic defence reviews, economic development parameters, the development of R&D, the development of doctrines, military modernisation plans and country-specific net assessment of potential adversaries. To put into practice such a model, resource allocation cannot be sacrosanct and needs to be adaptable instead. The budgeting process should also be a three tiered one as demonstrated below:

i. There should be an annual budget with the provision of rolling over to the next year and it should cater for maintaining and consolidating current military capabilities.

ii. The process of achieving objective force is linked to defence plans and the LTIPP (five to 15 years). This requirement cannot be met through the annual defence budget. However, yearly allocations based on approved defence plans could be considered as an alternate source of funding. Once the LTIPP is approved, it should receive budget support independent of the annual budget for capability building.

iii. Investment in the development of the future army can be made through R&D and joint ventures for niche technology and infrastructure development. In a nutshell, linking the process of planning with resource allocation is the best way ahead. Defence plans and resource allocation should be made before the plan is put into effect.

f) India's defence planning process requires streamlining and should cast aside unwieldy bureaucratic processes and reduce the number of advisory committees that currently exist

in order to put in place a simple planning process. The recommended steps that should be adopted are as follows:

i. On the basis of the strategic defence review, national political objectives, values and existing capabilities, the NSC should define national security objectives and strategy. After debating it in the NSC, apex political leadership should promulgate national security objectives and strategy. The PMO and the NSC should review objectives and strategy every three years based on the strategic defence review.

ii. The CDS/Integrated Headquarters should formulate mission capability goals and lay down priorities for a force structure on the basis of threat/environmental assessment, national security objectives, strategy, access to technology, existing capabilities and capability mismatch.

iii. The Services Headquarters should formulate defence plans on the basis of the parameters laid down by the CDS/ Integrated Headquarters. The Services Headquarters should consider problems like capability mismatch, emerging threats, technology optimisation, force development priorities, resource constraints, indigenous defence industry potential/ capabilities and military doctrines before finalising the defence plans.

iv. The Integrated Headquarters/CDS should lay down the priorities of force development and prepare an LTIPP on the basis of service defence plans. The MoD in consultation with the Finance Ministry should work out the dedicated resources required for the implementation of the LTIPP and five-year defence plans. The Finance Ministry should also indicate the budget available for the five-year defence plans and how each year's allocation could be rolled over to the next year/fiveyear plan.

v. Before the plan is approved by the government, the NSC should debate and discuss the rationale underlying critical projects and zone in on areas that need focus. Thereafter the apex decision-making body could approve the plan or ask the review to include or delete certain proposals that may not merit focus in the defence plan. Former US President Barack Obama had six rounds of deliberations with the Pentagon, the NSC and several think tanks before he approved the Military Doctrine in 2012. It is a bad idea to pursue, approve or reject such an important subject through file notings without consulting the end users (Services Headquarters). Ideally, the LTIPP and five-year plans should be personally signed by the Prime Minister to assure their sanctity and ensure that they are made binding for intergovernmental agencies and inter-ministerial groups.

vi. On approval of the plan, the Finance Minister and the MoD should consult together and earmark dedicated resources for the plan over and above the yearly defence budget.

vii. Once the resources have been earmarked it should be the MoD and Services headquarters' responsibility to ensure that the timelines in defence plans are met.

viii. The Defence Minister should review the implementation of the plans on a yearly basis, and the PMO/CCS should review the implementation of the defence plans after every two years.

Several defence planning models have been advocated by various analysts. However, given the specificity of the context, the following three sets seem most appropriate and can be adopted with certain modifications:

a) The first model, shown in Figure 2, demonstrates the process of the LTDP. It is simple, satisfies all parameters and ensures the involvement of all stakeholders. It is also top down, determines clear responsibilities and accountability, covers all aspects of the planning process (from the political level to the services level) and has been tested by many transformational armies. (The Defence Requirements Review of the North American Treaty Organisation uses a very similar model.)
b) The capability-based model, shown in Figure 3, has been adopted by the NATO and the US with certain modifications based on the strategic defence review. It is essential to remember that grand narratives and political visions of desired capabilities aside, at the end of the day, defence plans are constrained by resources. The corner stone of this model is affordable capability.
c) General BM Kapoor (retd.) has recommended a defence planning process for India as shown in Figure 4. Though Gen Kapoor has also suggested an affordable capability based planning process, it appears to be more cumbersome compared to the other models, requiring feedback and consultancy at every stage of the process. While incorporating inclusivity and increasing consultancy and feedback are certainly desirable mechanisms, doing so at every single stage, might end up detracting from the model itself, thereby causing bureaucratic delays and feedback loops.
d) The need of the hour is the adoption of a workable and affordable defence plan. The plan should be simple, manageable, with short, synergized processes preventing bureaucratic red tape. The defence planning process should have the sanctity and approval of the apex political leadership of the government and should be binding on all stakeholders responsible for national security. The model recommended in Figure 4 is too complex and would require a long process of reform and restructuring. The author, therefore, recommends a combination of the models in Figures 2 and 3 as the most suitable option for India. The added advantage of such a customized model is that it can be tweaked based on the restructuring of the MoD and the creation of the CDS/ permanent chairman COSC. The suggested model is delineated in Figure 5.

Figure 2: Process of LTDP

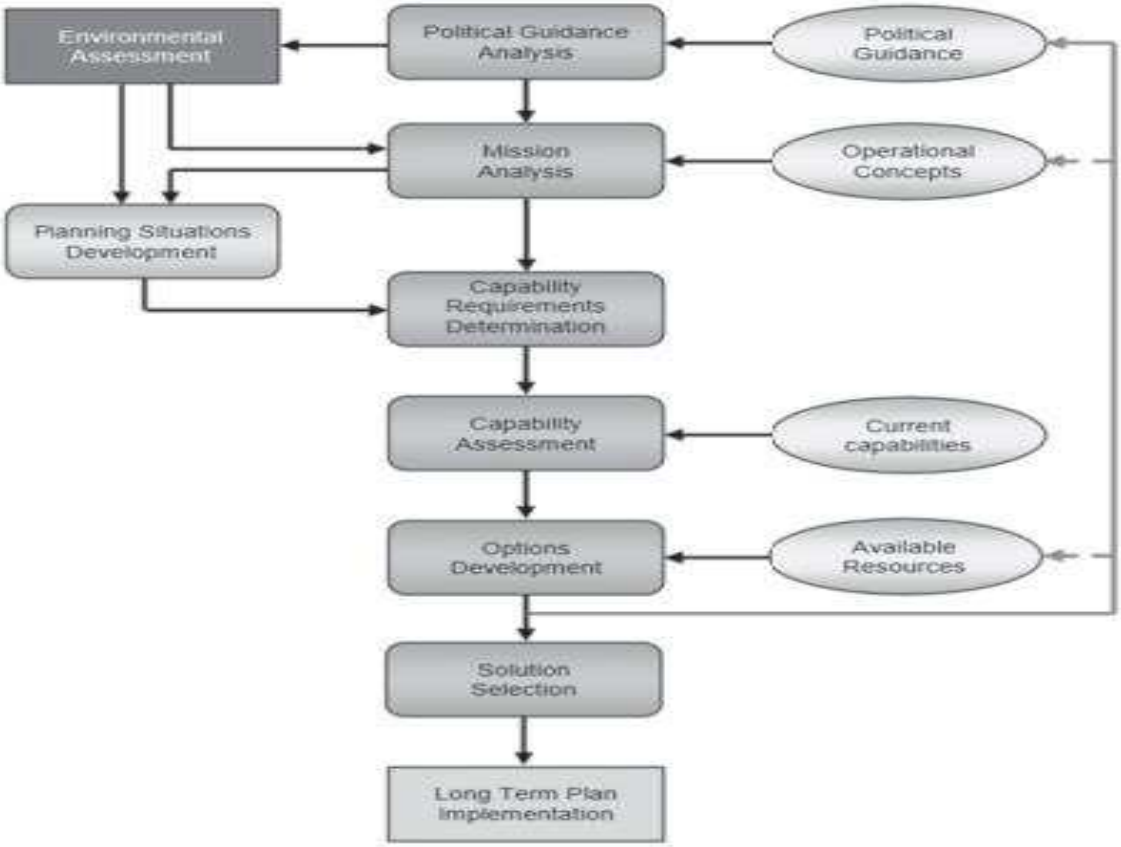


Figure 3: Affordable Capability-based Planning Process

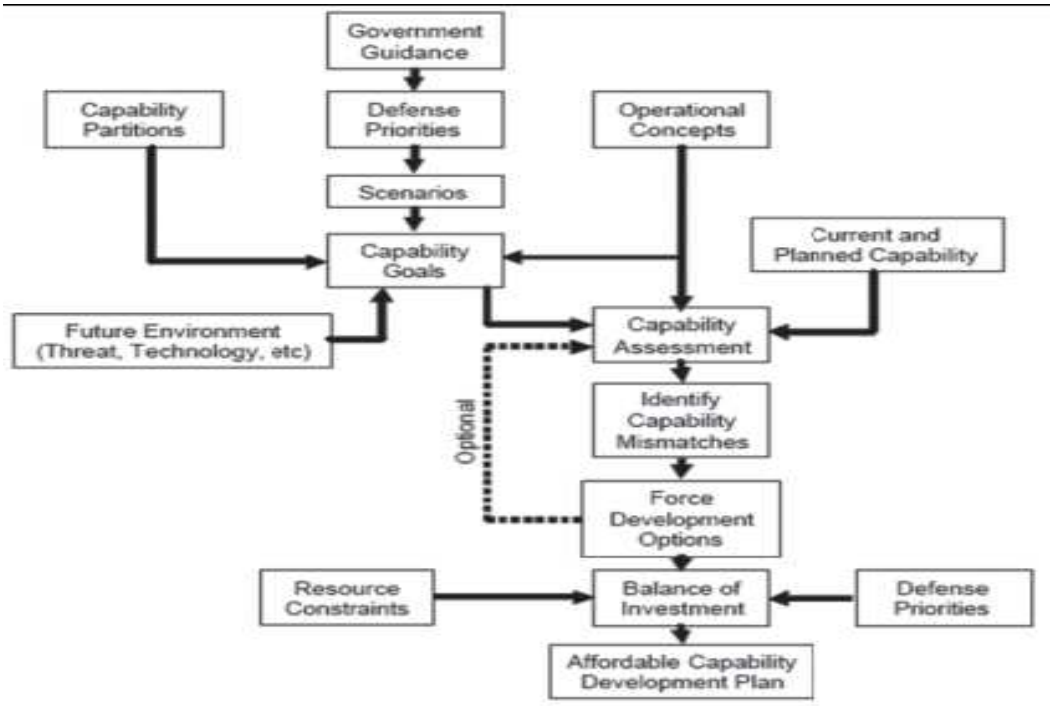


Figure 4: Defence Planning Process for India

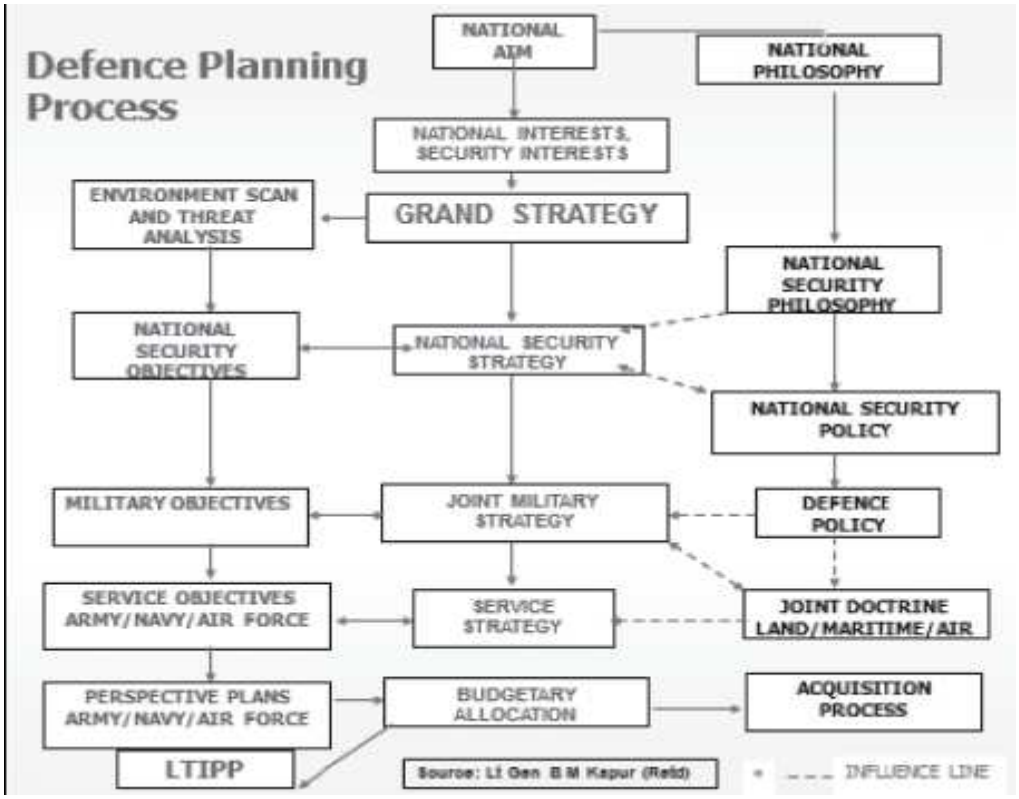
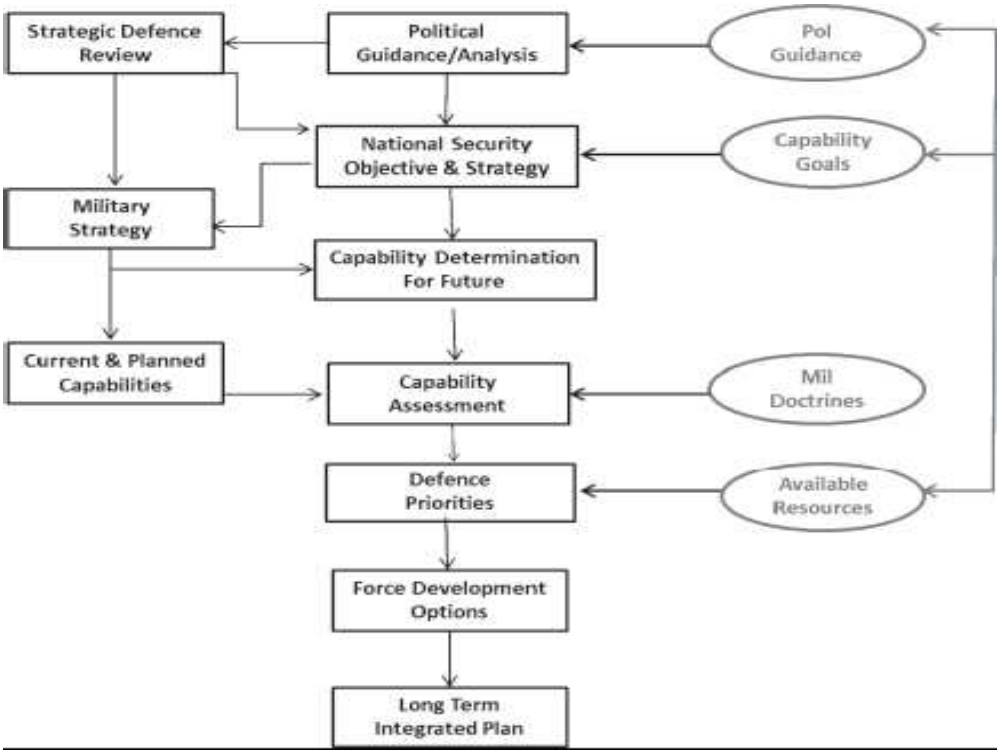


Figure 5: Recommended Defence Planning Process for India



Conclusion

Security challenges today, are outpacing capability building process, and in such an environment, the question that arises is – how much is enough? A resilient defence planning process needs an interdisciplinary approach that includes environmental assessment, the articulation of national security objectives, a holistic national security strategy, cost assessment, capability mismatch and specific mission objectives for forces. Over and above defence planning, dedicated budget allocation and timelines for capability and force development are equally important to ensure the strict implementation of plans. The armed forces have no direct access to the apex levels of political leadership and continue to be deprived the opportunity to participate in the decision-making process of the NSC. This anomaly is hurting the nation; the 1962, 1965 and 1999 (Kargil) wars, along with the protracted conflict in Jammu and Kashmir have exposed the dysfunctional nature of the defence planning process. This is a tremendous cause for concern particularly since, in a country that lacks strategic culture the armed forces have a more vital role to play – as compared to civil bureaucrats – in preparing to fight and win the nation's wars.

In 1961, after taking over as Secretary of Defense, Robert S. McNamara decided to take over the defence planning process and resource allocation from defence forces. He felt that capability building was a national responsibility and that the forces must focus on the development of their operational capabilities. Because the defence plans, resources allocation, programming and budgeting system are all integrated, the planning process will fail if it is not controlled by an appropriate apex authority. In India, the MoD can only assume such a role if the three Services and the DRDO are integrated with the MoD – as was recommended by the Subramanian Committee. Such a reformulation of the MoD and its associated wings' roles would require a complete restructuring of the current defence architecture and that appears to be a remote possibility under the given circumstances.

There is a need for the legislative institutionalisation of the NSC as a constitutional body to transform it into a decision-making authority because under the current charter it is a decision facilitating agency for the Prime Minister. Moreover, national security directives, national security objectives and strategy should bear the signature of the incumbent Prime Minister so that accountability is assured.

DEFENCE BUDGETING

The Armed Forces require large budgetary allotments to modernise, train and sustain themselves. It is a daunting task for the government to make adequate financial provisions for the armed forces. This has resulted in continual slippages in resource allocation culminating in large gaps in military modernisation and procurement programmes. It is well-known that the Indian subcontinent is among the most tense regions in the world where the Indian military is a stabilising factor. Keeping in mind that the Indian military operates in the most variable terrain - ranging from high Himalayas to desert, plains, marshy terrain, jungles, sea coast and oceans - it requires adequate budget allotment and the optimal management of resources to ensure desired levels of national security. Therefore, given the myriad

challenges of higher financial allotment and the difficulty of planning the augmentation of wide-ranging capabilities for the armed forces, there is a need to have a professional assessment of inter-service and intra-service resource allocation and its efficient management. The ultimate aim should be to ensure modernisation of the armed forces in a time-bound manner as well as to sustain operational capabilities at desired levels.

Optimal management of the budget is closely linked with the efficient management of all resources in the armed forces. Therefore, resource management has become one of the essential verticals of budget management. In real terms, it includes the transformation of management policies, structures and processes relating to all the resources earmarked for the defence – including but not limited to budget and finance – in a fully transparent, accountable and focused manner. Resource management has a substantial impact on areas like operations, logistics, infrastructure, acquisitions, training, financial management, support services, project management, etc. With the expanded responsibilities of resource management, there is also a need to undertake dynamic policy initiatives especially for defence acquisition, which is well-documented in the Defence Procurement Procedure (DPP) 2016 and Defence Procurement Manual (DPM) 2009.

Procurement and Acquisition

Procurement and acquisitions represent one of the most important activities of the Ministry of Defence (MoD) as well as the Service Headquarters and subordinate formations and units. It is evident that, the elaborate policies that have been laid down in the DPP and DPM notwithstanding, the entire process of procurement and acquisition is significantly delayed at every stage. This results either in a sizeable reduction of capital outlays at the Revised Estimate (RE) stage of the budget, or the surrender of the Capital Budget at the last moment. Despite being aware of the evolving situation, the Finance Ministry takes away a large chunk of the defence capital acquisition budget every year. During the financial year (FY) 2013-2014, the Finance Ministry took away over Rs. 10,000 crore from the defence capital budget. Similar exercises have been undertaken by the Finance Ministry in the subsequent years as well. This is an unacceptable situation as it directly affects the country's defence preparedness.

It should also be mentioned that the Comptroller and Auditor General (CAG) report that was tabled by the Parliament in February 2014 raised the issue regarding the sub-optimal management of the Indian Navy's 'Warship Refits', wherein only 18 per cent of the 152 refits for frontline destroyers, frigates and other warships, commenced as per norms, and 74 per cent of the rest were completed with a total delay of 8,629 days. The CAG report also pointed out that a ship overdue for refit cannot be part of an optimal solution to Indian security needs and thus represents a gap in Indian military preparedness. While many a study on the subject has been undertaken in the three services to mitigate similar problems, very little success has been achieved so far. Recent times have witnessed substantial cost overruns and imbalanced budget management has resulted in delays and inadequacies. Can the nation accept such wastage of its resources and finances anymore?

Financial Management

The Finance Commission legislates the sharing of resources between the central and state governments which is known as *vertical devolution.* Resource sharing between states is known as *horizontal devolution*. These were further progressed by the Planning Commission and implemented by the Finance Ministry and the other associated ministries. However, it should be noted that the 13th Finance Commission recommendation is for 2010-15, whereas the 12th Plan period of the Planning Commission is for 2012-17. An analysis of the effect of divergent expenditure in the period covered between the Planning and Finance Commissions indicates that this has resulted in serious impediments towards long-term planning. The funding for many ongoing defence projects has been affected as well. The Goods and Services Tax (GST) regime, introduced in July 2017, will have major implications for financial management in the three Services; these implications need to be studied.

With a large quantum of nearly obsolete equipment currently owned by the military – which is a fall-out of years of slippage in modernisation plans – it is estimated that the average growth of expenditure between 2014-15 and 2016-17 will have to be at an annual rate of nearly 30 per cent, as opposed to the recent years that have witnessed a growth rate of approximately 7.5 per cent per annum. With the revenue budget growth galloping and the admissibility of One Rank, One Pension (OROP) for ex-servicemen, the provision of adequate budgetary support for growth on a year-to-year basis appears to be very difficult, if not impossible. It is high time that the central government engages in a detailed assessment of the same and takes hard decisions to restore India's military power through rapid modernisation.

Budget management in the services also face the challenge of "overkill" in the planning and financial management aspect of the three services. The Indian Air Force (IAF) has stated that their long-term capital acquisition plans have been prepared based on the assumption of 15 per cent annual growth in the capital budget on a year-to-year basis. The IAF is reportedly processing schemes valued at 110 per cent above the available budget so as to ensure full utilisation of the budget. The army and the navy too are not far behind in this regard. Such suo moto initiatives could result in an imbalance and make budget management more difficult. Hence, there is a need to holistically analyse the areas of concern prior to initiating course corrections. Some of the issues that need to be considered while undertaking corrective analysis are:

a) Availability of budget versus inescapable necessities
b) Committed liability vis-à-vis new procurement funding
c) Extension of equipment life versus operational necessities
d) Prioritisation in procurement
e) Indigenisation versus imported equipment
f) Expansion of the armed forces versus management of future challenges through 'restructuring and technology'

To understand the parameters governing defence budgeting in India, it would be pertinent to refer to Article 114 of the Constitution of India which states:

> The number of funds sanctioned by the Parliament under various grants should not exceed the provision of the Appropriation Bill of that FY. Thus, the funds provided should be spent for the purpose allocated and the unspent funds will be returned to the Consolidated Fund of India.

It is from this statutory guideline enshrined in the Constitution of India that the Government of India's accounting system is structured. Accordingly, the accounting system followed by the Government of India is not an "accrual" but "cash-based" system. In the cash-based system, expenditures that are transacted in the form of cash and other monetary transactions are recorded in the accounts while receipts are recorded when actual receipts are received by the collecting agencies. It means that the exchequer's cash outgo, receipt and accounting must tally at the end of any transaction process. The entire budget of the department must also close and tally at the end of the FY. Over-expenditure is not permitted and the remaining amount in the case of under-spending is required to be credited to the Consolidated Fund of India thus becoming the property of the Parliament of India, with the Finance Ministry as its statutory manager.

The expenditures undertaken by the departments of the Government of India are bound by General Financial Rules (GFR). Ministries and departments are free to come up with their own standard operating procedures (SOPs), regulations and financial management procedures to adhere to the GFR in "letter and spirit".

Limitations of Cash-based System

- Only financial transactions pertaining to the FY are recorded and maintained.
- Committed liabilities incurred during the year do not get transparently recorded in subsequent years.
- Token allotment for a project during the FY can become a huge outgo in subsequent years.
- Earlier foreign currency parameters for imported items and cost as worked out in the Long-term Integrated Perspective Plan (LTIPP) change drastically during the FY, resulting in uncontrolled outgo from the budget allotment. For example, the US dollar value for imported defence procurement in the 12th Plan was pegged at Rs. 54, while its present value is around Rs. 65. As of now payments in US dollars are being made at the current exchange rate. Similarly, the contracted exchange rate of rouble is around Rs. 35 for payments of committed liabilities from Russia, whereas the actual rate is between Rs. 5 to Rs. 9 at present. Thus, substantial unplanned foreign currency expenditure tends to be incurred from the defence budget.

Budgetary Process for Defence

- It is a top-down process which commences with the issue of the budget circular by the Budget Division of the Finance Ministry.

- The circular contains guidelines for the preparation of the next FY's budget estimates (BE) as well as the current FY's RE. The modified appropriations to balance budgetary allotments are managed by the ministries themselves.
- The MoD (Finance) issues similar circulars to the three services, the Coast Guard, Defence Research and Development Organisation (DRDO) and attached departments and offices.
- Defence services and the MoD departments/attached offices compile the requirement of their funds for the forthcoming FY and send it to the MoD (Finance) for allocation.
    - Projections in respect of Locally Controlled Heads (LCH) are formulated by the defence services in consultation with Command Headquarters/PCDA/IFA.
    - Projections of Centrally Controlled Heads like Pay & Allowances, MGO, ASC, ASC, ACG, Army Commander Special Powers Funds and Modernisation are formulated by the Service Headquarters and forwarded to the MoD.
    - These projections are compiled, analysed, discussed and vetted by competent authorities, and then forwarded to the Finance Ministry. This exercise in the MoD (Finance) is based on projections, priorities, availability of resources, etc.
    - A similar exercise is undertaken in the Finance Ministry and allocation is made to the MoD.

Problems in the Present System

- At the higher levels in the Service Headquarters, MoD (Finance) and more so in the Finance Ministry, the budgetary process is merely an annual mathematical exercise wherein a standard nominal hike is made in the next year's budget. This results in a serious mismatch in budget management at functional levels.
- Parking of funds for later withdrawal by the Finance Ministry, is followed by its attempts to hide higher allotment to some other sector. These actions disturb the services' entire budget management system.
- No strategic defence priorities or programmes ever get discussed as part of BE planning.
- The services are never called to present their case for budget priorities by the Finance Ministry. Only the MoD (Finance) is authorised to discuss budgetary issues with the Finance Ministry, and they primarily concentrate on the technical issues of budget management.
- Thus, the entire focus of the present budgetary process is on resource allocation and not on "capability enhancement and efficiency of expenditure" in defence forces.
- In effect, since budget estimates and allocations are annual in nature, there exists neither the space nor the flexibility to integrate this allocation with strategic, operational, tactical requirements and match them with priorities of modernisation. These constraints have a severe impact on balanced capacity building in the armed forces.
- Due to the absence of an outcome budgeting process, it is difficult to point out the quantitative co-relation between the increase or decrease in allocation and its bearing on the operational efficiency or readiness of the defence services. For example, as we

procure weapon platforms like guns, tanks, aircrafts and ships, we need to simultaneously procure ammunition, missiles, and rockets for the same, otherwise the procured weapon systems only remain partially effective. Thus, the concept of outcome budgeting gets defeated.

- Defence Public Sector Undertakings (DPSUs) and the Ordnance Factories Board (OFB) – which are under the MoD (Defence Production) – work out their pricing formula for goods in an arbitrary manner, which must be accepted by the indenters. In this manner, the government and the indenters are forced to support inefficiency. As the government has invested billions in these institutions, it must keep a constant check on the cost of investment (COI) and the return on investment (ROI). This is never done. So, we continue with the non-scientific bookkeeping method of utilising valuable DPSU resources.

An Analysis of Defence Budgets

Figure 1: Defence Expenditure as a Ratio of GDP: 1986-87 to 2015-16

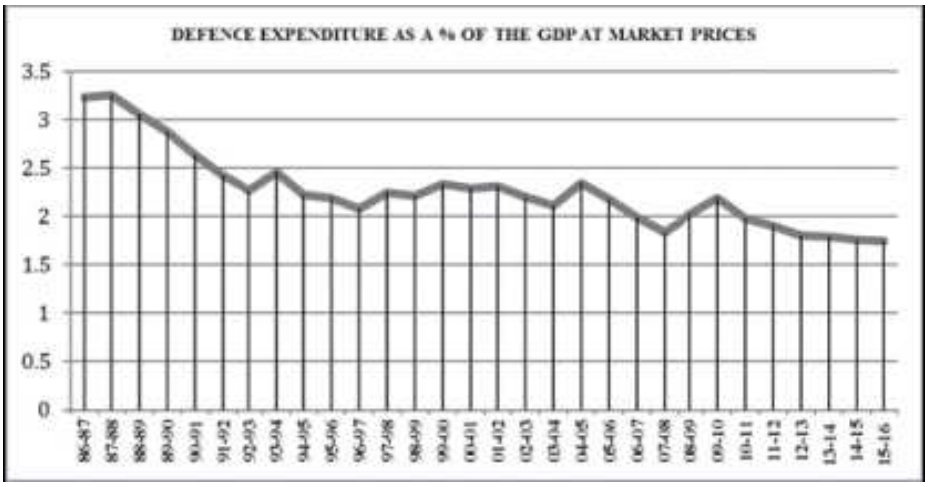


Table 1 shows the MoD's budget allotments for 2012-13, 2013-14, 2014-15 and 2015-16.

Table 1: Defence Budget 2012-13 to 2015-16

	2012-13	**2013-14**	**2014-15**	**2015-16**
Defence Budget (Rs. in crore)	1,81,776	2,03,449	2,22,370	2,46,727
Growth (%)	6.36	12	9	10.95
Revenue Budget (Rs. in crore)	1,11,276.65	1,24,799.79	1,40,404.8	1,52,139

Revenue Growth (%)	6.22	12.15	7.70	8.36
Share of Revenue Expenditure in Defence Budget (%)	61.22	61.27	60.01	62
Capital Expenditure (Rs. in crore)	70,499.12	78,872.20	81,965.2	94,588
Share of Capital Budget in Defence Budget (%)	38.78	38.73	39.99	38

Table 2 shows the defence budget's vital statistics for 2015-16 and 2016-17.

Table 2: Defence Budget: Vital Statistics

	2015-16	**2016-17**
Share of Defence Budget in Central Government Expenditure (%)	13.9	12.6
MoD's Budget (Rs. in Crore)	3,10,079.6	3,40,921.98
Growth in MoD's Budget (%)	8.72	9.95
Share of MoD Budget in GDP (%)	2.29	2.26

- The cascading effect of restricted financial support from the government has resulted in an army with no reserves (or an almost nil war wastage rate of reserve), serious deficiencies in ammunition and general stores items, as well as dwarfed modernisation initiatives.
- Budgets are often connected either to the wholesale price index (WPI) and the consumer price index (CPI), indicating the purchasing power of the rupee; or the gross domestic product (GDP) indicating the percentage of defence allotment when compared to the gross revenue of the government. If the hike of 6.36 per cent during the FY 2013-14 is considered, then with a WPI of nearly 6.8 per cent which was accompanied by the swift escalation of oil prices (which had reached nearly US$ 90-95 per barrel), as well as the rapid depreciation of the Indian rupee, the overall defence budget allotment works out to approximately (–)1.5 per cent. This without considering the withdrawal of over Rs. 10,000 crore that was made by the Finance Ministry at the end of the FY.

Figure 2: New Procurement vs Committed Liabilities

- One of the lesser known aspects of the grim financial situation faced by the armed forces during that FY was the substantial increase of product prices by the DPSU due to the depreciation of the value of the US dollar and the subsequent increase in the cost of raw material. It severely hampered the modernisation and reserves build-up of the armed forces.
- At the level of higher political leadership, major procurement schemes both at the Defence Acquisition Council (DAC) and the Finance Ministry were delayed. Thus, the armed forces could barely manage committed liabilities from the capital modernisation budget. Revenue shortfall increased as well. The miscommunication and resultant confusion culminated in the armed forces surrendering some of their budget allotments.
- An important point to note is that the army is a revenue budget heavy organisation. This can be attributed to the tremendous amount of manpower that they possess. The navy and the air force on the other hand are capital budget dominated organisations. The ratio for revenue to capital expenditure for the army is 80:20, while the ratio for the navy and the air force is nearly 50:50. Thus, capital modernisation is inbuilt in the annual budgets of the navy and the IAF. The army, on the other hand, has to struggle with the same due to negligible committed liabilities and deficient capital modernisation cases being cleared by the government. As a result of this deficiency, only small payments are being made from time to time. The details of modernisation cases that are being considered for the army and have finally been cleared are discussed below.

<u>Defence Budgeting: Planning Commission Approach Paper for 12th Plan</u>

The Planning Commission has linked the GDP to the likely availability of capital and revenue segments of the defence budget. The Approach Paper recommends that the revenue component should grow at 7.5 per cent (the distributed effect of the army's allotment being higher) and the capital component by 15 per cent. The Planning Commission has estimated GDP growth between 6.5 and 7 per cent, after taking into account 6 to 8 per cent inflation.

Accordingly, the Planning Commission paper recommended a plan-wise defence budget as follows:

- 12th Plan Rs. 11, 49,561 cr. – including the 7th Central Pay Commission (CPC)
- 13th Plan Rs. 22, 67,575 cr.
- 14th Plan Rs. 38, 88,437 cr.

An internal study within the army indicates that the revenue budget component of the critical deficiencies in the army for the FY 2017-18 and 2018-19 should be approximately Rs. 43,000 crore. This includes nearly Rs. 19,500 crore to replenish ammunition stocks. However, these figures are likely to rise due to several reasons such as constantly fluctuating dollar exchange rates, the seventh CPC's effect on the DPSU/OFB and its corresponding effect on inflation, the implementation of the Goods and Services Tax (GST), etc.

The armed forces require investments towards capacity building and modernisation urgently. Unless future budgets incorporate these concerns, the potential of the armed forces to deliver as per the nation's expectation would be severely affected.

Adequacy and Management of the Defence Budget

The present defence budget is pegged at 1.60 per cent of the GDP. Is it adequate for defence preparedness as well as modernisation?

Prior to the FY 2010-11, the previous four plan periods witnessed an average growth of approximately 2.1 per cent of the GDP along with an average rate of WPI inflation at around 7 to 8 per cent. The gradual decline in defence budget allocation has been observed since 2010. The defence budget for the FY 2013-14 was 1.79 per cent and for 2014-15, it was 1.78 per cent. It continues to be the same for the FY 2015-16 and 2016-17.

India, which is gradually becoming a front-line state – with its land and maritime borders active– cannot continue to deliver with budgetary allotments that are merely 1.78 per cent of the GDP. Under the present economic conditions in the country and the likely strengthening of the economy due to GST, it is felt that a sustained increase in the budget allotment of 2.1 to 2.3 per cent of the GDP is necessary to meet national security commitments. Delegating the task of managing the Revenue Budget to the Services is an idea that often comes up. Would it be a beneficial step?

Table 3: Defence Spending as % of GDP in Other Countries (Approximate)

China	2.0
Russia	4.4
France	2.3
USA	4.4
Pakistan	4.2
UK	2.5
Average of the above nations considered together	3.3 per cent

The constitutional requirement for management of government funds dictates that government funds need to be spent as per laid down rules, and such expenditures must be audited. Accordingly, the government has well-established departments to advise the CFA. This task is usually undertaken by the Defence Finance Department and the Audit Department that reports to the CAG, who is an independent constitutional authority and reports to the parliament.

The management of revenue and capital budget allotments is actually exercised by the respective services through their finance departments without external interference. For example, in the case of the army these allotments are overseen by the DGFP. The services have not surrendered any revenue budget in recent times except for some small amounts under the pay and allowance head, wherein claims of all ranks and corresponding payments had to be rolled over to the next FY due to technical and audit issues. These are many small amounts which add up to less than Rs. 500 crore. This kind of roll-over will take place even if the services run the revenue budget. The problems of the services are twofold:

- They want to get out of the IFA and pre-audit cycle, however this request is constitutionally unacceptable.
- Many cases pertaining to both revenue and capital budgets get stalled in the MoD, PCDA, IFA and local audit levels. This is due to a lack of proper knowledge among the personnel regarding the nuances of financial management and related documentation. This cannot be learnt by *on the job training* any more, when the budget of the army itself is more than the annual budgets of many states in India.

The problem arises due to the non-availability of a Finance Cadre in the three services. In the army, the availability of trained financial personnel is non-existent, despite a Financial Cadre having being approved during the Army Commander's Conference in October 2012. Later, however, the Military Secretary Branch felt that such a cadre would be unmanageable due to its small size and, hence, the decision was not implemented. Furthermore, the accounts departments of the IAF and the navy are not the same as the MoD's Finance Department and are not allowed to control, manage and execute substantially large government finances. If the aim of the query relates to delegating audit and IFA functions to the armed forces, it should be clear that the Constitution and GFR prohibit expenditure, accounts and audit functions being undertaken by the same department. Therefore, under the present dispensations the status quo will have to be maintained.

Another contentious issue is the institution of a non-lapsable defence modernisation fund. Will such a step be helpful? While it is a good idea, it may be difficult to roll out and implement. The problems envisaged are as follows:

- The cash-based financial management system in the government does not permit the creation of a non-lapsable fund as a general policy. In the past, the Finance Ministry has permitted small non- lapsable funds on a case-to-case basis. It is known that as a policy the revenue budget is funded from the government's revenue collection of the previous year, and the capital budget is mostly funded by the bonds and long-term monetary

instruments picked up from the market by paying. So, the capital modernisation funds have an execution period which cannot be overlooked as capital funds of the government need to be quickly deployed to commence returns.

- However, for specific national level projects, a non-lapsable fund can be earmarked if sanctioned by the Finance Ministry. But when the capital modernisation procurements of the services take four to five years, or more – mostly due to our retrograde systems and procedures – then what case can the services make for increased fund management powers for capital modernisation?

Large amounts of unspent funds are surrendered year after year. What measures can be taken to minimise the surrender of funds? The issue has been deliberated in great detail at various forums. There are a few key aspects to this vexing issue:

- The Finance Ministry's agenda shows higher initial allotment of the defence budget, whereas it wishes to provide less. This indicates that the Finance Ministry has not been satisfied by providing a low 1.78 per cent of GDP as the defence budget. Now, to withdraw the previously earmarked amount, the Finance Ministry micro manages the capital procurement cases by returning the files with minor observations and pushes it to the next year. The money saved is taken away during the last quarter of the FY. The entire exercise is undertaken as a previously laid down plan.
- Government parks funds in the defence budget, and moves it back when necessary.
- Revenue budget funds are not surrendered; in-fact the government has to make additional allotments during the RE stage.
- Due to non-specialist finance and procurement personnel, the pace of trials, documentation and the completed staff work to clear the laid down checks, procedures and audits get delayed substantially, resulting in higher unspent balance which is finally surrendered.

Way Ahead

There is no denying that there is substantial scope to improve resource management within the armed forces. Some of the issues that merit immediate consideration are:

a) Perspective plans for modernisation and procurements should be formed with members from the DPSUs and DRDO. Experts from all these organisations should be encouraged to participate in the deliberations. Indigenisation should be given greater priority as well.
b) All major projects need to have life-cycle costs that should include operational and maintenance costs in addition to capital acquisition costs.
c) Unspent funds that remain with the DPSUs need to be monitored, and their efforts at arbitrarily increasing costs to adjust to budgetary constraints should not be permitted. Such practices increase the inefficiency in the system.
d) Personnel costs in DPSUs must be monitored and reduced. The productivity of workers and installed machines needs to be quantitatively analysed and reviewed periodically, in order to obtain better returns on investment.

e) Revenue expenditure should to be restricted, and there also needs to be a substantial increase in the capital procurement stage of budgetary allotment. Admittedly, this is easier said than done, since the revenue expenditure – particularly the army's – is galloping. Furthermore, the OROP will lead to additional pressure on the revenue budget of the MoD.
f) The timely clearance of capital acquisition projections is necessary, as is the cost overrun that can occur sometimes due to delays. These overruns may be very expensive as in the case of the 155 mm 39 cal Ultra-Light Howitzer where the US Government has increased the cost of the project substantially due to a delay in project finalisation. If this trend remains unchecked, similar situations are bound to occur in the case of other large acquisition projects as well.
g) Ammunition procurements and weapon systems overhaul that might cost over Rs. 10 crore should be moved from the revenue to the capital budget and brought under the ambit of non-lapsable funds. The government should explore the viability of opening up ammunition production to the private sector for indigenous manufacture. Such an act of privatisation might help provide alternatives to foreign suppliers and competitive costs. However, such privatisation would need to be coupled with strict security measures.
h) A workable link should be established between the services budget, and the DRDO, DPSU, and other government establishments that are dealing with the services. Such a link should be based on good corporate practices with specific attention to budgetary allotments.
i) "Life-cycle cost" is one of the key elements of resource management. It is worth noting that expenditure undertaken on operations and the maintenance of major equipment during its potential lifetime can dwarf the initial acquisition cost. It is, therefore, necessary to holistically consider issues such as:
    i. total technical life,
    ii. calendar life,
    iii. mean-time between failures,
    iv. mean-time to repair,
    v. turnaround time,
    vi. time between overhaul, etc.

These issues need to be considered while upgrading/purchasing major equipment and monitored holistically so that unnecessary fund drainage can be avoided. If implemented in a fully networked and online environment, it can substantially reduce thousands of crores on spare parts, equipment and maintenance.

Conclusion

The quantum of budget for the three services is very large and its management is becoming increasingly complex day-by-day. If budget allotments are managed in a professional and efficient manner, it will be possible to reduce expenditures and streamline processes, thereby achieving higher efficiency. The management of the defence budget is not merely limited to

accounting. New processes that involve better policies, checks and procedures need to be implemented. There needs to be improved internal auditing of deployed finances as well as efficient deployment and redeployment of budgetary allotments to achieve optimal results. Whether the outcome budgetary process is followed or not, the Director General of Financial Planning (DGFP) of the army and his counterparts in the other services need to deploy and re-deploy financial allotments in a scientific manner so as to achieve the best output for their respective services. Hence, the time of ad hoc un-trained appointments in the Finance Divisions of the three services is over. There is an urgent need to establish a Finance Cadre in the army and the other two services. The personnel for the same would need to be trained in premium financial institutions such as the National Institute of Financial Management (NIFM), Faridabad, with special focus on job effective curriculum. Additionally, they should be encouraged to attend refresher courses from time to time. There is also a need to identify critical operational shortfalls and address them on priority. To ensure that important operational shortfalls are not lost sight of, institutional memory is necessary. The civilian counterparts in the MoD (Finance) have an upper hand due to their strong institutional memory. Unless the Headquarters of the three services get over this problem, they will not be able to put up their arguments in a convincing manner. Therefore, it is necessary that the finance department appointments in the services are classified as high-tech and the staff posted in these positions are given longer tenure, akin to the officers and staff in the MoD (Finance).

In order to ensure the smooth functioning of the Finance Divisions in the three services, coordination between the budget allotting authority and the actual user needs to improve. This can be best achieved by ensuring that the entire process of budget management becomes fully automated. Given recent technological proliferation, specific professional software can be acquired or developed for the process. The Service Headquarters needs improved communication and coordination between the budgeting/ purchase/procurement for modernisation/budget head expenditures/ audit/CGDA/PCDA/respective IFA in a seamless manner. Perhaps a fortnightly clean cash system between various budget holders may help with the process.

The government needs to empower the defence industry base in the private sector under the Make in India and Skill India initiatives.

Ordnance inventories need to be reduced. The holding of stocks in the Ordnance Depot should also be reduced substantially. There is a need to introduce modern supply chain management technologies like Just in Time, six Sigma process and other logistical chain systems that are being followed for delivery of stores by e-tailing organisations like Amazon. To achieve this concept, there is a need to improve storage infrastructure in order to avoid wastage.

The completion of any major project usually involves huge delays due to convoluted decision-making and repetitive due diligence issues. In order to avoid delays, the CFA's financial powers should be enhanced in tune with inflation. Currently there exists a

substantial amount of inefficiency within the services while dealing with large finances. This is due to the lack of knowledge, attitude problems and a fear of the unknown coupled with a tremendous amount of hesitation regarding document signing. Therefore, the entire process of financial planning and budget management should be an integral part of the overall planning process. In case the overall management of the defence budget at the Finance and Defence Ministries cannot be changed to an outcome budget system, the concept can easily be introduced within the services instead. This will require prior consideration at the time of planning for the next FY budget and a focused internal distribution of funds to achieve preconceived aims.

There is a need to institute a more comprehensive establishment to conduct technical and user trials of new weapons and equipment under the vice chiefs of the three services. The present system is inefficient and far too personality based. It is recommended that the General Staff Qualitative Requirement (GSQR) evaluation and the trial team should be part of the same group and they should be domain specialists. Furthermore, any deficiency in GSQR compliance should not lead to a delay in the finalisation of the case for years. Therefore, an empowered standing committee with members from all the stakeholders and the DRDO should be established. This committee should be responsible for getting into the details of the problem and providing considered opinions for proceeding ahead.

Under the present conditions, perhaps a two to three years' roll-on capital modernisation budget should be considered. Along with it the three services should also move from a part manual-part automated inventory, accounts, budget, auditing and financial management systems to a fully integrated and automated system.

The higher CFAs like the army commanders and their counterparts in the navy and the air force, as well as the Principal Staff Officers (PSOs) in the Service Headquarters should be provided with fully qualified and trained financial advisors (Col./Lt Col. and staff) who can help them correct and complete all financial documentation that needs to be sent to the IFA. This will substantially cut down the time required to complete any finance and resource-related cases.

DEFENCE BUDGET: OPTIMISING PLANNING AND UTILISATION

The *Merriam-Webster online Dictionary* defines optimisation as "an act, process or methodology of making something (as a design, system or decision) as fully perfect, functional or effective, as possible". Optimising planning and utilisation of the defence budget, therefore, requires identification of the deficiencies in these processes and the steps required to address them.

Planning and utilisation are two distinct, albeit inter-related, activities. While there is a fair amount of clarity about what needs to be done to optimise utilisation of the defence budget, such clarity eludes the process of optimising defence "planning". This lack of clarity gives rise to the question whether optimisation of planning refers to the process of securing higher allocation for defence or does it refer to making the most of whatever allocation is made every year, or to both?'

Ideally this question should not arise as the budget allocation is a given for the Ministry of Defence (MoD), and there is very little that the MoD can do to get it increased before the budget is passed by the Parliament or during the course of the financial year. But there is a scope to *plan* the process of securing higher allocation of resources in the long run and to prevent the reduction in allocation when the estimates are revised by the Ministry of Finance (MoF) as a part of the budgetary process. Such planning has to be based on pragmatism, as well as credibility of the estimates based on which the allocation is sought, and not on self-serving rhetoric.

Any discussion on the optimisation of planning generally revolves around the impact of inadequate funding and ends up with a fervent plea for higher allocation for defence. Merely asking for more funds is of little help. In the short to medium term time frame, the government's resources are going to remain limited. Simultaneously, it will continue to face serious challenges in raising its income and the demand from other sectors will continue to grow. All this has to be factored in while considering options for optimisation of the defence budget.

The endeavour in this chapter is to explore the possibilities that exist to *plan* for the prevention of the withdrawal of funds by the MoF, as well as to secure a gradual and realistic increase in allocation for defence, while simultaneously dealing with the question of making efficient use of the given outlays.

Optimisation of Planning:

Securing Higher Allocation for Defence:

The need for optimising the process of planning for securing higher allocation for defence arises because the current budget invariably falls short of the requirement by two commonly applied yardsticks. First, the annual allocation is consistently lesser than the requirement projected by the MoD to the MoF during their pre-budget discussions. Second, the allocation is always well below three per cent of the gross domestic product (GDP), which is considered by many, including the Standing Committee on Defence (SCoD), as the ideal level of funding.

Gap between projection and allocation:

That the allocation is always less than the projection is indisputable. In 2016-17, for example, the army asked for the allocation of Rs 1,53,521.96 crore, but received only Rs 1,39,700.43 crore in the budget estimates (BE) at the beginning of the year. It was the same with the other two services: the navy asked for Rs 48,725.87 crore but received Rs 39,424.88 crore, and the air force asked for Rs 66,995.01 crore, against which it received only Rs 53,451.25 crore. There has been a similar mismatch in the previous years as well as in 2017-18.

This mismatch is sufficient to conclusively establish that adequate funds are not being provided to meet the requirements of the armed forces. However from the point of view of *planning,* it raises an important question: Does the difference between projection and allocation represent realistically and accurately the extent of the shortfall?

Back-of-the-envelope calculations based on various SCoD reports show that in 2014-15, the gap between the overall projection made by the MoD and the actual allocation was around Rs 80,000 crore; while in each of the two subsequent years, it was close to Rs 40,000 crore. Gaps of this magnitude cannot be bridged during the pre-budget discussions between the defence and finance ministries, particularly since the demand is not based on any commitment made by the MoF. In fact, the projections are invariably out of tune with the indication of how much is likely to be available in a given year. The demand is also seldom, if ever, fully backed by irrefutable data.

The only inescapable conclusion that can be drawn is that the projections are not realistic. This assumes significance because the execution of any annual expenditure plan, based on the assumption that the amount demanded will actually be available in its entirety, is bound to present insurmountable difficulties. Therefore, the question that the planners need to ask themselves is whether making such unrealistic projections serves any purpose? And if not, would it not be better to synchronise annual projections with the likely availability of funds without banking on additional allocations which may or may not come through during the year?

Need for accuracy in projections:

Wide fluctuations in the estimated and final cost of acquisition programmes and other projects on the one hand; and the underutilisation of funds provided for capital expenditure on the other, raise questions about the accuracy of projections. The first problem can be attributed to a weak regimen of costing, coupled with the lack of sanctity attached to the initial estimation of the cost of the projects and the absence of any mechanism to enforce accountability for resultant cost and time overruns. This underscores the need for ensuring accuracy of budgetary projections. While it is true that estimates cannot be precise but these have to be credible enough to be taken seriously by the MoF.

Costing – the Achilles heel:

Costing is arguably the weakest link in the process of budget estimation as well as subsequent expenditure management. While the MoD does have the benefit of professional cost accountants working for it, they have been unable to perform the function with as much professional finesse as they are capable of because the requisite wherewithal has not been made available to them. It would not be wrong to say that costing in defence, as a discipline, is yet to mature. It requires careful nurturing, particularly if the MoD is serious – as indeed it ought to be – about life-cycle costing.

Costing of military equipment is complex. It requires the creation of the product and country specific historical and current databases on price, inflation, etc., as well as the development of defence-specific techniques for costing. It is unfair to leave the whole complex process to a few individuals in the ministry. More importantly, a greater sanctity needs to be attached to the estimation of cost than is the case at present. Capital- intensive acquisition and infrastructure development programmes are often approved on the basis of a tenuous estimation of cost, resulting in final costs being substantially higher than the estimated costs.

Although to be fair, cost-escalation is also attributable to several other reasons, such as changes in the scope of work or the tax structure.

Underutilisation of the capital budget:

The other related factor which impinges on the credibility of projections made by the MoD is the persistent underutilisation of funds allocated for capital expenditure. The fact that large sums remain underutilised is ironic considering that the annual allocation is invariably less than the requirement projected by the MoD.

The capital budget comprises two notional segments. A large proportion of the allocation is spread over budget heads which cater to the procurement of equipment, weapon systems, various platforms and other capabilities usually associated with the modernisation of the armed forces. The remaining funds are largely spent on acquisition of land and civil works.

The malady of underutilisation afflicts all these budget heads to varying extents. In 2016-17 the total allocation for capital expenditure of the three services came down from Rs 85,878.20 at the BE stage to Rs 74,413.28 crore at the revised estimates (RE) stage with all the three services contributing to this decrease (see Table 1).

Considering that the assessment of likely expenditure at the RE stage is more realistic, it can be presumed that the MoD actually ended up underutilising Rs 11,464.92 crore out of the budget allocated at the beginning of the year 2016-17 for capital expenditure. This has been the case in the previous years as well.

Table 1: Capital Budget: 2016-17 (Rs in crore)

Service	**BE**	**RE**
Army	27217.31	24230.47
Navy	25003.24	19740.66
Air Force	33657.65	30442.15
Total	85878.20	74413.28

Non-lapsable defence modernisation fund:

Some analysts believe that the problem of underutilisation could be addressed by creating a non- lapsable defence modernisation fund and the entire unspent balance could be transferred to this fund at the end of the financial year. A tentative step was indeed taken by the National Democratic Alliance (NDA) government in 2004 when the then Finance Minister Jaswant Singh, announced the establishment of a non-lapsable Defence Modernisation Fund of Rs. 25,000 crore to "commit availability of funds for the purpose" while presenting the interim budget for 2004-05.

It is not as if the fund did not get established because the NDA lost the general elections following the presentation of the interim budget. Had that been the sole reason, the present Bhartiya Janata Party (BJP) government would have set it up by now, particularly because the SCoD has also been persistently recommending it. There is also no constitutional

impediment in creating such a fund, which is evident from the fact that a somewhat similar non-lapsable pool of resources for the development of the north-eastern region has been in existence since 1997-98. Clearly, there are other more complex reasons why the fund has not been set up so far.

One way of operating the modernisation fund could be to withdraw the unspent balances from the exchequer and park them in a separate account to be used some time in the future. In a manner of speaking, this will amount to setting aside some money (unspent balance in this context) out of the borrowings, keeping in mind the persistent revenue deficit that the successive governments have not been able to wipe out. It would not be financially prudent to keep a part of the funds, borrowed by the government idle, for use in the future.

Alternatively, it could be a notional transfer of unspent balances to the modernisation fund. The problem with this alternative is that the MoF will need to raise the money in the year in which it is required to be taken out of the fund. Moreover, the Parliament's approval for the appropriation of any amount out of the modernisation fund will also be required in the year in which the amount is to be spent. This will undermine the utility of the fund.

The SCoD has dismissed these arguments in the past, and eventually its perseverance has made the MoD change its mind once again about the creation of a non-lapsable fund. The ministry sent a proposal to the MoF on February 09, 2017 for the creation of the fund, although the MoF continues to remain reluctant to set it up. This change of heart on the MoD's part has been praised by the SCoD, but given the MoF's stand on the subject, it will take some doing to set up the fund and, more importantly, derive the intended benefit from it.

Reduction of allocation at RE stage: contrived or real?:

While the reduction of capital outlay at the RE stage cannot be disputed, many argue that this reduction is not because of the MoD's inability to utilise funds, but due to the manipulation of these funds by the MoF, which plays a critical role in sanctioning all capital acquisition contracts where the negotiated cost is more than Rs 2,000 crore (raised from Rs 500 crore in 2017).

The argument is that the MoF delays the process deliberately with the aim of making sure that the MoD is unable to utilise the allocated funds which can then be withdrawn at the RE stage to meet the fiscal deficit target set for a given year. However, statistics do not support the view that the annual fiscal targets cannot be met by the MoF unless it withdraws money from the MoD.

The same argument is advanced to explain occasional reduction at the RE stage under certain revenue budget heads. Considering that the financial power for sanctioning revenue expenditure is fully delegated to the MoD and the services down to the lowest echelons, the inability to spend the allocated amount, at least under the revenue segment, cannot be attributed to any external factors such as the bureaucratic machinations by the MoF. The situation is, however, somewhat different in the case of utilisation of the capital budget.

Preventing Reduction of Allocation for Capital Expenditure at the RE Stage

The view that the underutilisation of funds is actually manipulated by the MoF is unsubstantiated. Even if it is true, the fact remains that the amount authorised by the parliament for appropriation during the year does not get fully utilised. Whatever the reasons for underutilisation, the MoD needs to address this problem through better planning. This has to be its first priority as it is possible to prevent to underutilisation of funds.

One of the arguments given by the MoF is that it withdraws the portion of the allocated amount that is likely to remain unspent, as per the assessment made during its consultation with the MoD at the RE stage. That such a mutual consultation does take place is certainly true, but whether the assessed amount that is likely to remain unspent is determined through mutual consent, is questionable. The official position of the MoD has been that it can always spend the money if it is not withdrawn, but it cuts no ice with the MoF because the MoD is unable to substantiate this claim.

The impression that the MoF manipulates acquisition proposals so as to be able to withdraw a substantial amount at the RE stage, as well as the impression that were it not for the withdrawal, the MoD would have spent the money, needs to be dispelled. Better expenditure management by the MoD leading to the creation of contractual commitments in the first six months of the year would make it virtually impossible for the MoF to withdraw funds at the RE stage.

It is equally important that the MoD officials, who participate in pre- budget discussions with the MoF, are better equipped with irrefutable facts and figures in order to establish without an iota of doubt that the entire funds allocated for the year stand committed. The role of the services and the other departments in providing the MoD with all the necessary details is critical in this exercise. Incidentally, some analysts used to hold the view that the civilian bureaucracy was unable to convince the MoF during the pre-budget discussions to meet the projected requirement completely. Although now the service officers participate in the pre-budget discussions, it has not made a difference in so far as the mismatch between the projection and the allocation.

Viability of Higher Allocations for Defence

The question whether it is viable for the government to make higher allocations for defence is moot as it is inextricably linked with generation of substantially higher revenues for meeting the requirement of not just the defence but also of the other sectors, including health, education and infrastructure development. What is important from the point of view of defence planning that it is not based on unrealistic assumptions about future increases in the defence budget.

A more immediate issue that has cropped up in the context of planning is the replacement of the Planning Commission by the Niti Ayog which has vowed to foray into defence planning as well. This has created uncertainty regarding what shape the present three-tiered structure of defence planning will take in future. Both the 15-year Long-term Integrated Perspective Plan (LTIPP) 2002-17 and the 12th Defence Five-year Plan 2012-17 are due to be replaced

with new ones from April 01, 2017. What will be the basis of revising these plans, what role will the Niti Ayog play in that revision, and to what extent, are questions that cannot be answered at this stage. These questions continue to be relevant although media reports suggest that the armed forces are now ready with the 13th Five-year Defence Plan.

There is a need to draw lessons from the past experience in defence planning. While the problems with defence planning are manifold, one problem which impacts the subject being discussed is the financial moorings of the defence plans. The unrealistic assumption about the availability of funds that characterises annual projections stems from the assumptions that underlie the 15-year and the five-year defence plans. The LTIPP 2002-17, for instance, was based on the assumption that the allocation for defence during this period would be equivalent to three per cent of the GDP – a level that has perhaps never been reached in the recent past and is unlikely to be reached in the near future. The 13th Five-year Defence Plan apparently envisages an outlay of Rs 27 lakh crore. This will require the allocation to be more than doubled beginning 2018-19. The question whether this is practical is moot.

This is a very difficult problem for the MoD to tackle entirely on its own. Protestations by successive finance ministers in their budget speeches about no stone being left unturned for the nation's defence and security are not compatible with the persistent discordance between the MoD and the MoF on the question of annual allocation. The financial viability of defence planning is a larger issue that needs to be resolved at the highest level in the government.

This situation has come about because, by all accounts, the MoD has been reluctant in involving itself in defence planning throughout the process, leaving it largely to the services and other departments. This has to change. Not just the MoD, but the MoF, National Security Council, Ministry of External Affairs and other associated departments need to be fully involved in the process of developing defence plans. All of them need to come together from the beginning until the end of the planning process, if the problems besetting defence planning are to be fixed.

Optimisation of Utilisation

This brings us to the next part of the discussion. While all the issues related to the optimisation of budget planning cannot be addressed in a short while, there are many things that can be done to optimise the utilisation of the allocated resources. The formulation and management of the defence budget should not be seen as some kind of a blue-collar, plebeian task to be handled by the MoD's Finance Division. The Department of Defence in the MoD needs to involve itself in the formulation and execution of the annual budgets for it is the MoD as a whole and not just its Finance Division that is responsible for overall defence preparedness.

<u>Involvement of Department of Defence</u>

The involvement of the Department of Defence would mean that the DoD would need to lay down the targets to be achieved during the year keeping in mind the availability of funds, issuing guidelines to be followed by all budget centres while assessing their requirement, application of standard costing techniques and a host of other things. These are small steps

that can be taken immediately, pending the resolution of larger issues related to efficacious planning.

A point needs to be made at this stage regarding the general impression that defence planning suffers because there is no long-term assurance of funds. While this is true – and it is doubtful if there can actually be any "assurance" of funds – it would be incorrect to say that the MoD has no indication of the funds likely to be made available in the long run. The annual growth in the defence budget that needed to be taken into consideration for the purposes of planning was known before the formulation of the 11th and 12th five-year defence plans.

More recently, the medium-term fiscal policy statement of 2016 clearly indicated that the government estimated its total defence expenditure to be 1.6 per cent of the GDP in 2017-18 and 2018-19. It has indeed turned out to be true for the year 2017-18, and there is no reason to suspect that it will be any different in 2018-19 as there is no revised forecast in the medium term fiscal policy statement of 2017. It is unlikely, though, that the MoD's projections for 2017-18 took this fact into account.

The choice really is between planning expenditure – both in the long run and on an annual basis– based on unrealistic assumptions on the one hand and with due consideration of the financial realities on the other. Continuous remonstrance regarding the inadequacy of allocation has not helped all these years and it is unlikely to help in future.

Outcome-oriented Budget Management

There is a need to ensure that expenditure leads to planned outcomes. This requires a restructuring of the defence budget in order to make it possible to allocate funds for specific acquisition schemes, programmes, projects and operational activities. It should be known right in the beginning of the year what portion of the funds are being allocated for the procurement of ammunition, bulletproof jackets, or even various types of aircrafts, and what the intended outcomes would be in quantifiable terms.

These outcomes should form the benchmark for evaluating performance at the end of the year. This approach was recommended by the SCoD in 2016. Though the recommendation was related to capital acquisitions, it can be extended and applied to critical activities funded from the revenue budget. It is inexplicable why no significant steps have been taken as of now, to move towards an outcome-oriented management of the defence budget.

An outcome-oriented management of budget outlays pre-supposes a need-based delegation of financial powers. The existing scheme of delegation of financial powers is inefficient. The authority to spend needs to be delegated to the working-level functionaries who are responsible for producing the intended outcomes. This does not entail any risk because the delegates will be able to exercise these powers only as per the prescribed rules, regulations and standard operating procedures, and subject to availability of funds and a reasonable system of checks and balances.

While a distinction needs to be made between the financial powers for capital and revenue procurements, with the former being concentrated at the higher echelons in the government

and the Services Headquarters, there is no reason why the retention of financial powers for revenue expenditure at the higher echelons should not be more of an exception than the rule.

For example, while the officers commanding workshops, repair depots or dockyards need not be given full power to spend on, new machinery or land acquisition; they ought to be given full financial powers to incur expenditure on buying spares, outsourcing or running their own establishments, all of which are critical for discharging the responsibility cast on them.

The reluctance to delegate financial powers to the lower echelons to incur revenue expenditure is inexplicable. This issue revolves around less than a third of the revenue budget, the rest of which is spent on pay and allowances, hardly entailing the exercise of any financial powers. The tendency to tie down whatever powers are presently exercised by the lower functionaries to a plethora of terms and conditions negates the very purpose of delegation.

One of these conditions, which has emerged as a sore point in the system is the need for the competent financial authorities (CFAs) to whom the powers are delegated to seek the concurrence of integrated financial advisors (IFAs) before sanctioning any expenditure beyond a certain threshold within the overall limit up to which the financial powers are delegated to them. These advisors are perceived to be a hindrance by the CFAs. This system has thrown up serious issues that have remained unresolved over the years.

It would, however, be wrong to pin the entire blame on the IFAs. The system gives CFAs the authority to overrule the advice of the IFAs. Theoretically there should be no hesitation in exercising this authority if CFAs have the courage of their conviction but in practice the IFAs are seldom overruled. There is a need for the MoD to step in and resolve this issue, to the satisfaction of both, so that the delegation of powers serves its intended purpose.

The effective delegation of financial powers and an outcome-oriented management of the budget are contingent upon several factors. These include removal of ambiguities in, and updating of, rules and regulations at regular intervals of two or three years, laying down of standard operating procedures., removal of procedural bottlenecks and the creation of a forum for quick resolution of all issues arising from the exercise of these powers.

This does not necessarily imply that procedures need to be diluted. That is simply not possible; public money has to be handled with due care and in a transparent manner. The problem, quite honestly, is also not so much with the existence of procedures per se, but due to the difficulties caused by the lack of clarity and the grey areas in these procedures. This has impacted decision-making, which has been the bane of efficient expenditure management all along. The answer lies in instituting a system of collegiate decision-making and crisis management.

Rationalisation of the Demands for Grant

An outcome-oriented management of the budget would require rationalisation of the structure of demands for grant to ensure that the categories under which the allocation is made are conducive to outcome- oriented monitoring. The demands for grant presented by various ministries and departments to the parliament were restructured in 2016. This resulted

in the number of demands for grant presented by the MoD to the parliament coming down from eight to four. The structure of these demands for grant was again tinkered with in 2017. But all this is unlikely to be of much help as this exercise has not led to the creation of outcome- oriented budget heads. If anything, it has only resulted in further obfuscating the defence budget.

In 2016-17, for example, the outlay for the National Cadet Corps was separated from the army's revenue and its capital outlays. In 2017-18, it is back to the fold, while the outlay for the Jammu and Kashmir (J&K) Light Infantry – a regular regiment of the Indian Army – continues to be outside the army's budget. Similarly, outlay for Joint Staff continues to be a part of the navy's outlay, though it does not function under the administrative control of the Chief of Naval Staff.

Similarly, the allocation of funds under the "stores" budget head does not provide a clear idea about the allocations made for the procurement of ammunition to cover up deficiencies in the war wastage reserves. Nor does the allocation of funds under the "other equipment" budget head – under the capital segment of the budget – provide a clear idea about what is being procured.

There are many such incongruities which only create further confusion in the management of the defence budget. The removal of these incongruities will not necessarily lead to the availability of more funds for the services, but it will certainly facilitate better management of budget outlays by the financial planning directorates. Rationalisation of the demands for grant should be based on outcome-oriented reclassification of budget heads under which allocations are made, both under the revenue and capital segments, as is already being done to a limited extent under the capital segment of the budget.

Rationalisation of Expenditure

Given the current level of defence spending, it is important to make sure that the entire expenditure being incurred by the MoD is really justified. At the SCoD's behest, the MoD had set up a committee in 2008 to review defence expenditure. The committee's report contained several recommendations to rationalise expenditure but those recommendations were not pursued seriously. There is a need to revisit this issue with as much objectivity and dispassion as can possibly be ensured by the MoD, based on the recommendations of the other committees set up since then.

To be sure, it is not all about reducing the size of the armed forces. This is a very sensitive issue by any stretch of imagination and while there is a strong case for it – with more than half the total defence budget being spent on pay and pensions – there are several other organisations and activities which also need to be subjected to a zero-based review. The fierceness of the response to any suggestion to carry out such a review comes in the way of any serious attempt to rationalise expenditure. Nevertheless, this has to be done by picking up a specified number of activities and organisations every year for independent zero-based review of their continued utility.

There is also a need to look at long-term measures, such as the creation of a logistics command to optimise the administrative cost of providing logistical support to the services (as also Coast Guard and Border Roads Organisation) and improving efficiency. This concept also needs to be extended to the operational domain through the creation of theatre commands, as also to all other activities that are presently being carried out in a fragmented manner.

Defence procurements are another case in point where the responsibility is presently being shared by the MoD, the respective services, HQ Integrated Defence Staff, Directorate General of Quality Assurance and several other agencies. This fragmentation is fraught with redundancies and undermines efficiency and accountability. A committee was set up by the MoD last year to recommend the modality of setting up a compact defence acquisition organisation. While the committee has submitted its report, it is going to be of little use unless some bold decisions are taken by the MoD.

Generation of Higher Revenues and Reduction in Expenditure

This issue has not received as much attention as it deserves. There is a need to explore the possibility of generating higher revenues through the exploitation of the idle capacity of the assets held by the MoD. As of now, all the receipts and recoveries related to rents and tariffs, sale of ordnance stores and dairy products, services provided by the armed forces, etc., are credited to the Consolidated Fund of India (CFI) and subtracted from the gross amount allocated under various demands for grant.

There is a case for the recoveries made against the expenditure incurred by the services/other MoD departments from their annual allocation for providing goods and services to outside users being ploughed back into the defence budget by accounting for it as reduction in expenditure. However limited it may be, this will mitigate the hardship caused by the allocated sums being spent for providing goods and services that have nothing to do with operational preparedness of the armed forces. There is also a need to explore the possibility of greater commercial exploitation of the idle assets, including research and development laboratories, and the proceeds being ploughed back for the maintenance of those very assets and other infrastructure.

Rationalisation of Administrative Costs

More cost-effective ways will need to be found to reduce administrative and establishment costs. This will require outsourcing on a larger scale under clearly set out policy and procedure. The adoption of performance based logistics – shutting down or leasing out money guzzling facilities should also be considered. This would require the adoption of a government-owned-company-operated model for running defence establishments that necessitates public-private partnerships, mandatory electronic payments, multitasking by personnel, zero-based review of all cost-prohibitive activities, pooling of assets (including infrastructure), jointness in training, real-time accounting and reporting, adoption of accrual accounting, and the creation of databases for financial management, including life-cycle cost

estimation. While it is not as if nothing has been done to promote some of these measures, but the disjointed focus on these initiatives has produced sub-optimal results.

Measures not Meant Just for the Services

All these measures are not meant for the services alone. These should be applied in equal measure to all the other departments under the MoD's administrative control. There is a great deal of potential for the optimisation of expenditure there. To illustrate this point, in his budget speech for the year 2017-18, Finance Minister Arun Jaitley announced "a comprehensive web based interactive Pension Disbursement System for Defence Pensioners" to "receive pension proposals and make payments centrally". This, he said, "will reduce the grievances of defence pensioners".

There is no reason why the pension sanctioning authorities should not take on the responsibility for disbursing pensions electronically. This will save on the expense of running more than 50 Defence Pension Disbursement Offices all over the country (which are funded from the overall defence budget); and also relieve the banks of the pension disbursement workload presently being grudgingly borne by them.

The centralised disbursement of pension – by no means an impossible task – will result in a more accurate and timely disbursement of pension, over and above saving establishment costs. However, the success of the arrangement will depend on the establishment of a strong grievance redressal mechanism. There are several such potential pockets of rationalisation that could be looked into.

Several other measures could be added to this representative list of areas which merit focused attention by the MoD. These ideas are not being talked about for the first time, and it will be unrealistic to expect any miraculous effect even if these are implemented but there are no quick- fixes to address the problems besetting the planning and utilisation of the defence budget. Optimisation is not rocket science. All it requires is the acknowledgment of financial constraints by all concerned and, more importantly, determination on the part of the civilian and military leadership to follow through on the steps – some even quite drastic – that need to be taken to fix the problems.

SUPPLY CHAIN MANAGEMENT

Introduction

Supply chain management includes procurement, inventory management, warehouse location and operation, ABC categories, material handling, network, transportation, information flow and technology, and security management.

Military logistics originated from the military's need to make provisions of arms, ammunition, and ration as they moved forward from their bases. Military operations and maintenance have made a significant contribution towards developing logistics in the initial stage as compared to other business sectors. Though logistics originated and developed from military operations, it is now widely adopted in the area of manufacturing, production, and business management.

Logistics is used more broadly to refer to the process of coordinating and moving resources – people, materials, inventory, and equipment – from one location to storage at the desired destination. The term logistics originated in the military, referring to the movement of equipment and supplies to troops in the field.

Crucial to the supply chain of any business, logistics involves the timely delivery of freight and goods from one place to another, as well as the unloading and unpacking of this cargo. Logistics workers may perform duties including inventory control, pricing and ticketing, and merchandise assembly.

Military logistics is the discipline of planning and carrying out the movement, supply, and maintenance of military forces. In its most comprehensive sense, it is those aspects or military operations that deal with: Acquisition or construction, maintenance, operation, and disposition of facilities.

The Oxford English Dictionary defines logistics as "the branch of military science having to do with procuring, maintaining and transporting material, personnel and facilities." The Institution of Logistics and Transport, UK, proposed the definition for logistics as "the time-related positioning of resources" (Bowdin et al., 2006).

In the ancient time, military officers with the title Logistikas were responsible for financial and supply distribution matters. As such, logistics is commonly seen as a branch of engineering that creates "people systems" rather than "machine systems" (Versi, 2007). In general, logistics is "having the right item in the right quantity at the right time at the right place for the right price in the right condition to the right customer."

Business Definition

Logistics is defined as a business planning framework for the management of material, service, information and capital flows. It includes increasingly complex information, communication and control systems required in today's business environment (Logistix partners Oy, Helsinki, FI, 1996). It is the science of planning, design and support of business operations that deal with procurement, purchase, inventory, warehousing, distribution, transportation, financial, human resources and customer support.

Military Definition

In Military logistics is defined as the science of planning, carrying out the movement and the maintenance of forces in military operations (http://www.logisticsworld.com, 2009). Those aspects deal with:

1. The design and development, acquisition, storage, movement, distribution, maintenance, evacuation and disposition of material Movement, evacuation and hospitalization of personnel
2. Acquisition of construction, maintenance, operation and disposition of facilities
3. Acquisition of furnishing of services
4. Medical and health service support

The supply chain is a vital part of this process, including transportation, shipping, receiving, storage, and management of all these areas. Within the business sector, logistics can be

applied to information, transportation, inventory, warehousing, material handling, and packaging, disposal, and security.

Logistics activities or Functions of Logistics:

1) Order processing.
2) Materials handling.
3) Warehousing.
4) Inventory control.
5) Transportation.
6) Packaging.

SUPPLY CHAIN MANAGEMENT IN DEFENCE

Introduction

The purpose of any military logistic system is to ensure that the correct item and service is provided to the end user, at the right time, place, and in correct quantity and quality required for the situation.

Indian Armed Forces have, however, continued to grow, basically under the same original framework. One major restructuring was attempted post Kargil War. Now that the Chief of Defence Staff (CDS) is appointed and firmly in place, the much-awaited changes are going to take place.

In the final analysis, most military campaign failures, could be attributed to mismatch between the operational plan and the logistic support capabilities. This could be well illustrated with examples of over-stretched logistics, from world military history.

In context of integrated logistics, the weakest chink in the Indian armour today is that of the Army. It must first achieve intra-service integration. To enable that, the most essential prerequisite is the computerisation of the logistics. This should be accompanied in parallel by restructuring of the overall organisation.

This by no account means that the present set up is not delivering. What it means, is, that by restructuring, the future challenges could be met more effectively, speedily and efficiently, both in material and human terms.

At the same time, and in spite of serious handicaps, the most encouraging part, is that the Army, seems to be the most open and willing service to take on this challenge.

In this context, the Navy and the Air Force are far ahead of the Army. They have kept pace with each other in bringing about organisational changes linked to Revolution in Military Logistics. The Air Force is perhaps a hair-breadth ahead in the conventional logistic management arena. But in the Capital Acquisition and Weapon Platform Development Management – the Navy is way ahead. The need of the hour is to work in unison and share one's experience and expertise to move forward.

At the time of Independence, the Indian Army, the Navy and the Air Force, inherited their organisational structures from their respective parent service in UK. Since then, the British system has undergone a sea change.

Indian Armed Forces have, however, continued to grow, basically under the same original framework. One major restructuring was attempted post Kargil War.

In this context, it is essential to look at other models and draw suitable lessons, appropriate to the Indian environment. In this regard the National Security Council Directive–2000 is relevant.

The British System

In the last fifty years the British system has undergone series of changes in the following sequence:-

- Introduction of computerised logistics management.
- Integration of all intra-service activities on conventional logistics.
- Corporatisation of repair infrastructure – till then, an in-house service.
- Privatization of repair infrastructure followed by outsourcing of other support infrastructure.
- Integration of all inter-service logistics, under broad heads of Defence Logistics Organisation (DLO) and Defence Procurement Agency (DPA).
- Merger of DPA + DLO + Defence Commercial Service Agency (DCSA) into Defence Equipment & Support Agency (DE&SA) – with the Chief of Defence Material (CDM) in charge, as a four star General/equivalent.

It would be observed that the organisation has two major Divisions.

- One dealing with capital acquisitions - This is subdivided on functional basis into DG Ships, DG Submarine, DG Combat Aircraft, DG Land Equipment etc. The next level is illustrated, using DG Ships as an example.
- The second Division – deals with support infrastructure – with three Chief of Material (COMs) in the rank of three-star generals heading their respective service support division.

It would be observed here, that the CDM is a four star general/equivalent, same as the Chiefs of Naval/General/Air Staff.

In the Indian context, if adopted – this would essentially mean delegation to the CDM (I) the responsibility and empowerment of the following existing authorities:-

- Master General of Ordnance (MGO) + Quartermaster General (QMG) + E-in-C + Part of Adjutant General (AG).
- Air Officer-in-Charge Maintenance (AOM)
- Chief of Material (COM) + Controller of Warship Production & Acquisition of the Navy.
- Special Secretary / DG.Acquisition – MoD.
- Department of Defence Production (DDP) of MoD.

Though desirable and pragmatic, in the Indian context, this does not appear to be feasible in the near future.

Other Global Players

Functionally, the US, French and the British systems are similar to each other. All of them have created a dedicated logistics cadre. The US and British armies have opted for inducting

officers at the junior levels from the QM and MGO's branches into the logistics branch. But they have been allowed to retain their parent branch status and specialisation – to enable them continuity, promotional prospects, and also to retain their skills and emotional/regimental bonding with their original branch.

The French and the Germans have an Armament Branch separate from the Combat Arms. The point to note here is that in all these countries, the promotion prospects in the Combat Arms and the Support Services are comparable.

From the outset, USSR and China have had a dedicated logistic branch to support the military. The erstwhile Soviet military had a dedicated Marshal of Soviet Union as Deputy Minister of Defence, responsible for the logistics of the entire Armed Forces. He was also the coordinating authority at the national level. Indian military is perhaps the only modern armed forces in the world, which has the distinction of not believing in a joint logistics organisation.

Indian Army

In the case of the Army, the support Services are responsible to provide the requisite logistics to the combat arms. Today, these services come under four different Principle Staff Officers (PSO), to the Chief of Army Staff (COAS).

Instances related by retired logisticians indicate serious disconnect between the combat arm leadership and, the logisticians in the field. The crux of the issue, boils down to the absence of a credible institutional mechanism for interactive, operation cum logistics process, specially, at operational and tactical level. This realisation has presumably led to the induction of DG Operational Logistics Organisation (DGOL) in the Army HQs. He is currently under Vice Chief of Army Staff (VCOAS).

Presumably, the above arrangement is an interim one–till such time as appropriate reorientation takes place and logistics become fully integrated. Ideally, emulating the British Army model would serve the purpose. This would be the most difficult step to take–bearing in mind the large momentum and the deep historical baggage, requiring a change of direction.

Computorised Inventory Control Project (Cicp)

The Army has now, also taken the next bold step of computerisation of the logistics management. CICP of the Army Ordnance Corps (AOC) was sanctioned in 2001.

Army's initial attempt was to have a customized system of CICP. Early this year, however, it was decided to change course and proceed with a decentralised solution – adopting a commercially available Enterprise Resource Planning (ERP) route. The system has a modular architecture and can be built up as one goes along. And with experience, the system can be easily upgraded, in line with the technology of the time. The Request for Proposal (RFP) for this is expected to be finalised shortly.

The Army Service Corps (ASC) Stores Monitoring & Control System (ASMACS) operates independently.

Indian Air Force

In the case of the Air Force, single point responsibility for conventional logistics management lies with the Air Officer in Charge Maintenance (AOM) at the Air HQs. The material management and physical distribution function is performed by the Logistics Branch. Maintenance of aircraft and equipment being the responsibility of Air Engineering Branch (Mechanical)/(Electrical). The overall responsibility rests with the AOM.

In an environment of shortages, centralised control is inevitable. It is considered that the advantages of transparency, and allowing on-line data access to lower formations on real time basis, far outweigh the perceived disadvantages.

In Command HQs – logistics and maintenance branches are responsible to the Senior Maintenance Staff Officer (SMSO). The Command Logistics & Maintenance Officer (CLMA) is responsible to the SMSO for all logistics activity of the Wings / Units within the Command.

Integrated Material Management Online System (Immols)

To facilitate logistics activity of IAF – a customised IMMOLS was developed. The facility establishing audit compatibility was inaugurated recently by the Raksha Mantri (RM). Also, the emphasis of the prime user of IMMOLS seems to be more towards central control.

In an environment of shortages, centralised control is inevitable. It is considered that the advantages of transparency, and allowing on-line data access to lower formations on real time basis, far outweigh the perceived disadvantages.

Indian Navy

The US Navy (USN) and the Indian Navy (IN) cadre structure are poles apart. In the USN, the line officer, heads all departments on board a ship. One day he could be an Engineer Officer, and on another, he could be a Navigator/Gunnery/Communications/TAS/Executive/ Commanding officer etc. They are, however, highly dependant for the day-to-day running of the Engineering Department onboard to enlisted technical sailors, NCOs/JCOs.

In the case of IN, on the other hand–the departments are headed by specialist officers. On board ships, there are no horizontal movements possible between the Executive and the Engineer officer. The sailors on board are divided into three categories – the highly skilled Artificer/ Mechanician, the semi-skilled Mechanic and the Seaman. This situation is likely to continue even after the intake of sailors is raised to 10+2 level and that of the officers upgraded to B Tech level for the Executive Branch. Improvement can only come about when Engineering and Electrical (E & L) branches are merged, the logistics function is restructured, and user maintainer concept is implemented in letter and spirit. Alternatively, the US Navy's "line officer" system would need to be adopted, along with their logistics concept.

The Navy was fortunate, for having chosen the model of in-house design, not only because there were no takers in the industry at the time, but also, because, this had the intrinsic advantage of the Navy (as the user), being fully involved and committed in the design choice from the concept stage to delivery and induction into the service.

The Controller of Logistics (COL) is responsible through the Chief of Material (COM), for most of conventional logistic activity for the Navy. Overall the COM is responsible for the material state of all ships, submarines s/m, infrastructure and equipment. Induction of any equipment / technology into the Navy has to have COMs endorsement. He is also the technical authority for all the Dockyards and Base Repair Organisations. Controller of Warship Production & Acquisition (CWP&A) under VCNS is responsible for all warship production in India and acquisition from abroad.

In the area of Design, Development and Production – the Navy has had distinct advantages over the other two services. The indigenisation orientation was the hallmark of all the Chief of Naval Staffs (CNSs) since Independence. The ships and submarines being an integrated fighting machine, with multi-disciplinary functions incorporated within–further facilitate this. The Navy has graduated, in stages from designing and building small ships and sophisticated destroyers to an aircraft carrier and a nuclear powered submarine. To achieve this end, the Navy started training naval designers abroad from the early 1950s. An in-house, multi-disciplinary, Design Bureau was also set up.

The Navy was fortunate, for having chosen the model of in-house design, not only because – there were no takers in the industry at the time, but also, because, this had the intrinsic advantage of the Navy (as the user), being fully involved and committed in the design choice – from the concept stage to delivery and induction into the service. All the stakeholders had full opportunity to have their say, at each stage. Backing out of any project mid-stream was out of the question, since every step was a corporate decision, supported with requisite funding. Any delay in freezing the design or thereafter, requiring changes in equipment/ weapon package would naturally result in cost/time over-runs. Today, the order books of all PSU shipyards are full. To make up for their poor productivity, there is an urgent need for adopting modern modular construction methodology and multi-skilled workforce. Also, emerging private sector shipyards need to be encouraged to provide the much needed competition.

Due to lack of such long-term commitments, vision, and frame of mind, the Army and the IAF, are still struggling to induct their first indigenous Main Battle Tank (MBT) and Combat Aircraft into respectively.

Integrated Logistics Online Management System (ILMS)

The Navy has also developed a customised logistics management system. ILMS was formally launched in December 1997. ILMS is also audit compatible. ILMS (Air) deals with naval aviation spares. Weapons Equipment Depots (WED) and Armament Stores Depots (ASD) work outside the ILMOS system.

Standardisation & Codification

Standardisation and codification is the key to efficient and effective logistic management. Almost from the outset, the Soviet Union had, to a great extent, universalised their standardisation process. Even in late 1960s, one could find the same prime mover, being used in different warships and ashore for power generation, and same being employed for driving

heavy duty specialised commercial/military vehicles and common tractors for plowing the fields. Also, HP air compressors, common motors, pumps and communication equipment were used across the board, for multifarious end use.

As far as the integration of Military Logistics is concerned intra-service integration, to a large extent, already exists in the cases of IN and IAF. Also, Army Medical Corp (AMC), Military Postal Service, Movement Control Organisation, Military Engineering Service (MES), Canteen Service and to a limited extent even the ASC are already part of a unified service. The Directorate of Standardisation (DoS) was established within the MoD about 46 years ago. Codification is part of their charter. For which purpose, they adopted the NATO Codification System (NCS) format. Today they have a strength of about 300 personnel. All of Europe including Russia, erstwhile Warsaw Pact Countries, USA, Canada, Australia, Scandinavia, and most of South America use the new NCS format for codification. In June 2008, India has also become a Tier I member.

The June 9, 2008 MOU with Allied Countries (AC) 135, in Brazil, has the potential of revolutionising the Indian scenario. At least as far as codification is concerned, the operationalisation of Tier I agreement with NCS has the possibility of bringing all the three services and DoS on to the same grid. This would also make it possible to remove all the technical hurdles in the way of sharing data between ILMS/IMMOL/CICP/ASMACS/ILMS (AIR) etc. However, to convert this into reality, a change in mind-set change would be essential.

Experience of the western world, in adopting an integrated and computerised logistics system has confirmed following advantages:-

- Efficient & effective logistics system.
- Higher customer satisfaction.
- Prompt response to flexible operational demands
- Large reduction in stock holdings.
- 15 per cent savings in inventory costs.
- Better sourcing contracting – leading to further 20 per cent savings.

Defence Capital Acquisition

Looking at it holistically, capital acquisition forms an important part of the overall logistics activities. Defence Procurement Procedure (DPP) documents are a series of documents promulgated by MoD, since 2002. These form a near comprehensive set of documents, covering all feasible options available in defence procurement process, along with the detailed procedures involved.

In the DPP 2006, there are some ambiguities in the new “make” subgroup, promulgated under the broad design and development category. And the “offset” options introduced need further elaboration. The proposed five-year plan for Capital Expenditure on defence is estimated to be of the order of $100bn. This would give an opportunity of extracting transfer of know-how and cutting edge technology benefits, worth at least $21bn. This must be

judiciously exploited. Presumably, these would have been taken care in the next version of the document (DPP-2008), released by the Raksha Mantri recently.

Naval involvement with shipbuilding, as brought out earlier, has been so extensive that a dedicated chapter had to be devoted, in DPP-2006, to this exclusive category. The naval model has reached such a mature stage that this model could be dovetailed into a DSES (UK) model discussed earlier.

Proposed Immediate/Short Term Action Plan

- Appoint a CDS. 5&6
- An affirmative JCSC decision on the long-term need for a unified military logistics system.
- A Joint Logistics Committee to evolve and adopt an integrated codification doctrine – within a quarter.
- Garner all wherewithal available in the country, towards rationalisation of military codification system.
- Get full mileage out of following opportunities knocking at the door: –
    - Tier I membership of NSC – June 9, 2008.
    - Indian membership of ISO.
    - Utilize all US FMS transactions – to gain full access to NSN catalogues and their supply chains.
    - Russian Federation Protocol offering supply of spare parts catalogue with NSC based part numbers.
    - Assistance from local ERP vendors – to integrate logistic software.
- DoS to add above to their charter and give priority assistance.
- The Navy needs to take its logistics restructuring process forward and overhaul the cadre structure to give it technical orientation and make it totally inclusive.
- Rationalisation of the command structure, as applicable to logistics on the model of the IAF, would also be necessary.
- Carry forward the DGOL prescription to its logical conclusion, in line with Brigadier Sarin's suggestions.2
- The IAF to inter-link the IMMOL's online real time connectivity with field units and other defence aviation establishments. Command & Control will continue to remain with AOM.
- The Air Force to become more institutionally involved and committed to military aeronautical design and development projects. Utilise the openings becoming available in projects such as Fifth Generation Fighter Aircraft (FGFA) etc.
- CICP is, in any case, all set to relaunch itself. In the circumstances, they would be expected to adopt the new NCS norms.
- In due course, the Navy & IAF, to also follow suit–the earlier the better.
- Adopt modern, ware-housing technology and supply-chain management system. Provisioning of improved mobility, mechanical handling facilities and universal use of

bar-coding system etc. would go a long way in achieving higher efficiency and productivity.

- CIDS to use Andaman & Nicobar Command to develop, on priority, a pilot project to implement an exclusive unified command logistic system.
- To ensure speedy and phased execution, JCSC must immediately appoint a dedicated Dy CIDS (Logistics), if required from own resources, to steer through this important programme. Also, institute a system of quarterly SITREP from CIDS to the JCSC.
- Navy to undertake commensurate cadre structure review, and implement E&L merger of Branches and introduce User Maintainer Concept on board ships.

Medium & Long-Term Perspective Plan

- The Army to establish an integrated intra-service logistics system/organisation from Corporate/Command HQs & Central Depots to field units.
- Implement the "out of the box option" presented for HDM.
- Progressively, the three services to restructure infrastructure in line with the British model.
- Extend above programme to Theatre Commands as they evolve.
- Evolve a unified/integrated logistics management structure for the three services.
- Progressively evolve a structure akin to UK's DSES to take on the total logistics responsibilities.

In conclusion, it may be added that:-

- As far as the integration of Military Logistics is concerned – intra-service integration, to a large extent, already exists in the cases of IN and IAF. Also, Army Medical Corp (AMC), Military Postal Service, Movement Control Organisation, Military Engineering Service (MES), Canteen Service and to a limited extent even the ASC are already part of a unified service.
- The immediate and short term action plan proposed above is considered to be well within the scope of the uniformed fraternity. Only joint will and perseverance is needed.
- The urgency is such that the above need not wait, either for the appointment of the CDS or the JCSC, to arrive at a decision on adopting a unified military logistics system
- If one can come to an amicable agreement within the JCSC on such contentious an issue as the Unified/ Joint Space Command Concept, then, such mundane issues as above, could also be resolved by mutual discussions.

MODULE-IV

Economic, Science and Technology Issues & Defence Management

INTRODUCTION

Defence and Economics. Do these two terms go together? The defence sector has been perceived to be amenable more to professional studies and strategic analysis, rather than economic and financial analysis. This is reflected in the output of defence studies, which spans almost entirely professional and strategic issues, and has very little content of finance or economics. Practitioners in this field are protective of their turf, and do not seem to readily welcome intrusions of financial experts and economists on their terrain, for various reasons. Some of these reasons can be stated as:

- National security. In any matter concerning the defence of the country against foreign aggression, patriotism comes into play. Surely the activities of the defence forces should not be unduly analyzed or questioned, lest it affect their performance.
- Repository of State Power: Defence forces represent the ultimate repository of force, in the expression of state power. Particularly in many developing countries, the matter of civilian control continues to be a delicate one. There is the sense that issues relating to defence should not be probed unnecessarily.
- Strategic and Operational Requirements. These are best judged by the professionals and practitioners, and override mere financial/ economic concerns, however reasonable they may be in themselves. Surely policies or positions based on professional views and strategic perceptions cannot be second=guessed by armchair theorists and number-crunchers.

The public and the political leadership in most countries by and large subscribe to a "holy cow" status of matters relating to defence. Particularly in less developed countries, there is a presumption that the needs of defence must be met, and these needs are generally met without serious political debate. However, this is not a perception confined to the less developed countries. Defence budgets attract limited scrutiny, even in advanced countries like the US, where the general feeling is that the bigger the budget the better. There is the spectacle in countries like India of the defence budget being passed in Parliament without debate.

In this backdrop, financial analysis of defence is always a tough, uphill task. Since public money is involved, and there are constitutional, legal and procedural requirements in most countries regarding the use of public money, this is a task that has to be done, and is being done. Economic analysis, on the other hand, is not a mandatory requirement. Economic analysis and studies relating to defence matters are virtually unheard of, except in the more advanced Western countries such as the United States of America (USA) and the United Kingdom (UK), where it is being accepted as a legitimate discipline in itself.

Definitional Issues Defence economics is essentially the application of economic principles and analysis to defence issues. This is easier said than done, since the defence sector has certain special features. It is largely state-controlled, opaque, and not as readily amenable to analysis as the rest of the economy. At the same time, defence is regarded as a public good in the economics literature, with significant externalities.

Various definitions have been attempted in the existing literature on defence economics. One version views defence economics as "the allocation of scarce resources to meet spending and policy goals concerning military organizations".A broader version states that "defence economics consists of applying economic analysis to national defence issues. As economics is a science of choice, so defence economics is a systematic study of choices from among competing alternatives".

In the field of defence economics, the analysis can range from consideration of almost pure economic problems to the use of economic and econometric tools, such as game theory and modeling, in strategy. Broadly, both macroeconomics and microeconomics are involved. For example, macroeconomics is used in the analysis of the defence budget, and the interrelationship of the national economy and growth with the defence sector. Microeconomics comes into play when defence industries are looked at.

In defence economics, standard economic principles are applied to the formulation of defence policy: A good exposition of this has been set out by Keith Hartley. In particular, the principle of final outputs has been explained in the following manner:

"Typically, the final output of defence can be expressed in such terms as protection, security and peace, as well as crisis management, peace-keeping and humanitarian aid. However, debates on defence policy usually focus on the numbers of aircraft, warships, infantry regiments and tank units. These are inputs into producing defence output. The key question is what is the contribution of each of these inputs of equipment and military personnel (capital and labour) to final outputs in the form of protection and security? Furthermore, what would be the impacts on final outputs of small changes (marginal increases and decreases) in each of these inputs?"

Another important principle is the principle of substitution. This recognises that there are alternative methods of achieving protection each with different cost implications. In principle, defence policy-makers have to seek the least-cost solution to providing various defence capabilities. And then there is the principle of competition. Competition is a means of achieving efficiency. Although the defence forces operate largely in a monopolistic framework, competition cha be harnessed for the purchase of equipment and for some of the activities traditionally undertaken 'inhouse' by the Armed Forces.

RELEVANCE OF DEFENCE ECONOMICS

Size of Defence Economy:

The sheer size and scale of the defence sector and its significant share in world economy and trade compel attention, and underline its importance. The world spent more than a trillion (1000 billion) US dollars on military expenditures6 in 2004: Nearly half of this was spent by the USA alone. After a decade of overall decline following the end of the Cold War, world defence expenditures have been on the rise since 2001. Defence spending is significant and increasing in major countries like India, China, Japan, France, the UK and Brazil.

Globally, arms sales7 (excluding China) were of the order of $ 236 billion in 2003. Similarly, the value of the international arms trade in 2003 was estimated at between $ 38 billion to $ 42 billion. This represented around 0.5 to 0.6% of total world trade. The top exporting countries are Russia and the USA, while the top importers are China and India. Likewise, military manpower numbers8 are also impressive. Active troops in just the ten major countries number over 10 million, while if we count reserves and para-miliatry forces, this number goes up to over 48 million, for the same set of countries. These figures do not include civilians employed directly or indirectly by the defence sector. Surely, these figures suggest that the defence sector is a crucial component of the world economy and is worthy of study.

National Security:

The security of a country, whatever the posture adopted in terms varying from aggression to deterrence with preparedness, has always been extremely costly. There are indeed few countries where the defence budget does not occupy the highest place in the national economy in terms of expenditure.

"What do dollars matter when national survival is at stake?" They matter precisely because they represent (however imperfectly in some circumstances) generalized national resources at the disposal of the military. Unless they are economically used, resources will be wasted, and the nation will have less military capability…If any one dimension of military power is wastefully planned, that is, at greater than minimum cost, some other dimension will, with a given total military budget, have fewer resources at its disposal and necessarily less capability. An economically efficient solution to military problems does not imply a cheap force or a small military budget. It simply implies that whatever the military budget (or other limitation, for example, on personnel) the greatest military capabilities are developed.

Framework of Analysis:

Defence economics seeks to present a useful way of looking at military problems many of which can essentially be seen as economic problems in the efficient allocation and use of resources. We can consider the economic problems of defence at three levels: the quantity of national resources available, now and in the future; the proportion of these resources allocated to national security purposes; and the efficiency with which the resources so allocated are used. At each level there are many alternative policies from which to choose. Explicit consideration of these alternatives in terms of economic criteria will help in better decision making, which is in the overall interest of the country.

For example, looking at the macroeconomic picture in the medium term, resource constraints for defence are best viewed as general monetary constraints, and costs are usually best measured as rupee or dollar costs.

In the long run, the effective constraint on the nation's activities, including defence, can be regarded as the nations' capacity to produce, as measured by gross national product (GNP) in constant dollars.

Looking at problems in this way can aid in reaching better decisions. Increased recognition and awareness that military decisions, whether they specifically involve budgetary allocations or not, are in one of their important aspects economic decisions; and that unless the right questions are asked, the appropriate alternatives selected for comparison, and an economic criterion used for choosing the most efficient, military power and national security will suffer.

DEFENCE ECONOMICS: CORE ISSUES

Defence economics has been emerging, mainly in the USA and UK, as a distinct branch of economics since the Second World War. The literature on defence economics, while not prolific, has covered a number of areas relevant for defence analysis, and used a wide range of tools in the consideration of defence issues. The presumption in the literature is usually that we are looking at more advanced, democratic countries where civilian control of the military is taken for granted. Developing countries studies are there, but rarely developing country perspectives.

If we look thematically, almost all the topics in defence economics can be grouped in five sets of issues. These are:

1. The Demand for Defence (Expenditure), encompassing the "Guns versus Butter" debate, and arms races
2. Defence and Economic Growth, including issues of impact and sustainability
3. Military Manpower
4. Arms Procurement and Trade
5. Defence Industry, including "Make versus Buy" issues, and those related to Research and Development.

We consider each of these in turn.

The Demand for Defence (Expenditure):

In most economics primers, the "guns versus butter" example is used to illustrate the resource allocation problem. In a two-commodity economy, with a given amount of resources, the dilemma is to allocate resources either for guns (defence and security) or butter (development and welfare), both of which are equally important for the well-being of the people.

How much to allocate for defence would depend on the demand for defence, in terms of expected outputs like protection from external aggression, internal security and keeping the peace. A valuation of these outputs in turn determines the demand relationship which indicates the manner in which a country allocates its resources between defence and non-defence goods (i.e., the classic guns versus butter trade-off).

Determinants of Demand:

National security is highly valued by most populations, judging by the sacrifices that many countries seem willing to make when territorial integrity, or fundamental interests, are threatened. Generally, the level of defence expenditure seems to be an increasing function of a country's perception of the nature and extent of the threats against it. Countries tend to

swing between the extremes of preferring more defence when military pressure is actually exerted on the country, and preferring less when peace prevails. Perceptions are important in determining the demand.

Some of the determinants of demand may be factors like:

- Confrontations with neighbours, due to territorial and sovereignty disputes, competition over natural resources, managing bordering ethnic peoples, instability of a neighbour.
- Multilateral and treaty obligations, including cooperative efforts with the United Nations and other coalitions and countries, including peacekeeping operations, humanitarian assistance, and disaster relief.
- Impact of trans-national issues such as terrorism, drug-trafficking, and environmental issues
- Protection of Exclusive Economic Zones (EEZs), marine resources, and fisheries.
- Protection of market access to trade, investment, energy, food, and other vital resources.
- Maintaining domestic law and order, counter-insurgency.

Nevertheless, without any tradition of systematic analysis of these factors in most countries, it is usually the perceptions which strongly influence the assessment of demand. Much can be gained in terms of more rational decision-making and better deployment of resources if a formal assessment of demand and a costing of its implications were to replace allocation decisions based on perceptions alone.

The Allocation Trade-Off:

Given that the demand has been determined, by whichever manner, there is the issue of meeting the demand. Typically, there would be competing claims for funds, and inevitably resource constraints. Development programmes in social sectors such as education and health have highly valued ends. If a country has 'too much' defence, it is wasting its resources, and if it has 'too little' defence its security is at risk. The penalty for the former may be a lower standard of living for the citizens, and for the latter it may servitude, or at best an unwarranted interference in their affairs.

Those that argue for greater allocations to development relative to defence make the point that military activity is one of the most important types of economically non-contributive activity in the modern world. Military activity may have other kinds of value, but it has no economic value because it does not directly contribute to material well-being, to the material standard of living, or to poverty reduction.

But while military goods and services have no economic value, they do have considerable economic cost. Military expenditure leads to labour, machinery, equipment, and other economically productive resources to be drawn into the service of the military sector. All of these resources could alternatively have been used to produce and distribute goods and services that do raise the standard of living. Their true cost is therefore their opportunity cost, the material well-being that has been sacrificed as a result of this diversion of resources.

On the other hand, to its supporters, defence spending is viewed as a form of insurance policy providing security and protection. As we have noted above, nations require military expenditures to respond to actual or perceived threats to their national interests. Threats can reflect a struggle for power or for resources, or they can reflect differences in ideology, race, or religion, or any kind of difference perceived as weakening a nation's security. The greater the perceived threat to a nation's interests, the more willing it will be to allocate resources to defence rather than civil goods.

Further, it is not always a straightforward choice between guns and butter. Guns also enable butter to be churned. The enabling environment provided by peace and security, though difficult to quantify, is important. For example, surely a value should be placed on deterrence, a strike capability, the defence of economic zones? It can also be argued that there is a need to look at the value that is contributed indirectly by defence to economically productive sectors. For example the tourist industry, which always takes a hit at the first signs of conflict, and which prospers in an environment of stability and security. Similarly, inflows of foreign investment into a country are directly affected by signs of conflict. There is also a developmental spin-off of defence industries, research and development, and employment of military personnel into the civilian economy.

Arms Races:

Sometimes, demand is influenced by competitive arms acquisitions by adversary countries, or arms races. In the post-World War II era, arms races between the US and Soviet Union, Greece and Turkey, India and Pakistan are good examples. Although arms races increase the demand for defence, a unique feature of such situations is that two nations in an arms race might not succeed in increasing their national security by increasing their military expenditures.

Game theory and modelling work has been used by defence economists in studies on arms races. For example, the Prisoner's Dilemma game, which is much used in the study of international relations offers insights. If given the choice between mutual arms limitation and mutual arms escalation, the payoffs clearly suggest that mutual limitation is in everyone's interests. The dilemma results because as each nation pursues its self-interest, the payoff pattern of the Prisoner's Dilemma leads both nations to escalate their arms acquisition. The self-perpetuating role of the military tends to accentuate these trends.

If decisions were to be made rationally and optimally, the demand for defence in most democratic, peace-loving countries would be based on the policy objective to offer minimum deterrence in a situation of possible conventional war of limited duration. A policy of minimum deterrence presumes that

a) The most effective preparedness should be determined in relation to the given threat; and
b) The preparedness, so determined, be procured and operated at the lowest possible cost.

Defence & Economic Growth:

After the issue of resource allocation between defence and development, the impact of defence and economic growth has been one of the most studied aspects in the current defence

economics literature. The interactions can however be both ways, i.e. defence impacts on economic growth of a country, and also a country's economic growth has implications for defence.

The Impact of Defence on Growth:

The defence sector has a major share of the budget in most countries, and is considered essentially non-developmental or economically unproductive. Accordingly, where defence spending is high and has a large share of the government's budget, we would expect it to act as a drag on the economy, and result in reduced rates of growth. This would be especially so in the case of developing countries where resource limitations tend to be serious constraints on the pace of development and growth.

The perceived adverse effects of higher defence spending on economic growth are due to the following:

- purchase by the defence sector of domestic goods or the use of scarce foreign exchange to purchase imported goods. This lowers the investment and consequently growth rate of civilian output.
- the government sector shows no measurable productivity increases, thus an enlargement in defence shifts resources from the productive sector to the non-productive sector,
- a shift of resources to defence reduces the size of the civilian nondefence sector.

An extreme view has been that demilitarization is a prerequisite of democratization and for genuine economic development of less developed countries. Economic growth also requires skill development which is expensive and difficult to achieve. In the face of the resources required to support extensive armed forces, this becomes virtually impossible. One example cited in support of this view has been Costa Rica. The Costa Rican government eliminated its national military forces entirely in 1948 and directed the nation's limited resources to more economically contributive activities. For more than half a century now, in the absence of any national military, Costa Rica has been the most stable, democratic, and economically well off nation in a part of the world that has been plagued by economic trouble and wracked by terrible spasms of violence. And it has maintained its independence. It is an interesting and important example.

A contrary view was expressed for the first time in a study of developing countries on this topic by Benoit in 1973. He shook a lot of students of development with his book Defence and Economic Growth in Developing Countries. Particularly disturbing was his statement that: "The big surprise of this study was the finding that the evidence does not indicate that defence has had any adverse effect on growth in developing countries".

Plausible or paradoxical, Benoit tried to examine how such a result was possible. He did not doubt that a switch of resources from defence to 'highly productive investments' in developing countries would have improved their growth rates. But he recognised that, in practice, in most developing countries, only a tiny proportion of their non-defence expenditure is put into productive investment. Of the favourable effects of defence spending, Benoit lists:

Security effects - to the extent that the military provides security to the country it enables an atmosphere conducive to investment and long-term planning decisions. In the absence of security, the economy may disintegrate.

Training effects - military manpower receives training even at the rudimentary level and this can be beneficial if the recruits come in substantial numbers from the subsistence economy and if the military programmes introduce people to 'modern' methods and social skills (discipline, acting on instructions, spending and saving money), travelling around the country and gaining familiarity with manufactured products (buses, trucks, cycles, planes), maintaining and repairing machinery and general inculcation of 'national' values and attributes as opposed to the limited horizons of the village. (To this we could add the employment opportunities and reduction in poverty levels of the associated families, as well as post-retirement productive usage of military manpower in the civilian economy.)

Infrastructure effects - the military may create infra-structure, such as roads, airports, docks, and communications, which can be used by the civilian sector, especially 'up country'. Also, mapping, surveying, geological and meteorological services have civilian spin-offs.

Consumable effects - the services provide substantial numbers of people with food, clothing, shelter, and medicines. They also engage in 'civic action' programmes and in 'hearts and minds' campaigns.

Later empirical studies focusing on the military expenditure-economic growth relationship give conflicting results. However, Yildirim and Sezgin (2002) report that defence spending enhances economic growth, by raising aggregate demand or its spin-out effects, in Turkey. Given the imperfect relationship between economic growth and job creation, Yildirim and Sezgin analyse the effects of military expenditure on employment. Their findings suggest that military expenditures negatively affect employment both in the short run and in the long run; this finding however does not have intuitive appeal if we consider most developing country situations.

The findings do not point towards a straightforward, one-size-fits-all conclusion. The existing research by and large seems to indicate a pattern whereby certain groups of developing countries - usually the more successful economically, the most stable politically, or those engaged in military production derive positive benefits from military spending. Countries less successful economically, more politically unstable, or lacking a domestic arms industry generally fail to have positive economic impacts from defence expenditures.

<u>The Impact of Economic Growth on Defence:</u>

The level of economic growth expands development options, increases revenue raising potential and also thereby influences the degree to which a country can comfortably spend on defence. In the long run, the effective constraint on the nation's activities, including defence, can be regarded as the nation's capacity to produce, as measured by Gross National Product (GNP). The sustainability of the defence budget is a function of the health of the economy. A glaring example of this in recent times has been inability of the Soviet Union to sustain high

levels of defence spending in superpower competition with the USA, in the face of a faltering economy.

Closer home, empirical studies have suggested that a similar phenomenon is in evidence in Asia. Total world defence expenditure fell in the 1990s. In real terms, Asian military expenditure rose from $106 billion in 1990 to $130 billion in 1998, a 22.6 percent increase overall. South Asia's military expenditure grew by 27.3 percent over this period, whilst East and Southeast Asia increased by 22.1 percent. Against a background of falling world military expenditure, Asia's share of world military expenditure rose from 10.6 percent in 1990 to 18.7 percent in 1998. The most logical explanation is that Asia's relatively rapid economic growth allowed this continued expansion. Between 1975 and 1995, when GNP per capita for all developing countries grew at an annual rate of 2.3 percent, the figure for East Asia was 7.3 percent, for Southeast Asia and the Pacific 4.4 percent. During this period, the growth rate in South Asia was only 1.4 percent for the region as a whole, but military expenditure growth in South Asia was sustained by the Indian-Pakistani arms race, better than average rates of growth in the countries concerned, and in part fuelled by inflows of foreign assistance.

Military Personnel:

Ancient armies essentially comprised manpower, and the quality and costs of that manpower were the quality and costs of the army. Today, while there are other inputs that go into the output of defence, military manpower still remains the most important input. In economics, the production function specifies the relationship between factor inputs and output. In defence economics, the inputs of technology, capital, and labour take the form of defence equipment, bases, facilities (infrastructure), together with the military and civilian manpower needed to provide defence forces.

Defence, however, differs from private competitive markets in that there is an absence of market prices for the output of defence, there are no rival suppliers of defence in a national market, and profitability cannot be used as a performance indicator. Military manpower operates in an administered or internal labour market dominated by hierarchies, rules and contractual commitments. It also has a price, which is not readily evident to the users, who may treat it as a relatively cheap resource. Indeed, within the military production function, commanders often regard manpower as a resource which, compared with defence equipment, is inexhaustible, inexpensive, and readily available.

Increasing manpower costs suggests incentives and opportunities for factor substitution. Changing relative factor prices provides incentives to substitute between labour and capital. As the experience of recent conflict e.g. the First Gulf War indicates, it is possible to achieve in certain circumstances great effectiveness with heavier reliance on capital and technology inputs than labour.

The armed forces are a major employer, but military manpower and the human resource dimension of defence economics is a relatively neglected field. US studies dominate the theoretical, empirical, and policy literature on military manpower. Two issues have been pre-

eminent. First, studies of conscription versus an all-volunteer force. Second, the concern with downsizing and its implications for military manpower.

Although there have been extensive economic studies of conscription versus an all-volunteer force, these have little relevance to developing country situations. There remain considerable opportunities for applying the analytical tools of labour economics to military manpower. Issues on the demand side embrace recruitment, factor substitution, and retention whilst supply-side factors include demography, relative pay in the civil sector, training, and skill acquisition.

Examples of policy issues that arise are the impact of changes in the relative prices of service personnel and defence equipment on the employment of service personnel; the problems and costs of recruiting an all-volunteer force where the armed services are a major recruiter of young people; and the opportunities for substitution between military manpower and equipment, between reserves and regulars, between men and women, and between armed forces personnel and civilians.

Arms Procurement and Trade:

The procurement of defence equipment is big business. The value of the international arms trade in 2003 was estimated at between $ 38 billion to $ 42 billion. This represented around 0.5 to 0.6 Per cent of total world trade. The countries dominating ths trade are also major players in the world economy. As earlier stated, he top exporting countries are Russia and the USA, while the top importers are China and India. Expenditure on major weapons procurement accounts for a significant share of total military expenditure for developing as well as European NATO nations. Defence markets are large, government regulated, and generally nontransparent in their functioning.

Despite the inevitable strong political overtones to decision-making in the international arms trade, economic factors are relevant in understanding and dealing with defence markets. For example, the post Cold War situation and disarmament in NATO and in the former Warsaw Pact countries has created excess capacity in their defence industries. Hence, defence contractors are actively seeking export sales to compensate for declining domestic procurement. As a result, disarmament in one part of the world might actually promote arms exports, regional arms races, and possibly instability elsewhere in the world.

To the supplying nation, arms exports can be a source of employment, of foreign currency earnings, of spreading high fixed R & D costs over a larger output, and of achieving economies of scale. Technological progress has been a distinctive feature of defence equipment markets. Major technical advances resulting in new products, and their newer advanced versions (jet engines, missiles, electronics, helicopters), have created new markets and fuelled demand from buyers who need to “catch up.” An interest by governments and international agencies in the arms trade reflects a continued concern that arms exports will promote regional arms races so increasing the possibilities of local and even global conflict.

To the purchasing nation, arms imports might be more efficient than developing a costly defence industrial base. But arms imports make the buying country dependent on overseas

suppliers and vulnerable to political leverage; they require foreign currency and can lead to an increase in international borrowing and external debt. Against this, in today's supply driven market, major arms importers enjoy considerable bargaining leverage with exporters.

At the beginning of the 21st century technology offsets have become commonplace for countries undertaking major overseas arms procurement. The purpose of offsets is to ensure that a proportion of funds spent are re-invested to achieve economic development goals. As noted above, arms purchasing countries wield substantial market power.

As the arms trade takes place within a buyers' market, it follows that arms importing countries are in a dominant position to extract compensatory investment. Such "offsetting" technology transfer has grown apace with the tightening of the global arms market. Evidence of the growing importance of offsets can be found by referencing to the 1970s when only a handful of countries possessed counter-trade and offset guidelines; there are now upwards of 150 countries with published countertrade requirements.

The bottom line for undertaking offsets is that there must be a development impact. If this is absent, then there is doubtful value to pursuing offsets. To achieve this impact, the authorities must develop a vision, translating offsets into a vehicle for the long-term, dynamic, and sustainable infusion of "technology" into the local economy.

Defence Industry

This is an important part of defence micro-economics. A nation's defence industry and the efficiency with which it supplies equipment are major inputs into "national protection". By all accounts, the size of the defence industrial base is significant. An indicator for defence production is the figures for arms sales brought out by the Stockholm International Peace Research Institute (SIPRI). In 2003, arms sales of the top hundred companies of the world (excluding China) were of the order of $ 236 billion. This is no mean amount by any count.

Countries seek to build up a defence industry for reasons such as:

- National independence, security of supply (self sufficiency) and responsiveness in emergencies and war.
- The need to maintain a capability which a nation believes will be required in the future.
- Foreign supply leaves the buyer vulnerable to monopoly price increases.
- Foreign supply provides equipment not tailored to a nation's requirements.
- National economic benefits.
- The desire to reduce dependence on arms imports and excessive reliance upon one foreign nation.

A major motive for indigenous arms production is stated to be acute strategic need. In recent years, a number of countries plead a pre-emptive strategic need, "just in case" a conflict should emerge.

Strategic motivations apart, indigenous arms production efforts have been justified on economic grounds. The two major "economic" arguments are:

1) that building up an indigenous arms industry will spur generalized industrialization by means of spill-over or spin-off effects; and

2) that building up an indigenous arms industry and arms export sales will permit foreign-exchange earnings.

On the first point, Brauer and Dunne (2002) indicate that, if anything, the development of indigenous arms industries in developing nations depends crucially on already established civilian capacities.

From the early 1980s to the late 1990s, a number of countries like South Korea, Taiwan, Singapore, Spain, Portugal, Israel graduated from relatively low levels and sophistication of arms production to relatively high levels. This coincides with the continued development of their civilian industrial capabilities. Among the remaining developing nations, as of the late 1990s, between 25 and 35 are engaged in some form of arms production and arms (re)exports.)

In an era of rising weapons and equipment costs, and increasingly constrained defence budgets, nations cannot avoid questioning the efficiency and competitiveness of their defence industries. It is desirable for policy makers to know what are the benefits and costs of a defence industrial base. Critics point to monopoly-oligopoly and the absence of competition for contracts, the overpricing of equipment, cost overruns, delays in delivery, cancellations, excessive profits, poor labour productivity, labour hoarding, and failure to export. In addition, the defence industries in Europe are criticized for excessive and wasteful duplication of costly research and development (R&D) and for relatively short production runs as each state supports its national champions. It is generally believed that defence industries in most countries are inefficient and uncompetitive.

It is reasonable for decision makers to have an expectation that taxpayers should get maximum value for their money. And the reference point for determining the value of any defence - industry relationship is its contribution to the ability of the defence forces to meet their key responsibilities. Hartley has put it well, in the context of a study on British defence industry

If buying British means paying more for some defence equipment and waiting longer for deliver, the result is smaller defence forces and less protection for our citizens. Questions then arise as to what the defence budget is buying: is it buying protection for our society or protection for UK defence industries?

The above quote is valid for a broad range of countries which have defence industries. The question is whether a country should seek to build up and support a defence industrial base with the capability of developing and producing a complete range of modern high technology equipment. Instead, should more defence equipment be imported or be produced jointly (particularly valid in the European context) with other nations?

Joint production or collaborative ventures should be expected to lead to cost savings and greater scales of output. But international collaboration is only one form of work sharing: alternative forms are licensed production and offsets; these also need to be evaluated as alternatives.

A feature of the debate about the defence industrial base is the general lack of quantitative evidence on its benefits and costs. The arguments are qualitative in which various benefits are described, sometimes too vaguely, without any indication of policy-makers' willingness to pay.

Does it really matter?

For countries like India, facing localized conflict situations, it may well be questioned whether the existence or otherwise of defence production capabilities really matter in strategic terms. While anyone can see the danger of supplier countries, for political reasons or whatever, turning off the tap at a critical juncture, thus jeopardising the country's fighting capability and compromising its freedom of action, there is a school of thought which holds that whatever advantage of internal strength the defence industry may have enjoyed earlier, it will never come into play in a short, swift war which is the basis of future defence planning in such countries. War materials in current production, the argument runs, cannot reach the front before fighting stops due to Security Council dictation or other international pressures. In other words, the war will be fought with the stockpile of weapons and ammunition already held and the strength of the production line cannot possibly affect the outcome.

Research and Development (R&D):

While there are a number of countries that have developed a defence industry, a few have also made efforts at research and development of arms and armaments in tandem with defence industry. If domestic industry is not already at the cutting edge of technology and reaping the benefits of economies of scale, R&D is likely to be a costly proposition.

A long lead-time for design and development and fast-changing technology are the twin bugbears of all R&D planning for defence production. For example, in the case of India's Defence Research and Development Organisation (DRDO) the development time taken is in many cases said to be so long that before an item reaches the prototype stage, the specifications and performance parameters aimed at are obsolete by contemporary standards. This is known to happen in more advanced countries also. By the time a new item can be brought into production, the user's specifications get upgraded and costs escalate; these in turn cause further delays. More effective products may meanwhile enter the armaments market and the dictates of military preparedness would not be satisfied with what is under indigenous development. True, the newer weapon systems are becoming more and more prohibitively priced, but then in defence parlance no weapon is costlier than an outdated or outclassed one. So fresh imports are resorted to and another effort at indigenous design launched, in a vicious circle.

If the question is what to develop, the answer may well be in terms of a strategy for buying information rather than a detailed blueprint of some futuristic operational weapon. Economies of scale are usually vital to justify the kind of R&D expenses that would give the programme a chance of success. With technological uncertainty layered on top of strategic uncertainty, it is rarely possible to specify an advanced weapon system well in advance and schedule a development program for it. And it may be a mistake to try. It may even be

worthwhile and more cost effective focusing R&D towards re-engineering, rather than original development. In any case, the costs and benefits associated with R&D efforts in support of domestic defence industry need a long, hard look.

Changing Nature of Security Challenges and Globalisation

The post cold war period and the end of superpower confrontation were expected to lead to a "peace dividend." For a while, global defence expenditures did decline. But the peace dividend proved illusory. Instead, the global security environment has evolved in unanticipated directions in recent times, particularly since the 9/11 incident in 2001. The sole superpower US has decided to defend its pre-eminence by actively striking out, and even anticipating threats to its security and seeking to crush them by use of force. At the same time, terrorists and rogue states can pose asymmetric threats even to the strongest nations. The need for greater global security interdependence is now being felt.

Today's world is susceptible to insurgencies, terrorism, and other forms of non-conventional conflict. Additional risks of conflict stem from the increased arms trade of 1980s and 1990s that flooded the world with weapons that can be used in insurrections. States bent on destabilizing other nations may view covert low-level operations, such as terrorism, as a cost-effective means for achieving political disruption. Dissatisfied groups may be able to cause great havoc and impose huge costs on a strong government when such groups resort to guerrilla warfare tactics. Nonconventional forms of warfare pose a significant risk to individual countries as well as to the world community. Defence economics has contributions to make in understanding and help tackle challenges in these areas, and other trends resulting from globalisation.

Terrorism

The threat of trans-national terrorism is now a reality that most countries have to face and factor into their security matrix. Each country has to study the problem and come out with its own solutions. For example, economic models of terrorist behaviour use the standard consumer choice models with individuals and groups facing an allocation and choice problem. Terrorists aim to maximise their individual or group utility. But they are subject to limited resources (income, wealth, labour, time) which have to be allocated between various terrorist and non-terrorist activities.

A rational-actor model depicts an individual or collective as optimizing some goal, usually that of utility or net benefits, subject to a set of constraints that restrict actions. These constraints indicate the limits imposed by resources, laws, institutional rules, or other considerations on the participants. Alteration in these constraints brought about, say, through government policies (e.g., increased security or stiffer penalties) should have a predictable effect on the agent's or optimizer's behaviour.

The choice-theoretic model leads to some testable hypotheses with respect to terrorism. If a government policy increases the relative cost or price of one kind of terrorist mode of attack, then terrorists are anticipated to substitute those modes whose prices are unchanged. The greatest substitution will occur between modes that achieve similar purposes - for example,

between hostage-taking events, or between different operations directed at diplomatic personnel. The overall level of terrorism need not decline. To achieve a general decline in terrorism, the government must either reduce terrorist resources in general, or else raise the costs of all terrorist operations relative to non-terrorist activities. Piecemeal policies, aimed at one or two modes of attack, will not necessarily curb terrorism.

Enders, Sandler, and Parise (1992) attempted to calculate the impact of terrorism on European tourism. Their results showed that terrorists had been successful in deterring tourism and that there was a generalization effect: an incident in one nation acted to deter tourism in neighbouring nations. The negative externality has important consequences for the proper amount of expenditures used to thwart terrorism, since countries are unlikely to account for these spillovers when allocating resources to terrorism prevention.

These economic models of terrorism offer various predictions:

- *Substitution effects*: If a government increases the price of one form of attack, terrorists will seek lower-cost alternatives. For example, increased airport security might mean more bombings of other civilian targets (e.g. city centres).
- *Income effects*: Government can try to reduce terrorist activity by denying access to funds (budget constraints).
- *Increase the costs of terrorism*: Deterrence is one option (tit for tat policies). Or, costs might be imposed on nations supporting terrorist groups (e.g. Afghanistan).
- *Free riding*: Nations have incentives to free ride on any nation (e.g. USA) which actively pursues international terrorist groups.

At the same time, recent terrorist strategies like use of suicide bombers do not readily fit into these predictive models. There will be an increasing need in the future for these models to be drawn upon, and newer models thought of in tackling the terrorist threat.

Cost Benefit Analysis of Conflict

The economics of conflict is a developing field that can be applied to both full-blown conflict situations as well as the lower intensity ones that are becoming increasingly frequent. A contribution by economists is to focus on the costs of conflict. However, there is a lack of empirical work on the costs and benefits of conflict.

For the conflict participants, estimates of military costs are made taking into account factors like:

- The additional cost of the conflict
- The need to include the costs of replacing equipment
- The need to value the human capital losses (i.e. based on the discounted value of future earnings)
- Possible long-term costs such as the need for peace-keeping forces and a greater threat from terrorism
- Possible financial contributions from nations not participating in the conflict.

There are also costs for the civilian economy. These include impacts on oil prices; on airline and tourist markets; on share prices and the state of general confidence in various economies;

possible recession effects; and on public spending plans (e.g. greater spending on defence at the expense of social welfare programmes). In undertaking such analysis, the counterfactual cannot be ignored, namely, what would have happened without any conflict? For example, would the airlines have experienced a recession in their markets?

A cost-benefit approach to conflict obviously requires estimation of both costs and benefits; e.g. what are the likely benefits to the UK from a war with Iraq and how highly are such benefits valued? Here, one possible approach is to use costs to indicate the minimum valuation which must be placed on the benefits. For example, the Gulf War cost the UK some £2.5 billion with contributions to the UK from other nations of over £2 billion (1991 prices). Today's costs to the UK of the conflict in Iraq are likely to end up being much, much higher. In purely economic terms, benefits in such cases then must be valued as greater than the costs incurred. If they are not, then this must be brought out, and an informed decision taken.

Alliances:

The need for global action to address the trans-national nature of the threats of the 21st century has renewed interest in coalitions and alliances, and opened up new horizons for the economic theory of alliances. There is already considerable defence economics literature on military. This literature models alliances as 'clubs' providing a public good in the form of collective defence-security (e.g. US strategic nuclear umbrella which is non-rival and non-excludable for members of the alliance). One prediction of this model is free riding whereby the more defence a nations' allies provide, the less the nation will spend on defence. As a result, small nations exploit the willingness of large nations to provide alliance defence.

The range of alternative policies is also wide in defence missions that involve alliances. The broad choices include alternative allocations of tasks among allies so as to realize economies of specialization in forces, in production, or both; various arrangements for burden sharing; and adjustments of domestic policies in the light of the constraints and opportunities presented by alliances. Finding efficient solutions is complicated by the fact that allies have divergent national interests.

The economic theory of alliances can throw insights into the issues of burden sharing and alliance composition. It can also be fruitfully applied to the study of other supranational structures, such as environmental pacts, the United Nations, and common markets.

Trends in Defence Industry:

During the 1990s, defence firms had to adjust to the end of the Cold War. The result was job losses, plant closures, exits from the industry and major mergers creating larger defence firms. Over time, the top arms producing companies have grown enormously in size, and today match multinational corporations in size and scope. Defence industries where the companies are sub-optimal will face difficult times, and have to rely on state support if the State deems their existence absolutely necessary. Efficiency and profitability of defence production are the imperatives for the defence industry of today.

Other trends that are expected to be reinforced are that companies involved in defence production will focus on more profitable defence activities, such as systems integration. They

will be more global with international supplier networks and international alliances. They will have a 'mix' of defence and civil business. Civil work will provide insurance against defence downturns; it will also allow the transferability of human and physical capital.

Another trend, strengthened in the Iraq War, is that of increasing outsourcing. There is likely to be greater military outsourcing with firms and contractors involved in support activities for the Armed Forces. Obsolescence is expected to be rapid, which has implications for R&D and production decisions.

All these trends open up areas for micro-economic analysis and empirical studies. The more businesslike the defence industry becomes, and the closer it approximates to the private sector, the more the economists and financial wizards will have to contribute.

Technology:

Technological advances occur today occurs at a breathtaking pace. The challenge for defence and defence economics is to try to keep up and stay on top of the changes. Information and communication technology, specially the power of the internet, is revolutionizing business and lifestyles, and impacting the economies of the world. It has proved to be a great leveller, with the geographically disadvantaged and economically weak as able to derive its benefits as those better placed. Instant communications and access to remote corners of the globe have led to economic shifts that are no respecter of established power equations and strengths. The implications of the thesis of "The World is Flat" have yet to be fully realized. Business process outsourcing that is one outcome of this phenomenon will have its impact in the defence sector as well, though perhaps less dramatically because of its highly controlled nature. Defence economists have much to contribute in helping identify least cost solutions consistent with security imperatives, using the potential offered by technological changes.

US operations in Iraq and Afghanistan have pointed the way to a future in which there may well be a "remote-controlled war". Till then, increasing capital intensity, and declining labour intensity of the armed forces seem to hold out potential of greater efficiencies and effectiveness.

Technology today is divisible, with very small formations able to leverage great power (e.g. hand-held missiles). The enemy, whether conventional or unconventional such as terrorist groups, is likely to have access to latest technology. A higher level of technological solutions will have to be found to counter these.

Finally, information and communication technology has also empowered a range of non-state players such as civil society, nongovernment organizations and most notably the media. The interplay of these forces influences the outcomes of military operations, has to be factored in.

Research and Analytical Issues

There are issues in the analytical framework of defence economics that when considered add value to the analysis. Some examples are given below, and illustrations of relevant directions of research are set out.

Enemy Response:

One useful methodological distinction is the degree to which the analyst considers the enemy response. There are three broad classes of analysis. Studies in the first category assume no enemy response. This type of analysis is very relevant to technical questions concerning issues such as the choice among available production methods where our choices are unlikely to affect enemy strategy. Most microeconomic studies relating to defence industry or military manpower would fall in this category.

The second category, while still employing the method of constrained maximization, introduces explicitly the enemy's reaction to our choices. They are analogous to partial equilibrium analysis in economic theory.

The third category considers overall strategic action and cannot be treated as a strictly economic issue. In this mode of analysis, quantification becomes increasingly difficult; socio-political considerations may predominate. At times, it may only be possible to describe the important strategic interactions and to rank them according to their relative importance.

Measurement and Transparency:

The accurate measurement of defence expenditures is notoriously difficult. Security concerns result in budget opaqueness and production secrecy. Classification of defence expenditure in non-defence heads in the budget is resorted to by many countries seeking to underplay their total defence spending. For example, paramilitary forces in a military role not being accounted for; merging defence pensions in the civilian budget, and intelligence gathering. There are also conceptual definitional problems, and empirical measurement difficulties. However, analysis undertaken overcoming these handicaps, even if less than perfect by economist standards, has much to contribute.

Future Discounting:

As with much of the government, the proper valuation of future outputs is usually neglected. There is a marked tendency on the part of the military and the government to undervalue future capabilities. The reason seems to be that the primary responsibility of the military services is the operation of today's forces. Perhaps significantly, they always have emergency war plans, but seldom long-range war plans. Since personnel involved (whether in the forces, bureaucracy or at the political level) have a short personal time-horizon; almost everyone is trying to make a recognizable mark in the very near future.

The result also is that measures that promise significant savings over a period of years are often rejected because they involve somewhat higher expenditures the following year. This bias in decision-making presents opportunities for quantitative economic analysis to demonstrate large gains in efficiency.

Future Directions:

In the consideration of the core issues of defence economics above, the key research directions have been identified. Most of these directions have been researched to some extent in select economically developed countries. Research in developing economies on this subject is rare. It is needed.

Some of the key directions that need to be looked at, and which seem to be of relevance to developing countries as well, are:

- The demand for defence
- Impact of defence expenditure on the civilian economy
- Economic growth and sustainability of defence expenditure
- Optimal military manpower mix
- Cost-benefit analysis of defence industries and exports
- Subsidization of R&D
- Empirical studies on procurement
- Arms race models with strategic interactions
- Alliance economics
- Cost-benefit analysis of conflict, including low-intensity conflict
- Game analysis of terrorism
- Cross country empirical studies
- Identification of economic best practices
- Nuclear non-proliferation

A range of issues set out above represents the prominent concerns in defence economics. Much work has already been done in the nascent discipline of defence economics in select advanced countries, but the discipline is yet to take off in developing countries.

If there is no work on defence economics in developing countries, should it matter to them? Yes, if the defence sector is an important sector in the economy, or absorbs a significant share of the national budget. Further, while existing studies are useful in bringing out the issues, they may not necessarily be useful in serving as a guide to policy formulation. Unfortunately from the point of view of developing countries, most issues are studied by Western researchers with a Western perspective, with their countries' interest the setting. Even when developing country issues are looked at, it is with the same perspective.

The results of such research, however academically sound it may be, has been to willy-nilly enhance and strengthen understanding of the economics of defence relevant to the world-view of the countries and philosophies that are represented by the researchers and institutions concerned. However, it is the developing countries with significant defence sectors that need the analysis and insights of defence economics. Resources are scarcer, the allocation problem more acute in the face of an unfinished development agenda, and optimization imperative. For these countries, it holds the potential of enabling better utilization of scarce resources, and getting a bigger "bang for the buck", without compromising specified strategic objectives. Application of modelling and gaming theories can even assist in strategic decision-making. As noted earlier, insights and findings of defence economics can on the whole be expected to enhance national security.

We can begin here and now. As a major defence spender, producer and trader, India deserves a better back-up for decision-making on defence issues. In the USA and UK, where defence economic studies seem to have taken root, work in defence economics is anchored in

universities and academic institutions, as well as in think-tanks. Ideally, therefore, a defence economics facility ought to be created and nurtured in an institution of excellence in economics. However, the nature of the sector (security concerns predominate, there is lack of transparency in information available) is such that this may not be practicable at present. A defence economics facility would need to be anchored in an academic institution or think-tank with strong linkages to the defence establishment, and its willingness to go along, for such an endeavour to succeed.

The Institute of Defence Studies & Analyses (IDSA) is one such potential anchor that would fit the bill. A beginning can be made by establishing a chair in defence economics in the IDSA. This could be the nucleus around which defence economics expertise could be developed, harnessed and studies felt to be important taken up. It would be a small step, but one which has the potential of leveraging enormous value. Surely there is already more than enough material within the country's defence sector to be looked at from an indigenous defence economics perspective to keep the chair busy for many years! In time, once the critical mass is built up, the institution can seek to offer its expertise also to friendly developing country counterparts, and thereby acquire a greater academic stature in the field.

We can, of course, always take the view that we have been managing fine without, and will continue doing so. However, the rapidly evolving global scenario will have no mercy on laggards, in whatever field. Can we really say that we don't need to know; we don't need to benefit from an analytical method that has been shown to be relevant and useful in other, more advanced parts of the world? Would it be prudent to deny ourselves the benefit of information, techniques and analysis that are currently available and may help us make better defence policy decisions? Probably not. It might well amount to putting an avoidable and perhaps ultimately dangerous handicap on our own national security.

TECHNOLOGY AND DEFENCE INDUSTRY

Despite the end of Cold War, armed forces continue to allocate a large share of their investment effort to defense R&D, particularly in arms-producing countries. Emerging powers like China, India and Brazil are also dedicating an increasing share of their defense budgets to R&D while these countries were not use to invest so heavily in this domain.

One may wonder whether such investment results from the need for new capabilities, linked to existing or emerging threats, and whether the outputs of defense R&D match the expectations. Defense R&D has been widely criticized since the 1970s in the economic literature because of its opportunity cost and its relative ineffectiveness compared to civilian R&D (Lichtenberg, 1995). It is therefore quite surprising that this part of defense spending was sheltered or at least preserved from budget cuts after the end of Cold War although there were mainly low-tech conflicts since the beginning of 1990s.

Such a situation reflects a paradigm shift in the twentieth century. The defense industry and armed forces' procurement have been driven by technology since World War II and this industrial model has survived after the collapse of the Soviet Union. Nevertheless one can

ask if a technology-driven defense market is still able to deliver capabilities that armed forces require for today's conflicts.

Moreover does this technology-centric approach correspond to today's business model of the defense industry and does it respond to a true need to face potential threats? This focus on technology has characterized the so-called "military-industrial complex" for four decades. However, is this approach still relevant in the post-Cold War era? Or are defense firms mainly trying to preserve their technology-driven industrial model?

This section aims to address these questions. Part one underlines how the technology-centric paradigm has been dominating defense capabilities since the end of World War II and why it is still dominant in arms-producing countries despite the end of Cold War. Part two looks at the limit reached by such a paradigm when dealing with current conflicts or ongoing programs, even though advanced technology seems to remain a core parameter in current and future defense efforts. This leads to look at the predominance of technology in defense firms' strategy, which explains both the limits reached through a technology-centric approach and the repositioning of these firms on the emerging market of security.

The persistence of a technology-centric defense

While military capacities have always played an important role in defense matters, a new paradigm emerged in the 1940s centered on technological issues. Such a paradigm was steadily reinforced by the Cold War and it survived after 1990, since a technology-centric defense is still considered the best approach to solve security challenges – at least for the largest military spenders.

Technology disruption as the driver of military capabilities

Since the 1940s, armed forces have fielded advanced technology through an aggressive pursuit of R&D and the development of a high-technology defense industrial base of unprecedented scale. Technological superiority is considered to be a key element to achieve defense effectiveness, and R&D plays a major role in accessing relevant advanced technologies. This explains why the United States and Western European countries have been pouring a large share of their R&D expenditures into applications for defense since World War II.

Technology played a minor role before the middle of the twentieth century, but World War I and even more World War II marked a radical change. This latter demonstrated the potential that scientific and technical progress can provide to armed forces, thus legitimizing large R&D budgets in most industrial countries. This was a major change, which has given birth to what Freeman and Soete (1997) called "Big Science". For instance R&D spending in the United States represented only 0.8% of federal budget in 1940, but more than 10% by 1960 – and defense R&D received most of these additional resources.

Such a dedication proceeded from major successes in defense R&D like the "Manhattan project". As Väyrynen (1983, p. 63) states, "*the invention of the atomic bomb modified entirely the importance of technology towards national military policies*." The greatest advocate of defense R&D was unquestionably Vannevar Bush, who supervised technological

projects for the Pentagon during World War II. In *Science, The Endless Frontier*, he popularized the idea that government-funded R&D produces large technological spin-offs. His book revealed how much the war effort generated technological opportunities and argued that it is fruitful to maintain it in peacetime. Vannevar Bush created a founding myth, which soon became the justification of government-funded R&D (both military and civilian).

The Cold War reinforced this technology-centric paradigm, as the USSR and the United States were looking for means that would provide strategic superiority at whatever costs. In a seminal paper on industrial policy, Reich (1982, p. 864) states: "*Large scale defense and aerospace contracts have provided emerging industries in the United States with a ready market for which they have expanded production and thereby gained valuable experience, know-how and scale economies. The Pentagon's willingness to pay a high premium for quality and reliability, moreover, has helped emerging industries bear the costs of refining and 'debugging' their products.*"

Indeed armed forces have been able to spend large amounts of R&D to sustain disruptive technology as well as achieve incremental innovations, because a "*small edge in performance can mean survival*" (Alic *et al.*, 1992, p. 114). This paradigm is not only a result of the quest for technological superiority, but also from the need to avoid strategic surprises that can result from scientific and technological path-breaking innovations. As Gansler (1989, p. 217-218) puts it, "*we have what refer to as the technological imperative: because we can have it, we must have it* (…) *Technological opportunities resulting in incremental changes are rapidly accepted and enthusiastically pushed forward–perhaps too unquestioningly*."

Such a quest for technological superiority and innovation makes sense when armed forces are trying to preserve and reinforce their strategic superiority. However, by nature, scientific and technological opportunities are unpredictable. In order to face such uncertainty, armed forces try to avoid strategic surprises by anticipating any possible technological disruption.

Saunders *et al*. (1995) explain that it is imperative to prevent "technological surprises", which threaten or jeopardize national security. Services are extremely risk-averse, in the sense that the cost of failure to find the best technology (technically speaking, of course) can appear very high. Research by definition is risky, and to maintain technological superiority armed forces must allocate a significant share of their resources to basic and applied research in areas of high potential technologies. Regardless of whether such investments succeed, failure can actually be one of the desirable features of advanced R&D, because it demonstrates that a given technology cannot be used by an enemy. If there are not some failures, technologies might not be pushed far enough nor all its military uses explored.

By exploring alternative technologies, defense R&D helps maintain technology scouting by continuing "*experimenting long after a market would have standardized on one technology*" (Cowan, Foray, 1995, p. 865). Defense R&D in new technologies eventually makes these technologies affordable by moving them along learning curves, lowering costs for later civilian adopters. Defense R&D can then be considered as a complementary action vis-à-vis

commercial firms, as it can provide what market mechanisms fail to supply. When the military supports more than one technology in the development phase, it increases the choice of civilian users, especially in the case of new, complex and/or expensive technologies.

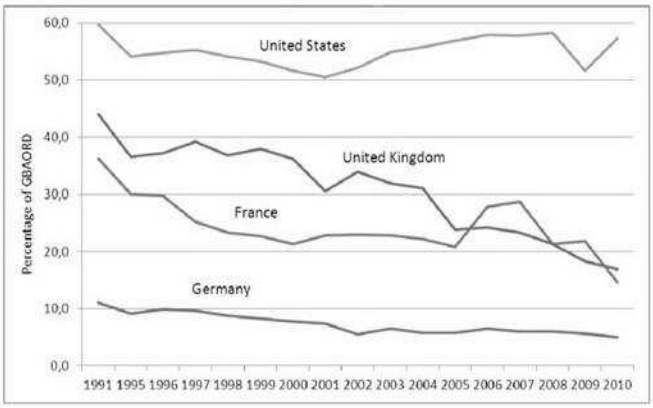
Once driven by the East-West arms race, technological superiority continues to be the core of defense procurement. Although Western countries no longer face the threat posed by a global peer competitor like the former Soviet Union, they still live in a very dangerous world. Western armed forces feel that strategic surprises can be avoided by mastering innovation and disruptive technology. This explains why defense R&D remains a key dimension of defense spending.

Still a large effort of R&D in Defense

Trends in military spending show that a defense technology race remains at the heart of defense procurement in the Western world. Despite the end of Cold War, defense R&D absorbs a large share of defense spending although no country is able to challenge the United States or NATO countries in the field of defense technology, at least in the medium term.

Conflicts since the 1990s can be identified as low-tech wars. Gulf Wars I and II demonstrated this by proving that the most dangerous enemies or troublemakers did not possess high-tech capabilities; and that there is a major technological gap between NATO countries and most other countries. There is indeed a technological barrier to reach the most advanced military capabilities (Middleton *et al.*, 2006), which naturally protect NATO countries for several years from any technologically-sound military competitor – including China, India and Russia.

Nevertheless, defense R&D remains a central component of scientific and technology investment in large arms-producing countries, as illustrated in the graph below. Through all transformations of 1990s and 2000s, armed forces have preserved their ability to invest in R&D. One can note that the Pentagon was very careful to "sanctuarize" such budget in the 1990s, when "peace dividends" led to a one-third reduction of its budget. Even though defense R&D was less protected in other large arms-producing countries, they remained larger than expected, especially when the economic impacts of defense R&D were highly challenged (Lichtenberg, 1995; Serfati, 1995).



Graph 1

Therefore defense R&D has kept a key role in the national innovation systems of arms-producing countries. One may wonder why armed forces have not changed their strategy, especially since their budgets are under pressure (except for the United States since 2001) and recent wars have not required advanced capabilities. In fact, the post-Cold War era demonstrates that the technology-centric paradigm was not only related to this specific period but translates a radical change in the way armed forces conceive military matters. This is particularly relevant in the United States, where technology has become and will remain the essential dimension to win wars.

Even though technology is neither the unique answer nor effective by its own right, it is perceived as crucial to analyze threats and to maintain military dominance. This is the reason why merely sustaining the technological effort is not considered an option but a necessity to counter unexpected – and sometimes unpredictable – foes. This view also explains why the United States and Europe have kept spending over €65 billion a year in defense R&D over the last decade, according to the European Defense Agency.

Maintaining technological superiority requires an effective technology policy both in terms of operational and budgetary impacts. This is the reason why R&D represents between a quarter to half of equipment spending of large NATO countries, as shown in the table below. Such a policy can appear as expensive, and it can be questioned whether the technology-centric paradigm is still relevant to defense missions.

***Table 1*: R&D share in equipment spending**

	2005	2006	2007	2008	2009	2010
France	38.1%	37.4%	33.4%	34.4%	35.0%	30.2%
Germany	23.2%	21.9%	25.2%	18.2%	17.3%	20.5%
Spain	8.1%	7.9%	10.5%	11.0%	10.4%	n.a.
Sweden	n.a.	18.7%	18.8%	20.7%	16.0%	9.4%
United Kingdom	35.3%	34.8%	31.4%	29.4%	26.5%	25.5%
EU-26	25.4%	25.0%	22.7%	20.5%	19.0%	20.4%
United States	40.7%	41.1%	36.6%	32.6%	38.3%	36.5%

Source : European Defense Agency, statistical surveys, various years

The predominance of this technology-centric paradigm can be easily identified through the official publications of large arms-producing countries. For instance, in June 2008, France released a defense review that called for an increased effort of defense R&T and for the launch of technological demonstrators. The subsequent Defense Program Law emphasizes such a trend, with a significant increase of effective spending since 2008.

Similarly, the United Kingdom has preserved its defense R&D effort in spite of budgetary tensions. Although the above graph and table show that R&D expenditures have been decreasing over the last few years, the British ministry of defense still considers technology as a vital dimension of its strategy. This position was reaffirmed in February 2012 when the British government published the policy paper entitled *National Security Through*

Technology – Technology, Equipment, and Support for UK Defence and Security. It is noticeable that, in this specific approach, the preservation of defense-related R&T goes through a more global perimeter of activities, because this policy paper explicitly takes into account civilian security.

Beyond the historical leaders of defense R&D, emerging (or re-emerging) powers seem to follow the same technology-centric paradigm. Non-western countries such as Russia, India, or China have been increasing their defense R&D since the 1990s, while they have yet to reach a maturity level similar to that of the biggest NATO spenders. Finding reliable statistics about defense R&D spending in these countries proves very difficult and the reliability of data is questionable. Even the Pentagon is very cautious when it estimates China's military spending.

Nevertheless, emerging countries are focusing more and more on advanced technologies for their defense capabilities, and the situation is very similar in Russia, India, Brazil and Turkey. It appears that any country, which has military ambitions and enough resources, is dedicating a large share of its defense budget and economic resources to defense technology.

The predominance of a technology-centric paradigm can be explained – at least partially – by the evolutions of international relations since the end of 1980s, as well as the transformation of threats. In other words, armed forces can perceive technology as a means to anticipate threats (in a technical and operational perspective) and increase their ability to manage more and more heterogeneous configurations.

Managing uncertainty through technology

Since the 1990s threats have become dramatically more diverse than ever. Most armed forces consider advanced technology as an appropriate and adequate answer to both traditional enemies and disruptive ones. Peacetime, or a close equivalent, is a difficult time for a nation's arms buyers, since there is no readily available guide to what should be acquired. Such a difficulty is increased when uncertainty is high about potential threats and risks, as is the case in the post-post-Cold War era. As Donald Rumsfeld (then U.S. Secretary of Defense) put it, "*our challenge in this new century is a difficult one: to defend our nation against the unknown, the uncertain, the unseen, and the unexpected*" (Rumsfeld, 2002b, p. 23). This analysis of an uncertain as well as unpredictable world is at the core of the defense policy of major countries, particularly the United States , the United Kingdom and France.

Sapolsky (2001) underlines that this is the main reason why the so-called "*Revolution in Military Affairs*", launched by the Pentagon in the 1990s, appears so jumbled. A true revolution in military affairs is more than building new high-tech weapons; this process is also about new ways of thinking defense and fighting. Armed forces do not only require improved systems but also alternative ones and new doctrines to employ both new and old systems.

Such uncertainty seems even more important because of asymmetric threats and the lack of a clearly identifiable enemy. Defense planners cannot know precisely what kind of risks they have to avoid or fight, so that they must assure that forces can rapidly counter them by

increasing their conceptual and organizational adaptability and flexibility. Such an evolution has strong implications at the procurement level, for acquired systems must be reoriented towards new missions, and new needs must be satisfied quickly.

This implies that armed forces allocate a substantial amount to defense R&D for two reasons. First, as potential foes can also have access to much state-of-the-art technology and capabilities, accessible on the open global market, it is necessary to "run faster" than others. Second, potential foes might adopt non-conventional means to overcome the technological superiority of today's military powers. It is therefore necessary to explore a larger scope of technology that could be used for military purposes and evaluate their possible impacts on the military balance.

In fact current armed forces are structured in battle systems prepared to face classical conflicts, where professional units try to acquire the means of tactical and strategic superiority thanks to training and equipment. The East-West rivalry was completely based on such a philosophy, with doctrines aimed at guaranteeing a victory through a major conflagration: the decisive battle. The arms race resulted from the attempt to gain technological and quantitative superiority, but both sides shared a similar vision of war. "*Daughter of World War II's confrontations*, notes La Maisonneuve (1997, p. 196), *the Cold War favored the accumulation of armaments and a race to their modernization. Modern armed forces are those of quantity*." Indeed, for at least a century, armament policies have been a quest for strategic balance, characterized sometimes by great oscillations but always corrected quite rapidly. However today's geopolitical situation is rather characterized by an out-of-balance situation.

How can armed forces manage their procurement policy when the rules of war are changing, at least partially? Current defense procurement principles become obsolete, but are not replaced by new ones. It is possible to draw a list of asymmetric threats, and many analysts do so. For instance, McKenzie (2001) identifies a typology of six potential asymmetric threats: nuclear, chemical, biological, information operations, operational concepts, and terrorism. However this kind of list is not necessarily useful here. It is more relevant to understand how armed forces can prepare themselves to emerging, unexpected threats rather than targeting only those that have been identified. In a way military powers are still trapped in a "Maginot line" system, relevant during the Cold War but less and less effective today. In fact, "*as in judo*, notes Saint Germain (2001), [our potential adversaries] *are going to challenge us not with the same weapons but in targeting our weaknesses*".

NATO countries focus their reply mainly on technological innovations and weapons superiority, notably developing multi-purpose systems. While multipurpose systems are seldom as efficient as single-purpose ones, they may make the most sense because of the great uncertainty about foreseeable threats. Nonetheless single-purpose systems remain relevant when the strategic environment becomes clearer and specific threats are identified. Procurement strategies sould be revisited and modified to integrate these new constraints, leaving more room for new or unconventional programs.

Interpreting the impacts of 9/11 events Donald Rumsfeld used an eloquent image to describe the situation Western armed forces have to face: "*It's like dealing with burglars. You can't possibly know who wants to break into your home, or when they might try it–but you do know how they might try it–and that you need good, solid deal bolt on your front door. You know that they might try breaking through a window–and that you need a good alarm system. You know it's better to stop them before they get in–and that you need a police force to patrol the neighborhood and keep the bad guys off the streets*." (Rumsfeld, 2002a)

Weapons acquisition takes place today at two levels: non-symmetric and asymmetric. Classical armament remains important in a large field of international relations. Even though no classical threat may rise in foreseeable years and the American dominance appears uncontested, it seems unwise to get rid of major weapon systems since they remain the basis of the military balance between States in the long term. The United States has then developed a preemptive strategy to prevent potential rivals from investing in defense technology by raising entry barriers thanks to their own defense R&D effort… Nevertheless this dimension is not sufficient because of asymmetric threats. It is also necessary to develop a new way of thinking to prevent and anticipate "flaws in the wall." Uncertainty concerning intentions of asymmetric actors and the possible evolution of threats implies a divide of the strategic field in numerous scenarios.

Preparing for the future in an uncertain world requires innovative visions, as well as forces and capabilities that can adapt quickly to new challenges and unexpected circumstances. As Metz and Johnston (2001, p. 15) explain: "*While iconoclasts and nonconformists should not rule the military, they should be valued, preserved and heard*." However such an evolution does not appear as self-evident. It requires not only a complete revolution in the way military procurement is handled, but also a great awareness on more and more diversified scientific knowledge and technology.

The loop "identified threat/corresponding technology" appears necessary but not sufficient, and armed forces can no longer rely on pure defense technology. More than ever armed forces must prevent military "surprises". The latter were essentially localized in technological fields, but nowadays emerge from various sources… This can lead to an increase rather than a reduction in defense R&D as a means to increase technology scouting and enhance the awareness about possible strategic disruptions.

If such a strategy is necessary, is it enough and truly appropriate? For instance the overemphasis on technology in Western countries could lead to underestimating the many low-tech means and ways by which adversaries could asymmetrically respond to one country's technological supremacy. Such supremacy did not prevent the Netherlands' defeat in Indonesia, France's defeats in Indochina and Algeria, or more recently Russia's difficulties in Chechnya. Even the United States cannot rely solely on its technological superiority, since it does not automatically guarantee victory on the battlefield (as the Vietnam War demonstrated). Actually it is not possible to find a technological silver bullet for each

asymmetrical threat. Although technology remains a crucial element in military battles, an alternative approach might be found.

Defense firms' strategy in a stalemate?

Today's defense R&D model, set up during the Cold War, appears less and less adapted to deliver defense innovation at a sustainable cost. Not only budgets seem out of control, but one could also question the choices made in terms of R&D targets. This leads to wonder whether defense R&D provides military capabilities or rather helps sustain the business model of the defense industry. This second hypothesis can be validated when analyzing how these firms are repositioning on the security market and how they are molding such a market through a technology-centric paradigm.

The drifting costs of defense R&D

Even though advanced technologies can support some missions and maintain strategic dominance for arms-producing countries, defense R&D has become increasingly expensive while being less and less able to generate disruptive technologies. Serfati (1995) had already underlined the fact that defense R&D was focusing on incremental innovations, which are by definition much more difficult to achieve and therefore increasingly costly. Almost two decades later, one can note that such an approach has not changed when reading official reports on the management of defense programs. Almost all programs of complex systems are encountering major difficulties concerning either technological developments or budgetary targets.

As the biggest military spender, the United States provides the most relevant experience of the limits in the dominant model of defense R&D. In spite of doubling its global budget from 2000 to 2008, with outlays growing from $386 billion to $736 billion (constant FY 2012), the Pentagon is experiencing technology shortcomings and failures. One can be surprised, since over the same period, the RDT&E line of Department of Defense (DoD) budget increased from $47 to $82 billion. As underlined in the table below, defense technology appears more and more expensive. One can ask if there is a systematic underestimation of the development cost of selected technologies and if the industrial and technological base is unable to deliver expected outcomes.

If the Pentagon provides the most obvious example of such drift, major arms-producing countries are in a quite similar situation. Kirkpatrick (2004) or Pugh (2007) underline that fixed costs represent a larger and larger share of defense programs, and R&D constitutes a key element in these costs. In other words, such programs appear overambitious in terms of technology and performance. One can wonder whether these outcomes result from the management of defense R&D or from inadequate objectives.

***Table 2*: Changes in DoD's 2011 Portfolio of Major Defense Acquisition Programs**

	1 year comparison (2010 to 2011)	5 year comparison (2006 to 2011)	Since first full estimate (baseline to 2011)
Increase in total R&D cost	$14 billion 4 percent	$39 billion 14 percent	$113 billion 54 percent
Increase in total procurement cost	$61 billion 5 percent	$192 billion 19 percent	$321 billion 36 percent
Increase in total acquisition cost	$74 billion 5 percent	$233 billion 17 percent	$447 billion 40 percent
Average delay in delivering initial capabilities	1 month 2 percent	9 months 11 percent	23 months 32 percent

Source : U.S. Government Accountability Office, *Assessments of Selected Weapon Programs*, GAO-12-400SP, Washington D.C., March 2012, page 171

Moreover, one can wonder whether defense R&D is truly useful, since economic literature shows that its effectiveness results from both the spending level in a given technology and how this spending is managed. In fact, threshold affects results from the evolution of defense-related technologies. In particular, one cannot expect a linear relationship between R&D spending and its output: below a certain level of investment in a given technology, the output of R&D falls rapidly. Exploring investments in integrative technologies in a dynamic optimization framework, Setter and Tishler (2006, 2007) find that under nonlinear, convex development costs it is not optimal to build military forces using a myopic, short-term approach. It is difficult to transform an armed force within a few years. Consequently, early investment in technological infrastructure is required because entry cost in technology is high and transformation period extends over more than a decade.

If a country's investment in a given technology is too limited, it cannot expect to keep pace with the state of the art, and it is not worth investing in that technology. This explanation can cover part of technology issues, especially for countries with limited budgetary resources. When looking at EDA statistics, it becomes obvious that defense R&D is not optimally used. Nevertheless it seems insufficient to understand the limits or stalemates of current defense R&D.

Reports from public audit organizations in France and the United Kingdom put into relief that armed forces choose immature or unproven technologies that could jeopardize the delivery of capacities, while such specifications are not essential to achieve armed forces' missions. As Rogerson (1990, 1994) demonstrates, there is a systematic bias in the defense procurement in favor of quality even though this choice results in a reduced quantity of systems.

Such a context has nurtured an industrial environment in which firms are encouraged to promote advanced technology rather than look to minimize unit costs (Serfati, 1995; Bellais,

2000). Therefore today's drift in R&D costs reflects, for a large part, the business model which has characterized the defense industry since World War II. The blame should be put on the technology-centric paradigm that defines the essence of such an industry.

Missed targets or wrong strategy?

One may therefore wonder whether current R&D policies can achieve their goals or whether they should be reviewed, especially to manage tensions between capabilities required immediately and the development of advanced systems that can take years or even decades. When U.S. armed forces were deployed to Iraq and Afghanistan, the Pentagon was accused of neglecting the protection of ground forces while allocating fantastic budgets to programs like the F-22 fighter aircraft whose relevance to these operations was inexistent.

Two dimensions can be criticized about the way defense programs are defined: armed forces focus on incremental innovations that appear more and more costly; and both armed forces and the industry tend to favor technology-intensive solutions, which is not always the best way of solving issues.

First, armed forces seem to have too many weapon systems they do not necessarily need and too short of those they do need. "*But in spite of these shortages*, as underlined by Rumsfeld (2002b, p. 28*), the department postponed the needed investments, while continuing to fund what were, in retrospect, less valuable programs*." How can we understand such a situation?

The relative stability in arms production results from armed forces' wish to maintain production lines that are considered as crucial for national security. Since they are responsible for national security, armed services may have an industrial and technological base at their disposal to respond to an emergency. As a result, some production units represent a strategic resource and must be preserved. "*The Defense Department would find it risky and even reckless*, notes Kurth (1993, p. 308), *to allow a large production line to wither and die for lack of a large production contract*". This is the reason why armed forces have sometimes launched new productions when a major program ended to avoid closing a unique and essential capability, even though such systems do neither provide path-breaking innovations nor fill a crucial lack of equipment.

This *follow-on principle* (Kurth, 1972) has two main consequences: a relative stability of the main arms-producing firms, and a technological continuity–resulting from both firms' lobbying and armed forces' conservatism. This explains why the military-industrial complex "*has endured for several decades, in some cases dating back to the Second World War, despite the ebbs and flows, the booms and busts in defense spending*" (Kurth, 1993, p. 307). Such a system constitutes a truly high barrier against technological disruptions and the introduction of new, alternatives defense systems… as long as the tension between available weapon systems and operational needs is not too strong. "*The striking fact about the post-Cold War period, mergers and acquisitions notwithstanding, is that essentially all the military aircraft, armor vehicle, and warship building lines opened at the end of Cold War stayed open and productive*", explains Sapolsky (2002, p. 35). Similar conclusions could be drawn in most European countries.

Such a bias induces a tacit agreement with defense firms that promote the renewal of existing systems–relying on assets, technology and know-how they master. This strategy can be useful to maintain the defense industrial and technological base, but it has strong negative effects especially in an age of uncertainty and geopolitical evolution. Indeed the follow-on principle favors existing systems against new ones, which do not have the same backing from firms, armed forces and decision-makers for economic, operational and political reasons respectively… Moreover such follow-on programs require huge credits and then reduce the available budget for other programs. Here the eviction effect might be strong (and often it is), especially when a less clear geopolitical context undermines the justifications of defense expenditure in budget debates.

Second, the technology-centric paradigm leads armed forces and the industry to look for solutions which appear quite expensive and not optimal with regard to operational, technical and budgetary dimensions. Iraq and Afghanistan operations give a good illustration of such a trend.

As mentioned before, armed forces have faced new threats for which existing capabilities were not fully adapted. Thanks to the massive increase of its budget, The Pentagon has been able to launch new, disruptive programs. Nevertheless, a closer look reveals that choices favor the reproduction of Cold-War program targeting.

In fact, the Pentagon picked up solutions that are technology-intensive, relying mostly on unproven technology and architecture. Two examples that illustrate this trend: first, the Pentagon spent billions of dollars to develop counter-IED devices and yet most of these programs did not deliver expected outcomes (even though some R&D investments were able to reduce risks, at least in Iraq). Similarly, in order to reduce the sniper threat in Afghanistan, the Pentagon promoted the XM25 Counter-Defilade Target Engagement Systems, which appears as a technological tool not fully adapted for operational deployment and not fully reliable.

There are many examples of technological over-specifications in defense programs in the United States (For instance, does the U.S. Air Force need the F-22?) and in major arms-producing countries. The failure of NIMROD in the United Kingdom illustrates a similar situation, as well as FELIN electronic systems for infantry in France.

Even though technology-driven solutions can deliver capabilities for certain threats, it appears that they mainly follow an industrial model where armed forces look for advanced technologies and where the industry is organized to deliver such high-tech systems. This interactive model leads to today's troubles (technological underperformance, unmanageable costs), and it explains why arms-producing countries allocate such a large share of their defense spending to R&D. This does not mean that defense R&D is unnecessary, but the way it is used could be significantly improved to increase its output and reduce its costs (Oudot, Bellais, 2008).

The security market as a substitute for defense firms

As defense budgets are bound to decrease in forthcoming years, the ability of the defense industry to preserve its business model will be challenged. It appears that this industry has already looked for substitution markets, and it has deeply invested in the security market. This trend was obvious in the United States, when the Bush Administration created the Department of Homeland Security and gave it billions of dollars, mainly to procure systems in the same way the Pentagon does.

It is also interesting to analyze how the defense industry has influenced the structuring of the security market in Europe (Boulanin and Bellais, 2011). Indeed, even though this market is smaller than the American one, its emergence demonstrates how defense firms try to sustain their technology-centered economic model by duplicating it in alternative markets.

In 2003, following the release of its security strategy "For a Secure Europe, in a better world", the European Commission decided to start a research program on security. As part of the program, the Commission gathered a Group of Personalities, whose role would be to identify needs and research priorities and provide concrete recommendations for the design of an ad hoc research program. This group was mainly composed of defense actors from both public institutions and the industry, including four main European defense firms (EADS, BAE Systems, Thales and Finmeccanica).

Arms-producing firms have been ostensibly associated with the agenda setting process and their influence has been remarkable if one considers recommendations formulated by the Group of Personalities. First, the Group of Personalities clearly promotes technology as a central component to the EU's security strategy, "as a force enabler for security in Europe." The key argument being the following: "*Technology itself cannot guarantee security, but security without the support of technology is impossible*" (Group of Personalities, 2004, p. 6). Such promotion of technology is typical of the intellectual paradigm that dominates the defense sector. For example, in the American context in particular, the defense industry offers to respond to each kind of threat with a specific and adapted technology.

Secondly, the report of Group of Personalities underlines that many possible synergies could be found between civil and defense industries (Group of Personalities, 2004, p. 12). In terms of industrial know-how, some military technologies have found some civilian commercial applications and on the other hand, military network-centric systems are largely developed on civilian commercial technologies. The technological needs of police and military forces are also said to be increasingly overlapping (Group of Personalities, 2004, p. 12).

This report takes, for instance, the case of UAVs, suggesting that they can be used both for border surveillance by customs authorities and crisis management missions or surveillance missions carried out abroad by military forces. Articulating that there is more and more of a "continuum" between the technological base of defense and civil security applications, the Group of Personalities recommended to the EU to support a greater integration of defense and security technologies, in particular by favoring the development of sophisticated security

goods and services and by taking specific measure to support the European defense industrial base (Group of Personalities, 2004, p. 20).

These recommendations, which are largely favorable to the defense sector, were by and large retained by the Commission and integrated into a policy paper setting the agenda of the security research program entitled *Security Research: The Next Steps* (European Commission, 2004). The participation of the defense industry in shaping the European program did not come to an end with the agenda-setting phase. Arms-producing firms took part in developing the research program itself.

One of the final recommendations presented by the Group of Personalities, in its report was indeed to set up an advisory board. As for the Group of Personalities, the private-sector side of ESRAB was largely composed of arms-producing firms, mostly the ones sitting at the Group of Personalities. Recommendations addressed by ESRAB regarding the 7th European R&D Framework Program (FP7) had undertones of a remarkable defense approach.

For each of the four identified key security missions (protection against terrorism and organized crime; border security; protection of critical infrastructure; and restoring security in crisis situation), ESRAB recommended to tune the research agenda according to a capacity-based approach (ESRAB, 2006, p. 6). This concept was directly borrowed from defense. ESRAB pointed out two generic objectives: respond to security needs and develop the global competitiveness of European technological supply (ESRAB, 2006, p. 6).

The defense industry's footprint on the development of this research program is clearly visible. The capacity-based approach that structures the research agenda recalls to a great extent the logic that dominates arms procurement in the United States and European Union. Consequently, it is not fundamentally surprising to note that the actual implementation of research program largely benefits to arms producers. Looking at the various projects funded under the framework of the Preparatory Action for Security Research (PASR 2004-2006) and FP7, arms-producing firms seem to have benefited to a great extent from allocated research credits.

Out of 24 projects funded under PASR, 17 were led by firms operating mainly in the defense sector. EADS, BAE Systems, Finmeccanica and Thales, the four firms sitting on the Group of Personalities, were here highly represented (Hayes, 2004).

One can make a similar appraisal by looking at projects funded under FP7. Even if the ratio of projects led by arms-producing firms is lower than under PASR, the defense industry remains a pampered beneficiary of allocated credits. For instance, out of the 45 projects funded in 2009, 17 were led by firms operating mainly in defense, and 5 were led by firms operating mainly in security sector. One can also note the participation of other non-industrial defense related agents, such as state defense research agencies from the Netherlands (TNO) and Sweden (FOI).

The defense industry has played a central role in shaping and monitoring the EU's security research program. There is also little doubt that security-related R&D can appear as an alternative funding channel for European arms-producing countries that need to support their

defense industrial bases. On the other hand, security markets related to border security or counter terrorism represent interesting opportunities in the context of a declining defense market.

Conclusion

Technology has been essential to military capabilities since World War II. If this trend characterized particularly the Cold War, defense R&D has maintained a central role after the fall of Berlin Wall. This demonstrates that the technology-centric paradigm in defense does not translate only to the specific era of East-West confrontation alone, but represents an essential feature of defense in the twentieth and twenty-first centuries due to uncertainties surrounding international relations.

Nevertheless this fact does not determine whether defense R&D is effectively employed in the most effective manner. Indeed this technology-centric paradigm favored the development of a high-tech defense industry, and these firms appear to try to preserve their business model rather than reshuffle this model to adjust to armed forces' current needs. Such hysteresis effect is perceivable when analyzing the emergence of a security market, which has been structured by some defense firms to promote a technology-centric approach.

Trends in defense and security markets highlight the bias possibly introduced by firms when they are able to structure such markets. This leads to question how such state-managed and state-centered markets can be regulated, where competitive pressures cannot be the only driver to avoid manipulation. Indeed, defense and security constitute specific markets as they are not competition-driven markets. Therefore such markets require an ad hoc regulation, preserving an industrial base whilst keeping firms under control.

Beyond administrative regulation, the need for reintroducing democratic processes into the decision loop should be raised. Is it acceptable that critical decisions such as defense spending and military capabilities be delegated to experts and de facto exclude citizens from decision-making because of the technicality of such choices? Whilst technology remains critical to provide adequate capabilities to armed forces, the effectiveness of public spending and the ability to deliver the right capabilities on time require giving citizens and political decision-makers adequate tools to oversee proposed solutions and investment choices.

TECHNOLOGIES AND NATIONAL SECURITY

The world has witnessed two significant events during last three decades which has changed the contours of global strategic thought. The first being the end of the Cold War and second is the September 11, 2001 World Trade Center (WTC) terrorist attacks (9/11). The end of the Cold War could be said to have started a phase of unilateralism with United States (US) being in the so called 'command' of the world affairs while the 9/11 attacks could be said to have challenged the hegemony of the US to such an extent that they are still unsure about how to address this 'asymmetric' challenge posed by the terrorist organizations. So in a way it could be argued that the end of the Cold War created opportunities for the US dominance while 9/11 could be said to be the US's Achilles' heel.

However, it could be incorrect to argue that these two events were instrumental only in shaping the US policies to address the 21st century challenges. The end of the Cold War also gave an opportunity for many states towards developing peace and prosperity, at the same time it also threw new challenges to the security apparatus of the nation-states. On the other hand, 9/11 made the world (read West) aware about the menace of terrorism and unfortunately, also could be said to have motivated the terrorist organizations to continue working on this path by using more heinous ways to spread terror in many other parts of the world.

To seize opportunities and meet the challenges of the post Cold War and post 9/11 era, the one strategy which states across the globe have been found bestowing upon is that of the investments in technologies. This is essentially because such investments have paid dividends and are expected to offer solutions to many challenges, if not all. Few states have developed a comprehensive approach to putting science and technology to the service of national security and global stability.

States understand that their security rests on three pillars: the readiness and capabilities of military forces, their engagement with other states to prevent conflict from occurring, and the strength of their economy. Strategies of many developed and few developing states are grounded in the conviction that advances in science and technologies are a vital part of the solution to many of the problems that world is facing today.

Last few decades have witnessed an exponential growth of technology. This growth has not remained restricted to few limited fields but various new/applied fields have emerged leading to significant changes into lifestyles. From security perspective impact of technologies has become an important premise of study particularly, during the last few decades. This article takes a macro view of impact of technology on security. It essentially argues that recent conflicts like the Gulf War (1993), Kosovo conflict and the US invasion of Afghanistan and Iraq have clearly demonstrated the relevance of technology for war fighting.

Various modern day tools of war fighting are driven by technology and that makes technology an important theme in the study of international security. The impacts of science and technology on international security environment are all-encompassing. Technology is instrumental in influencing the 'concept of war-waging' in the minds of both the political and military leadership for many centuries but it appears that in the present scenario, it has almost become over-arching. Presently many emerging technologies are being talked about which have major relevance for militaries. Modern day wars are not always envisaged to be fought only on the battleground. 21st century defence preparedness involves demonstration of technological strength, display of technologies via various military exercises, conducting 'tests' of new weapons/weapon delivery platforms for the purposes of the expression of the power and building up of an effective deterrence mechanism. In short, there exists an inter-relation between security and technology.

Technology has always played a significant role in defence. But, there is a subtle difference in the development of technology vis-à-vis military and civilian fields during both, the World

War II era and the Post-Cold War era. During and after World War II, the efforts of states used to be towards the development of technologies, essential for militaristic purposes and such technologies used to find their relevance towards the civilian filed subsequently. Computers and Internet could be said to be the products of such a military development which in turn has brought in revolution in the civilian fields too.

However, for the last few decades it has been observed that the market forces essentially dictate the growth of technology and subsequently military technologists take a note of it and then modify it for militaristic purposes. Another reason for this could be the realization by the global powers in regard to blind investments into military weaponry/ technology. States have learnt from the erstwhile USSR example and are not ready to invest in military hardware just for 'effect'.

At the same time, the growth of technology in military field needs to be viewed in two stratums. One, the investments made by defence industry in weapons & weapon delivery platforms. Two, the overall investments by the states in various 'support' technologies. The support technologies could be categorized as technologies that improvise the manufacturing process of military hardware. Here, support is not only in terms of providing the software support but it also involves making the existing hardware more stealthy, more users friendly, lighter and more lethal. Various innovations in the recent past in Information Technology fields and Communications have helped militaries to make their basic hardware and support infrastructure faster, securer and dependable. On the other hand, innovations in the fields like composite materials and nano-technology have made the platforms lighter and stealthier.

Particularly, the dependence of states on various technologies for war fighting could be said to have brought in the concept of Revolution in Military Affairs (RMA). This involves induction of computer networks that confer information superiority, allows precision strikes on the targets, permits dominant maneuver, and undertakes usage of space based assets for militaristic purposes. Basic important aspects of the RMA are the advent of trustworthy standoff weapons.

Also, induction of weapons like JDAMS (Joint direct attack munitions), delivered over a target from an aircraft with the help of global navigational systems like GPS has helped the states to avoid collateral damage. Such weapons could be dropped from higher heights and under any other weather conditions. It needs to be mentioned here that the concept of RMA goes beyond technology. It also involves doctrine, strategy, training, administrative support, etc. But, the entire process of doctrine and strategy development would have to have the technology premise at its backdrop.

Presently, RMA technologies are changing the nature of war-waging by enabling precise destruction of targets from a distance and speeding up the processes of decision making. This quest for modernization caters for emerging capabilities of states potential adversaries, cost factor and raising the technological threshold of armed forces. This advent of the RMA clearly indicates how technology plays an important role in regard to national security.

Over the years states have understood that science and technology investment enables them to counter military threats and to overcome any advantages that adversaries may seek. It also expands the military options available to policymakers, including options other than warfare in pursuing the objectives of promoting stability and preventing conflict. The militaries also rely on science and technology to make advanced military systems more affordable through their entire life cycle period. For this purpose there is a need for the defence science and technology community to maintain a close dialogue with the militaries and remain sensitive to users need. They also need to educate the user to the possibilities that technology offers for responding to evolving threats.

In the past it has been observed that every industrial revolution had outcomes in the form of technology innovation which in turn had direct or indirect impacts on the military architecture of nation-states. The innovation of the steam engine can be termed as the beginning of first industrial revolution because this period saw the textile industry and mechanical engineering as noteworthy outcomes (1780-1840). The second industrial revolution (1840-1900) begun with the emergence of railways and steel industry, whereas the third revolution (1900-1950) produced electric engine, heavy chemicals, automobiles and consumer durables.

Post 1950 could be said to have started the fourth revolution that started in 1950s with dominance on oil industry and information technology. Military technology (in some form or other) has impacted all these various phases of industrial revolutions. From simple detonators to nuclear weapons to submarines to intercontinental ballistic missiles to fifth generation fighter aircrafts, the military technologists have always provided various weapons and weapon delivery platform options to the states for the purposes of safeguarding their national interests.

Two technologies that have dominated the entire landscape of military revolution particularly during last two to three decades, are information technology (IT) and space technologies. The presence of both these technologies has been instrumental in bringing the concept of network centric warfare to reality. These technologies have succeeded in converting the modern day battle fields into digital battlefields. C4ISR capabilities and network-centric tactics have become an important element of war fighting in the 21st century.

Modern day commanders require almost real time digital picture of the battlefield and this has become possible because of both these technologies. Sensor technology has also been instrumental towards digitizing the battlefield. Multi-spectral sensors are increasingly being used in equipments and platforms used for war fighting in all four dimensions, viz. land, sea, air and space based platforms. Various IT tools have helped towards bringing in sophistication and speed in various military platforms. Space technologies are relevant for the purposes of communication and navigation. They also have a significant role towards guiding the standoff weapons.

Satellites are found extremely important for the purposes of intelligence gathering. Particularly remote sensing satellites are significant for the purposes of reconnaissance and imagery intelligence. Specific satellites are found playing a significant role towards gaining

intelligence. Satellites are useful for the purposes of electronic intelligence (ELINT), signals intelligence (SIGINT), communication intelligence (COMINT), and radar intelligence (RADINT).

IT revolution and military utility of various space technologies have made a significant impact on the state's preparedness level. It has dictated the policy making in regard to national security strategy, military doctrine, and operational concepts in regard to many states. However, the availability of such technology, still more or less remains restricted to the hands of few states and hence there exists a 'digital divide' amongst the few developed states (and their allies to whom such technology has been transferred by them) and others.

Such a divide clearly elucidates the fact that the era of making militaries numerically stronger would fast be replaced with militaries that are digitally stronger. IT and space technologies being at the heart of the RMA has partially succeeded from shifting the focus from weapon-centric warfare to network-centric warfare.

Two basic technologies which are being discussed for their potentiality and are expected to change the face of future war fighting are the nano-technology and bio-technology. These technologies are likely to make the fifth industrial revolution a reality. Nano-technologies have wider applicability both in electronics and materials. It would eventually make ships, aircrafts and spacecrafts further lighter and stronger. This would allow the states to use them more effectively and offers wider flexibility in terms of flying heights and load carrying capabilities.

Bio-technologies could bring in a revolution in logistics supply chain. It would help carrying lighter foods which have more shelf life and nutrition (this would help in having a leaner "tooth-to-tail ratio"). The technology could make the soldier's uniform more lighter and also could inject camouflage capabilities in them.

Developed states and few developing states, have understood the relevance of technology from national security perspective and are making investments in various fields of technologies that have both short and long term security relevance. Such technologies are commonly known as Strategic Technologies. The current focus is on space and near-space technologies, networks, and close-in and standoff sensor technologies. It is also important to look at strategic materials and is expected that military technologists would have a narrow focus on this area in near future.

Following are few areas of technology which could be considered as Core Strategic Technologies:

- Advanced 3D image processing, analysis, and feature extraction approaches.
- Advanced electronic vision and situation awareness devices, algorithms and systems.
- Biofabrication processes for improved nanostructured devices and materials,
- Innovative methods to visualize complex, self-organizing systems
- Microelectronic systems comprising advanced system concepts coupling electronics, sensors and actuators with micro-scale packaging and battery technologies
- Novel three-dimensional data visualization and projection methods

- Power harvesting technologies and devices
- Self assembly and/or manufacture techniques

States understand that the 21st century threats are not restricted to the conventional realm only. Technological help is also essential to counter special threats such as terrorism. Recent history has shown that such threats cannot be met by conventional military tools and tactics. None of the technology could be identified as an effective tool to fight the menace of terrorism. At the same time, it could be unwise to argue that all tools and tactics available with militaries are irrelevant to fight terrorism. Terrorism being an asymmetric threat it is important to use both conventional and unconventional tactics to defeat the unknown aggressor. So the intelligent use of technology is more important than technology itself.

No situation in most of the terror attacks is similar, hence every situation demands innovative usage of available technologies. Few specific technologies like small robots for the purpose of tactical intelligence gathering could be used; humanoid robots could also become part of the first line of defence in specific cases. There is also a need to invest into non-lethal weapons8 to address these issues. Such weapons are useful to incapacitate personnel or material, while minimizing fatalities. They are useful in a scenario when the state requires catching the terrorists alive to trace back the terror network. Technologies based on Acoustics, Optical Science, Bio and Chem Science are being developed for such purposes by few states.

For many states in the world over last few decades, the threats and the enemies have changed. At places few rouge states have started supporting terrorism as a covert policy. There even exists a danger that non-state actors may adapt to the strategies involving Weapons of Mass Destruction (WMD). In short, enemies in the 21st century pose a gigantic challenge that demands a new approach in form of methodological changes in intelligence gathering and usage of military tactics.

States need to understand that their Technology Strategy has to be a dynamic process. This would depend on the geo-political environment as well as the growth of technology itself. The formulation of strategy to meet new threats would depend on how best the states could factor the technology in their planning process. The recent conflicts have successfully demonstrated the capabilities of smart weapons. This demonstration by the US and allied forces have forced many other nation-states to invest in such technologies.

These conflicts have demonstrated that technology makes military capabilities far superior. Naturally, this has fueled an arms race amongst states. But, interestingly this arms race is not on the lines of the arms race in the Cold War era. In a way it could be said that the new arms race has started where states are interested in investing more in ‘aid’ (support) technologies rather than going for bigger weapons. For fighting 21st century warfare what is important is to offer soldiers lighter weapons, reduce the burden on logistic chain, and have weapon delivery platforms which are light and able to deliver weapons on the target mostly from standoff range.

In the past thirty years, the world has experienced more dramatic changes brought about by technology than ever before in history. Given some in-depth insights into advanced technology research organizations (both public and private); there are wondrous new developments ahead that will shape mankind's lives in ways yet unimaginable. These scientific and technological breakthroughs have far reaching political, economic and social implications. These implications are not limited in scope to the country or jurisdiction where the development takes place but throughout the world.

Technology is viewed as a force multiplier. But at the same time dependence on technology also allows the enemy to cripple your infrastructure by attacking your assets and cause substantial damage. The state's dependence on various IT tools has unfortunately converted them into a lucrative target also. Issues with technology to protect cyberspace is one of the most urgent national security problem faced by many states.

Also, historically it has been seen that almost every military technological superiority is being challenged by counter measures be it ECM or ECCMs (Electronic counter and counter-counter measures) or missile defence shields. However, what is problematic in today's world is the advantage even the non-state actors are gaining by taking commercially available technologies like GPS, mobile phones, satellite phones and more importantly the Internet.

Today, states are investing in all kinds of military and non-military technologies for a simple reason that these technologies are critical to progress. They allow them socio-economic development as well as guarantee security. States view possession of state-of-the – art technology infrastructure as a strategic asset which in turn could be viewed as symbol of national power.

In the context of international relations and diplomacy, power is normally considered as the ability of one state to influence or control other states. Investments in technology allow states to possess four commonly accepted instruments of national power viz. political, economic, informational, and military. Hence, even though this part has discussed importance of technology for military instrument of national power it needs to be understood that the concept of national security in the 21st century has wider connotations and should not be viewed only through a narrow prism of military. Investments in technology allow nation states have political, economic and informational superiority as well. It gives them leverage for the execution of state's foreign policy through diplomatic means. Military industrial complex as well as other industries with technologically superior products allows them to attract global customers giving boost to economy. Technology also allows access to information which other states may not have.

Over the years the methods of war fighting have always responded to the evolution of technology. In some cases the technology itself came into being because it was researched for militaries. It has been aptly demonstrated during last few decades that the advances in technology dramatically expand the options available for the use of force. However, the process of scientific evolution is a difficult task. Scientific discoveries have their own momentum and further its transformation into technology could not always be guaranteed.

The entire process of scientific discovery to its conversion into usable technology is an intricate progression involving large number of complex variables. Technical revolution is essentially a dynamic process and is constantly evolving and its impact on society as a whole and national security in particular will vary with the transformation in technology.

INDIA'S DEFENCE MODERNISATION: CHALLENGES AND PROSPECTS

The developments in India's immediate neighbourhood over the past decade have led India to take a close look at her foreign and security policies. There is a widely sensed need for the rapid modernisation of the Indian armed forces, which is being reflected in some of the key initiatives that have been taken up by the Indian government so far (such as Make in India), so as to address to the complex security challenges that emanate from its hostile neighbourhood.

However, the pace of modernisation of the Indian armed forces over the years has been rather slow, and technologically, they are not where they should have been. Indigenous development of modern defence hardware continues to remain a concern and Indian policy aspiration for defence self-sufficiency remains largely elusive. The aim of the research is to highlight how the Indian armed forces are responding to the emerging security scenario in the region and beyond, and to address issues in defence policy making, progress with defence modernisation, and military effectiveness.

The Indian defence industry suffers from major policy, structural, and cultural challenges that beset a military industrial complex that continues to struggle in terms of delivering modern defence hardware that could have added to the greater Indian defence indigenisation and production. Experts see a number of systemic flaws in the Indian defence establishment and civil-military relations, which present major challenges for India's military modernisation aspirations. As India's defence requirements are likely to increase in the foreseeable future because of the dynamic security environment, indigenous development of modern defence hardware and technology is likely to remain a top priority.

As India is an aspiring great power (and it is believed that great powers have great arms industries), its ability to acquire autarky and self-sufficiency in terms of development of advanced defence hardware and technology to fulfill the requirements of its armed forces would be crucial so as to address to its national security concerns. The study here shall highlight the impediments to India's defence modernisation and its likely implications for India's national security.

India's National Security Concerns and Defence Preparedness:

India today faces the most complex threats and challenges that range from nuclear to sub-conventional spectrum of conflict. Issues such as unresolved territorial disputes with China and Pakistan, insurgency in Jammu and Kashmir (J&K) and in the North Eastern states, the growing menace of left wing extremism, and the rising threat of urban terrorism has further exacerbated India's security environment.

In the regional security milieu, it has clearly emerged that China poses the most potent military threat to India given the advantages it has over India in nuclear, missile, and military

hardware. Moreover, the China-Pakistan nexus and increased strategic engagements between the two have increased the probability that India might face a two-front war in the future.

Therefore, the need for augmenting defence capabilities i.e. land, air, and sea capabilities, is being largely reflected in the Indian policy towards defence modernisation today (initiatives such as Make in India) to meet the challenges that emanate from both traditional and non-traditional threats that pose severe threats to India's national security.

India's defence industry, however, has failed to manage India's defence requirements as of today. India is one of the largest arms importer in the world as indigenous production of technology is one area where India continues to struggle. India's defence preparedness, therefore, remains a question as some of the most crucial requirements in various services of the armed forces have not been fulfilled because of severe deficiencies in the defence industry.

India's land forces lack sophisticated weapons and armory, the navy's submarine fleet has dwindled down to 40 percent of the minimum requirements, and the fighter squadrons are at the level of 60 percent of the mandatory need, which indeed is a cause of concern considering the slow pace of India's defence modernisation. Therefore, when taking into account of the changing nature of threats in the emerging geopolitical scenario (also considering the changing nature of warfare with the rise of non-state actors), India has to focus on building capacity for continuos modernisation of the armed forces, while directing it towards achieving the desired capability, which will in turn depend on the analysis of threats.

Articulating India's Defence Needs and Requirements:

India's defence requirements are likely to be influenced especially by the external factors such as the threats that emanate from two of its primary adversaries i.e. Pakistan and China. Though Pakistan will continue to remain an immediate threat, China will be the major concern as China is more likely to be a medium-term threat for India according to some observers. Therefore, India's defence requirements are likely be based on capabilities that cater to the larger threat, which would take adequate care of the threat from its more traditional adversary i.e. Pakistan.

As India is much more superior in conventional and strategic capabilities when compared to Pakistan, articulation of India's defence requirements is likely to be influenced by the growing offensive capabilities of China that has been demonstrated over the years, which has created huge debates among the members of the strategic and the academic community on the need for pro-active decision making in terms of streamlining defence acquisition and procurement processes, while also focusing on indigenisation, thereby leading to augmentationof India's overall war deterrence.

Therefore, there is a growing understanding within India's security establishment that Indian defence modernisation and capacity building should focus on China. The need of the hour is to change the "understanding" into "URGENCY" in order to build comprehensive national capability to counter any threat that arises from China or from the collusive threat of China and Pakistan.

Given India's current deficiencies in the armed forces, there is an imperative for India to focus on development of advanced and sophisticated weapons system for various platforms of combat i.e. land, sea, and air, and ensure necessary integration within the services of the armed forces as well as intelligence organisations to ensure an effective and a viable response to the threats that emanate in the immediate regional security environment. There is a need to make a thorough assessment of the security threats and accordingly articulate the needs of the services of the armed forces and take necessary steps to procure advanced weapons system that in turn will augment India's national power. Before looking into what are India's defence requirements, the next section discusses the challenges that India faces in its defence industry.

Issues in India's Defence Modernisation:

India faces a whole range of complex challenges in its defence modernisation aspirations, which are aimed at containing the threats that it perceives to be having severe implications for its national security. Looking into the current capacities of India's defence industry, it is not hard to say that many observers remain dismissive of the same and have proposed a number of reforms aimed at bolstering India's defence production capabilities thereby achieving self-reliance in building such capabilities, and streamlining India's defence procurement procedures for lesser procedural delays in acquiring advanced weapons system.

As India is one of the largest importers of arms the in the world, its over-dependency over other countries for sophisticated weapons system for the services of the armed forces is likely to negatively affect India's aspirations of becoming a great power as it is widely believed that great powers are supposed to have great arms industries. The challenges that India's defence industry today faces in terms of producing and procuring advanced weapons system to fulfill the requirements of the services of the armed forces are immense, which need critical examination. The issues that India faces today are hereby discussed one by one.

Self-Reliance and Enduring Challenges:

India's defence industrial policy during the initial years of its independence was guided by the phrase 'self-sufficiency'. This was subsequently modified to 'self-reliance' in defence production, and now it has long been a fundamental goal of indigenous armaments production in India. However, India's heavy dependence on arms imports has been a matter of concern for parliamentarians, oversight agencies, policy makers, and defence analysts.

India's inability to meet its own defence needs through indigenous production (the two flagship programs i.e. Main Battle Tank Arjun and Light Combat Aircraft Tejas are examples where the Indian defence research organisations have gone through several production delays and cost-overruns) is drawing wider concerns over the challenges that the Indian defence industry has been going through in terms of being efficient, productive, and more capable in research and development (R&D) of advanced weapons system and defence technology. The targets that have been set over the years have not been achieved that raises questions on the ability of India's defence industry to produce weapons system and defence technology to meet the requirements of the services of the armed forces.

There is an urgent need for the government to focus on indigenous production of defence hardware and technology by carefully articulating long-term strategic plans to augment India's military power. As India is a rising power with a huge economic base, India has to look beyond the buyer-seller relationship that had almost become a feature of its defence industrial policy, and should instead develop means to produce advanced weapons system and defence technology indigenously.

The policy priority for the Indian defence establishment should be to ensure that India should maximise its indigenous production so that the quantitative requirements of the armed forces are met, while also ensuring quality in varieties of defence equipment and items that should be made available to meet the ever-increasing demand of the services of the armed forces with rapid changes in technology. The need of the hour is to increase budget allocation for defence R&D and utilise the manpower in its defence laboratories to promote research for advances in defence equipment, hardware, and technology. These practical steps would ensure that India meets the demands of the time, and is in continued possession of cutting-edge defence technology as a result of indigenous production by its defence industry.

Decision Making and National Security Strategy:

While looking into India's present defence status, there has been a long going debate on what are the impediments to India's defence modernisation pace which in turn has been severely affecting India's ability to enhance its defence capabilities. As threats to India's national security are both traditional and non-traditional, effective defence preparedness is the key to secure its national interests, which would depend on the ability to produce and procure advanced sophisticated weapons and high-tech technological devices in order to ensure that the services of the armed forces and their requirements are fulfilled, which would enhance India's war capabilities, naturally augmenting its military power.

The decision making in India on national security and strategic matters have been however projected to be slow and complex because of the hierarchical structure of the decision-making process, which affects India's ability to produce and procure weapons on time, which in turn affects India's defence preparedness. Today, the services of the armed forces are suffering from severe lack of necessary war-fighting capabilities, which has severe implications for India's national security considering the actual requirements.

India's aspirations of becoming self-reliant in indigenous defence production and also acquiring advanced weapons system faster would, however, depend on the effectiveness of the decision-making at the apex-level while taking into consideration of India's national security interests. Some observers have questioned the efficacy of the established process of decision-making in defence acquisition or during times of crises, which is managed by Cabinet Committee on Security (CCS).

The lack of military inputs in decision-making is considered to be the most significant lacuna. It is also observed that the national security strategy of India suffers from flaws such as the absence of a National Security Doctrine and the absence of a long-term defence planning. Moreover, the need for a Chief of Defence Staff (CDS), a supposedly single point

of advice to the CCS on military affairs and defence acquisitions, has been long felt. There are increasing number ofopinions on the need for key structural reforms in India's higher defence management and in the national security decision making process, which shall in the long run help improve India's defence R&D, self-reliance in defence production, and civil-military relations.

Acquisition and Offset Strategy:

To expand India's defence industrial base, India has long relied on its offset policy to engage in transactions with foreign suppliers and promote transfer of technology thereby leading to indigenous defence production. First introduced in 2005, the offset policy has gone through several revisions in the Defence Procurement Policy (DPP) that have been released over the years (the latest one came out in March 2016). The transactions with foreign suppliers are aimed at enhancing the economic, technological, and the industrial capabilities of the India. India, as it is well known, has long relied on licensed production with overseas defence contractors. And as now offset is mandatory, India is likely to benefit from transfer of technology with the rise in the number of offset-agreements as a result of India's increasing defence acquisition budget.

The increase in defence spending has become possible not just because as a result of the tensions in the immediate regional security environment, but also because of its rapid economic growth over the years that has given it a solid economic base. This should play a major role in increasing India's defence offset appetite, which would give it the necessary financial resources to promote indigenous defence production.

However, India's defence offset policy suffers from major challenges that require attention. India's offset policy requires foreign vendors to engage with local defence companies through co-development, co-production, joint ventures, maintenance, and upgrades, but full mergers and acquisitions are not allowed. Therefore, foreign companies are hesitant to invest in a defence industry without having full stakes in the defence production.

Foreign Direct Investment (FDI) in the defence sector is capped at 49 percent, which again is a sore point for many foreign firms, as they believe that investments involve huge financial risks, and therefore, FDI cap in defence should be raised to 74 percent or even 100 percent.

Secondly, the expectation that a foreign vendor will engage in 'complete' transfer of technology to the Indian pattern of the system's subsystems, modules, assemblies, and specific parts/components is too much to ask, given the commitments the offset policy of India demands.

Thirdly, India's offset policy is based on an inflexible doctrine of indigenisation and India's offset policy should be made compatible with the economic dynamism of the global defence industry.

And finally, other issues in the offset policy should be addressed such as the policy's obligatory nature, objectives that need broadening, and most importantly, the inherent complexities, which need reduction.

Under the current offset policy, India under 'Buy (Global)' would purchase from foreign/Indian seller, and under 'Buy and Make with Transfer of Technology' would acquire defence hardware from foreign sellers which would be followed by co-development and joint-production. The estimated cost of acquisition proposal should be INR 300 crore or more and 'compensation' or offset for the cost of acquisition under the 'Buy (Global)' category would be 30 percent and for foreign exchange component under 'Buy and Make with Transfer of Technology' would be 30 percent.

Foreign firms from major defence hardware exporting countries find such conditions difficult to fulfill as there are literally no incentives, and because of lack of proper monitoring mechanism and issues related to intellectual property rights.

The Ministry of Defence (MOD) released an incomplete version of DPP 2016 on 28 March 2016, which saw the introduction of a new category titled 'Buy (Indian Designed, Developed, and Manufactured)' or Buy (IDDM). For the first time its inception in 2002, that means the Indian government has recognised the need for encouraging scientific talent in India and has placed importance on "indigenous design", development, and manufacture. However, critics would argue that it is too early to judge or predict the efficacy of the document as it misses many critical issues and does little to address problems that beset decision-making in the MoD.

What India Needs?

Each of the services of the Indian armed forces today needs urgent modernisation to face the complex security challenges that emanate in an increasingly unstable neighbourhood and in a complex strategic regional security environment. The Indian Army, which is one of the largest standing forces in the world, possesses weapons and equipment that are bordering on obsolescence and need to be replaced. The next step should be to acquire network-centric capabilities to optimise army's full potential in defensive and offensive operations.

The critical capabilities that are needed to be enhanced (as Lieutenant General J.P. Singh noted in an interview with Centre for Land and Warfare Studies, New Delhi) are "battlefield transparency, battlefield management systems, night-fighting capability, enhanced firepower, including terminally guided munitions, integrated maneuver capability to include self-propelled artillery, quick reaction surface-to- air missiles, the latest assault engineer equipment, tactical control systems, integral combat aviation support, and network centricity." Also, urgent steps should be taken to enhance the operational capabilities of army aviation, engineers, signal communications, reconnaissance, surveillance, and target acquisition branches in order to improve the army's overall combat potential so that it can face aggression of any magnitude.

India needs to take urgent steps towards extensive naval modernisation so as to secure its security interests in the Indian Ocean Region and beyond. India should look to augment its naval power by acquiring capabilities for maritime domain awareness in the area of responsibility, including space-based surveillance, maritime reconnaissance, airborne early warning and control (AEW&C), and unmanned aerial vehicles (UAVs).

The Indian Navy should be equipped with modern capabilities in fields of tactical aviation, anti-submarine warfare (ASW), anti-air/anti-missile, land-attack, mine counter-measures, and electronic warfare. It is equally important to make sure that Indian Navy is integrated by networking of ships, submarines, and airborne platforms via satellites. In the end, the government should commit to self-reliance and indigenisation, with the objectives of harnessing national strengths in ship-building, engineering, electronics, and information technology (IT). The Indian naval modernisation though much delayed, has begun to pick up steam as seen from the recent developments where deals worth thousands of crores have been made to expand India's naval fleet and India's naval dominance capabilities.

The Indian Air Force (IAF) is a full-spectrum force equipped with very capable platforms and trained manpower, but the numbers are inadequate for intense and lengthy operations. India must take urgent steps to maintain an edge over the adversary through technology and force employment.

The IAF is at the forefront of technology, but India should push towards self-reliance, as it has to develop its own technology and defence industrial base. India's track record in R&D however has been dismal and it is continuing to face a number of challenges in terms of meeting the quantitative requirements to defend the Indian skies. As per one of the recent reports, the IAF has only 32 squadrons of fighters, the lowest in a decade, while it needs at least 42 squadrons to protect its western and northern borders from Pakistan and China. Also, as aircrafts such as MiG-21s and MiG-27s in the IAF are old and aging (which date back to the Soviet era), India is likely to lose another 14 squadrons by 2019-2020.

Commercial negotiations with France on the deal over Rafale fighter jets are far from over and India has yet to start production of its first indigenously built aircraft Tejas (the project is more than 30 years old). India has to urgently focus on air dominance and control of the air by building capacity to indigenously produce future capabilities for design and development of aircrafts, heavy attack helicopters, and other combat and surveillance-related capabilities for further projection of air power.

From India's point of view, the most crucial component that has to be implemented for better integration of the services of the armed forces is a robust and an efficient Command, Control, Computers, Communication, Intelligence, Surveillance, and Reconnaissance (C4ISR) system. An integrated Indian C4ISR system will be central to augmenting India's overall defence capability.

With better integration of the services of the armed forces, it is also essential that there is integration between the armed forces, defence and intelligence agencies, and other government and private organisations as well. This would provide a joint force that would protect the country from traditional as well as asymmetric threats while providing flexibility, analysis, interpretation, and efficiency. This would also give advantages such as information assurance, controlling and disruption of information, data processing and management, quicker decision-making, and larger system integration.

A strong political will and an enabling framework for the involvement of players from different sectors (such as private sector or academia) for indigenous production of such capabilities would be essential, which is turning out to be a key national security imperative.

Conclusion

Threats from China and Pakistan leave India with no other option but to augment its defence capabilities to secure its national security interests. India's pace of defence modernisation, however, has been slow because of a number of inherent holes in the system such as lack of a National Security Strategy doctrine, or a long-term strategic defence plan, which are impediments in terms of evolving a clear-cut strategy to meet the defence requirements of the armed forces by making a thorough analysis of the security challenges in the immediate regional security environment.

Moreover, India's inability to produce advanced sophisticated weapons system and advanced defence technologies indigenously has severely affected its aspirations of becoming self-reliant in defence production, thereby remaining heavily dependent on foreign sellers for defence purchases, which in a way or other, do expose India's vulnerabilities. Adversaries may seek advantage in case they happen to know India's vulnerabilities, which in turn would have severe implications for India's national security. Therefore, the policy priority for the Indian civil and defence establishment should be to take necessary decisions to ensure that India's defence requirements are met as soon as possible through indigenous production.

India's indigenous defence production capabilities have however not grown because of a number of challenges. There is a lack of the greater political will that has severely affected decision-making in terms of acquiring weapons on time as per the needs of the armed forces. The Indian defence industry suffers because of under-utilisation of human resources that has negatively affected India's defence R&D base. Because of unfriendly defence industrial procurement system, it has resulted in few co-development and co-production ventures with foreign firms.

The lack of conducive financial framework for the local industry to do business in the defence sector, especially for the private sector, has also negatively impacted private participation in the defence sector. Therefore, the urgent focus for the Indian government should be to encourage private individuals and entities in India that could contribute in indigenous defence production. This would mean that India would achieve its goal of self-reliance only if it allows more private players in India to participate in the defence sector, and the true potential of the Indian minds are utilised.

Also, initiating/implementing further defence reforms such as streamlining procurement and offset policy, and introducing newer positions and staffs for better policy coordination, would be essential if India wants to reduce the qualitative and quantitative gaps between its defence industrial base with that of the other major powers.

MODULE-V

Strategic Studies

INTRODUCTION TO STRATEGIC STUDIES

Strategic Studies is an inter-disciplinary field of study, which at its core examines the ways in which military power and other coercive instruments may be used to achieve political ends in the course of a dynamic interaction of (at least) two competing wills. Since the subject matter is so broad, numerous insights from a variety of academic disciplines have been incorporated in order to enrich the study of strategy, including major insights from the sciences, arts, humanities, and the social sciences (especially International Relations, Political Science, Sociology, Psychology and Anthropology, among others). This history, and the composite nature of the discipline, is often overlooked by its critics, who in recent years have displayed a tendency to black box this field of inquiry. Strategic thought, succinctly understood as the leading ideas of military and civilian strategists about the threat and uses of force and the application of power to fulfill the ends of policy, provides the conceptual foundations that underpin Strategic Studies more broadly.

Presently Strategic Studies is confronted with several challenges. On the one hand, the scholarship is charged with a seeming lack of relevance and its perceived intellectual flaws highlighted by the wider community of security studies scholarship. One contribution has, for example, even called Strategic Studies merely 'the specialist military-technical wing of the Realist approach to IR'. On the other hand, there is a challenge from those who more narrowly critique the absence of fresh thinking and new perspectives to be applied to the challenges facing contemporary political practice.

Strategic Studies scholars need to take these voices and challenges more seriously; it is increasingly clear that in the civilian academy the field appears to have been increasingly outmaneuvered and cut off by the new and normatively-driven mainstream, which is instinctively more appealing in the context of Western liberal democracies, while in the policy field the absence of good strategic thinking is becoming increasingly evident. These two dynamics become especially clear, for example, in the way in which policy-makers have reached for counterinsurgency as a silver bullet, divorcing it from wider strategic imperatives, and indeed in the way in which this kind of warfare has been discussed as a form of 'armed social work' which frames conflict and intervention in a manner more appealing and acceptable to Western publics and policy-makers.

In the light of these multiple practical, environmental and intellectual challenges, we signal here a need to rethink and rejuvenate the field in both its theoretical foundations and practical applicability. Strategic Studies today is ripe for revitalization but in order to begin this process the field needs to consider moving beyond its traditional constraints:

The state-centered focus

It is true that states have played and continue to play an important role in international affairs. We cannot understand the many outbreaks of conflict and violence in the international system without recognizing the role of the state. However, actors other than states have gained in importance and the field compromises its relevance by not incorporating them in a more structured and significant manner. Individuals, non-state actors,

transnational groups and international organizations all have strategies and increased power and agency, the field needs to urgently deal with them. States are important but they are far from the only significant strategic actors out there. This is equally of course the case for the study of the changing environments which enable and constrain actors, especially in terms of globalized structures and mechanisms of global governance.

The rational actor model

The scholarship to date has relied heavily on these models to understand strategic behaviour and they have proven fruitful in many investigations. Still, they do not capture the full scope of strategic reason. Developments in cognitive psychology and related fields have the promise to renew the study of strategy and need to be further explored. Going beyond rationality as understood in rational choice theory would entail the study of emotions, intuitions and strategic imagination. Even Clausewitz, in whose footsteps many of scholars have trodden, asked that attention be paid to the idea of military genius and the role of passion in war. None of which are purely rational phenomena to which we can apply these dominant actor perspectives.

The Western world

Western states have indeed been responsible for significant armed conflict in modern history. In public perception, war is often associated with a dominant image of states at loggerheads, such as in the two world wars. This image overrides the many smaller and even deadlier engagements in other parts of the world. As has been pointed out time and again, civil wars in the non-Western world form, since the end of the Napoleonic wars, the dominant pattern.

The field of Strategic Studies needs to recognize more fully the global roots of strategic thinking and action and incorporate these non-Western perspectives. The rise of new actors, notably India and China, pose both intellectual and policy challenges which require more informed thinking. In a changing world, the field must adopt a truly global outlook, if it is to remain relevant. Relatedly, there is a need to move beyond the dominance of American and British perspectives and scholarship. Recognizing and respecting the huge debt we owe this scholarship, we see a clear need to give greater attention to continental European and more importantly non-Western perspectives on strategy. Examples which could easily be built from are Sun Tzu and Kautilya, and especially the way in which their thinking has influenced scholars and policy-makers in China and India.

The Realist paradigm

This paradigm has formed a cornerstone of the field and has contributed to many insights furthering our understanding of strategic behavior. However, closely linked to problems with the state-based framework, we see a pressing need to incorporate alternative approaches. There are many other ways of looking at international affairs, which have not made sufficient inroads within the study of strategy so far. We need to more fully conduct investigations from the perspectives of other research traditions and points of view. In the study of International Relations, strategic ideas are part of all the main research traditions, such as Constructivism, Liberalism or Marxism, and in turn these perspectives have shaped, and

continue to shape, strategic thinking and action. The Realist research tradition will obviously remain significant for Strategic Studies, as indeed it will in wider IR given, for example, the foreign policy actions of Russia in Syria and Ukraine, and China in the South China Sea but Realism is not and should not be the only analytical tool in the toolbox of Strategic Studies. We recognize that this could be difficult given path dependencies and normative issues on both sides but it is essential to explore possibilities further in order to reinvigorate the field.

The present and the short term

Strategic Studies has, as a distinct field of study, always held a particular relevance to gauge pressing and contemporary security challenges at the expense of deeper and longer term reflection. The risks of short-termism have, however, been very real. For example, in the debate about new terrorism, historic roots were denied and hodie-centric reasoning dominated. The field would benefit from looking further back into history and we suggest that a perspective from the longue duree is essential. This long-term perspective should notably include pre-nineteenth-century global history, enabling longer-term patterns to come to light in assisting with the study of today's challenges.

The concentration of strategic scholarship in military institutions

Traditionally the study of strategy was conducted within the walls of military academies and institutions. In the nineteenth century, the civilian strategist was almost non-existent. This changed with the advent of nuclear weapons and scholarship moved to think tanks like RAND and also to civilian universities, since nuclear war remained a theoretical exercise. While we would encourage the continued engagement in military colleges and academies of higher learning with strategy, it should not be its only locus. The study of strategy needs a firmer base in civilian institutions as well. From the perspective of cross fertilization and the different intellectual and policy foci present in those locations, renewal and new ideas can be born. This exchange of perspectives between the military and civilians was, of course, where the Golden Age of Strategic Studies in the 1950s also originated.

Either the purely practical or the purely theoretical

Not only in Strategic Studies but in the wider field of international relations there has been a debate to what extent the scholarship has divorced itself from practical relevance and gone off into the purely theoretical for the sake of theory alone. This also applies to the study of strategy. Scholars should consider recalibrating the needs and necessities of the study of strategy for both practice and academia. In the more distant past, the purely theoretical approach has been found to be problematic, with examples of Cold War abstract reasoning that were very far removed from reality. In recent years, the field has been accused of being too close to policy, so as to lose its independence and risk being co-opted by policy-makers, this trend is the more worrying given the seeming lack of strategy in many recent foreign policy adventures. For Strategic Studies to be relevant, a careful balance needs to be found between theoretical rigor, solidity and relevance for policy.

A positive vision

There are pressing world events that demand input and answers from scholars who have studied and theorised on the phenomenon of strategy. This is a field which still has much to contribute both intellectually and practically. What we are suggesting here is the plotting of a course between the hidebound Cold War perception of strategy and the wilder utopian shores in the broader field of security studies. As a plan of action to strengthen a global Strategic Studies enterprise, we formulate the following:

- The need to encourage research and publications exploring and developing the points suggested above in more visible and developed ways.
- The need for a scholarly outlet. This could come by rejuvenating existing journals such as the Journal of Strategic Studies, which would be the preferred option to build the necessary bridges. Alternatively a new journal devoted to the topic of Global Strategic Studies could be established but it would remain important to reinvigorate rather than splitting the field, any new journal should be focused on offering opportunities for dialogue and fostering a sense of common purpose.
- The need for a greater concentration and framing of research efforts and the establishment of a network of scholars devoted to the study of strategy from a truly global perspective.
- The organisation of panels at major conferences both within and beyond the field of Strategic Studies itself.
- The acquisition of research funding to pursue these goals with greater purpose.

Where should such a recalibration and redirection of the field towards global Strategic Studies lead us? First and foremost, it would create an area of research and investigation that is fit for the future. It would operate on the basis of the recognition that strategic challenges in the international system today are far more diverse and require a refreshed input than hitherto acknowledged. The challenges we see as most pressing are linked to a variety of non-state actors in the form of terrorists, insurgents, warlords, militia leaders, pirates and, most recently, the difficult to identify and easily deniable 'green men' that NATO is worried will be used to infiltrate the eastern frontiers of alliance territory. These diverse actors engage in a variety of different violent activities ranging from the purely criminal to the completely indiscriminate, and anything and everything in between. If we want the field to remain relevant, and make further development of strategic thought a serious and useful addition, we need to focus more on these actors and their ideas of strategy. A large-scale effort since the end of the Cold War has indeed tried to grapple with these agents in both local and global contexts. Most attempts have, however, been informed by tried and tested approaches, such as the extrapolation of balance of power theories and the security dilemma to non-state actors. This exercise has run into trouble with shortcomings in this theorization rapidly becoming apparent. We currently witness a concerning trend that with the increased assertiveness of Russia, some Strategic Studies scholars have been harking back to the Cold War literature on escalation dominance and deterrence. Even though the scholarly efforts are

laudable, we should be wary of simply dusting off old concepts that seemed logical but were beyond utility already at the time of their conception.

Not only is it necessary to recognise the panoply of strategic actors, we also need to broaden the understanding of their behaviour from viewpoints other than that of the rational actor perspective. This could be highly beneficial for any grasp of the real driving forces of violent activity. It is not very helpful, as is common today, to assess the strategies of perceived opponents as something which we are familiar with but which they are not, i.e. ISIS is not a terrorist organisation. Furthermore, developments in the study of psychology and emotions in relation to war could lead us to new and productive insights. This is just one example of where the field could head.

Most of the violent actors, listed above, operate in the non-Western world but with links between battle theatres becoming increasingly and pressingly relevant for policy and strategy. As others have pointed out, the banlieues in many a Western metropolis are now directly linked to battle theatres further afield in Asia and Africa. Working from a perspective where we link the local, the regional and the global and also the particular with the general would be highly beneficial for deeper investigation. Transgressing the boundaries between security perspectives that focus on the domestic and the international would also be highly productive to push the existing boundaries of the field. Conversely, most military operations today are carried out in coalitions or based on alliances in which non-Western partners participate, e.g. the most prominent participants in United Nations operations have for a number of years been non-Western states and the coalition of states fighting Daesh/ISIS consists of a mix of both regional and Western states. These facts deserve a more thorough treatment, if only to add to a better understanding of converging and diverging strategic cultures and 'ways of war'.

With a widening of the theoretical approach to the study of strategy, we could attain a richer understanding of what strategy is all about. When we move beyond the purely power- and interest-driven ideas and further relate to norms, expectations, appropriateness, consequence and culture, we can increase our grasp of not only what we are doing ourselves, and of how our partners perceive common problems but also what is driving our opponents.

Incorporating a longer-term vision would do justice to the many challenges we have faced in implementing by force the political desirables of restoring order, building democratic states and creating sustainable peace. These are all processes that have occurred before, for which history offers a wealth of insight but also sounds a note of caution. They require, among other things, staying power to attain success. If the stamina is not present, as history demonstrates, these types of undertakings should be avoided.

Building up further civilian expertise could help widen the currently small circles debating strategy and help prevent the risk of group think. Bringing in more outsiders would aid in curbing the tendency to simply regurgitate old ideas in new garb and increase the potential for critical self-reflection. The risk of narrow groupthink is more real than imagined; it is exemplified by the ideas coming out of NATO presently with a renewed attention to Cold

War thinking, such as the importance of deterrence and escalation dominance. Providing and discussing alternative approaches to military challenges, which the alliance perceives itself as facing might be helpful in lessening the danger of intellectual straight-jackets. Civilian and independent expertise could help to broaden and deepen the debate.

Finally, finding a proper balance between the theoretical and the practical application would boost the field, not only scientifically, as it would increase its academic standing as a mature field of inquiry. It would also provide an impetus for practical application that is sufficiently divorced from day-to-day demands and the flavours of the month but still meets the requirements and challenges of praxis.

It seems then that we have a tremendous opportunity at this juncture to refresh and reinvigorate a field which has lost its lustre and is perceived to have been unable to respond to the wider circle of security studies scholarship which has either by-passed or enveloped the field. As Security Studies as a field appears well placed to explain the policy challenges facing the world, from different perspectives and seemingly with a truly global outlook, it has become all too easy for Strategic Studies to be painted as a parochial, obsessive and introverted area of study which is increasingly irrelevant. The stripping out of strategy from this field, and increasingly from policy-making, has had a deleterious effect. Strategic Studies clearly has both the flexibility and tools within it to respond to today's challenges – the potential for renewal and relevance is clearly present, and is in many areas emerging in an exciting way – but in order to counter the assumptions which are increasingly made about the field and the successful (seemingly wilful) caricaturing of the discipline, it is necessary that the field of Strategic Studies changes and is seen to change. Renewal is necessary, this does not mean throwing the baby out with the bathwater but instead infusing new ideas and bringing a truly global scope to the field. In order to respond to a changing world, Strategic Studies must be able to respond with clear strategic answers to today's problems. The absence of good strategic thinking when facing the panoply of threats from both state and non-state actors is becoming increasingly evident; it is time for Strategic Studies to re-assume its rightful place at the forefront of the intellectual study of the threat and uses of force and the application of power to fulfill the ends of policy.

Around 20 years ago in an overview article Richard Betts asked 'Should Strategic Studies survive?' His answer then was a clear yes. Today, we argue that Strategic Studies indeed has a bright future, if we take these challenges seriously and see them as an impetus and inspiration to bring the community of scholars together with new focus. We look forward to the constructive debate that this manifesto is intended to provoke and welcome ideas about how the field can be reinvigorated and how Strategic Studies can become truly global.

DEFINITIONS OF STRATEGIC STUDIES

Clausewitz- "…is the use of engagement for the object of war."

Von Moltke- "…is the practical adoption of the means placed at a general's disposal to the attainment of the object in war."

Liddell Hart- "…is the art of distributing and applying military means to fulfill the ends of policy."
W. Murray and M. Grimslay- "…is a process, a constant adoption to the shifting conditions and circumstances in world where chance, uncertainty and ambiguity dominate."
Grogery D. Foster- "…is ultimately about effectively exercising power."
Robert Osgood- "…as the overall plan for utilizing the capacity for armed coercion- in conjunction with economic, diplomatic and psychological instrument of power- to support foreign policy most effectively by overt, covert and tacit means."
Recently, thinkers argued that strategic studies or 'strategy' embodies more than just the study of war and military campaigns, but strategy is the application of military power to achieve political objectives. More specifically "the theory and the practice of the use, the threat of use of organized force for political purposes. [Clausewitz, Sun Tzu, Kautilya) Liddle Hart (1969) coinage the concept of 'grand strategy', which involves the coordination and direction of "all the resources of a nation, a band of nations, toward the attainment of the political objectives".
Strategy deal with difficult problems of national policy which the areas of political, economic, psychological and military factors are overlap. Strategic theory is a theory of action (Brodie, 1973), which is best studied from interdisciplinary perspective (which involve: politics, economics, psychology, sociology, geography, tech, force structure, and tactics). Strategic studies cannot be studied as a discipline on it own, for it is too narrow, and rely upon arts, sciences and social sciences for ideas. It is also studied by people from different expertise: Schelling (Economist), Kissinger (historian) Brodie (Sc Politics) etc.

CONCEPT OF SUPER-POWER AND GREAT-POWER

The international system recognizes and divides nation states in terms of their respective "powers". Some are called great powers; some are identified as middle powers; some as emerging powers; and others, rising powers. Each of these terminologies has a specific meaning attached with them because different kinds of powers have different attributes, roles and functions in international relations.
For instance, a great power is defined as a state that plays a major role in international politics with respect to security-related issues. The great powers can be differentiated from other states on the basis of their military power, their interests, their behavior in general, their interactions with other powers and other powers' perception of them. This definition of great powers was given by Jack S. Levy in his book, 'War in the Modern Great Power System', 1495-1975.
All the superpowers therefore are great powers but the reverse is not true. This is precisely because one has to be a great power first in order to become a superpower. For instance, both the US and the Soviet Union were great powers even before World War II, but they were not recognized as superpowers then. It was only after the end of World War II that the world recognized them as superpowers because of their military strength, their destructive potential

(especially with the advent of nuclear bombs) and their capabilities to affect international politics at a much wider and deeper scale than before.

Then, there are rising powers, which are primarily those powers whose rise in terms of their socio-economic indicators as well as their military strength is recognized by other nation states in the international system. Sometimes, their rise is so sharp and fast that it starts throwing a challenge to existing superpowers. For instance, many scholars argue that China is a classic case of a rising power which is at the cusp of becoming a superpower and take the place of Soviet Union whose collapse in 1991 left a vacuum in the international politics as it was balancing the US for nearly half a century.

While China is recognized as a rising power, India has often been termed as an emerging power since the last decade, especially after the LPG or liberalization, privatization and globalization reforms after 1991 that accelerated its economic growth and it became a nuclear power in 1998. It secured India's national interests to a considerable extent. The term emerging power denotes that a nation state has just started to emerge as a power which is recognized as such by other existing powers in the international system.

The "self-image" of an emerging power changes rapidly, as it starts to broaden both its intentions as well as capabilities to make a broader mark outside the region in which it is regionally situated. For instance, India has always been a regional powerhouse of South Asia, so much so that the very idea of South Asia can't be imagined without India in the picture. However, India was not considered as a major global power till the turn of the last millennium, after which India's interests, especially economic interests, were broadened.

Today, the situation is very different. Not only has India's overall power increased manifold, the country is seen as one of the major powers in the world whose influence is not just confined to its immediate neighborhood in South Asia. Ironically, over the last few years, India's relations with most of its immediate neighbors have deteriorated but outside the region, India is enjoying amicable and strong trade, economic and security relations with most of the major powers.

Many scholars of international relations call India a middle power as well. The term itself suggests that a middle power is often a sovereign nation-state that comes in the middle of the power spectrum of all nation-states. These states are relatively less powerful compared with great powers but possess the capability to shape international events. During the Cold War, states like Canada, the Netherlands and Sweden played the role of middle powers. Today, scholars and academics put India and Australia, along with Brazil and South Africa, in that position.

That brings the question of what kind of power India actually is. Is it an emerging power, is it a middle power, is it at the cusp of becoming a rising power? The answer to this question is debatable but the most agreeable answer is that India is one of the major economic powers with nuclear power capability today.

However, one should also examine why these terminologies are important in themselves. The most likely reason seems to be that these terminologies are coined to assess the power of

nation-states by the international community so that they calculate their strategy of behaving with a particular state in a particular way. Second, these terminologies often act as catalysts to boost the “self-image" of a nation-state.

However, many diplomats and scholars of international relations caution that leaders and ruling dispensations in respective nation-states shouldn’t take these terms neither too seriously nor too lightly. The concept of power of nation-states has changed with time. To sum up, power manifests itself in many ways and therefore to be recognized as a major power, nation-states aspire to possess both the hard and soft power to influence the international system at large.

HISTORICAL EVOLUTION OF STRATEGIC STUDIES

In the academic, study about strategy began to emerge after World War II, but the basics have been around since centuries ago when a general of China, Sun Tzu in his book The Art of War, wrote his thoughts on how to achieve the strategy of war, “*what is of supreme importance in war is to upset the enemy’s strategic plans, next best is to disrupt his alliance by diplomacy, and the next best is to attack his army, the worst policy is to attack cities”.*

At first, strategic studies developed out of the university academia, and very identic with the military and war. After World War I, the seeds of this empirical about strategic studies began exist when some universities founded the department of international relations as an attempt to avoid the birth of the war again, but the study of the strategy itself is still heavily influenced by the natural sciences, like physics and engineering.

In further development, strategic studies developed rapidly when the world at that time experience the Cold War and arm race, but again, it still influenced by the military. Actually strategic studies at that time focused only on something called by deterrence, which as a major issue that widely used by the conflicting party, the United State versus Soviet Union, to bluff their opponent with purposed that the opponent does not do the things that can threaten balance of the world with a conflict that refers to the re-birth of the war. By taking advantage of the cold war, some party trying to establish and develop strategic studies as an academic subject, but a variety of policy changes to make these studies difficult to set up.

Indeed, Strategic Studies have continuity with the theory of realism, that basic assumption that human beings are selfish and want to win themselves. This is in line with the Strategic Studies that consider the other as an the opponent and learn how to conquer the opponent. In addition, the constructivist approach also helped the development of Strategic Studies to provide focus attention on the importance of the dynamics of the relationship between "objective" and "way" that extremely crucial and affects the final result in any conflict. Strategy is always exists where politic take place, even if the political objective can be achieved without violence and war. Although Strategic Studies try to apply the analogy of a "war" as widely, but Strategic Studies also focus on the role of armed forces in times of peace or war.

On its development, the strategy changed from time to time. After the end of the Cold War, Strategic Studies focuses on international security, that combines the concepts and practices

so that the theories put forward can be applied. This is one of the efforts to prove that the theory made by scientists not only can be understood as textual but also contextual.

The end of the Cold War, moreover, also makes the scope area of Strategic Studies increasingly widespread, not just talking about the military and security such as what happened before, but a combination of both that gave birth to a new science that escaped earlier. For example, security studies are now expanding the scope includes diplomacy, policy formation, economic, social mobilization, innovation, knowledge, and control arms. Changes occur in the military that are now viewed as more moral decision-making because it does not always give priority to the ego to show strength through war, but more concerned with peace. Strategic Studies has many inspired many aspects of the political world, including the security and the military.

Thereby, it can be said that Strategic Studies are still very relevant in international relations for Strategic Studies is not monotonous in terms of war and the military only, but can cover a wider sense, including the global issues that are currently happening in the world at large. Strategy also plays the important role in facing the non-traditional threats, such as drug trafficking, transational organized crime, international terrorism, and also very needed against the human security issues, such as infectious diseases, food security, natural disaster, global warming, etc.

The Role of Strategic Studies in Post-Cold War and Globalization Era

Development of the age and technological advances that exist inside provides great opportunities for the strategy, to grow wider. With the passage of time, along with the emergence of globalization, interdependence and complexity in the relationship between the state, bring the strategic studies to not only monotonous in term of war strategy, but it has substance and the development of knowledge strategically expanding into various fields, both in political and economic fields. Now everyone realized how important it is to apply strategic thinking, because basically every management and exercise is always accompanied by a strategy.

Strategic studies is still urgently needed to face the challenges of security from time to time, either from traditional threats, which war and its main actors are the State, as well as new threats that the main actors are not only the State, but also all parties, including individuals. The emergence of new threats to humans and the development of a universal perspective also add spice to the development of strategic studies.

- *Terrorism Issues*

One of the non-traditional threats of security, dealing with the relevance of Strategic studies in the 21st century now, is a case of terrorism. The case was widely discussed after the attacks of 9/11 that destroyed the twin towers in the U.S. after being hit by two planes hijacked by terrorists. Terrorism is a real challenge of global security, so the concepts of security in each country were to change, from put forward the concept of conventional, to the new security concept that is more comprehensive. Because terrorism is a threat that threatens

the lives of people around the country, then it is very vital role in the strategy to confront the issue of terrorism.

The British have a step, which was considered to address the threat of global terrorism, called Contest Strategy. This strategy has four ways: Pursue, Prevent, protect and prepare. Pursue is a way to catch terrorists through intelligence gathering and analysis. While Prevent is a way intended to reduce the threat of international terrorism that focuses on the radicalization of individuals, including fixing the structural problems, obstruct the agitators and escapement of terrorism, and launched a campaign to fight the ideology that supports terrorism. Protect is a defense effort in the face of terrorist attacks. This aspect focuses on the enhancement, and overall security. And finally, prepare that be used when an attack cannot be prevented so that it can be done as soon as possible to restore its impact.

The problems of terrorism, in general, motivated by injustice, poverty, and narrow fanaticism which if it had been associated with religious issues will become increasingly complicated. A low level of education in remote communities also makes them vulnerable to the manipulation of religion used by terrorist groups.

- *Nuclear and Weapons of Mass Destruction Issues*

Another threat on human security issues is nuclear. Nuclear revolution becomes a discussion that marked a shift in military strategy. This is due to the transformation nature of military force, which means that classic strategy has begun to be questioned its significance when faced with what is happening in the modern world. This revolution was marked by the victory of offense over defense, as well as the transition from the "war to win" to "preventive war" through a policy of deterrence. This revolution involves the creation and development of weapons of mass destruction, so it is identical with nuclear and marks the birth of "nuclear strategy".

According to Klien, he said that "*Clausewitz's three modification of real war no longer upheld in the nuclear world…Welfare in the nuclear age is claimed to be Instantaneous, unlimited, and irreversible in tis overwhelming consequences".* Furthermore, industrialization and the mechanization of war lead to "all war is limited" belong to Clausewitz, become less relevant when it has a tendency toward total war with the development of technology; defense subordinated to the offense, the iron is replaced with a steel, a battle between soldiers turned into a battle between machines, emergence of strategic bombing, and a shift in war strategy targets becomes more towards the moral sentiment and the enemy's civilian population. From this it can be seen that modern strategy and technology developments affecting the strategic studies when nature of war was also changed.

In the international scope, nuclear strategy are more likely to the restrictions with the policy of Non-Nuclear Weapon Proliferation treaty (NPT) which is one of the international regime of nuclear existence. Nuclear power technology is a a powerful and efficient and can be used as the discovery of alternative fuels, but as a double-edged knife, nuclear also has a dangerous nature which makes the world worried about the use of nuclear power in any form. For example, a Japanese nuclear technology leaked after being hit by the devastating

earthquake. Things like this causes the world is still controversy regarding the procurement and development of nuclear, so the existence of nuclear kept under pressure until the point of disappears.

- *Global Warming Issues*

Global warming is one of the new phenomenons faced by humanity that occurred due to the greenhouse effect and continuous environmental destruction, as well as industrial emissions that are difficult to be controlled. As a result of global warming is an extreme climate change that swept all over the world.

The uncertain seasonal changes and continuous environmental destruction that occur, resulting in a serious impact on human life, such as famine, poverty, scarcity of natural resources, health disorders, and natural disaster. This global phenomenon if not taken seriously, it will cause a more serious threat for humanity. For this reason, strategic studies play its part to help human race deal with global issues that arise.

- *Scarcity of Energy Issues*

The need of oil and gas energy which continue to increase in the society, is contrary to the availability of the energy that limited, has implications for political, economic and security. The issue of energy security in this decade is continuing to emerge and it is expected to have an impact on global security in the years to come. The greater number of humans on earth and the economic revival in countries that have a significant impact on global security contributed to the growing need for energy.

For developing countries, rising oil prices have an impact on economic stability and security; especially increase the burden on state budgets and expenditures. In the public sphere, the rise in world oil prices has an impact on prices of goods and services that are not balanced with purchasing power. This rising prices could potentially encourage social unrest if not managed properly.

Limited energy resources of oil encourage worries about emergence of new competition in various areas, which is triggered by the need to secure energy sources. This condition lead to the energy crisis in future periods will be more serious and have a great tendency to be a source of conflict between countries in the fight over natural resources. Considering that most of the oil and gas resources located in developing countries, the developing countries will become the most widely felt impact.

So can be said, from human security issues as non-traditional threats above, that position of strategy is needed then it can provide some alternative way to confront these challenges. This is a proven strategic study still relevant in the post-cold war era and globalization. Strategic studies have already covered many aspect of life, not only in military fields as in the beginning. The strategic studies help people to get the desired destination so that the authors believe that the strategic studies will continue to be relevant until the world ends.

Actual Example of International Politics Affairs, Case Studies: The Success of Obama in U.S Election 2008

As mentioned above, the strategy can be applied not only in the military and security only, but has spread to the world of politics and economics. In politics, as an example to the case study, the strategy is still very relevant and needed. Peeling the success of Barack Hussein Obama in the 2008 U.S. elections, is not only because of expertise in political negotiations, but also because Obama successfully implement marketing elements in the political struggle to become number one in the U.S.

Successful teams make planning positioning, differentiating and branding carefully and execute political marketing programs with optimal. Political marketing is intended to disseminate information about the program made by political actors through the channels aimed at specific targets, in order to gain support as much as possible.

In his strategy, Obama did pull, push and pass marketing. Pull marketing is defined as the use of internet technology in capturing the support and funding, while pass marketing is useful for gain strong support from young voters and minority voters. One of the keys of Obama's victory lies in the use of internet technology in capturing the support and funding. Obama is the first successful example which integrating technology with political organizational change model that emphasizes participation of volunteers and extensive large and fast of feedback, so cause the enthusiasm that had never happened before.

Obama's campaign team dared to refuse campaign funds from the government quota in the belief that he was able to raise funds independently, one through the internet. The result, Obama's camp can get more money than its competitors. When McCain took the allotment of funds for the campaign, and finally troubled by funds that have been thin on the end days of campaigns, at the same time Obama can produce tens of dollars to broadcast the advertisement campaign in all 30-minute national television networks.

Inspired by the success of social networks, such as Facebook, MySpace and YouTube, Obama’s team set up a website namely MyBarackObama.com ("MyBo"), which is used as epicentrum of Obama's overall strategy to attract the mass of the virtual world community. Through this site Obama is able to collect almost 1 billion dollars from millions of donors which can contribute only $ 5 per person. Until the seconds before the election, Obama has 1.7 million friends on Facebook, MySpace 510 000, and 45,000 followers on Twitter. With this strategy, Obama is loved by young people, so that the age group under 29 dominate vote Obama by 66 percent.

Analyzing from the case studies above, it can be seen how the study of the strategy is not only applied in the realm of the military or the war only. The collectivity demands of human problems that are very wide push strategy to be applied in every line of human life. As the success of Obama in the 2008 election that not spared from the applications of marketing strategies and the use of Internet technology, thus he become the first person in history to successfully utilize the internet, especially social networks in his campaign. This proves that

the development of strategy use as a tool or way has been expanded in various aspects of human life at large.

STRATEGIC THEORIES

One of the most useful services that academics can perform is to explain the principles of thought that guide their study. As a 'strategic theorist' this is rather challenging. The term 'strategy' must be one of the most commonly used terms in public discourse. It is employed to refer to anything from state policy to personal choices. Yet, few appreciate what this term really is, and what it implies as a system of inquiry.

The notion of strategic theory as a method of analysis has slowly, over the course of 40 years, permeated the domain of international relations and political studies via the work of those like Thomas Schelling and Colin Gray – classic strategic theorists – and has been increasingly used and acknowledged as a tool to assist in the comprehension of decision making. One of the best statements of the utility of strategic theory has been given by Harry Yarger: 'Strategic theory opens the mind to all the possibilities and forces at play, prompting us to consider the costs and risks of our decisions and weigh the consequences of those of our adversaries, allies, and others'.

What, then, precisely is strategic theory, and how does it help us to open the mind? Working from first principles in the following commentary, this section aims to provide a concise understanding of what strategic theory encompasses in its most essential form. As will be shown, to achieve this understanding it is important to appreciate what strategic theory is not, as much as what it is.

Before itemizing what strategic theory is, it is necessary to appreciate how the term 'theory' is being used in this context. Plainly, in any study of the infinitely varied scale of human conduct strategic 'theory' cannot aspire to any hard scientific understanding that survives experimental testing under exactly replicable conditions. However, it does constitute a theory in the broader sense that it advances a set of propositions that if true can be held to explain certain facts or phenomena. In this regard, strategic theory reveals itself less as a set of hard and fast rules, but more as a series of purposive assumptions that guide analysis.

The Assumptions of Strategic Theory

1) The study of ends and means

The term strategy denotes the endeavour to relate ends to means. Strategic analysis thus refers to the study, in Michael Howard's words, of the 'use of available resources to gain any objective'. Here, the term 'resources' or the 'means' refers not simply to the tangibles of power that may be employed to gain objectives but also to the many intangible factors that may impose themselves on any decision-maker, most notably the degree of political will that an actor may exert to attain its goals.

2) The study of the political actor as the central unit of analysis

What do strategic theorists study? Principally, they examine the calculations of the individual social actor, be it a state, a sub-state entity, or any other social grouping. Hence, strategic

theory analysis is interested in describing the choices available to an actor and evaluating the quality of decision making.

3) Understanding the political actor's value system and preferences

What specifically do strategic theorists wish to understand in their examination of political actors? They want to comprehend the actor's value system. What motivates them? How do actors construct their interests, which, thereby, inform the objectives they strive for and the manner in which they seek to attain them?

4) An actor's interest will be influenced by the wider strategic environment

Integral to the endeavour to understand the actor's values and preferences is an appreciation of the wider social environment in which it functions. Lyndsey Harris puts it well when she argues that the strategic environment is the crucial 'determinant of the information that is available to an actor and the structure within which actors operate. The environment determines what the actors think they know for sure and what they have to infer, if possible, from the behaviour of others'.

5) The actor is behaving rationally in pursuit of its aims

It is sometimes said that strategic theorists assume rationality on the part of those whom they study because they cannot assume anything else. To pass judgment on whether anyone is rational or irrational in political life is to assume that one exists in Olympian detachment with a unique insight into what constitutes supreme powers of reasoning (a self-evidently delusional position). The assumption of rationality, however, does not suppose that the actor is functioning with perfect efficiency or 'that all rational decisions are right ones, merely that an actor's decisions are made after careful cost–benefit calculation and the means chosen seem optimal to accomplish the desired end.'

6) The acceptance of clashing interests

An individual actor has to function in an environment full of other actors all trying to pursue their interests and objectives. It is a constantly reactive condition in which, according to Schelling, the 'ability of one participant to gain his ends is dependent to an important degree on the choices or decisions the other participant [or participants] will make'. Strategic theory thus accepts that clashes of interest are liable to occur among actors and that in some instances this will lead to the resort to war as a means of obtaining objectives.

7) The observance moral neutrality

Strategic theory is intellectually disinterested in the moral validity of the means and ends of any actor. Commentary is confined to evaluating how effective chosen means are in attaining stated objectives. This understanding includes and applies to all acts of violence which are viewed as politically instrumental; that is, undertaken with the conscious purpose of securing goals and interests. This may seem clinical, even cold blooded, but it is a logical extension of any dispassionate understanding of the wider political environment and vital to sustain coherent evaluation. As Schelling again elucidates, this is for two reasons. First, strategic 'analysis is usually about the situation not the individuals – about the structure of incentives, of information and communication, the choices available, and the tactics that can be

employed'. Second, strategic theory 'cannot proceed from the point of view of a single favored participant. It deals with situations in which one party has to think about how the others are going to reach their decisions'.

Seven Assumptions = One Key Idea – the Application of Occam's Razor

These seven assumptions comprise the core of strategic theory. It is a precise and economical method because it applies the principle of Occam's Razor. That is to say, it incorporates as few postulates as possible in its understanding. In essence, strategic theory is the study of correlations between ends and means, including the use, or threat of use, of armed force as a conscious choice of political actors who are intent on rationally pursuing their objectives. It is as simple as that.

Of course, what has been presented so far is only the basic framework of this theoretical approach. The seven key assumptions provide the point of entry into many other interesting questions, such as: how is it possible to gain an appreciation of another's value system (through serious historical research); how might we be able to assess whether an actor is attempting to be proportional in the seeking of its goals (a matter of proper qualitative judgment based on deep research); and how might we be able to discern when an actor has attained its objectives, or has reached a point where it has maximized its potential with its chosen means (again, a matter of academic judgment based on knowledge of the actor's value system)?

With its focus on understanding value systems, and how the contingent political environment shapes the formation of interests, readers may discern that strategic theory is a form of constructivism *avant la lettre*. Strategic theory, however, avoids the problematic nature of constructivist approaches as they have evolved international relations by not arbitrarily, and entirely illogically, bolting on normative commitments that hold that just because identities and interests are not permanently fixed that they must be manipulated towards some set of universal humanitarian values, a flawed and deeply ethnocentric enterprise if ever there was one.

Neither does strategic theory fall into the hole that American political science approaches often manage to dig for themselves by perceiving a contradiction between the fact that identities and interests may be constructed from contingent historical and social experiences (rather than given by immutable structures in the international system) and that once interests are formed that they are often pursued with great realist vigour, particularly on the part of major state actors on the international stage, like China, for instance. Strategic theory perceives no such contradiction.

What Strategic Theory Is Not…

Strategic theory avoids many of the pitfalls that have afflicted international relations because in disciplinary terms it is unrelated to IR. Its origins derive from public choice economics. It is an analytical method that is sometimes brought into investigate issues and problems in the realm of IR, but it is not intrinsically 'of IR'. Unfortunately, some international relations scholars think it is a branch of IR, and this leads to misunderstanding and confusion.

Therefore it is worth mentioning briefly what strategic theory is not. This in itself helps to clarify the nature and value of this approach.

1) Strategic theory is not just the study of military power

It is true that the term 'strategy' derives from the Greek word 'strategos', meaning the 'art of the general', but the way strategy is defined (the application of ends to means) implies no inherent link with military power and war, which is but one way to achieve any objective. The majority of self-described strategic theorists probably do study the use or threat of use of armed force in politics. They do this, I would suggest, because strategy in war is easier to study, and in some senses more measurable, than more ambiguous decisions in life: the choices and outcomes in war are often stark, involving matters of life and death, winning and loss, victory and defeat. Fundamentally, though, strategic theory has universal application across the sphere of human activity as the great Thomas Schelling, an economist by training, demonstrated in much of his work. Strategic theory does not refer only to the study of force, and strategic theorists themselves sometimes need to be reminded of this fact.

2) Strategic theory is not necessarily strategic studies

It is difficult sometimes to separate strategic theory from the term 'strategic studies'. Strategic studies was a phrase that developed after World War II signifying the general study of military power in international politics. Although elements of strategic theory found their expression in this disciplinary niche in IR, more often than not strategic studies became an umbrella term for the study of defence and security issues, which leads us to the next point.

3) Strategic theory is not the same thing as security studies

As a consequence of the association of the study of military power with the notion of strategic studies in IR, a more general source of misunderstanding is the conflation of the strategic approach with the term 'security studies'. The two are wholly unrelated. As a strategic theorist I recognize no connection between them. Strategic theory is the study of ends and means. Security studies is…well, who really knows what security studies means?

4) Strategic theory is not the study of 'strategic culture'

Strategic culture is a meaningless concept. Strategic theory, as has been emphasized, is routinely about the study of how value-systems inform and influence ends and means, and if that is what people mean by the study of 'culture' then strategic theory is, *ipso facto*, concerned with the study of cultural variables. Strategic culture grew up as a popular notion within IR after the end of the Cold War by analysts who for some reason believed that, hitherto, constructivist ideas had no correspondence with the study of how political entities sought to gain their objectives in the international system. Such approaches invariably demonstrated little understanding both of the disciplinary derivation of strategic theory, or the available academic literature on the subject. Confusion was the end result and it shows in almost all works on so-called strategic culture.

5) Strategic theory is not game theory

Just as strategic theory repudiates erroneous notions of 'culture', neither does it connote the opposite fallacy of an entirely valueless understanding of rational-actor behaviour embodied

in game theory. It would be true to say that strategic theory originated in part from game theory, but it soon surpassed its origins. For example, Schelling's *Strategy of Conflict* is one of the most sublime works in the field. It is full of mathematical equations and abstract theorizing. But the truth is that few read this work for its mathematical formulas. You read it for the deep, qualitative insights derived from Schelling's economist background and, just as importantly, from his profound understanding of the nature and interdependency of human relationships.

A Brief Case Study

Now that a set of statements has been advanced as to what does and does not constitute strategic theory, what does it all add up to? The beginning of this piece made the claim that strategic theory was a precise and efficient method that can help simplify and clarify social phenomena. Let me provide a short example that will hopefully elucidate.

In recent years the term 'terrorism' has vexed IR scholars, with one contributor to e-IR lamenting that over 200 definitions had been put forward. The received wisdom is that terrorism 'is nearly impossible to define', and that consequently no stable basis for study has been possible. Following the assumptions above, strategic theory would reject that view. By contrast, defining the term is easy and unproblematic. You employ Occam's Razor. Simply, terror is an abstract noun that denotes fear, and thus terrorism can be defined quite adequately as the deliberate creation of fear for a purpose. In this way, terrorism reveals itself as a method, a tactic. This is a perfectly stable basis for study. If you are seeking to generate fear to achieve something, then you are practicing a tactic of terror. If you are not trying to generate fear, you are not.

The self-inflicted problem for many in IR and political science of course is that they insist, without any clear reason, in attaching moral valuations to the term terrorism (people who use terrorism = bad). Strategic theory, because it practices intellectual disinterest towards the moral validity of the cause, the means and the ends of political action, rejects this notion because, like any tactic, it can be used for either good or bad purposes. As a parent, you might need to instill fear into your children (to employ terror) for a whole variety of responsible reasons. Sub-state actors sometimes employ the tactics of terror to achieve their goals. States will also practice the tactic. In any instance this can be for entirely legitimate purposes.

The point is that deciding what constitutes a morally good or bad purpose is a wholly separate intellectual task from describing and evaluating the utility of a particular tactic. Mixing up an attempt at description with a moral judgment is what philosophers of language call a category mistake. To give an example, the much-quoted phrase 'one man's terrorist is another man's freedom fighter' is a classic category mistake. For a strategic theorist, one part of the phrase – 'terrorist' – alludes to the description of a tactic (someone who seeks the deliberate creation of fear for a purpose), while the other – 'freedom fighter' – is obviously a positively loaded moral judgment. To fuse together these different intellectual tasks is illogical. Strategic theory thus succeeds in revealing that 'one man's terrorist is another

man’s freedom fighter’ as a meaningless slogan (because if one thinks about it, clearly you can be both at the same time).

Strategic theory offers an exact and coherent basis for investigating social phenomena. In particular, as has been shown, it is able to de-conflict the attempt to assess social activity designed to achieve goals from arbitrary moral valuations. In this manner, strategic theory facilitates clarity of understanding. Strategic theory is, thereby, mind opening and intellectually liberating.

PHENOMENON OF INTERNATIONAL CONFLICT IN INTERNATIONAL RELATIONS

There is a saying that "when there is an individual, peace prevails and where there are two individuals, conflicts arise and when there is more than that, alliances begin." This wisdom refers to the historical law that governs our lives in general whether the national societies or political units at the international level that has the form of human or political unity from the family, the tribe, the nation to the organization and the state which is governed by the law of conflict, a historical basis that does not need to be proven stressfully. As many scholars of international relations see that conflict is a natural phenomenon of extremely complex dimensions and very intertwined where the human experience conflict has begun since the emergence of the first human, and these relations are known at different levels: individual or collective, and also in various dimensions: psychological or cultural, political, economic, social, historical, etc .. Also, its forms vary and the results have different ranges that intensity starts of a fine conflict at the family level to the extent of wars and armed conflict.

Conflict is a competitive phenomenon that involves two or more conflicting goals. At the same time, the main element in the definition of conflict is that it involves at least two or more parties with opposing objectives, that means that each party wants to get what the other wants or retains it, and therefore if the demands of one party are met, the demands of the other party will not be realized because the conflict is focused on the same thing. Israel wants to keep it's the occupation of the West Bank while the Palestinians want to extract it from the Israeli occupation.

The phenomenon of international conflict differs from other phenomena of international relations as a very complex dynamic phenomenon, due to its multiple dimensions, the interplay of its causes and sources, the interplay of its direct and indirect effects, and the varying levels that occur in it in terms of scope, intensity and violence. In addition to the radical difference in the nature of the international conflict management strategies pursued by the parties in these ongoing conflict-related processes, whether with regard to objectives, methods and means, where we are able to recognize the fact that it continues to prevent the development of a general theory of international conflict and its causes, as well as ways to confront and encounter it within a framework of comprehensive and logical integration. However, this should not diminish the enormous academic efforts that have been made in order to create the scientific basis for such an integrated theory, which has been crystallized in two basic dimensions:

1. The main theoretical approaches and concepts used in interpreting the international conflict in terms of determining their causes, motivations and the driving forces behind them.
2. The most important theories of confrontation and containment of this phenomenon in its faculties, in terms of how the international community can deal with it in the context of general international measures aimed at the basic and stable empowerment of international peace.

The theory of conflict in sociology is a term that refers to theories that say most of the community entities are witnessing a state of permanent conflict of those who were mentioned in order to maximize their benefits. This conflict situation contributes mainly to the state of mobility and social development to the maximum extent with the revolutions and the accompanying Political developments.

The theory of conflict within the framework of international relations refers to a set of intellectual theses that may contribute to the interpretation of the external behavior of States. The Arab-Israeli conflict is one of the most prominent types of international conflict.

In fact, the most precise term is the theories of conflict, not the theory of conflict, each characterized by conflict interpretation from one dimension, in the sense that each of them tends to preferentially or specifically on the other dimensions of the phenomenon of conflict. In addition to interpretation, the term theory or theories of conflict includes certain theories (means and strategies) to deal or manage with the international conflict.

The concept of conflict is one of the most prominent concepts on the surface of the hot debate after the end of the Cold War, the disintegration of the historic opponent of liberal democracy, and the fever of evangelization at the end of history, according to Francis Fukuyama's theory, following the "resurgence" of the strategic clash of civilizations theory, The Future wars by Samuel Huntington who believes that the clash between "civilizations" is inevitable. There is a saying that: (when there is an individual peace prevails and when there are two individuals conflicts arises and when there are more than two parties , alliances begin). This wisdom refers to the historical law that governs our lives in general, whether it is national societies or at the international level, the laws of conflict governing the universe. Whatever in the form of human unity, family, tribe, nation, it is governed by the law of conflict that is a historical basis... it does not need to be proven stressfully.

Many West thinkers believe that conflict is a natural phenomenon in human life and in the life of all institutions. From the family to the level of humanity through the tribe, the state and the nation, the law of conflict is what governs all institutions. However, the forms of conflict are not the same in these institutions and the results are different, it begins intensity in a form of a fine conflict at the level of the family and continues at the level of humanity until it may reach the level of wars and clashes.

While the liberal school believes that the cause of the conflict is the existence of non-democratic governments and therefore democracy in the eyes of the liberal school means a

peaceful and natural solution to the problems of the internal state and thus the disappearance of international conflict.

Most scholars of international relations believe that international conflict is inherent in the nature of state organization, that is, the conflict is the result of the organization of the capitalist state. This organization creates contradictions between the capitalist class and the working class. It also creates economic crises such as overproduction crises. Marxism believes that the main way to mitigate this conflict is to find external markets, leading to international competition among capitalist states, resulting in international wars such as the First World War. Many scholars have agreed that the term "conflict" refers to positions that involve a specific and explicit contradiction in the objectives, values and interests of the conflicting parties, as Joseph Frankel defined it as a position that results from a difference in national interests and objectives. Lewis Kosser defined it as a competition for power, resources and values. A party to compete to liquidate incarnates or harms the other party.

The difference between the conflict and some similar concepts:

There are some concepts that are similar in form of conflict and which are brought about by the historical development of the conflict. They are as follows:

Tension: It is a situation that accompanies the conflict and is not characterized by violence and may lead to the breakdown of relations between the parties.

Crisis: An advanced stage of conflict and a tense confrontation between parties to a conflict that may result in war.

War: The last stage of the international conflict, an armed conflict between two or more parties with a high level of violence.

Means of managing the international conflict:

Diplomatic means: the process of negotiation and representation between states, that is, each party through its own means to convince his opponent is trying to gain public opinion in his favor.

Media: is a modern means of communication and media to win public opinion.

Military means: This method is taken after the failure of the previous means (diplomacy) in the management of the conflict, so that the conflict becomes a war and armed conflict.

Political means: This means negotiation, mediation, good offices, investigation and conciliation, legal means, courts of law, and arbitration.

The concept of conflict: its nature and dimensions

The literature of the conflict reflects a clear richness in its definitions of the concept of conflict. There are also a number of foci of interest and points of emphasis that specialists attach to the importance of the concept of study and analysis. As part of the review of some of the linguistic definitions provided by the knowledge and linguistic dictionaries of the conflict concept, the US Department of Knowledge defines the conflict as usually referring to "a state of discomfort or psychological stress resulting from incompatibility or incompatibility between two or more desires or needs of an individual or Needs ".

As for the Department of Social Sciences, its concern is to highlight the complex nature of the concept of conflict and to define the different meanings and meanings of the concept in its various dimensions. From a psychological perspective, the concept of conflict refers to "a situation in which the individual has a motive to engage or engage in two or more activities of a totally opposite nature." Here, Murray emphasizes the importance of the concept of conflict in understanding issues related to the individual's ability to adapt and to mental disorders as well.

In its political dimension, the conflict refers to a particular competitive position, whose parties or parties are aware of the incompatibility of possible future positions, both of which are either obliged to adopt or take a position incompatible with the potential interests of the second party or parties other. While Lewis Kozer is interested in focusing on the conflict in his social dimension, Laura Nader tends to clarify the anthropological dimension of the armistice process. Thus, the struggle in its social dimension is "a struggle around values, demands, specific situations, power, or limited or rare resources." The aim here is "not only to win the desired values, but also to neutralize, damage, remove competitors or eliminate them." We can say that the international conflict is only an international position that is contrary to the interests of the international community, where each party or actor seeks to achieve reconciliation and direction, leading to disagreement between them.

The conflict in such situations, as Kozar puts it, can occur between individuals, between groups, between individuals and groups, between groups and each other, within the group or the groups themselves. The explanation of this is attributed to the fact that conflict itself is one of the basic features of social life. As for the anthropological dimension of conflict, conflict arises or occurs as a result of competition between at least two parties. This party may be an individual, a family, an offspring, a particular human, or a whole society. In addition, the party to the conflict may be a social class, an ideology, a political organization, a tribe, or a religion. Here the conflict is linked to incompatible desires or goals, which are characterized by a degree of continuity and permanence, which distinguish them from conflicts resulting from excess, anger, or that arise as a result of temporary or instantaneous causes. In this direction, the Longman Dictionary goes to define the concept of conflict as "a state of disagreement or disagreement between opposing, conflicting, conflicting, conflicting groups, principles, or ideas." The World Book Dictionary defines the conflict as "a battle or a fight, a struggle or a struggle, especially if the conflict is long or protracted."

In general, the concept of conflict in specialized political literature is seen as "a dynamic phenomenon. The concept, on the one hand, suggests a "certain competitive position, in which each of the participants is aware of the incompatibility of possible future positions, and each of them is also obliged to take a position that is incompatible with the perceived interests of the other party."

Hence, there has been a tendency to focus on the competitive dimension of conflict definition as "one of the forms of competitive behavior between individuals or groups" and that "it usually occurs when two or more individuals or parties compete around incompatible targets,

Perceived or limited resources.) In another definition, the concept of conflict is simple and direct, where conflict is described as "a process of apparent or potential competition between its parties." Here the importance of distinguishing between conflict and some types of competition - For example, "In competition, individuals cooperate or compete for fun and a good time." In conflict, "causing or causing physical or moral harm to others is a specific goal of the conflict itself."

The variable "the will" at the parties to the conflict represents a central basis in the definition of conflict in another direction of the book of political literature. Therefore, the concept of conflict is seen as essentially a "conflict of wills" resulting from a difference in the motives, perceptions, goals, aspirations, resources and potentials of their parties, leading them to make decisions or adopt policies that are different from one another. However, "conflict remains below the point of armed conflict".

In addition, there is a third opinion that prefers to focus on the structure of the conflict situation and the interests encountered therein. In this direction, both Lopez and Stoll argue that the concept of conflict represents or reflects "a situation in which two or more objectives, values or interests are incompatible to the extent that one party's decision on this situation is very bad", hence the concept of conflict as "As a result of incompatibility in structures and interests, leading to alternative responses to major political problems." The authors conclude that "conflict in this way is a common feature of all domestic and international political systems."

The conflict in the Kozar concept is crystallized in light of the values and objectives that represent the frame of reference for the parties to the conflict situation. Therefore, Kozar believes that the conflict is determined in the "struggle of values and the demand for rare and distinctive positions, power and resources, where the objectives of the parties are to neutralize, hurt or eliminate adversaries."

In addition, there are other views that seek to draw attention to the psychological dimensions of the acceptance and rejection relations between the parties to the conflict situation. Hence, these visions tend to define conflict as "that mutual animosity between individuals, groups, peoples or nations among themselves at various levels".

In the light of the previously mentioned definitions of definitions presented by the literature of the conflict in relation to the definition and its various dimensions, the following three dimensions can be emphasized as key dimension in defining the concept of conflict:

1. The first dimension : It relates to the conflict situation itself: It indicates that the concept of conflict expresses a position with its specific features or conditions: it is a beginning that assumes the contradiction of interests or values between two parties or more, the second is shared awareness of the parties to the situation and awareness of this contradiction. The availability or willingness of a party (or parties) to adopt a position that is not necessarily consistent with the wishes of the other party, or (the other parties), and may even clash with the rest of these positions.

2. The second dimension concerns the situation of the conflict parties. In general, the conflict situation in terms of its parties can be distinguished between three levels: the first level concerns individual conflicts: that is, the parties of the conflict are individuals, and thus the circle and subject of this conflict tend to be limited in nature. In the second level is the conflict between groups: The variety of types of this conflict diversity of parties, and the circle and its fields are usually more extensive and diverse than the counterpart in the circle of individual conflict. The third level concerns the conflict between states, usually also known as the international conflict, and the conflict circle (or circles) is more complex and broader than the previous two levels of conflict.
3. The third dimension : The international conflict: It should be noted that the widening of the circle of the third level of conflicts, through the successive historical stages of international relations, would guide and aggregate a considerable amount of scientific and academic efforts to study and rooting the phenomenon of conflict, Scientific interpretations and theories that facilitate understanding of the causes and determinants, and then provide different alternatives through which to control the phenomenon of armament, or at least to reduce the risks associated with them and the consequent, and identify methods of dealing with them. In this field, these scientific efforts have resulted in rich and original heritage of theories and interpretations, among which may be theories of rational knowledge, theory of power, theories of power, theories of decision making, communication, systems, and many other theories explaining the conflict in its various dimensions: psychological , Biological, cultural, social, economic, political, and recently environmental and civilization etc.

Nature of the conflict:

In general, it should be pointed out that the conflict is remote and can be distinguished between a negative dimension and a positive one. While it is easy to recognize the negative side of a conflict through its general and stable association with the "attempts to destroy, exploit, or impose a solution on one side or others", the positive dimension of the conflict generally refers to that aspect of " Push towards work or establish contacts, solve problems, and positive exchange between the parties concerned. " From this point of view, it is important to regard conflict as, as Murray states, "including motives for achievement, association, follow-up, and other positive motives." In other words, the conflict is "a creative element in human relations: it represents a means of change through which Social values related to well-being, justice and opportunities for self-development and development ".

In this direction, it is possible to emphasize some of the basic premises that contribute to support the trend towards maximizing the positive dimensions of the conflict. The most important of these principles can be explained as follows:

The destructive nature is not a necessary aspect of conflict, nor is it an inherent feature of unmanageable human nature. Individuals - and still are - are discovering the possibility of

finding different ways of dealing with their differences, disputes among themselves, and managing the conflict in ways that generally lead to better results.

Conflict exists as a feature of life and human relations. In daily interactions, each party seeks to maximize its benefit. In order to achieve it, the benefit of the other party must be reduced. Hence the necessity for the parties to reach a mutually satisfactory exchange that achieves certain rules and limits, in order to achieve harmony and stability rather than confrontation and conflict.

It is also related to the above that the parties or parties to the conflict in a conflict position, and by choosing channels of communication between them, usually choose between one of two main forms: either the establishment of a pattern of a relationship between them, in which one of the acts to the benefit of one of the parties or actors at the expense of the other , Or choose to establish a pattern for a reciprocal relationship of means and ends. Hence, the movement between them benefits both sides significantly.

In light of the above, it can be emphasized that the conflict has some important functions which allow, in its entirety, and throughout its life cycle, its levels and its multiple types, the possibility of transforming it from a destructive conflict into a positive conflict. Its role and function are effective and closely linked to social change issues. One of the most important areas of these functions is the role of conflict as facilitator of social change, integration and integration, restoring balance and stability, and increasing the efficiency of coordination among its parties. This is in addition to the traditional function of conflict, which in most cases revolves around supporting and confirming the control of limited or desirable resources by one party to the conflict.

Theoretical Approaches of the phenomenon of international conflict

There are a number of approaches and theoretical premises that try to explain the phenomenon of international conflict in international relations in relation to the following:

1. *Psychological Approach:* This approach occupies a prominent position in various studies dealing with analysis and treatment of the phenomenon of international conflict. Psychologists focus their interpretation on the motivations of conflict and international conflict within the scope of what they call the human tendency to destroy, domination, and the drive for revenge, expansion, risk, and conflict provide the best opportunity to satisfy such impulses. We also find the theory of failure or frustration which claims that the motivation for international conflict is the result of the psychological frustration that reaches the peak of its impact in crisis conditions, especially when the national plans of the state fail, where the basic needs of the people are less psychologically prepared for conflict and war by those who control their peoples dissatisfaction, as we find the theory of the national character that is based on the belief in the existence of the aggressive nature of some of the national nature of the public and constitutes such an aggressive national psychology in its perception as the main force driving conflicts and international wars.

2. *Ideological Approach*: The pioneers of this trend consider the ideological contradictions between the great powers are behind international conflicts and the advocates of this approach in particular focuses on Marxism and is at the core of the conflict platform and considers this ideological conflict is more dangerous in content far beyond the time of any image or other images of international conflict that history has known in the past.
3. *The national Interests Approach:* This approach assumes that the main driving force of the policies of foreign countries is the continuous pursuit of the protection and development of national interests through the multiplication of states of their resources of power or as defined by Hans Morgenthau "The motive that drives man is the struggle for power for Staying and meeting the challenge and self-affirmation. So the interest is only synonymous with power.
4. *Arms Race Approach*: According to this approach , superiority in armaments leads to the tendency to show strength even in international disputes whose conditions dictate the means of diplomatic settlement, which leads to the shipment of conflicts with more tension and violence and the framework of secrecy associated with the context of armaments creates an atmosphere of Uncertainty, fear and uncertainty among the various parties of the conflict, which does not help them resolve political disputes, but may be the cause of pushing towards conflict.
5. *An Approach related to the nature of the international political system*: This approach stems from the assumption that the international political system based on the principle of national sovereignty which is the main source of all forms of chaos and international conflicts and also believes that the conflict does not stem from human nature, conflict with the legitimate interests of various States and peoples and whose elimination can only be achieved through the establishment of a strong world Government that has its authority over the national sovereignty of States.
6. *Geopolitical Approach*: Most of the theories of this approach converge on a central axis of the pressures generated by natural conditions on the process of conflict for survival and growth, and can be referred to the theory of Ratzl, who believes that the border often lead to the establishment of international wars for a natural reason which is the boundary, if viewed as final and permanent, is thus an obstacle to the growth of the state. We also find Kellen's theory, which focused on the nature of the state as a living being and believed that the most important attribute of the state is power and considered it the most important in the existence of the state of law because the law cannot be implemented only by force.
7. *The political Approach:* This approach considers that the existence of competing international blocs and alliances comes at the top of the factors that lead to war or accelerate the occurrence of coalitions are the cornerstone of the for the implementation of power politics and any change in the composition or the general international structure, which interact within the framework must result in imbalances

that vary due to conditions but remain the main source of all causes of tension and conflict.

8. *The nature of the political system Approach*: The advocates view of this approach is based on the premise that the existence of a relationship of dictatorship and conflict, which supporters of this logic that the systems of totalitarian government by virtue of its ideology and the motives and goals that drive is the main reason for the intensification of conflict in the international community.
9. *The approach that focuses on the imbalances* resulting from the increasing entry of newly independent States into the international community. This approach is related to the increase in the number of modern countries in the international system leads them to a bloc in which they can face other international forces such as this bloc by threatening their target forces to lose their former influence within the international system and hence find themselves motivated to implement many of measures and countermeasures to thwart the potential effects of such a bloc and is in itself a factor of tension and conflict.
10. *Demographic theories*: including the theory of the French sociologist Paul Rib Ault, who believes that modern warfare is of a biological nature in the first place and decides that the violence of these wars is directly proportional to the human surplus, which is the main forces pressing in the direction of the war and the theory of demographic cycles that every country is going through three stages of the development of the population is the stage of slow growth and then the stage of explosion and then the stage of stability and balance and if the population growth rates remain high and in the last two stages the population pressure of these countries to wage wars to obtain a vital enough.
11. *The Military Industrial Dimension Theory*: This theory states that the major forces driving conflicts and international tensions are the various interest groups benefiting from the circumstances of the conflict, which constitute a significant pressure force on the most dangerous decision-making centers within the political system. Heads of this compressive force are industrial forces and militaries.

TYPES OF CONFLICT

Low Intensity Conflict (LIC). LIC is a generic term encompassing all kinds of armed conflicts that are above the level of peaceful co-existence amongst states and below the threshold of war. These include proxy war, terrorism and insurgencies; border skirmishes also fall within this category. It involves protracted struggle of competing principles and ideologies. Low Intensity Conflict Operations (LICO) figures at the lower end of the spectrum of conflict and is characterised by one or all of the following conditions : -

- Asymmetry of force levels between the regular forces and the irregular opposition force.
- The force applied and the violence generated depends on the code of conduct and the capabilities of the weaker side.

- Laws of the land impose restrictions on the actions of security forces.

Proxy War. Proxy war is a war conducted between nations utilising non-state players to fight on their behalf. At least one of them employs a third party to fight on its behalf. The extent and type of support provided by the states involved in proxy war will vary but financial and logistic support are normally always provided. An example of a proxy war is the foreign sponsored terrorism in Jammu & Kashmir.

Insurgency. Insurgency is an organised armed struggle by a section of the local population against the State, usually with foreign support. The many possible causes of an insurgency include nationalistic, ethnic, linguistic, religious or cultural separatism, poor governance, economic deprivation, corruption, discrimination and oppression. Its goals may be seizure of power and replacement of the existing regime or even liberation of a defined area. Employment of military force may not be able to stamp out an insurgency but may help to contain it. In most cases, it is a combination of military force backed by appropriate political and economic measures which can adequately resolve such situations. The latter part acquires even more importance than the use of force.

Irregular War. Irregular war may take many forms of which terrorism and guerrilla war are two important ones. Terrorism is the unlawful use or threatened use of force or violence against people or property to terrorise, coerce or intimidate governments or societies; this is most often resorted to with the aim of achieving political, religious, or ideological objectives. Terrorism thrives on a fear psychosis and could be achieved by arson, sabotage, hijacking, hoaxes, maiming, bombing, seizure, kidnapping, assassination, taking hostages, raids, ambushes and the threat to use or use of WMD. Guerrilla war is an irregular form of warfare which includes acts of subversion, assassination, attack on supply lines and terrorism. Terrorism and guerrilla warfare can be employed across the entire spectrum of conflict**.**

Non-Combat Operations and Aid to Civil Authorities

Non-combat operations are defined as military operations where the use of force may not be necessary but, at times, the most minimal use of force, or threat to use force, may be required. Non-combat operations include aid to civil authorities, disaster relief, humanitarian assistance and peacekeeping operations.

Nuclear Chemical and Biological Warfare

Nuclear Warfare. A conventional war may escalate to a nuclear war when any of the belligerents decide to use nuclear weapons through any means of delivery to avoid defeat in the sphere of conventional warfare or to safeguard its vital national interests or even with the aim to bring the war to a decisive end. World opinion is against the use of such weapons. India is a nuclear weapon state and pursues a policy of 'Credible Minimum Deterrence' and 'No First Use'. India's nuclear policy clearly states that she will not use or use the threat of use of nuclear weapons against those states which do not possess nuclear weapons or are not aligned with nuclear weapon powers. India reserves the right to retaliate with nuclear weapons in case of a strike against her by adversaries with nuclear, chemical or biological weapons.

Biological and Chemical Warfare. International conventions, to which India is a signatory, along with a large number of other countries, have banned the use of biological and chemical weapons. However, their use by adversaries and non-state actors cannot be ruled out. Chemical weapons are relatively easy to produce without any elaborate infrastructure. As a consequence, our forces must be prepared for operations in a biological and chemical weapons environment. Both, active and passive defensive measures are being instituted to cater to this requirement.

Information Warfare (IW)

IW can be defined as actions taken to achieve 'information superiority by adversely affecting the adversary's information, information-based processes, information systems, and computer-based networks whilst simultaneously protecting one's own information, information-based processes, information systems and computer-based networks'. Correct and timely information made available to commanders at all levels contributes directly to effective Command and Control (C^2) and helps in shortening the Observe-Orient-Decide-Act (OODA) Cycle (also known as the OODA Loop). IW has a vital impact upon the first three activities of the OODA Loop by disrupting the enemy's observation and surveillance systems, corrupting his orientation and misguiding his perception and thereby inducing him to arrive at wrong decisions.

Objectives of IW. The basic ingredients of IW are collection of data, sifting (to extract relevant information), analysis and assimilation of information to create intelligence which will help to achieve the objectives of IW. These objectives are:-

- Develop and maintain a comprehensive information base of the capabilities of adversaries and forecast their likely actions.
- Deny information about own and friendly forces to adversaries.
- Influence perceptions, plans, actions and the will of adversaries to oppose own and friendly forces by offensive employment of IW techniques.
- Influence non-combatant and neutral organisations to support friendly missions or, at least, not to resist friendly activities.
- Protect friendly decision-making processes, information and information systems.
- Degrade the information systems of adversaries.

Forms of IW: The seven forms of IW are Command and Control Warfare (C^2W), Intelligence Based Warfare (IBW), Electronic Warfare (EW), Psychological Warfare, Cyber Warfare, Economic Information Warfare and Network Centric Warfare (NCW). These are discussed in succeeding paragraphs.

Command and Control Warfare. The aim of C^2W is to influence, deny information to, degrade or destroy enemy C^2 capabilities while protecting own C^2 systems against such actions. C^2W is a dominant component of IW in the military arsenal. C^2W operations integrate and synchronise the capabilities of EW, military deception, physical destruction, psychological operations and operational security.

Intelligence Based Warfare. IBW is a traditional component of IW and occurs when intelligence is directly fed into operations (notably targeting and battle damage assessment) to bring transparency to the battlefield rather than being used as an input for overall C^2. IBW is the direct application of battlefield intelligence instantaneously into the battle and aims at creating an asymmetry in the level of transparency or situational awareness in relation to the enemy.

Electronic Warfare. EW is a set of military actions taken to deny the use of the electro-magnetic spectrum to hostile forces while retaining the ability to use it oneself. This basically implies that the endeavour is to deny, degrade, delay or disrupt information in order to create a false picture so that the enemy is duped into making incorrect assessments and taking wrong actions. EW involves the use of electro -magnetic and directed energy to control the electro-magnetic spectrum or to attack the enemy. One of the most important developments in the field of EW has been the introduction of automated and integrated EW systems, which provide a high degree of information in addition to interception, direction-finding and jamming activities.

Psychological Warfare. Information is one of the several means to target the human mind. Psychological warfare is achieved through mass media such as newspapers, radio and television broadcasts and distribution of leaflets. The prevailing state of information technology allows effective psychological warfare to be conducted in a very subtle manner. In order to be effective, psychological operations need to be conducted in conjunction with other operations. During peace time and in LIC operations, this effort can be termed as "psychological initiatives".

Cyber Warfare. This entails techniques to destroy, degrade, exploit or compromise the enemy's computer-based systems. Cyber warfare includes exclusive attacks, known as hacking, on enemy computer networks. Computer hacking has evolved to a stage wherein information stored or passing through computer networks is interfered with to degrade the adversary's C^2 structure.

Economic Information Warfare. This form of warfare uses information as power to destabilise the economy of the adversary. Since all revenue -generating industries of a country such as aviation, transport, power, banking and the like use computer-based systems, IW at the strategic level can play havoc with the national economy of the adversary.

Network Centric Warfare. NCW focuses on the combat power that can be generated by the effective linking or networking of the war-fighting machinery and organisations. The basic elements necessary to generate the requisite shared battle-space awareness that can be exploited through self-synchronisation to achieve the overall objective are given below: -

- A virtual sensors grid that would provide a 'grid of capabilities' overlaying the battle-space instead of series of independent single sensors. This grid is termed as the Surveillance Grid.

- To leverage the strength of the worldwide telecommunications infrastructure, all communication networks could be viewed as virtual grids overlaying the tactical, operational and strategic areas. This grid is referred to as the Communications Grid.
- An abstract grid that comprises weapons available, sorted by suitability and availability against a hostile order of battle is termed as the Tactical Grid.

CHANGING NATURE OF CONFLICT IN THE 21ST CENTURY

A few decades ago, it was relatively easy to talk about the nature of warfare, as it was intimately linked to statecraft, so one identified an adversary state and prepared oneself accordingly. In fact, one could even quantify threats and capabilities to arrive at a predictable outcome. In the 21st century, this is no longer so. Shades of grey have crept in; threats are not easy to quantify and, sometimes, even to identify. There is a merging, a fusion of various types of warfare; international rules do not apply to adversaries who are non-state actors; and deterrence, coercion and escalatory dynamics have been turned on their heads in a large number of cases.

Against such uncertainty, it is no longer easy to define the capabilities that a nation requires to meet its aspirations and obligations, and safeguard its vital national interests. To offer a perspective against such a background is, indeed, a daunting task. The character of warfare is determined more by political, social, economic and strategic imbalances than it is by changes that may occur on the military front alone. The disintegration of the Soviet Union in 1991 led to the end of the Cold War. However, the cataclysmic airborne terrorist attacks on the US on September 11, 2001, transformed the definition of security, and, today, we live in an uncertain security scenario of "no war, no peace".

There has been a paradigm shift in the very nature of conflict. Though territorial issues are important, other issues related to historical differences, ideological biases, economic disparity, energy security and water shortage are contributing factors for conflict. Modern-day conflicts are not merely confined to states, but have expanded to include sub-nationalities, terrorists, insurgents, religious fanatics and ethnic interests. The nature of conflict today encompasses sabotage, subversion, non-kinetic confrontation and traditional armed conflict in all its forms. Thus, the state's response needs to be balanced, inclusive and one that incorporates political, economic, societal and military measures. Future threats will also encompass the war on drugs, radical groups, control of resources and religious extremism. The use of space and cyber space has added a new dimension to the scope of conflict. As the battlefields merge, the conflicts of the future would also be conducted with energy, trade, and aid employed as weapons. Therefore, the very concept of national security needs to be reexamined, and realigned to the new dimensions of the 21st century.

War is distinct from conflict. The latter is a vast canvas and includes all shades of discord, involving both states and non-state groups. There are various instruments to address conflict. Here, we will largely restrict ourselves to an exploration of one of those key instruments—military power—which, exercised by any entity, is the essential component of warfare, as war is specifically about employment of force to achieve a desired political end. Technology

is the driver of changes and this is no less so in warfare. What is less certain and not easy to predict is how technology will develop and how it will be adapted to improve military capability. However, it would be safe to say that the future is unlikely to be a linear extension of present trends. Who could have predicted the impact of social networking—the way it has shifted the balance between oppressive state regimes and their disaffected populace.

In principle, war has become not only politically but also economically unattractive for the developed countries. The costs outweigh the returns. In "post-heroic" societies, wherein the concept of self-sacrifice is no longer an ideal, the highest value is the preservation of human life, and with it, the multiplication and intensification of individual sensations of well-being. Developed societies, therefore, remain vulnerable because of their advanced socio-economic state, and no degree of military superiority can eliminate this vulnerability.

Developed nations cannot adopt asymmetric warfare as they are based on the rule of law and political participation and will do their utmost to avoid body bags, which is possible only through superior military technology. The strategists of terror have recognised that "post-heroic" societies, with their lifestyle and self-assurance, are particularly vulnerable to attacks by individuals who value martyrdom. Terrorists are unlikely to achieve the power to destroy the developed nations, but will continue to cause anxiety, selective harm and, sometimes, immense psychological collateral damage.

Demilitarization of War

A return to the forms of war which the nationalisation of warfare brought to an end during the 16th and 17th centuries and replaced by a disciplined military organisation, can already be observed. Civilian targets are now taking the place of military objectives, starting with towns and villages being overrun and despoiled by militias and warlords, and extending to the symbols of political and economic might that were targeted in the US by terrorists in 2001. Suicide bombers compensate for their military inferiority by giving up any chance of survival. A new perverse form of "heroism" has developed, which "post-heroic" societies are ill prepared to deal with from a military or psychological point of view.

In the last few decades, the enormous destructive power of strong conventional and nuclear capabilities has resulted in weaker states and non-state groups adopting sub-conventional and irregular means to achieve their political objectives. Conventional conflict is increasingly intertwined with sub-conventional conflict, with irregular forces using unconventional means and tactics. The irregular forces are becoming increasingly lethal, with access to technology and equipment that previously only conventional state forces could afford. The characteristics of future conflict can, thus, be summarised as under:

- The spectrum of conflict will range from conflicts between states to conflict with non-state actors and proxies.
- The boundaries between regular and irregular warfare are blurring. Even non-state actors are increasingly acquiring limited conventional capabilities that were earlier the exclusive preserve of nation-states.

- Conventional conflict could also be preceded and succeeded by a period of irregular conflict, which would include low intensity conflict and prolonged stabilisation operations.
- Technology has empowered the individual and today, a single terrorist/guerrilla can cause severe damage to adversaries through cyber, financial and kinetic attacks, which earlier only large organisations or states could do. The suicide bomber has added a very destructive dimension. Future conflicts will demand concurrent investment in sharpening softer skills like cultural awareness training, language skills, psychological operations and human intelligence.
- Non-contact/non-kinetic aspects of warfare are coming to the fore, specially between well-armed and nuclear capable adversaries. Cyber and space are the emerging frontiers, as is a combination of data mining and Artificial Intelligence (AI) to influence the human mind. Nuclear sabre-rattling by irresponsible states like North Korea and Pakistan is beginning to upset the nuclear deterrence which has prevailed so far.

Hybrid Warfare

Hybrid warfare is a military strategy that blends conventional warfare, irregular warfare and cyber warfare. This approach to conflicts is a potent, complex variation of warfare. Hybrid warfare can be used to describe the flexible and complex dynamics of the battle space, requiring a highly adaptable and resilient response. Hybrid threat actors seek to master unrestricted operational art in order to reconcile overmatch and protect or advance their interests. The hybrid threat concept represents the evolution of operational art and a potential paradigm shift as a doctrinal and organizational Revolution in Military Affairs (RMA).

Baptized in its modern form after the 1991 Gulf War, the hybrid threat construct is a sophisticated amalgam of unrestricted threat activities that have resisted codification. As an unrestricted collective methodology, the hybrid concept bypasses the cognitive boundaries of traditional threat characterization and the application of organized collective violence.

Emerging Security Environment around India

In establishing the strategic context, exploring the nature of the security environment should be an obvious stop. When we survey the strategic environs around India, it becomes fairly obvious that there may be few others that are imbued with greater strategic-military adversity. Consider this: we face two neighbours which are also full-time military adversaries and in active strategicmilitary cahoots.

- That one of the two neighbours is also a superpower undergoing a military modernisation which is said to be the most massive in the history of mankind, only adds to the enormity of the challenge. To paraphrase the German Chancellor in the early 20th century, Bethmann Hollweg, from another context, “China grows and grows and weighs on us like a nightmare.”
- It is also more than obvious that in geostrategic terms, while Pakistan is the immediate irritant, China is the long-term threat; yet, the constant needling and

frequent pokes from the western adversary do not allow India to turn its strategic gaze sufficiently to the north. In that sense, the two-front challenge is already an everyday reality, whether or not it manifests in all out conflict.

- What about the nature of the contest with China? Well, China is not an irrational power—it is unlikely to spoil its ascendant roll by resorting to an all-out war with India. This is very different, however, from deftly weaving force into its statecraft to aggressively pursue its interests and constrict India's geostrategic space. When considering when and how China may use military force, it may be wise to heed the advice of Graham Allison, noted theorist and practitioner in the field of national security, who says, "It is not sufficient to ask what we would do in its (China's) shoes. For Chinese leaders, military force is an instrument in an orchestra of engagement, one they may use preemptively to surprise an opponent who would not have done likewise." It also bears consideration that while China will treat warfare as a last resort, should it conclude that the long-term trends are no longer moving in its favour and that it is losing bargaining power, it could initiate a military conflict to cut India to size.
- It is also fairly evident now, that China's strategic orientation is steadily acquiring global overtones. The connectivity projects encapsulated in the Belt and Road Initiative (BRI) (connecting Asia with Europe and the Pacific with the Indian Ocean), its expanding footprint in Africa, its numerous ideologically agnostic initiatives in pursuit of its search for oil in the Middle East, the resolve to push the Americans out of the Western Pacific—all these moves and more, have obvious foreign policy, economic and strategic drivers, which are also being carefully undergirded by a potent military anvil. The scale of the military push and ambition is mind-boggling. Given the fact that Chinese defence spending is expected to exceed that of the USA by 2035, that by 2040 or so, some experts opine, the question will not be whether American ships should stay 12 nautical miles off the Chinese coast but whether Chinese ships should stay 12 nautical miles off the Californian coast. Contrast these developments with India's strategic predicament wherein our foreign policy is entrapped in the Line of Control/ Line of Actual Control (LoC/LAC) syndrome, pushing us into a perpetual defensive crouch. We have little option but to muster the will and find the resources to not only hold steadfast along the LoC/LAC but also acquire an outward orientation, failing which China's strategic squeeze will get only more strangulating. The time has come for the Indian military to acquire an outward orientation and an expeditionary profile—the sooner we shed our shibboleths in this regard, the better for us.

Establishing the Strategic Context: Revisiting Our Approach to War in Contemporary Conflict

Utilitarian leveraging of the instrument of force can occur only within a particular politico–strategic-military context. Before we arrive at the contours of a possible military strategy,

therefore, it may be useful to analyse the domain of hard power in terms of its linkages with the larger universe of politics, the changing character of war and the emerging geostrategic realities so as to try and determine to how force could be usefully leveraged within the prevalent strategic context. If we do reach the right answers, it will help in making sure that we prepare (as far as reasonably possible) for the 'right' and not the 'last or wrong' wars, as averred by Gen Rupert Smith. In doing so, it may be relevant to address stray sensibilities which, in recent times, have fuelled some diffidence about the very utility of force, the refrain in some quarters that 'war is no longer an option,' or that 'the days of all out war are behind us,' et al. Thinking the strategic context through and in depth is pertinent for two additional reasons: firstly, such an endeavour will ensure that the consequential military strategy is more grounded and resilient—else, it may not survive the first punch that Mike Tyson alludes to in the quote above; secondly, a military strategy framed in a sound strategic context is also important in order that in these days of scarce budgetary allocations, our capability building is suitably optimised. In establishing the strategic context, we will do well, therefore, to be informed by a set of persuasions—the import of which is discussed in the paragraphs to follow.

Force has numerous stabilising uses, hard and soft, in equal measure: it helps keep the peace, it gives the practice of diplomacy a robust veneer, it deters, it is a useful tool for politico-military signalling, it is a critical component for the protection of geostrategic spaces, a means of protecting our interests across the globe, a conduit for the delivery of humanitarian aid and when employed sagaciously and resolutely, a decisive arbiter in conflict. When wrapped in imaginative statecraft, its utility as a metric in the resolute pursuit of national interest cannot be overemphasised. So, the real issue is not that 'military force is failing or that it is no longer utilitarian' but that we need to get much more cognisant of its deft leveraging, particularly in the non-kinetic/non-contact domains, and reconfigure its use in the obtaining politico-military context. If we do so thoughtfully, we shall discover that force has numerous enabling uses in day-to-day foreign policy contests and not merely as an instrument of last resort in an all-out conflict. The Indian strategic establishment, particularly the military, needs to develop and reinforce various military options within such a paradigm.

A few questions may help to illuminate the salience of the paradigm and consequential shortfalls in the Indian context. If cyber offensives [Computer Network Exploitation and Computer Network Attacks (CNE and CNA) to be more militarily precise] are the non-kinetic, digital equivalents of kinetic, strategic bombing of the adversary's infrastructure, have our capacities evolved adequately in this regard? The Chinese Anti-Access/Area Denial (A2/AD) strategy, it is widely acknowledged now, has successfully pushed American aircraft carriers beyond the second island chain. The dramatic growth of the People's Liberation Army Navy (PLAN) and the construction of island fortresses/other military infrastructure in the South China Sea have effectively brought the Chinese threat closer to the Andaman and Nicobar Islands by 600-900 nautical miles. Geostrategic spaces are being impacted/ altered not through kinetic use but by deft moves in the non-kinetic domain; military pressure points

are being created and strategic objectives are being achieved without a shot being fired. Could we, in the Indian context, do much more and better? Unlike the kinetic, the non-kinetic domain operates 24 x 7 x 365—it envisages the leveraging and integration of all implements of statecraft: diplomatic, economic, military, psychological, media, legal—there is nothing 'off the shelf' in this high stakes competition.

The professional ethos and ethics of the Indian military, naturally drive it towards delivery and excellence in the kinetic domain; activity in allied domains such as the non-contact, non-kinetic, informational, digital and diplomatic realms, has, for long been viewed as somewhat militarily infradig and 'as stuff that real militaries don't do.' With the grammar of conflict changing rapidly, militaries need to do much more in these domains to build up such levels of capacity that the military opposition withers without conflict—in the mould of Sun Tzu's classical dictum of 'winning without fighting.' In the ongoing contest with China, during the recent Dokala episode, our military agility and robustness helped in bringing about a military closure (albeit one that is temporary and will be tested again)to a developing diplomatic impasse [BRI, the Chinese stance on Masood Azhar, the blockage of India's entry to the Nuclear Suppliers Group (NSG), etc., being the immediate drivers]. A good beginning by all means,but the Indian military will need to get far more proficient and savvy in this regard if it is to enhance its own institutional relevance and align the utility of force with the larger needs of Indian statecraft.

There are other posers which demand answers. In a hypothetical repeat of a Dokala-like scenario, how would we respond to a situation, wherein, in order to neutralise 'our edge in the air', our northern adversary saturates the ground Air Defence (AD) environment with S-400 systems? Do we have an escalatory option whereby we could ramp up our military response to the next level, in terms of surgical Suppression/Destruction of Enemy Air Defence (SEAD/DEAD) without getting close to all-out war? The availability of such escalatory options, the authors aver, would demonstrate military sophistication and poise; were we to suggest to the political class that we have run out of options (save the resort to all-out war), it would tantamount to a crude response—one that is not in accord with the attributes of a modern military. If faced with the prospect of 300 Chinese non-nuclear missiles deployed to target Indian facilities/military infrastructure along our northern borders, what will our response be in the domain of missilery? In the absence of a viable response option to meet the missile threat, will ground commanders be able to retain the verve to hold/escalate on the ground? Will they be constrained to pull back or at least get straitjacketed psychologically? Developing layered, intertwined military response options within a carefully thought through escalatory frame is something we need to attend to with despatch. The military mind needs to stop thinking of itself only in terms of 'a last resort option,' one that can only be 'a decisive arbiter in all out conflict.' The principal purpose of the military establishment is, of course, to win wars. It must now also diligently apply itself to an even higher order skill—how to avert them without losing military face.

Modern conflict is more likely to manifest in the form of political/foreign policy contests interspersed with military episodes; a series of political events with military characteristics. Force is more likely to facilitate political settlements, rather than fashion outright military victory, even as political strategies without a military anvil are unlikely to succeed. So what we need today, more than ever, is for the strategic organs of the state to integrate— the political, foreign, defence, informational and military domains need to operate even more intimately together. Clausewitz recommended that the head of the armed forces should sit in the Cabinet, not so much to render military advice, but in order that the military understands how it must tune its campaign to the political goals. We need to adopt and adapt the modern equivalent for institutionalised and intimate politico-military interface in the Indian context—a Chief of Defence Staff (CDS) whose institutional persona embodies a military ally with the trust of the political class—may just be the beginning that we desperately need. If we are to prosecute strategic conflict, particularly in the Responses Short of War (RSOW) domain, productively and successfully, we need to not only blur the distinctions between the military and civilian realms, but perhaps merge responsibilities. Cross-pollinating our strategic-military structures with talent from diverse domains—officers from the armed forces, civil servants, strategic affairs analysts, media experts, technologists, domain experts from the corporate world and futurologists—is now an inescapable necessity.

Force Capability Dilemma to Meet Emerging Threats and Challenges: It may also be pertinent to reflect on the perspicacious insights provided by one of the world's foremost thinkers on warfare, David Kilcullen, on why the recent land wars in Iraq and Afghanistan went awry.4 He opines that the wars were inadequately managed and resourced—strategy without resources, therefore, is mere fantasy. We may, therefore, like to seriously consider whether our defence allocations ($53.5 billion at 1.62 percent of the Gross Domestic Product—GDP)5 is adequate to address the grave challenges/monumental adversities in our security environment. It is also for our collective consideration (particularly of bodies like the NITI Aayog) that while defence must certainly not unduly burden the economy, it can be nobody's case that capacity building in national security be premised only on economic considerations, in utter disregard of geopolitical/ geostrategic realities. The metric of 'affordability' in defence budgeting must of necessity be buttressed by geostrategic needs; the pure economist's scalpel that is applied to budgetary allocations for defence, year after year, is a matter of intellectual and strategic concern. Given, the burgeoning economic differentials between India and China, it is quite apparent that we will not, for the foreseeable future, be able to match Chinese defence spending, rupee for yuan. We need to however, spend significantly more to at least sharpen our conventional and asymmetric capacities as also optimise by way of defence reform and structural overhaul—we are, unfortunately, not doing enough on this score. May be we cannot get stronger, but we can at least get smarter. We will also do well to realise that no amount of military skill or technology can substitute the lack of a stomach for a contest—if we lack the character or will to play the long game with foresight and thought, we will simply not be able to deal with a formidable adversary

like China and a crafty one like Pakistan. Fixing the military time and again is not good enough unless you fix the politics too and develop civilian expertise and capacities to tackle the looming strategic uncertainties in order to secure a better peace. War and conflict, after all, are not spectator sports for the militaries to fight and for civilians to observe from the sidelines.

The Nuclear Dimension

With the development of nuclear capability, and the remote yet attendant danger of its catastrophic use, there are differing perceptions on whether or not space remains for conventional conflict between nuclear powers. Since the 1998 nuclear tests, India and Pakistan have been through a limited war and a major military crisis, making clear that the nuclearisation of both countries has not made conventional war between them an obsolete concept. Acquisition of nuclear weapons by Pakistan has not altered the strategic balance in the subcontinent, though Pakistan has been able to pursue a sub-conventional proxy war under the assurance of its nuclear umbrella. Notwithstanding the nuclear deterrence in place, in our view, there is adequate strategic space for India to respond to a Pakistani misadventure, which might arise out of its miscalculated and misplaced perceptions. Nuclear capability may limit the objective, scope and intensity of the war, but despite views to the contrary, the nuclear threshold would not be as fragile and low as made out by many strategists and academicians.

PRINCIPLES OF WAR

OBJECTIVE: The purpose of the objective is to direct every military operation toward a clearly defines, decisive, and attainable objective. The objective of combat operations is the destruction of the enemy's armed forces' capabilities and will to fight. The objective of an operation other than war might be more difficult to define; nonetheless, it too must be clear from the beginning. Objectives must directly, quickly, and economically contribute to strategic objectives. Avoid actions that do not contribute directly to achieving the objective.

OFFENSIVE: The purpose of the offensive is to seize retain, and exploit the initiative. Offensive action is the most effective and decisive way to attain a clearly defined objective. Offensive operations are the means by which a military forces seizes and holds the initiative while maintaining freedom of action and achieving decisive results. The importance of offensive action is fundamentally rue across all levels of war. Commanders adopt the defensive only as a temporary expedient and must seek every opportunity to seize or re-seize the initiative. An offensive spirit must therefore be inherent in the conduct of all defensive operations.

MASS: The purpose of mass is to concentrate the effects of combat power at the place and time to achieve decisive results. To achieve mass is to synchronize appropriate joint force capabilities where they will have decisive effect in a short period of time. Mass must often be sustained to have the desired effect. Massing effects, rather than forces, can enable even numerically inferior forces to achieve decisive results and minimize human losses and waste of resources.

ECONOMY OF FORCE: The purpose of economy of force is to allocate minimum essential combat power to secondary efforts. Economy of force is the judicious employment and distribution of forces. It is measured application of available combat power to such tasks as limited attacks, defense, delays, deception, or even retrograde operations in order to achieve mass elsewhere at the decisive point and time.

MANEUVER: The purpose of maneuver is to place the enemy in a position of disadvantage through the flexible application of combat power. Maneuver is the movement of forces in relation to the enemy to secure or retain positional advantage, usually in order to deliver–or threaten delivery of–the direct and indirect fires of the maneuvering force. Effective maneuver keeps the enemy off balance and thus protects the friendly force. It contributes materially in exploiting successes, preserving freedom of action, and reducing vulnerability by continually posing new problems for the enemy.

UNITY OF COMMAND: The purpose of unity of command is to ensure unity of effort under one responsible commander for every objective. Unity of command means that all forces operate under a single commander with the requisite authority to direct all forces employed in pursuit of a common purpose. Unity of effort, however, requires coordination and co-operations among all forces toward a commonly recognized objective, although they are not necessarily part of the same command structure. In multinational and interagency operations, unity of command may not be possible, but the requirement of unity of effort becomes paramount. Unity of effort–coordination through co-operations and common interests is an essential element of unity of command.

SECURITY: The purpose of security is to never permit the enemy to acquire unexpected advantage. Security enhances freedom of action by reducing friendly vulnerability to hostile acts, influences, or surprise. Security results from measure taken by commanders to protect their forces. Staff planning and understanding of enemy strategy, tactics, and doctrine will enhance security. Risk is inherent in military operations. Application of this principle includes prudent risk management, not undue caution. Protecting the force increases friendly combat power and preserves freedom of action.

SURPRISE: The purpose of surprise is to strike the enemy at a time or place or in a manner for which it is unprepared. Surprise can help the commander shift the balance of power and thus achieve success well out of proportion to the effort expended. Factors contributing to surprise include speed in decisionmaking, information sharing, and force movement; effective intelligence; deception; application of unexpected combat power; operations security; and variations in tactics and methods of operation.

SIMPLICITY: The purpose of simplicity is to prepare clear, uncomplicated plans and concise orders to ensure thorough understanding. Simplicity contributes to success operations. Simple plans and clear, concise orders minimize misunderstanding and confusion. When other factors are equal, the simplest plan is preferable. Simplicity in plans allows better understanding and execution planning at all echelons. Simplicity and clarity of

expression greatly facilitate mission execution in the stress, fatigues, and other complexities of modern combat and are especially critical to success in combined operations.

FUNCTIONS OF MILITARY POWER

Conventional

Conventional War will fall under the "Military Role'' and encompass the following operations:-

a. Offensive Operations. The purpose of offensive operations is to attain the desired end state and achieve decisive victory. Offensive operations aim at addressing the adversary's centre of gravity. This is achieved by attacking enemy's criticalities, either simultaneously or sequentially. In the prevailing geo-political environment, some critical planning parameters are maintaininga perennially high degree of operational preparedness;capability to mobilise swiftly for an early launchto rapidly achieve tangible gains. Offensive operations will seek to seize the initiative from the enemy, retain it and exploit the dividends accruing from such actions. These operations will end when laid down objectives are achieved.

b. Defensive Operations. A philosophy of pro-active defence is most suited for India, considering its geo-political imperatives.Defensive operations are necessary to guardterritorial integrity and vulnerabilities, ensure the security of ownforces, secure bases for launching strike forces and create favourable conditions for offensive operations to be undertaken. It enables us to optimise time, hold critical geographical space, facilitate other operations, hold, degrade and destroy the enemy resources. Defensive operations will be intrinsically aggressive in design and offensive in conduct.

Sub Conventional

Low Intensity Conflict Operations /Low Intensity Maritime Operations. Low Intensity Conflict Operation (LICO)/ Low Intensity Maritime Operation is a politico-military confrontation between contending States or groups, below conventional war and above routine peaceful competition among States.Proxy war is being waged against India, by an inimical adversary,engineered through hybrid elements. Countering this proxy war mandates concomitant capabilities and establishment of a robust Counter Infiltration and Counter Terrorism Grid.Counter Proxy waris being waged through a number of means *viz*political, economic, social, cultural, psychological, informational and military. In combating Low Intensity Conflict (LIC), the Military dimension is not dominant, as in conventional war, but supportive - it is low profile, restrained and people-friendly nature. At the tactical level, Military operations in LIC may include direct actions such as raids, cordon and search, show of force etc. At operational and strategic level, these operations are conducted for creating a situation conducive for implementation of political, economic and psychological actions. The key planning parameters for conduct of Joint operations in LICO would entail joint planning, intelligence, communications, authority and utilisation of assets.

Non-Combat

Aid to Civil Authority: Non-combat operations are conducted primarily to assist the civil administration to meet sudden challenges to internal peace and tranquillity,caused by local disturbances initiated througha segment of population or due to natural or man-made calamities. Defence Crises Management Group (DCMG) is the apex body to coordinate response of the Armed Forces for all crises situations. The constitution of DCMG and its mandate provides for and facilitates a well conceived and coordinated response from the Indian Armed Forces. While the Armed Forces will be able to deploy speedily, provide relief and bring the situation to a state manageable by the civil administration, it must be noted that management of disasters is primarily a State subject and the Armed Forces only assist the process of stabilisation.

Maintenance of Law and Order: Amongst all the duties generally performed by the Armed Forces in aid to civil authority, maintenance of law and order is the most important and sensitive one. The levels of violence encountered in such commitments have been progressively escalating. Under such conditions, deployment and conduct of the Armed Forces has to be thought through and planned meticulously bearing in mind prevailing sensitivities. The Armed Forces work on the well established principles of good faith, use of minimum force and prior warning to the people whenever they are compelled to take action.

Humanitarian Assistance and Disaster Relief: The Indian sub-continent is home to 70% of the world's natural disasters like floods, droughts, cyclones, earthquakes etc in addition to man-made. Man-made disasters include global warming, wildfires, epidemics, etc. The impact of these disasters is more pre-dominant in under-developed and remote areas, where facilities to handle such calamities do not exist. Succor needs to be provided to the affected population/people during disasters/distress situations by rendering necessary assistance keeping in mind the following:-

a. Humanitarian assistance should enhance National Security Interests and therefore the operational readiness of the Armed Forces performing such missions should be optimum at all times.
b. The readiness will entail provisioning of medical care, basic sanitation facilities, repair of public amenities and facilities, education, training and technical assistance. This function will also be performed by the Armed Forces (DCMG) in close coordination with the National Disaster Response Force. It may be utilised in an international situation, as also to address the needs of the Indian diaspora abroad.

Application of Military Power

Military Power will be applied whenever the designated roles of the Armed Forces have to be fulfilled, at a place and time of our choosing. The application of Military Power should be in continuation and through integration with the other instruments of National Power (Diplomatic, Economic, Information, etc). The application should reflect our National values and beliefs conjoined with international norms and underpinned by our National Interests.

Military Power should not be used - if the situation does not threaten our National Interest; if it is not whole-hearted with adequate force level and resource; have clearly defined political and military objectives; if we are unwilling to re-assess at any stage, the balance between our committed forces and objectives; the support of the Nation is absent and finally it should always be an instrument of last resort.

Concepts of Military Power Application

The concepts of Military Power application of the three Armed Forces have congruence in the fact that manifestation of effect (consequent to force application) ultimately has to fructify on land.

Land Force Power

The threat paradigm of large disputed land borders, directive to defend territorial integrity and response options over the entire spectrum of conflict, in the realm of defensive and offensive operations, guide the employment philosophy of land forces. The overall force generation matrix is to be achieved through optimum force structuring, modern equipment and effective training across all types of terrain and climaticconditions. Land forces can be employed singly or in conjunction with the other two Services in conventional and sub-conventional role during Joint operations at a very short notice. Capabilities through specialised forces are to be maintained to fight persisting sub-conventional threats with timely re-orientation, for conventional employment/deployment. Application of Land combat potential/power by Land Forces will be aligned to the principles of war through effective C2 on the battle field resulting in operational success.

Border Management:

The various borders are manned on the concept of 'one border one force'. The sanctity of international demarcated borders is the responsibility of Central Armed Police Forces. The Line of Control (LoC), Actual Ground Position Line and Line of actual control (LAC) remain under the operational control of the Indian Army. During war, all border guarding organisations come under the operational control of the Army. Being the first tier of defence, their integration, training and operational procedures must provide seamless transition to the war fighting effort. The Indian Army consequent to its pan-India presence would also form part of the security mechanism for coastal security.

Sea Power

Warfare has become exceedingly complex and includes multifarious disciplines. The full range of operations in which a Nation's maritime forces may be involved is extremely wide. Two specific and important concepts are elucidated below:-

a. Sea Control. Sea Control in single/joint operations implies, to be in a position where one is able to use a defined sea area for a defined period of time, for one's own purposes, and at the same time prevent an adversary from using it for his advantage. Sea Control, in other words, affords freedom of action to those who possess it but denies it to those who do not. This is often the first step to begin, sustain and support

Joint operations like Amphibious Operations, Blockade and Sea Lines of Communication (SLOC) protection/interdiction.

b. Sea Denial. Sea Denial is a concept of denying the adversary the use of the sea area for a certain period of time, while not attempting to control the sea itself.

Air Power

Air Power is employment of air power assets of the Nation to assert its will through the medium of air to achieve National Security Objectives. Air power with its intrinsic characteristics of speed, elevation and reach provides tremendous strategic options. These strategies will be prosecuted by air campaigns which comprise a variety of air operations. These operations will be to deter, contain or defeat the enemy's air power. Counter air, strategic air (including space) and counter surfaceforce operations are the three elements of air strategy with combat enabling operations forming the fourth pillar. The flexibility, versatility, speed, and reach of modern aerial platforms and weapons will allow aCommander to conduct parallel/inter-dependent operations by prosecuting all campaignssimultaneously as also engage enemy surfacetargets, within and outside the battle space. All the air campaigns can be conducted independently, parallel with, or in support of surface/maritime operations.

Cyber Power

Cyber Power is the ability to use cyberspace freely and securely to gain an advantage over the adversary while denying the same to him in various operational environments, and by applying the instruments of National Power. In the globalised world economy of today, cyberspace has probably become the single-most important factor that provides necessary linkages, stores information, facilitates business transactions and acts as an effective medium for instant delivery of services. Therefore, it forms an ideal platform for expediting the development processes and proliferate the benefits to the masses instantly. The high value cyber assets make the Critical Information Infrastructures of the Nation, which must be protected at all costs, to enable the core and routine state businesses function uninterrupted.

Space Power

Space is a medium like land, sea, air and cyber through which various activities are likely to expand in the future. Emergence of space power is analogous to conventional land, sea or air power that will mark it out as a 'Revolution in Military Affairs'. Space bestows immense force multiplication capability on the Armed Forces, and the dependence on space assets for military operation is rapidly increasing. Currently, India's space capabilities are mostly driven by civil and commercial requirements, steps for exploitation of space for military applications towards which steps are being undertaken. Leveraging space power would include protection of our National space assets and exploitation of space to enable defence capabilities across the conflict spectrum.

Special Forces Operations

Special Forces operations will be conducted in support of offensive and/or defensive operations. Operations are to be conducted by specially selected troops of the Armed Forces (Army, Navy and Air Force) who are trained, equipped and organised to operate in hostile

territory in all dimensions - land, air and sea; and can also be employed isolated from the main combat forces. Special Forces of the - Army are designated for operations in all dimensions; Navy are mandated for operations in the Maritime domain; and Air Force are mandated for protection of critical air bases/assets. Such Forces may operate independently or in conjunction with other Forces at the operational level. They are versatile, have a deep reach, can make precision strikes at targets of critical importance and must be provided access to the maximum possible intelligence inputs relevant to the task while maintaining absolute security in respect of their intended employment. The principles of 'direct control' and 'mission command' will be exercised during their employment. Special Forces units will be tasked to develop area specialisation in their intended operational theatres to achieve an optimum effect.

MODULE-VI

Strategic Studies and National Security

STRATEGIC CULTURE

India's Strategic Culture Defined

India's strategic culture is not monolithic, rather is mosaic-like, but as a composite is more distinct and coherent than that of most contemporary nation-states. This is due to its substantial continuity with the symbolism of pre-modern Indian state systems and threads of Hindu or Vedic civilization dating back several millennia. Embedded in educated social elites, the consciousness of Hindu values has been resident in essentially the same territorial space, namely, the Indian subcontinent. This continuity of values was battered and overlaid but never severed or completely submerged, whether by Muslim invasions and Mughal rule, the seaborne arrival of French and Portuguese adventurers and missionaries, or the encroachment of the British Empire – with its implantation of representative political institutions and modern law. Indian culture is assimilative, and during the rise of nationalism under British rule, India's strategic culture assimilated much of what we think of as 20th Century "modernity". This composite culture informed India's behavior after 1947 as an independent nation.

On the surface, India's strategic culture today operates through, and affirms, a parliamentary-style republic, a secular constitution, popularly elected national and state governments, and modern diplomatic channels that are cognizant of international law and globalizing trade practices. Most of India's top leaders and civil servants are well educated, use English (and other foreign languages) in external relations, and are sophisticated in the ways of the modern world. Internally, Indian society is highly diverse, and generalizations invariably have exceptions. But there are common threads of attachment to India as India, even among the educated layers of India's religious minorities.

Discerning the underlying traits of India's strategic culture, its distinctiveness, and its resonance in India's contemporary actions may take some effort. But it can be done. There are core traits of Indian strategic culture that have persisted since independence despite shifts in India's strategic foreign and security policies during and after the Cold War, and notwithstanding the gathering momentum of the forces of globalization. However, it is foreseeable that some of the core traits may be subject to modification in the coming decades due to generational changes in Indian leadership who are less steeped in tradition, the rise of new business entrepreneurs in high technology spheres who operate with a less parochial and more globally oriented paradigm, and the impetus of regional political leaders and upward mobility of lower strata of society who are less easily socialized in a standard strategic outlook.

The provisional definition of strategic culture that was adopted in the earlier workshops is serviceable enough in the Indian case, with one caveat. Before one arrives at security ends and means, the content of what is strategic and what is to be secured under the rubric of Indian "security objectives" must be recognized as based on metaphors of "Indian-ness" (or Bharatvarsha and Hindutva), an outlook that transcends the Republic of India—the divided nation and territory—that emerged after partition from British colonial rule in 1947.

India's Strategic Culture Profile: Traits

We begin here with propositions on the traits of Indian strategic culture—listed in Table 1 below—in two sections, the first related to the conceptual origins of the traits, and the second to their instrumental or behavioral implications. These are discussed and illustrated later, in terms of specific actions and events. Encompassing these traits, and as a provision simplification, Indian strategic culture can be labeled as an omniscient patrician type: A description of each element of the philosophical and mythological factors that form the foundation of this culture follow.

A. Philosophical and mythological foundation:
   - Sacred permeates Indian identity
   - Goals are timeless, not time bound
   - India's status is a given, not earned
   - Knowledge of truth is the key to action and power
   - World order is hierarchical, not egalitarian

B. Instrumental implications:
   - India's external visage is enigmatic
   - Self-interest expressed externally is impersonal and absolute
   - Contradictions in the real world are natural and affirmed
   - Force has its place, but guile may trump force
   - Actions have consequences, good intent does not absolve injury
   - Entitlement inhibits ordinary compromise (hard to split differences, truth is not at ease with quid pro quo)
   - Compromise easily viewed as internal defeat (ephemeral, bends truth, dents sovereignty)
   - Trust is in right knowledge and action, is impersonal, and hard to build or replenish
   - Security is sedentary (encompasses a geographic setting and way of life)
   - Strategy is assimilative (appearance changes, reality is constant)

Table 1. Traits of India's Omniscient Patrician Strategic Culture

<u>*Sacred Permeates Indian Identity:*</u> Indian strategic culture has a collective consciousness of the sacred origins of Indian-ness that give mythological and metaphysical significance to the subcontinent as a territorial expression. Great rivers symbolize life-giving and cleansing properties in the material world and connect mortals to the gods and to the underlying cosmic forces they manifest. Enlarged by tributaries, the Ganges River (after, Ganga, goddess of purification) is dotted with places of pilgrimage and temples from its source in the Himalayas through the plains before flowing into the Bay of Bengal. India's natural (and spiritual) frontier begins in the Himalayas where the great rivers rise and follows to where they join the sea. Modern concepts of security would protect this way of life and the territorial domain in which it exists. Affinity for the sacred in this society should not be confused with religious fundamentalism or literalist acceptance of religious texts. The shared outlook is not personal,

not specifically faith-based nor historically-grounded, as in the Judaeo-Christian or Islamic belief systems, and not necessarily doctrinal or doctrinaire. It is rather a cosmic consciousness, timeless and also pervasive. It is the heritage of the Pundits (sages, priests and teachers).

Goals are Timeless, Not Time Bound: The collective reference points of Indian strategic culture are timeless. The thought process is a-historical 7 and generally resists being event-driven or trapped by deadlines, which tend to be regarded as ephemeral. Underlying forces matter (e.g., demographic trends, rates of economic growth) but their effects are seldom sudden or overwhelming. Official goals may be framed as five-year plans, but if they are not accomplished within that time frame, they are reset as future targets without excessive rancor or disappointment. Painstakingly decided official goals are rarely discredited or set aside entirely. Strategic objectives are embedded in a long haul outlook. Patience and persistence are rewarded over time. This public style is quite the opposite of a post-industrial business or entrepreneurial outlook, in which "time is money" and opportunity costs are high. Business traits may operate in the private sector and in individual careers but are not dominant in the public domain.

India's Status is a Given, Not Earned: This widely held premise is rooted in collective consciousness of India's ageless and rich civilization—a natural claim to greatness. It appears to be reinforced by traditional norms of status in India's society based on ascriptive criteria (caste, family, and upbringing), not only performance-driven mechanisms. In India, caste structure still assigns status and tilts opportunity. Those who have a natural affinity for knowledge, Brahmins particularly but some other high castes as well, have been disproportionately successful in rising educationally and competing for the elected and salaried positions of government, public enterprise, and the professions that have given modern content to India's strategic culture. Those who have risen in these channels in the nationalist era have been inducted into an outlook of cultural superiority versus the outside world. This outlook holds India's importance to be singular and self-evident, an entitlement and that does not need to be earned, proved or demonstrated.8 This trait is reflected in the doggedness of India's negotiations with the outside world. India's external affairs leadership prizes being respected. Merely being liked by officials in other countries, in interpersonal relationships, are not regarded as necessarily additive to India's prestige or critical to India's achievement of key objectives. India's strategic culture sees status as an objective reality, a matter for other state to recognize and act in accordance with, not a favor for other states to confer.

Knowledge of Truth is the Key to Action and Power: In the abstract, this proposition about knowledge of "truth" could be applied to participants in a theocratic as well as in a scientifically endowed or secular strategic culture. In this case, the reference is the truth inherited from Indian civilization. During the colonial era, India's assimilative strategic culture came to prize modern scientific and instrumental knowledge. This trait drove India's investment in modern science and engineering across the board, its acquisition of modern

military technology and large standing military forces, its development of nuclear and missile capabilities – against international opposition, and its secret development of chemical weapons. In India's case, however, its top political leaders, the carriers of strategic culture, were versed not only in modern knowledge but in a cultural frame of reference that had metaphysical and spiritual properties. Ageless cultural and cosmic metaphors set their modern knowledge in a context that placed a premium on deep thinking, instilled a penchant for understanding the interplay of underlying forces over the long term, and inculcated values that reward patience, persistence and devotion to the national interest. This outlook aimed for deeper knowledge, a secular approximation of omniscience.

In India this trait is most pronounced among those reared in Brahmin and high caste families, whose heritage often is pedagogical, as transmitters of learning, including the legendary epics, philosophies, and cultural mores. This outlook was propagated internally in a way that structures a unique sense of obligation among peers and that is particularly instrumental to the achievement of India's strategic goals. This trait is conducive to Indian practitioners in strategic decision making and negotiations being better informed and more analytically focused than most of their external interlocutors, and also much less concerned about the passage of time.

World Order is Hierarchical, Not Egalitarian: India's strategic culture is elite-driven and patrician-like rather than democratic in inspiration or style. It sees the outside world hierarchically both in measures of material power and in attributes of intellectual and ideological competence. It recognizes and adapts to but is not intimidated by a foreign power's temporal performance. It adheres to a long term perspective in which today's impressions may prove evanescent or unreliable. This hierarchical view of the world is informed by the basket of distinctive Hindu mythologies and symbols, which emphasize both what is worthy morally and of durable practical importance. It also draws on Chanakya's (Kautilya's) secular treatise, the Arthashastra, which closely parallels Niccolo Machiavelli's The Prince, as an exposition of monarchical statecraft, realpolitik in inter-state balances of power, and the practices of war and peace.

This is not to say that Indian strategic decision makers and diplomats reject contemporary principles of international law that subscribe to equality among sovereign nations and that give weaker countries leverage against the more powerful. On the contrary, whenever they work in India's favor, international legal norms are exploited to the hilt. Independent India has been a strong proponent of the United Nations and active participant in the elaboration of international law. Jawaharlal Nehru, India's first prime minister and a giant on the international scene adhered to some principles and policies that arguably were idealistic in their inspiration. But India's strategic culture – omniscient and patrician – is hard-nosed. It harbors no illusions about the ultimate importance of international norms in comparison with the importance of objective realities, and the role of accumulated prestige and power in fortifying sovereignty and self-determination.

India's Strategic Culture in Action

The profile of India's strategic culture above focuses on distinctive traits rooted in India's ancient cultural and religious heritage, as they were manifested after independence. These traits may be considered the core or skeleton of India's strategic culture. They have not changed essentially since independence. The analysis that follows shifts to how India's strategic culture has been reflected in or reinforced by international interaction. Necessarily brief and selective, the analysis brings out the implementation of India's strategic culture in the face of external challenges and live security threats, including threats to internal security. This fleshes out the skeleton of India's strategic culture. It may also portray India in a way that most strategic observers can more easily relate to – in terms of geopolitics and national interest. East-West competition during the Cold War and challenges in the immediate region – particularly India's partition and subsequent wars with Pakistan, and the 1962 military skirmish with China -- enlivened and added texture to India's strategic culture but arguably did not fundamentally alter it. India suffered from a variety of security problems after independence, but, apart from partition in 1947, it did not undergo any severe nationwide traumas of violent revolution, civil war, or military defeat and protracted occupation by a major external power. Had any such trauma occurred, it almost certainly would have forced changes in India's strategic culture. The emerging relationship of strategic cooperation with the United States and the effects of globalization within India could, conceivably, have certain transforming effects, but this remains to be seen. India's home-grown strategic culture has been carved in the minds of elites and its dominant parameters have been very resilient since 1947.

<u>The Partition of India and Residue of Communal Conflict</u>

India's prospective geopolitical options and threat environment were profoundly altered by the rise of Muslim nationalism, and by the partition of India and creation of Pakistan as the last acts of British colonial power. The status of Jammu and Kashmir, formerly a princely state, with territory bordering on China, was divided de facto but left unresolved and became a lasting bone of contention. Partition truncated India as a holistic geographical expression, and therefore constrained a full assertion of the underlying strategic culture in terms that the rest of the world could have viewed as self-explanatory.

Geopolitically, this partition had three profound effects. One was to limit India's natural influence on Iran, Afghanistan, and formerly Soviet Central Asia – since the newly independent state of Pakistan now existed squarely between India and these former neighbors. (East Pakistan as an enclave in the Muslim-majority districts of Bengal also complicated India's reach to the east, and thus limited its natural influence on Burma and defense-preparedness against China, illustrated by the Chinese incursion of October 1962.) Second, the fact that this partition of India was based on the Hindu-Muslim communal divide meant that the Muslim minorities dispersed in the rest of India could, potentially, rise in agitation and jeopardize India's internal solidarity. This domestic factor inhibited India's full assertion externally of what its subcontinental strategic culture implied. Third, the struggle

over Kashmir hobbled India even as it threatened Pakistan, leading to recurring limited wars between India and Pakistan, and stoked Pakistan's determination to follow India down the nuclear path.

India's possessiveness of Kashmir is a natural expression, however, of the territorial premises of its strategic culture. Eastern Kashmir is part of the Himalayan chain and is thus linked to ancient Hindu holy places of pilgrimage and legendary as well as historical Indian empires in the same region. Tenets of India's strategic culture hold that religious differences can be absorbed and do not contradict Indian-ness as a unifying feature of those reared together in the subcontinent. This tenet which is at odds with Pakistan's emergence as a homeland for Muslims of the subcontinent implicitly calls the basis for Pakistan into question. The timelessness of Indian goals provides a perspective on Kashmir that frustrates negotiations and suggests to bystanders as well as those involved that India cannot help but prevail in the long run.

The consensual understanding in Indian strategic culture of the virtue of the long view, exercising patience as temporal trends shift, has enabled India's top leadership to build Indian strength internally to mitigate Pakistan's initial curtailment of Indian power. India's greatest strategic feat in the first three decades of independence was to head off further potential fragmentation of its territory both from Muslim disquiet after partition and from language-based subnational movements in southern and western India. The Congress Party-led system defused a grass-roots movement of Tamil-speakers whose demands once verged on independence. It also overcame agitations by Gujarati- and Marathi-speakers by giving them separate linguisticallybased states in India's federal system.

It is difficult to overstate the importance of this successful internal political integration of India in the early years. India's internal diversity made it uncertain at the outset whether unity could be preserved. But the political victories of integration were cumulative and underwrote India's success with representative and electoral institutions and economic stability. They gradually strengthened India's capacity to cope not only with the challenges from Pakistan but to overcome or manage a series of other secessionist threats, such as the Sikh Khalistani movement in Punjab in the 1980s and the Naga, Mizo and other tribal independence movements on the periphery of Assam in eastern India. Achieving internal unity was also instrumental in recruiting and modernizing India's military services, expanding the scientific, industrial and manufacturing sectors of the economy, and in projecting India's image abroad of a rising regional power, if not prospective great power.

Pakistan's capacity to challenge India politically and militarily was curtailed by India's first strategic military operation in the 1971 War, in which Indian forces invaded and forced the surrender of Pakistan's military forces in East Pakistan, and enabled the Bengali nationalist movement there to set up the newly independent state of Bangladesh. This action reflected the realpolitik strands of India's strategic culture, dismembering Pakistan as a sovereign entity after preparing and using offensive force decisively. India limited its risks in this

venture by concluding the Indo-Soviet Friendship Treaty with Moscow, although this impaired its much touted doctrine of non-alignment.

Pakistan's loss of the eastern province and acceptance of the 1972 Simla Accord set back residual hopes to win its claims to all of Kashmir by military means. Thereafter, Pakistani military leaders tacitly recognized the fact of India's conventional military superiority over Pakistan. Pakistan's nuclear weapons program was started secretly in 1972, but this was not known until some years later. Pakistan's military challenge over Kashmir went silent for the next eighteen years. Pakistan's relatively compliant posture after the 1971 War tended to confirm India's view of its strategic culture tenets, especially its sense of superiority, hierarchical view of world order, and conception that truth and power go hand in hand over the long haul. India also managed internal communal problems relatively well in the 1970s and 1980s, reinforcing an organic sense of national unity no longer vitally challenged by linguistic or regional differences, with minor exceptions in India's northeastern tribal areas.

Cold War, the Superpowers, and China

Modern India's independence coincided with the Truman Doctrine and the onset of the post-war U.S.-Soviet rivalry in Europe and the Near East, but predated the communist revolution in China and the Korean War. India's foreign policy doctrine of non-alignment reflected its distinct world view and sense of status as well as its political fragility after partition. Just as the newly formed United States feared "entangling alliances," India's leaders consciously avoided explicit alignment with the West or the Soviet bloc, fearing this would lead to dependency and that foreign quarrels might exacerbate divisions within Indian society. Thus, despite affection for British parliamentary institutions, law and literature – in which two generations of India's nationalist leaders had been steeped – India's strategic culture urged political distance from the West, to seal out European or American neo-imperialist influence. In India's nationalist narratives, the British had, after all, employed "divide and rule" strategies to control the subcontinent and had, ultimately, caved in to Muslim agitation to partition India. Non-alignment was a secular rationale for an anti-imperialist or hands-off posture.

Sealing out Western and Soviet political and military influence had to be done in such a way, however, as to leave open the flow of modern scientific knowledge and high technology. Here there were tradeoffs. India's strategic elite believed, correctly, in its own intrinsic capacity to absorb and master modern scientific knowledge and technology, provided it had open access. This elite held a nearly ideological determination, however, for India to be self-sufficient in modern science, technology and means of national power. By endorsing an autarchic approach to defense production and high technology development, and by demanding technology flows as a matter of entitlement, the Indian establishment initially retarded national progress in those same sectors.

Non-alignment was conducive to the aims of domestic autarky, but externally, in the context of the Cold War, it was a tool for geopolitical leverage. It was a means of playing the Soviet Union off against the West, and vice versa. Although this approach required patience and a

long term perspective, it also enabled India to squeeze high technology offers and military equipment supplies from both sides in the Cold War, more often than not at lower than market prices. While this approach failed to open a flood of technology transfers for India, its steady benefits seemed sufficient in the minds of the strategic culture elite at the time to validate their premises.

Only later did it become obvious that with India's heavy reliance on public sector industries for defense, atomic energy, electronics, and space technologies, the practice of squeezing of technology and arms from both sides during the Cold war also had negative effects on India's capacity to achieve self-reliance in the most sophisticated areas of technology. India's indigenous development of high technology was much slower, more painful, and less successful than public rhetoric implied. India's shared strategic culture inhibited open criticism and remedies for these shortcomings, until the Cold War had passed, and, indeed, have operated that way until very recently.

India's non-alignment was replete with contradictions that illustrate the strategic culture's capacity to absorb inconsistencies. Non-alignment was never a scrupulous policy of neutrality. Over time, Indian foreign policy tilted toward the Soviet Union and the Communist Bloc, even when the Soviet Union intervened militarily abroad, as in Afghanistan. Although touted today to cement US-Indian strategic partnership, India's professed "democratic values" failed to align it with the West during the Cold War.

Several pragmatic reasons for India's pro-Soviet leanings can be adduced. First, U.S. containment policy favored Pakistan, along with Turkey, Iran, and the northern tier Arab states as allies against Soviet expansion. Indian leaders viewed Western military assistance to Pakistan as threatening to Indian interests. The Soviet Union, for its part, routinely supported India's position on Kashmir against Pakistan in the United Nations. Second and less widely understood, India and the Soviet Union had a tacit common interest in managing Muslim populations peacefully within their respective borders. India's early proclivity for socialism, more Laskiite than Leninist in inspiration, had the same secular objective as Moscow's nationalities policies, of denying space for "political Islam". Third, India's pro-Soviet tilt gave India leverage in Moscow to forestall Comintern temptation to stoke subversion of India through external financing of India's communist parties. India's international support for Soviet positions was also instrumental in negotiating Soviet arms supply at bargain basement rates.

India's relationship with China was not so easily managed, despite initially solicitous Indian policies. India attempted to cultivate a friendly relationship with Communist China, assuming that it would, as a less developed Third World nation with anti-colonial reflexes, sympathize with India's leadership of the non-aligned movement. This appeared to work for a time. But in a humiliating blow to India's omniscient patrician stance in October 1962, China sent troops through Himalayan passes into poorly defended eastern India. This was apparently meant to convey to India that its inflexibility on negotiations over disputed Himalayan borders (based on British colonial era claims) must change. Having made its

political point, China unilaterally withdrew behind its own border several weeks later. India's sense of entitlement to those northern regions made India inflexible in its territorial dispute with China, setting up a contest of wills between governments that remains, like the Kashmir dispute with Pakistan, unresolved till today.

China's 1962 military incursion into India humiliated India and stimulated the construction of access roads and fortifications in the Himalayas as well as a sustained Indian conventional arms buildup. By the early 1970s, was well prepared to block such an incursion by China. Meanwhile, China became a source of military assistance and arms transfers to Pakistan and, until recently, a supporter of Pakistan's side in the Kashmir dispute. India's strategic culture helps explain India's resistance to settling what it considers entitlement issues by pragmatic compromise and its determination to wait the opponent out. China's patience likewise appears to be a match for India's.

The 1962 Chinese incursion temporarily brought India closer to the United States, although Washington was preoccupied at the time by the Cuban Missile Crisis. President Kennedy offered India military assistance to improve its defenses against China, and some assistance was delivered. India briefly considered longer term offers but finally walked away because of real or supposed strings attached. The same trait of resistance to pragmatic compromise – India's inability to deal with quid pro quos in a two way relationship – operated on one side with China as an adversary, and on the other side with the United States when it was eager to help. These outcomes can also be attributed in India's strategic culture to the traits of superiority, presumed deeper knowledge and a profound sense of entitlement. Admittedly, the unilateral Chinese withdrawal removed the immediate pressure on India. A different test would have applied had China extended and fortified its occupation of that Indian real estate in 1962.

U.S. overtures to India in the 1960s bore other less well-known fruit, for instance, technical intelligence cooperation in monitoring China's development and testing of nuclear weapons. China's first nuclear detonation was achieved in October 1964. Obtaining technical data on that first test and subsequent Chinese nuclear tests was facilitated by U.S. instrumentation, placed with Indian permission in the Himalayas. Those programs were kept out of public view and are not well known even today. India's strategic culture may have reinforced a deep suspicion of U.S. intelligence, particularly of the CIA, with allegations frequently surfacing in India's Parliament. India generally held US overtures for military cooperation at bay. The strategic culture favored a self-imposed Indian demand for self-sufficiency long before this was technically realistic. India also disparaged the U.S. involvement in the Vietnam War, a troubling undercurrent in relations from the Kennedy to the Nixon administration.

Protagonists of India's strategic culture shaped and propagated a strategic myth that further poisoned U.S.-India relations at the time of Pakistan's dismemberment at Indian hands in December 1971. Indian leaders claimed, and the Indian press amplified, reports that a U.S. carrier task force had entered the Bay of Bengal to relieve pressure on, or perhaps rescue, Pakistani military forces in East Pakistan. The media campaign suggested that the task force

was nuclear-equipped and posed a direct U.S. nuclear threat to India as a crude act of coercive diplomacy, aiming to compel India's disengagement from the conflict with Pakistan. This rendition of the event instilled a shared memory in the Indian elite that the United States might go to extreme lengths, even threatening India with the use of nuclear weapons, to protect Pakistan. This theme was replayed from time to time later as a justification for India's steps towards nuclear weapons.

Covert Nuclear Proliferation and Declared Nuclear Weapons

The "knowledge-as-power," "goals-are-timeless," and mystical features of India's strategic culture have been epitomized in Indian nuclear programs and policies, both in how India presented these to the world, and in how it evaluated Pakistan's nuclear weapons progress in later years. The U.S. use of nuclear weapons on Hiroshima and Nagasaki in 1945 was a defining moment for elites around the world, and certainly in India. The dualism of creative and destructive potentials in splitting the atom resonated with India's strategic culture's reflection of mythology and the Hindu pantheon – especially with Brahma "the creator" and Siva "the destroyer". Among Indian scientists, the challenge of divining the timeless mysteries of particle physics and quantum mechanics evoked traditional consciousness of cosmic forces, fusing the realm of the sacred with action in the real world. India's scientific community moved actively into this area even as the new nation gained independence and formed new political institutions.

India's top political leadership sensed the importance of mastering the laws of nature for the development of the nation and the opportunity to lift its huge population out of poverty to a respectable standard of living. India's scientific community viewed this as an entitlement that they would take charge of, dedicating themselves to India's transformation and elevation to a status on par with the great powers of the world. Nuclear energy and technology was by no means the only area of modern scientific endeavor that Indian leadership aimed to master, but it was a uniquely potent one that could be expected to have a galvanizing effect on the rest.

India's policy of ambiguity on nuclear weapons is so well known today that there is a tendency to assume that was India's posture was intentionally ambiguous from the start. This overstates the case. India's leaders, political and technocratic, sought to master this technology. A few among them, but certainly all the atomic energy commission scientists, knew that full mastery of nuclear technology would bring nuclear weapons capability as a matter of course. The construction of plutonium production and chemical separation facilities began early, in the mid1950s, and plutonium separation was demonstrated in 1965, just 17 years after independence.

That said, the top political leadership in the early years, particularly under Jawaharlal Nehru's tenure, believed India's moral and political stature would gain from emphasizing the peaceful aspects of nuclear energy and assuring the world India opposed nuclear weapons. This was consistent with the strategic culture tenets of India's deeper, moral knowledge and

desire to enhance its world stature by setting an example that might encourage the nuclear weapon states to change course and begin disarmament.

After China went nuclear in 1964, the rationale for India setting an example of weapons abstinence was less compelling, but not given up entirely. India had been one of the primary advocates of a nuclear nonproliferation treaty at the outset, yet declined to join the NPT when the negotiations were completed in 1968. India's third prime minister, Indira Gandhi, authorized the scientists to complete the technical preparations for the so-called "peaceful nuclear explosion" (PNE) around 1969. Her motivations may have been partly to remove doubts about her own political leadership, and partly to show the world—in those years India's international image had been slipping—that India had the requisite will and capability, and its status should not be discounted.

That nearly four and a half years elapsed before the actual nuclear test is surprising. There may have been a precursor test device that failed. The policy of ambiguity, however, was firmly established by the May 1974 nuclear explosive test. The test program broke the news to the leadership in Delhi telephonically with the code words: "the Buddha smiles." India's overt declaration of nuclear weapons came with the nuclear tests of 1998, after another 24 years, illustrating the timeless goals and patience of India's strategic culture.

The strategic culture traits of knowledge as power and long haul endurance were reflected in the determination to avoid international controls over the nuclear program, even at the cost of being denied open nuclear commerce and technology transfer. India's indigenous construction of nuclear power plants for urban electricity supply proceeded, but at a painfully slow rate, and with plants of small size and dubious safety. Forty years after construction began on the first two power reactors at Tarapur, India's nuclear power plants today still make up barely 2.6 percent of its electric power supply.

The elements of intellectual superiority and status as an entitlement in India's strategic culture have been reflected in the Indian leadership's disdain towards Pakistan's nuclear weapons program. Admittedly, starting later and with far smaller resources, Pakistan's nuclear research and power program was almost miniscule in comparison with India's. Pakistan's options for obtaining nuclear technology through normal channels were even more constrained than India's after the 1974 test, since that test precipitated a steady tightening of Western nuclear export controls on sensitive and dual use technologies. Focused on developing nuclear weapons after the 1971 War, Pakistan's major breakthrough was in production of highly enriched uranium (HEU), beginning about 1979, using covertly imported materials and indigenously assembled gas-centrifuge equipment. Pakistan developed a plutonium production reactor and chemical separation plant much later, coming on line in the late 1990s.

India's success in winning Bush Administration acceptance of an Indian civil-military nuclear separation plan between July 2005 and March 2006 is an extraordinary example of India's negotiating steadfastness, and vindication of the omniscience and entitlement traits of its strategic culture. This case further illustrates how that strategic culture resists ordinary

compromise and quid pro quos on matters of strategic value, enabling its practitioners to hold out indefinitely if necessary.

Economic Factors and Decision Making

India's strategic culture was well reflected in India's economic decision making until 1991, when a shift in policy towards liberalization occurred that might be considered adaptive. India's centralized economic policies after independence were heavily influenced by the socialist teachings of Harold Laski at the London School of Economics and the Soviet Union's central planning and command economy model. India's western trained economists were first rate and optimistic about macro-economic management. Nehru and his socialist-leaning Congress party associates imparted to the Planning Commission a view that India's poverty and presumably weak industrial trade competitiveness could best be overcome by allocating resources in accordance with five-year plans and closely managed import restrictions and controls on international currency. This perspective was deeply suspicious of "capitalism," "profit," foreign investment, and market principles.

This suspicion of profit and openness to international capital flows was not only a Marxist fashion but fit the omniscient patrician strategic culture like a glove. The science management culture from abroad reinforced the domestic strategic culture that accorded deeper knowledge to the nationalist elite on how to make the economy grow, and a paternalistic responsibility for distributing the benefits equitably to the masses for overall welfare. This meant relying on public sector industries for key sectors, especially in infrastructure and defense – railroads, ship-building, electric power generation, coal mining, steel production, heavy machinery manufacturing, telecommunications, and essentially all defense production. India's economic performance in the agricultural sector was incrementally improved by using genetically improved seeds and expanded irrigation – leading to the "green revolution" in Punjab and Gujarat. But India's centrally-planned industrial performance was so tepid through the first three decades that critics dubbed it the "Hindu rate of growth."

India's reliance on public sector management went hand in hand with tight restrictions on foreign capital and high tariffs on imported goods. The approach slowed the growth of indigenous private firms in the domestic economy, and the absence of external competition meant poor quality control in modern Indian manufacturing (e.g., automobiles, capital equipment), typically making products uncompetitive abroad. It was the view at the top that the political leadership knew what was good for India and that it would excel in an autarchic environment that prevailed until the 1980s, and retarded India's economic development. In this respect, the strategic culture was a severe handicap to Indian performance. It was only the dramatic export-led economic expansion of the Asian tigers (South Korea, Malaysia, Singapore, Thailand, and Indonesia) and the extraordinary trade performance of "communist" China throughout the 1980s that finally sank into Indian consciousness and made the government willing to adopt a change in course.

While Indian policy makers began a series of small economic and trade reform steps in the late 1980s, the 1990-91 financial crisis over hemorrhaging foreign exchange and the adverse effects on Indian workers overseas from the first Gulf War against Iraq forced a shift in economic and trade policy that became cumulatively important in the 1990s. This shift began essentially as a technocratic policy of liberalization of India's business tax and trading license environment. India opened the doors to its own entrepreneurs importing and exporting more freely, even when it required use of foreign exchange. The government also moved in steps towards the convertibility of the rupee and the dollar, and began, in phases, to open up various sectors of the economy to foreign investment – though foreigners were not permitted to take majority control or buy out Indian firms. This liberalization was fortunate to occur when it did, because it enabled the Silicon Valley developments in the computer and information technology industry in the United States to flow to Asia and take root in India quickly – where education had provided a large labor pool of English-speaking engineers and other technically able workers, and enabled India to capture big chunks of the offshoring of software development and database service activities of many Western and multinational corporations.

One of the ironies of India's excellent performance in the computer software and information technology industries is the vindication of the Indian strategic culture tenets that emphasize deep knowledge, knowledge as power and the enhancement of status this gives India in international circles. Yet these market-driven economic developments would seem to be at odds with the basic emphasis in the strategic culture on traditional mythology, symbolism, and timeless values. Nothing could be more driven by time and money than the production schedules of the information technology businesses. Yet there is a link with cosmic and timeless values metaphorically in the infinite potential for invention and elaboration of information technology applications. That said, the very success of Indian entrepreneurs abroad and at home in these booming business areas also has a burnishing effect on India's sense of status and those traits of Indian strategic culture that suggest India is rightfully superior in what it brings to the modern world. Thus these dynamic new developments tend, in the final analysis, to reinforce certain aspects of the strategic culture, even as they challenge others, e.g., the autarchic impulses. But just as ironically, the challenges—which may be reflected as real world contradictions—are easily reconciled by an outlook that is comfortable in its essence with contradictions.

War and Peace Themes in India's Strategic Culture

India's strategic culture has drawn selectively from various threads of its past civilization values and larger political culture. The dominant war and peace elements of India's strategic culture lean more to the realpolitik side of the mythological and religious spectrum, and away from the pacifist themes that had gained prominence, temporarily, as a result of publicity about Mahatma Gandhi's influence on the nationalist movement. But both sources of inspiration, a readiness for war and pacifist inclinations, have validity in the strategic culture. The emphasis may shift in facing different challenges over time. The guardians of strategic

culture are comfortable with contradictions. The nature of this dualism and occasional tension is worth discussing further, especially inasmuch as Nehru's leadership on foreign policy and India's role in the NAM drew evoked moral sympathy in the West for the Gandhian image of India.

Popular Indian mythology draws heavily on the great epics, the Ramayana (life story of godlike prince Rama) and the Mahabharata (literally, the story of "greater India" as epic struggles between good kings and demonic adversaries—their ancestries usually connected with the gods). These epics exist in written form (in Sanskrit), but their transmission to ordinary persons has largely been through local theatrical and dance presentations (in regional languages), seasonal festivals, certain temple rituals and, contemporaneously, in Bollywood movies. What the epics teach, implicitly, is that good and evil forces collide, and that the good usually prevails—albeit often after long suffering and many losses. The "good" is demonstrated both in exemplary acts of personal morality (including heroism and romantic fidelity) and also in accounts of good governance withstanding evil forces. The epics are set in the context of kings, courts, and rivalries that lead to wars, epic in scale and duration. Resort to force in these rivalries is treated as natural. Some of the stories involve god-kings employing extraordinary weapons— thunderbolts, for example—that raise connotations of weapons of mass destruction. War is not necessarily celebrated as such, but deadly combat certainly is approved as acceptable when good fights evil. These popular images are shared by the Hindu elite and population as a whole— either as beliefs or as metaphors—and are important unifying features of a diverse society.

Kautilya's Arthashastra, an ancient treatise on principles of statecraft, was written by an actual person who served Maurya dynasty monarchs. The writing is down to earth—not connected with the epic legends. But it is embedded in the same composite civilization and reflects a period of the Indian subcontinent when rival Hindu kingdoms were the norm. Its advice to rulers addresses the use of force, poisons (or toxins and chemical weapons), and tools of espionage, in detail. It presupposes that wars will occur and therefore provides guidance on how to construct military alliances with other states in the Indian state system, for the survival or safety of the home state.

Gandhi shunned the use of force and opposed violence in politics. It should be added that his philosophy and technique of non-violent resistance to the British was, nevertheless, politically steely and unyielding. His concept of resistance was Satyagraha, or "force of truth." Gandhi's approach was philosophical and reflected "reform" variants of Hinduism (more in touch with devotional books, such the Bhagavad Gita, or "Song of the Lord," and the philosophical Upanishads, as well as Jain religious teachings) more than the popular and mainstream Hindu tradition. His philosophy emphasized reverence for human life (Jainism venerates all life forms, human, animal, and vegetable) and a sense of horror in killing or shedding blood (ahimsa). This perspective is based on the belief of the continuity of all life, or the great chain of being, and interprets all life forms as incarnations. While it would be going too far to say today's guardians of India's strategic culture hold these Gandhian

precepts dear, his espousal of Satyagraha, or unyielding "truth-based resistance," has an appeal. Gandhi's reverence for life would also be acknowledged as the preferred high ground, but Gandhi's doctrinal opposition to violence and the shedding of blood would not be considered as an absolute value, only a preferred norm when peace prevails and nothing vital is at stake.

Defining the Enemy

How does Indian strategic culture conceptualize "the enemy"? The enemy is an alien (organized) force whose aims or actions would deprive India of its sacred territory or subvert its society by undermining its civilized values. While the strategic culture is ahistorical in its conscious roots, proponents of Indian strategic culture have ample historical reference points for enemies over the last millennium. Chinese empires as such did not figure prominently in this South Asian history. Rather, the subcontinent was invaded over land by successive waves of Muslim armies, typically from the northwest -- through what we know today as Afghanistan. Muslim rulers overthrew numerous pre-existing Hindu monarchies in north and south India, and established their own hegemony by force, conversion and institutions of government.

The Muslim invader is a particularly potent example of an enemy in India's concept. British leaders probably had an advantage in gaining Indian allegiance for the British Empire in India because the British unseated the Moghul emperors and contained other less powerful Muslim kingdoms (e.g., the state of Hyderabad) that had established themselves in the subcontinent. In theory, Indian society had long absorbed alien intruders by their assimilation of its superior teachings, traditions and civilized values. Muslim beliefs and practices were less permeable and could not be absorbed and transformed. Rather, monotheistic Islam challenged Hindu society and belief by its efforts to stigmatize and purge polytheism and idolatry, and by its egalitarian inspiration (status is earned, not given) which set it against the caste system and therefore the underlying Indian social order. The Muslim impulse to convert unbelievers also challenged Hinduism directly. Over time, Muslim governments adapted to Indian society by restraining forcible conversion, and by recruiting Hindus from urban and upper castes to help run government and from middle and lower castes to fill out military ranks, thereby avoiding incessant internal warfare and rebellion. But Muslim hegemony was imposed, and this mutual accommodation was inherently unstable.

The European invaders came by sea, not over land, combined superior means of waging war with commercial and missionary interests, and carried the early forms of modern scientific and industrial knowledge. The British did better than the Portuguese and French in making territorial inroads in the subcontinent. British encroachments initially were efforts to protect their commercial enclaves. Modern and English-language education came with missionaries, and over time Indian graduates from affluent Indian families continued their educations in the United Kingdom and occasionally elsewhere in Western Europe. As the British colonial system expanded, it introduced modern law and courts, civil and police services, and eventually elective representative institutions. British rulers and colonialists were also

"enemies" but mainstream Indian coexistence with the British was not quite so unstable because it displaced or eroded former Muslim power and brought advantages of mechanized transport, industry, science and modern education. Culturally predisposed to the concept of knowledge brings power, Indian upper classes took to the new educational system, and eventually used their knowledge and political organization to gain experience in self-rule and then agitated for independence. The Western colonialist enemy was still alien but softer and more tractable, particularly when his own means of superiority were mastered and turned against him. Inasmuch as the nationalist movement ultimately forced the British to grant India independence, this principle of mastering new knowledge was a particularly potent source of inspiration for modern Indian strategic culture.

Chinese Rivalry

China did not figure prominently as a classical enemy, but a sense of Indian rivalry with China has emerged. In antiquity, the Himalayan wall stood in the way of invasions from the northeast. Buddhism which emerged in India as a reform of Hinduism migrated east by osmosis, not conquest, into Tibet, China, Japan, and most of Southeast Asia. Classical Chinese empires were oriented to the great rivers and agricultural resources of central and eastern China, and simply did not have reasons or energy to invade India and never threatened to colonize India. Tibet was a forbidding high altitude province, lightly populated, and of no special resource significance. The British did press frontiers outward and concerned themselves with boundary issues, including with Tibet. Since boundaries were never settled by formal agreements with imperial China, however, this legacy for India was a source of potential disputes. While India has been concerned with the sources of the great sacred rivers, as discussed earlier, it did not challenge Chinese interests in controlling Tibet, but did claim territory along the Himalayan watershed that would encompass the sources of most of these rivers (the Brahmaputra where it rises and flows east in Tibet being an important exception). Given partition and the creation of Pakistan, and the dispute over Kashmir, India's concern about defining and defending these frontiers was easily understandable. But it did provoke a Chinese military incursion into eastern India in 1962, a political act inasmuch as China just as quickly withdrew rather than fight any prolonged war.

Insofar as China figures in Indian strategic culture as an "enemy," it has several components. First, India is sensitive to China's appeal as an alternative ancient civilization, with a large modern population, that is almost bound to collide with India in seeking influence for security and commercial purposes in adjacent regions. Second, China managed to go nuclear relatively quickly, presenting a possible threat of nuclear blackmail. Third, China has been a major source of military and nuclear assistance to Pakistan, giving China an ally or partner on the Arabian Sea. This concern about China as a potential enemy is easily explained both in Kautilyan and modern balance of power terms. China's nuclear and missile assistance to Pakistan have been serious sore points. Nevertheless, concerns about China are not overplayed in Indian strategic culture. Rather, India's sense of civilization and antiquity is seen as at least equal (if not superior) to China's, and India has been prudent in seeking a

non-confrontational relationship with China in which trade channels and other forms of exchange are growing and are being used to limit China's reliance on Pakistan.

Revolutionaries and Terrorists

In the post-independence world, India has faced another "enemy" (actually a series of enemies) that wage guerrilla war against India, including in contemporary parlance by "terrorist" means. In most cases, these threats are from non-Hindu tribal societies seeking independence or autonomy from India. There are also Maoist (Naxalite) revolutionary groups within India dating back to the 1960s that have fomented insurrection in efforts to establish local bastions of power in Bengal, near Nepal, in Andhra Pradesh, and most recently among aboriginal tribes in Chhattisgarh in central India. The newer variant of terrorism is that of Islamic extremist organizations operating from Afghanistan, Pakistan and Bangladesh, or within Indian-held Kashmir, with occasional operations deep in the Indian interior. India has had to cope with terrorist "enemies" long before the post-9/11 War on Terrorism, and has a great deal of experience with them. The components of India's strategic culture that are particularly relevant to countering terrorism are timeless goals (patience) and knowledge of truth is power (a superior understanding of the correlation of forces). India's increasing public identification of Islamic extremist groups and terrorist attacks with Pakistan since 9/11 is a major inflammatory factor in that relationship, given nuclear arms on both sides.

Note that Indian leaders do not single out "Islam" or "the Muslim world" as categorically the "enemy." To do so would stigmatize and alienate 12-13 percent, or some 130 million, of India's own population. India's relationship with the Arab countries and the larger Muslim world, however, has been complicated and uneasy. India's strategic culture has no soft corner of admiration for Islam. India long withheld diplomatic recognition from Israel because it was expedient to have close relations with the more powerful Arab countries, particularly Egypt and Iraq. Iraq has been important to India as a source of imported energy. Similarly, India has worked hard to foster closer relations with Iran, partly, as with Iraq, for secure maritime energy supply. This Indian policy of preemptive diplomacy with Arab and Muslim countries in the Middle East naturally weakened Pakistan's natural influence over the same countries. Only in 1992, with Saddam Hussain under international constraints, the Cold War over, and the importance of the NAM diminished, and in need of better relations with key Western countries, did India establish formal diplomatic relations with Israel. The Indian-Israeli relationship has since become very close. Even so, India has worked hard to maintain positive relations with Arab and Muslim countries. These particular shifts are not foreordained by, but are consistent with, India's omniscient patrician strategic culture, which puts a premium on the long view and on cultivating counter-alliances with Pakistan's neighbors, and with external powers that can arrest extremist infiltration into India, whenever possible.

Strategic Culture and Weapons of Mass Destruction

India's strategic culture is not enthusiastic about the acquisition and prospective use of nuclear weapons and other weapons of mass destruction, but is fatalistic about their

proliferation and potential use. This allows for a view of WMD as a regrettable evil, but one among many cosmic evils that cannot be wished away by political fiat and that can be adjusted to, as necessary. It is noteworthy that India secretly developed and stockpiled chemical weapons, denying their existence until the Chemical Weapons Convention was concluded, leading to a sudden turnabout. In all likelihood, India has done intensive research on biological weapons, especially on virulent diseases like smallpox and pathogens like anthrax, as a hedge against unforeseen contingencies. India's strategic culture affirms mastering each of these scientific thresholds, however unpleasant their wartime consequences may be.

The project of developing nuclear weapons despite policy level ambivalence in the early years and against intense international pressure was shepherded by a strategic enclave that reflected India's strategic culture. After India went nuclear openly in 1998, the policy declarations that some observers confuse with nuclear doctrine were often enigmatic, conveying the impression that India was reluctant to embark on nuclear weapons but forced into the arena by circumstances. India's declarations of a posture of "minimum credible deterrence" and a nuclear "no first use" policy in 1998, coupled with a posture of not physically deploying combat-ready nuclear forces were conveyed to the world as India's conscious decision not to repeat the alleged mistakes of the Cold War superpowers: vastly excessive arsenals, destabilizing arms races and war-fighting doctrines. The omniscient patrician strategic culture thus reached one of it's more distilled and refined high points in justifying both to the Indian public and the rest of the world why India had to acquire and demonstrate nuclear weapons. India would continue to teach the world, but have its cake too.

Embracing contradictions, a selection of India's strategists serving on an official advisory board produced in August 1999 a so-called "draft nuclear doctrine" (DND) paper which was released to the public. This DND paper provided a rationale for credible nuclear deterrence based on the features of a full-fledged triad, with postulated requirements for massive retaliation against nuclear attack and the survivability of the force and its surveillance and command and control components under attack. It omitted only strategic anti-missile defenses.

While this DND paper was not then adopted as official policy, in January 2003 a press release "on operationalizing India's nuclear doctrine" announced that a civilian National Command Authority (NCA) and triservice Strategic Forces Command (SFC) had been established. The press release said that a review had been conducted of India's nuclear "command and control structures, the state of readiness, the targetting strategy for a retaliatory attack, and operating procedures for various stages of alert and launch." It did not stipulate that nuclear forces had been deployed nor did it describe force characteristics, service assignments, the adversaries targeted, or the nature of alert procedures. The release did, however, undermine the NFU policy with two loopholes. It indicated first that India would not bar the use of nuclear weapons in retaliation against a chemical or biological

attack on India or on Indian forces. Second, it promised Indian nuclear retaliation not only against a nuclear attack on Indian Territory but on Indian forces anywhere.

India's strategic culture proponents of nuclear weapons were comfortable castigating the nuclear arsenals and policies of the Western powers and the Soviet Union and differentiating India's posture as a minimum deterrent leashed by a no first use policy, on one hand, and in emulating a superpower-like, expansive nuclear triad with built in capacity for absorbing strikes without fatal compromise of survivability on the other. The 2003 release emulated recent U.S. and former Soviet postures of prospective nuclear retaliation for any WMD attack on territory or forward deployed forces.

India's enigmatic approach to strategic nuclear forces suits, on the side of minimalist rhetoric, the nation's still limited economic resources and the long lead times it faces for deployment of credible nuclear forces vis-à-vis China. On the side of its long term ambitions, the template is a guiding framework for long-range air-, sea-, and land-based nuclear strike forces. If India proceeds to accomplish these maximalist options, the cryptic language it employs today will be described in retrospect as visionary and prophetic, the natural expression of an omniscient patrician. If it falls short of those objectives or the world changes so fundamentally that they are no longer believed needed or are overtaken by events, shifting course is just as easily explained by reverting to the minimum deterrence language and the usual rhetorical bows to postulated nuclear disarmament objectives.

INDIAN MILITARY DOCTRINES

A Military Doctrine is a stated principle of government policy on military affairs. A policy is a guide for action. It is a belief or set of beliefs accepted, held and taught by the military. It is the conceptual or theoretical foundation for application of military power. It is dependent on and interrelated with factors such as history, demography, geo-political threat perceptions, national aim, strength of the military, technology, organisational structures, and strategy and concepts.

A doctrine is for the future, but is based on past experiences and takes into account the present conflicts/wars with available technology and anticipated technological advances. From doctrine, flows the organisational structure of the military, its staffing, what the forces need to be equipped with, their training and sustainability. The Military Doctrine lets the people of the country as well as its adversaries and people at large know how the Indian military will execute military policy. More importantly, it lets the military personnel know how their contribution will affect the integrated application of force, when they are tasked for a certain operation. It lets them know "Why" they are doing "What" they are doing thereby giving it a definite purpose, enhancing their individual output.

Our Constitution is a good example of a doctrine. It is a set of beliefs followed so that India functions as a country. The National Aim culled out of the Constitution by the Joint Doctrine Indian Armed Forces (JDIAF-2017) and released on April 25, 2017, is Comprehensive National Development. It is a moot point whether it has all party political endorsement and

whether all the political parties that have been in power have been sincerely working towards it.

It follows that the military is supposed to provide an environment for peaceful Comprehensive National Development without any disruption or deceleration by other nations or external forces. The military is the last bastion precisely for the reason that if the military is compromised, Comprehensive National Development cannot take place. A lot is invested in the military and it cannot afford to fail, hence Military Doctrine needs to be robust. The military is also required to assist the civil administration whenever needed.

The military aim that flows from this is to ensure territorial integrity of the country and prevent interference from external forces, using military power in an offensive and/or defensive manner. Somewhere buried in the Constitution is also a mandate that the military is to preserve the democratic, secular and federal character of the Indian Republic. Military personnel take an oath every year that they will defend the Constitution to the peril of their lives whereas others take an oath to abide by the Constitution during swearing in.

This effectively prevents a dictator from taking over power and dictatorial tendencies of the elected executive are not permitted to undermine the Constitution. Hence, the military with powers within the military for legislative, executive and judicial functions has a pre-eminent position among other services especially with respect to the defence of the Constitution, which impacts on national security as a whole.

The Joint Doctrine

The Indian Military Doctrine should flow from what is mentioned above. The Indian Army, Indian Navy and the Indian Air Force (IAF) doctrines ideally should flow from the military doctrine. What has been released on April 25, 2017, is a Joint Doctrine. It states, "This Joint Doctrine is aligned with the existing Army, Navy and IAF doctrines. It provides control of certain common functions in an optimised manner of existing capabilities/capacities concepts, structures, mechanisms, practices and is restricted by availability of resources."

The emphasis in the doctrine appears to be on "synchronisation" of certain operations instead of "integration". It is supposed to have synergy between the three wings of the Armed Forces which essentially means that the application of joint force will have better effects than the sum of effects of individual wings. Synchronisation results in the summation of the forces applied, in a bottom up approach whereas integration leads to force multiplication because of a top down approach. What we have in the Joint Doctrine is a joining of the three service doctrines wherever feasible and could be called Joined Doctrine.

Military Doctrine needs to have a top-down approach rather than a bottom-up approach. A doctrine is about which activity is important and not which platform or service is important. The weakest link in the adversary's air power target system will be the pilots as they are the hardest to replace, in good time. If the Special Forces are tasked to neutralise them, then the adversary's air power cannot come into play. Similarly, air power can be used to attack what the land forces consider as the weakest link in the adversary's target chain, may be the

leadership, as it can be applied simultaneously at the Strategic, Operational and Tactical levels. Activity is important, not who does it.

The Joint Doctrine of the Indian Armed Forces appears to have taken this shape, as individual service doctrines were already formulated. Individual services have their own doctrines based on the nature of operations and the medium that they operate in. The medium has its own peculiarities such as the average speed of movement of the Army may be two knots, the Navy may be 20 knots and IAF aircraft have flown at 2,000 knots. The speed, range and inherent flexibility of air power make it very versatile and it influences the mindset of people who employ air power. The perspectives and attitudes of the personnel vary according to operations in the medium and specific roles such as combat, combat support or support service. This can only be imbibed when one grows within the service.

The geography that can be covered also varies where aircraft can provide support to the Army/Navy by allocating targets in time and space in different theatres rather than bring a certain number of aircraft under a Force Commander and reduce the flexibility of their use as planned by the Air Force. The same aircraft can be used for ensuring that the enemy Air Force does not interfere with our Army operations. Currently, the extent of the theatres is different in the perception of the Army and the Air Force. The forces guard their turf zealously. If the Army calls J&K a theatre, for the IAF, it is the theatre of the absurd, as a Su-30 fighter aircraft can fly from Delhi to Singapore non-stop and may be, attack targets in between. The IAF would need a larger theatre to fight a war in, if scarce resources are not to remain idle or be wasted while an opportunity exists elsewhere. The most important tenet of application of air power is "Centralised control and de-centralised execution" which may not hold good for the other services.

On one end of the continuum, we have perspectives and attitudes that have been developed in each service that are so different because of objectives and medium that they operate in and on the other end, we need to integrate operations so that they deliver maximum effectiveness when military power is applied. The Military Doctrine needs to focus on how force can be applied in an integrated manner using more than one force/medium.

National Security is a blend of long term political vision, level of internal security, development level of human resources, availability of food for the population, degree of technological competence and availability of natural resources for exploitation by an appropriate industrial base, protected by military might. All these aspects need to have an appropriate doctrine to maximise their potential and let the nation and themselves know what is expected of them.

In the Joint Doctrine, the doctrine itself has been referred to as Armed Forces Doctrine and Military Doctrine in different places. National Security has been abrogated as the sole domain of the military as is amplified in National Security Objectives and National Security Policy. National Security Strategy indicates the primary role is that of the military with the rest as 'add ONs'. Central to the National Security Strategy is 'Deterrent Nuclear Capability'. An appendix on Civil Military Relations is out of place in a Military Doctrine.

There are references to Internal Security in this document, but that is not essentially a part of military doctrine. It should be a part of the Internal Security Doctrine. It is essentially a function, under aid to civil administration. The military cannot have prolonged involvement in internal security duties as that will create disaffection within the area from which the military draws its resources. The philosophy of application of force is different and is best left to the police forces.

The statement, "No formally articulated National Security Policy or National Security Strategy does not imply that they do not exist or are not sufficiently understood" leads one to believe that they exist but mean different to different people as it is not formally articulated. In this scenario, it is debatable how they have been sufficiently understood. The Strategy may be classified but the Policy needs to be articulated. The Policy limits the forces to what their strategy can be and necessitate adherence to the Geneva Convention for human rights and should be known to the forces. In a scenario the Strategy, that a Commander will follow, needs to be classified as divulging it may jeopardise the intention of achieving the National Aim.

If an integrated application of force is needed, then it needs to be well planned, objective based and executed with the supporting services providing support in time and space and not rely on cooperation ("If I have spare resources, I will give it" kind of attitude). There will be conflicting requirements of say, between Counter Air Operations and Counter Surface Force Operations by the Air Force. That is a challenge that can be resolved by the Integrated Operations Commander.

Indian Military Doctrine

The doctrine for integrated application of military power may be referred to as the Indian Military Doctrine. If the Military Aim is to be achieved, following a top-down approach, the country may be divided into a maximum of three or four Military Regions. Geographical contiguity and political boundaries play an important part in such a division. We have China across our Northern border, Pakistan across the Western border and the seas to the South with a vast maritime boundary.

Geography has a major impact on the weapon system, type of warfare and consequent training of personnel. Our Northern border is in the mountains and we need troops trained in mountain warfare and aircraft that can support them at high altitudes and in the deep valleys. Our Western border has all types of terrain and hence the troops need to be trained accordingly. The Indian Navy has a major role against threats from the sea across our maritime boundary.

These would need a military authority to execute operations with integral Army, Navy and Air Force components to function in an integrated manner to deliver the biggest bang for the buck. This change in structure would be essential for cost effective utilisation of available resources. This would address the issue of geography, facilitate employment of air power in a meaningful manner and facilitate integrated application of military power. It still leaves types of common assets which are very few in number like Strategic Forces (Nuclear), Special

Forces, Strategic Reconnaissance, Air-to-Air Refueling, AWACS, Cyber and space-based assets that need to be commanded by a Central Military Authority (CMA). These could be allocated depending on the need of a particular region in space and time.

The CMA needs to have control of Intelligence, Integrated Planning, Operations, Operational Readiness Inspections (with respect to Training, Maintenance and Administration), acquisition and all functions common to three services besides the common assets. These common assets which are force multipliers would be assigned to the Military Regions that need them in time and space to maximise their utility. The existing organisations would be responsible for Training, Administration and Support including aid to civil power. They should have boundaries congruent with the Military Regions. During peace time Training, Maintenance and Administration would continue and Units would be placed under the Military Region depending on the need to neutralise the impending threat. This could probably be the backbone of the Military Doctrine with a top-down approach to ensure integrated application of military force in a Military Region. The Military Authority for these regions could have senior support staff from the three services.

In effect, we have a CMA who will be the senior most military officer. His mandate would be application of military power in an integrated manner through Regional Military Authorities (RMAs). The RMAs could have Integrated Task Forces for a specific purpose, the size of which will vary depending on the task at hand and which could be formed as and when the situation demands. The existing organisation needs to continue with the COAS, CNS and CAS, but without the mandate of Operations which would be the domain of the CMA. The existing Commands would be congruent with the Military Regions for better cohesion. The administration and training would continue during peace time with the CMA and RMAs carrying out their functions of Intelligence, Integrated Planning, Operations, Operational readiness Inspections and Acquisition.

When required for operations at a national level, integration is created by inducting the Chief of the Army Staff (COAS), as Commander of Land Forces which includes any force that uses land as a medium, Chief of the Naval Staff (CNS) as Commander of Maritime Forces which includes any force that uses the seas as a medium and Chief of the Air Staff (CAS) Commander of Air Forces which includes any aircraft/missiles/drones or anything which uses the medium of air, even if it belongs to other organisations, except air power integral to an Army thrust and Naval task forces, to assist the CMA while continuing with their original functions. Similar integration would be at a level lower at the Military Regions and subsequently at the Integrated Task Force levels within the Region.

At the Military Region level, the Commander-in-Chief would become the Land Force, Maritime Force and Air Force Commanders. They would then have control of operations, administration and support functions. The Border Security Force would get embedded with the Land Force and Coast Guard with Maritime Force and anything which flies, with the Air Force. This is shown at Fig 1. The Regional Military Authority would have the requisite staff for planning and conduct of operations.

Fig 1: Diagrammatic representation of the Regional Military Authority indicating linkages. The arrow indicates transformation.

The Force Commanders need to be deeply involved in integrated planning. Their knowledge of using their force individually for the benefit of the integrated plan needs to be utilised. They also need to know what to train for. Planning needs to be evolutionary in nature as the best laid plans can go haywire after contact with the adversary is established and the first round is fired. Authorisation for this transformation of placing combat units and their Commanders for operations to be controlled by the CMA/RMA/ITF will need to be authorised at the highest practical Political level, the Cabinet, on the advice of the CMA and the Service Chiefs and should not be delegated to the bureaucracy. Allocation of Special Forces, Strategic Forces or utilisation of assets under the CMA and its quantum, will depend on the task at hand and the need for them. These should also be done by the Cabinet on the advice of the CMA and the Service Chiefs.

The circumstances that the authors of this Joint Doctrine were in, during the last four years, would force certain limitations. One of the limitations being that the individual service doctrines have already been formulated and they need to be accommodated. However, it is a good attempt which can be improved upon albeit with the participation of statesman-like political leadership. Nothing short of an Indian Armed Forces Act that includes the changed structure above, passed by the Parliament, can usher in effective integrated application of force by the Army, Navy and Air Force and reorganise the Armed Forces for effective utilisation of Integrated Military power. It goes without saying that this would need a new Indian Military Doctrine.

INDIA'S NUCLEAR DOCTRINE

Debate on revision of Indian nuclear doctrine has been going on for some years now, both at the political level as well as within the strategic community. The strategic community has been particularly active in this front with critical questions being raised over various elements of the current Indian nuclear doctrine, including the no-first-use (NFU) policy and the strategy of massive retaliation. The NFU policy has been argued by critics to be a

normative policy which fails to serve the national interest of India. While it may make sense to adopt such a policy when one is conventionally superior to its adversary, the policy limits the defensive utility of the nuclear arsenal against a conventionally stronger enemy. Perhaps in 1999 and 2003 when the Draft Report of National Security Advisory Board on Indian Nuclear Doctrine and the press release by the Cabinet Committee on security reviews progress in operationalizing India's nuclear doctrine were respectively made public, India did not feel conventionally inferior to China, if not superior. Much, however, has changed over the decade thereafter and China has amassed a military might that has significantly widened the gap in conventional military strength vis-à-vis India. The question on the utility of NFU in the Indian nuclear doctrine is therefore of great importance and must be addressed.

Similarly, the strategy of massive retaliation against any scale of nuclear first use has received severe criticism as it has been argued to not be a credible deterrent posture, especially against the backdrop of Pakistan introducing tactical nuclear weapons (TNWs). This is essentially because a massive nuclear retaliation from India against a tactical use of nuclear weapon by Pakistan in a conventional battle would not only be inhumane, but also irrational considering that it would invite a similar retaliation from Pakistan.

While the strategic community has been engaging on these intense debates, nothing much has happened at the political level – without which, it is unlikely that there will be any changes introduced in the Indian nuclear doctrine. The Bhartiya Janata Party's manifesto for the 2014 Lok Sabha elections captured much attention when it spoke of the revision of the India's nuclear doctrine. However, the Government has decided to not introduce any changes in the doctrine so far. Important to note here is that a revision of nuclear doctrine need not necessarily result in changes and thus the current Government cannot be blamed for going back from its promise made in its election manifesto. Revision is an exercise where basics such as the purpose of nuclear doctrine and evolution of the threats that the doctrine is required to address is assessed. The Government's decision to not introduce any changes in India's nuclear doctrine makes it important to go back to basics and identify the purpose which India's nuclear doctrine was designed to serve.

Assessing the evolution of India's nuclear doctrine, Ashley Tellis notes that the sole purpose that policy-makers in New Delhi associate nuclear weapons with is deterrence and not defence. Critics, as mentioned earlier, however, point to the situation when deterrence fails and thus suggest ways to look at nuclear weapons as tools for defence. Glenn Snyder captures this problem in his book Deterrence and Defense, where he notes that "one reason why the periodic "great debates" about national security policy have been so inconclusive is that the participants often argue from different premises – one side from the point of view of deterrence and the other side from the point of view of defense." Arguing that deterrence and defence are two different objectives which require different types of military forces in differing proportions, Snyder goes on to assess how different nuclear postures and deployments are required to meet the two mentioned objectives.

This section uses Snyder's assessment on the difference between the objectives of deterrence and defence as the framework to assess India's nuclear doctrine. The essay identifies India's declared nuclear doctrine as a peacetime doctrine by assessing two of its prominent elements - the strategy of massive retaliation and the NFU policy. It then goes on to test the validity of aforementioned elements of the currently declared nuclear doctrine of India in wartime, especially against the backdrop of introduction of tactical nuclear weapons by Pakistan and China's rapid military modernisation, and argues that there is a need to have separate doctrine laying out nuclear redlines, postures and deployments during war.

The Purpose: Deterrence or Defence?

Glenn Snyder, while assessing the US national security policy, argues that the concepts of deterrence and defence are different and thus different combinations of military forces are required to meet these objectives. He defines deterrence as the concept of "discouraging the enemy from taking military action by posing for him a prospect of cost and risk outweighing his prospective gain," and defence as the concept of "reducing [one's] own prospective costs and risks in the event that deterrence fails. Snyder leads to the conclusion that deterrence is essentially a peacetime objective, while defence is a wartime necessity. Considering solely the nuclear assets of a country, the purpose of nuclear weapons in peacetime can be argued to be deterrence and that in wartime, when deterrence has failed, to be defence. Nuclear doctrine that encapsulates a country's, and its political or military leadership's, view on the purpose of nuclear weapons must therefore have two versions – one that caters to the requirements of deterrence in peacetime and that of defence in wartime.

This theoretical framework is useful in assessing India's nuclear doctrine. The two documents declared by the Indian government - Draft Report of National Security Advisory Board on Indian Nuclear Doctrine of 1999 and the subsequent press release by the Cabinet Committee on security reviews progress in operationalizing India's nuclear doctrine of 2003, essentially reflect a peacetime nuclear doctrine with the sole emphasis on the deterrence value of nuclear weapons.

There are underlying reasons behind India's emphasis on nuclear weapons as tools of deterrence and not defence and Ashley Tellis identifies three of them. First reason is rooted in the "strands of idealist and liberal thought that defined the country's political culture in its formative years." As Tellis argues, India for over half a century has consistently "refused to invest nuclear weapons with any axiological legitimacy." Even right before it crossed the nuclear rubicon, "India argued that the threat of inflicting mass destruction to control state behaviour was invariably an abhorrent doctrine." It is probably also the reason why India's declared doctrine, uniquely, refers to its commitment to nuclear disarmament. The second reason which Tellis notes is the organisation of political-military relation in India that gives the political leadership complete authority in determining the purpose of nuclear weapons. Given the political leaderships view of nuclear weapons as political tools for deterrence, the possibility of these weapons being seen as tools of war remains significantly low. The third reason is that by reducing the purpose of nuclear weapons to just deterrence, India avoids

getting engulfed in the task of building a vast nuclear inventory and simultaneously establishing an elaborate and complicated command and control system.

These reasons may explain why New Delhi sees nuclear weapons just as political tools for deterrence. It is, however, the presence of concepts such as the strategy of massive retaliation and the NFU policy that render the current Indian nuclear doctrine solely a peacetime doctrine that focuses on deterrence and not a wartime doctrine that addresses the defensive requirements in war. For instance, the assurance of massive nuclear retaliation against any scale of nuclear attack on India or its military by its adversary is arguably an attempt of imposing great costs on the adversary that outweighs the latter's prospective gains. Similarly, the NFU policy is arguably a peacetime assurance that reflects the responsible nature of the country in ensuring peace and stability. In wartime, however, different circumstances may challenge the validity of concepts of massive retaliation and NFU, simultaneously questioning the efficacy of the current Indian nuclear doctrine. The following section tests the validity of the strategy of massive retaliation and the NFU policy during wartime circumstances, against the backdrop of introduction of TNW by Pakistan and rapid military expansion and modernisation by China.

Efficacy of Indian Peacetime Doctrine in Wartime

While discussing the "massive retaliation" debate of 1954 in the US, Snyder noted that "the late Secretary of State Dulles and his supporters argued mainly that a capacity for massive retaliation would deter potential Communist mischief, but they tended to ignore the consequences should deterrence fail." In the Indian context, introduction of TNWs by Pakistan strongly challenges the efficacy of the strategy of massive retaliation during wartime.

Though India did not implement the Cold Start, New Delhi would have preferred to retain the option of conducting a low-scale conventional attack below Pakistan's strategic nuclear redlines on the table, especially in order to punish the latter for its sub-conventional war against the former. By introducing TNWs, Pakistan has lowered its nuclear threshold in a way that restricts the room for India to explore options of a low-scale conventional attack.

Tests of short-range missile systems, such as Nasr and Abdali, rapid increase in the number of nuclear warheads, with estimates of 200 warheads by 2020, and a transition of nuclear policy from credible minimum deterrence to full spectrum deterrence, all indicate that Pakistan has already developed TNWs. While details of deployment remain publicly unavailable, considering the purpose with which TNWs are introduced and the requirement of predelegation of launch authority, the possibility of TNWs getting used in the event of a low-scale conventional war is real.

In the event of a conventional war, if nuclear deterrence was to fail and Pakistan was to use a TNW on, say, an Indian battalion in its territory, massive retaliation will not be the strategy that New Delhi is likely to put into use. This is firstly because massive retaliation from India, which in Indian context refers to targeting population and industrial centres in the form of city busting, would be highly inhumane. Secondly and importantly, it would also invite a

nuclear retaliation from Pakistan of similar scale and nature which would be against India's interest. On the other hand, if India were not to respond with its nuclear weapons at all, then the credibility of India's peacetime nuclear doctrine in deterring an adversary would be severely damaged. Therefore, in wartime, should nuclear deterrence fail, India must have a nuclear retaliatory strategy that increases the cost for Pakistan to continue nuclear exchange and in effect cater to the objective of defence. As Snyder also argues, "we indirectly profit from defense capabilities in advance of war through our knowledge that if the enemy attack occurs we have the means of mitigating its consequences." Thus, reference, even if limited, to a nuclear retaliatory strategy that is viable for implementation in the event of a first use of nuclear weapon by Pakistan, simultaneously, increases the deterrence value of India's peacetime nuclear doctrine.

With regard to the NFU policy is a peacetime assurance, whose validity would be questioned during wartime. Ashley Tellis, while examining India's emerging nuclear doctrine in 2001, noted that "unlike the United States during the Cold War, India does not suffer any conventional inferiority visà-vis either Pakistan or China." Tellis subsequently argued that "since [India] is therefore unlikely to be at the receiving end in a conventional conflict with either of these two states [China or Pakistan], it is spared the imperatives of thinking about nuclear weapons as usable instruments of warfighting which may have to be employed in extremis to stave off potential defeat on the battlefield." Thus, in 2003, when the Cabinet Committee issued the press release on security reviews progress in operationalizing India's nuclear doctrine, India could perhaps afford to have remained committed to the NFU policy both against Pakistan and China in wartime, given that it did not feel conventionally inferior to either of them.

However, over the past decade, China's rapid military advancements and modernisation has significantly increased the gap in the conventional military strength vis-a-vis India. While China's defence spending is difficult to monitor with accuracy, the overall trend capture a double-digit percentage annual increase in defence spending in the last one decade. This has simultaneously resulted in tremendous increase China's warfighting capabilities. To further enhance its ability to operate near its border with India, Beijing has amassed heavy military infrastructure, including roads and railway links near the three sectors of its unsettled border with India. Simultaneously, the People's Liberation Army (PLA) Navy has been undergoing expansion with 86.67 percent and 85 percent increase in the numbers of submarines and destroyers, respectively from 1995 to 2014.

Noting the trends, ceteris paribus, this gap is likely to increase by 2022. Given this gap, if China were to engage in a conventional war, say, over territorial dispute, Beijing would not be required to introduce nuclear weapons. In such circumstances, India is unlikely to remain committed to the NFU policy, while incurring heavy losses and even losing territory and New Delhi would inevitably have to bring in its nuclear weapons into the picture.

Therefore, in wartime, while against Pakistan, India may still remain committed to the NFU policy given its relative conventional superiority, against China, it is unlikely going to be the

case. New Delhi therefore must consider a wartime scenario vis-a-vis China and define its nuclear red lines, which once crossed by Beijing, would result in renunciation of the NFU policy and a probable nuclear retaliation by the former.

Conclusion

To conclude, there appears to be a need for two separate nuclear doctrines for peacetime and wartime. What, however, remains unclear is the extent to which the publicly asserted understanding of nuclear weapons as only political tools for deterrence affects India's wartime nuclear postures and deployment.

Interestingly, in 1999, to a question on whether India will follow different peacetime and wartime deployment/postures, the then Foreign Minister of India, Jaswant Singh noted that "this would be a correct assessment." Thus, it could well be the case that while the declared Indian nuclear doctrine defines its nuclear redlines, posture and deployment for peacetime, New Delhi already has in place a doctrine that would define its nuclear redlines, posture and deployment in wartime. Recent developments, such as introduction of tactical nuclear weapons by Pakistan and rapid military modernisation and expansion by China render a different nuclear doctrine for wartime all the more important.

A wartime nuclear doctrine need not be declared and New Delhi is right in emphasising on its peacetime doctrine publicly. Reference to normative policy such as NFU and stressing the sole purpose of the nuclear weapons to be deterrence in its peacetime nuclear doctrine have played significant roles in strengthening India's image as a responsible nuclear power. As India continues to successfully pursue its integration with the global nuclear order, it would not make sense to renounce NFU or explicitly refer to the options of nuclear war fighting for defence in its peacetime doctrine.

Strategic experts debating India's nuclear doctrine must differentiate between the objectives of deterrence and defence and acknowledge that while the declared Indian nuclear doctrine is a peacetime document, New Delhi must have assessed its options for wartime and has prepared a document that defines nuclear redlines, postures and deployment once nuclear deterrence has failed.

At the same time, given that the disassociation of nuclear weapons with the objective of defence diminishes the deterrence value of its peacetime nuclear doctrine, as examined in this essay, limited reference to some of the nuclear options, which New Delhi would keep itself open to in wartime, in its declared peacetime nuclear doctrine, could be useful in increasing the deterrence value of its peacetime doctrine. This would simultaneously assure its people that New Delhi is open to the idea of using its nuclear assets for defence during wartime, once deterrence has failed. Critical, however, would be to identify the elements of wartime doctrine which could find mention in the peacetime doctrine without hurting India's image as a responsible nuclear weapon state.

NATIONAL SECURITY CHALLENGES

States across Asia face growing challenges to their security. The gradual shift in the balance of power from the West to the East has introduced security competition among the major

states. As India's economic and military profile grows in the wider Indo-Pacific, it too faces a range of intrastate and interstate security challenges, which it has to manage. In this context, it is worth considering the nature and scope of India's military modernisation in view of the types of conflicts it faces. The modernisation of the Indian defence forces is a complex process covering issues pertaining to the balance between manpower and firepower as well as that between the acquisition of weaponry from indigenous sources and the import of arms. India's efforts to revamp and restructure its military in response to security challenges are characterised by a quest to meet the needs of the three services without compromising transparency and integrity in the acquisition of weapons.

Along its land frontiers, India faces disputed boundaries and competing territorial claims with both Pakistan and China. The Line of Control (LoC), a de facto boundary with Pakistan, and the Line of Actual Control (LAC), an unmarked boundary with China, have remained contentious for decades. Beijing has also forged partnerships with other states in the Indian Ocean Region (IOR), if not of the same depth and breadth as its relationship with Pakistan. The Yunnan province of China borders Myanmar (Burma), which in turn serves as a bridgehead into the Indian Ocean. Thus, Beijing is able to pursue a more potentially offensive strategy in the IOR with both Pakistan and Myanmar offering dependable means of execution. Beijing's military deployments have been facilitated by improved hardware across the three service arms, a progressive shift in objectives, and organisational changes in the form of five integrated theatre commands introduced by the Xi regime in 2015. Together, these developments provide the Chinese military with greater offensive capabilities and the ability to make more rapid forward deployments.

The twin military challenges posed by China and Pakistan thus reflect critical shifts in these two countries' military capabilities and operational postures. They demand, in turn, different command structures, involving tri-service cooperation and capabilities, for the Indian armed services. Most of the sub-conventional threat confronting the Indian state stems from Pakistan, although insurgencies in north-east India also impose a military burden. In addition to conventional and sub-conventional threats, India faces a significant nuclear threat from Pakistan and China, between whom a deep connection has historically existed in the nuclear technology and missile delivery domains.

The challenges facing the Indian armed services in using force after the 1998 nuclear tests were no less than they had been before. So far as Pakistan is concerned, there is a strong imperative to prevent its use of nuclear weapons simply because of the Pakistani sense of vulnerability to strategic interdiction. Its lack of geographic depth, its propensity for risk-taking and ability to strike deep inside Indian territory—and if pushed into a corner it might easily be driven to nuclear use. The challenge facing New Delhi has been how to leverage its conventional advantages in the shadow of nuclear weapons. For its part, Pakistan has more effectively leveraged its advantages in the employment of terrorism under the atomic umbrella. India has had few answers to Pakistan's resort to subconventional violence under the cover of nuclear weapons. The most it has been able to do militarily is launch limited

attacks on Pakistan's side of the LoC, using special forces and infantry units. *Vis-à-vis* China, India's nuclear capabilities and deterrence are a work in progress, in both scope and extent. China's expansion of its nuclear capabilities in response to increasing American and Russian capabilities could potentially leave India more vulnerable to Chinese coercion. However, following a suicide attack on 14 February 2019, which was a first in the armed conflict in Kashmir that claimed the lives of around 40 Indian paramilitary personnel, India retaliated with air strikes against the Pakistan-based group Jaish-e-Mohammad inside Pakistani territory, which again was a first in the Kashmir conflict. This was an attempt to reset the nuclear dynamic between India and Pakistan by calling Islamabad's bluff.

At present, the Indian conventional war-fighting doctrine and posture, with its time-consuming mobilisation, cannot adequately respond to the terrorism unleashed by Pakistan. Moreover, the Pakistani state, which remains determined to contest India's claim to territory, particularly in Kashmir, benefits from far shorter interior lines of communication requiring a mobilisation period of 96 hours, which gives it an advantage both in faster mobilisation and in simultaneously concentrating the strength of its mobile offensive units. India's exterior lines of communication are significantly longer, which contributes to an increase in mobilisation time.

In addition, New Delhi has also had to contend with and respond to substantial shifts in the nature of the military capabilities of its north-eastern neighbour, China. The growth of Chinese military power has been accompanied by a new assertiveness, reflected in frequent troop incursions along various sectors of the LAC dividing India and China. The combination of relentless sub-conventional violence from Pakistan and boundary tensions with China has triggered concerns within the Indian military and political establishment about a two-front war with both Pakistan and China.

Compounding the two-front military threat posed by China and Pakistan, New Delhi faces trade-offs between importing weaponry and developing domestic capacity for an indigenous defence industry. Given its heavy dependence on military imports, New Delhi has sought to diversify risk by forging partnerships with multiple external partners. It has significantly upgraded military ties with and defence purchases from the United States in particular, and also has crucial strategic ties with France and Israel. However, Russia remains the single largest defence supplier in aggregate terms, despite having been displaced by the United States in some key acquisitions India has made in the past decade. While purchasing weapons from numerous sources has created more options for India, it also generates challenges, in that New Delhi needs to keep many players satisfied as they compete for shares in the Indian defence market. This requires New Delhi to respond to pressures and incentives from the leading weapons supplier states.

India's national security landscape, if not irretrievably perilous, is stressed and susceptible to conflict with its neighbouring rivals. The military procurement models New Delhi has pursued are less than optimal, reflecting the difficulties faced by the Indian state in indigenising capabilities, building core capacities within the defence bureaucracy, and

exploring integrative solutions to deal with the challenges facing higher defence management. In the absence of a productive defence-industrial base, New Delhi will have no choice but to forge strategic partnerships, in order to redress the gap in its conventional capabilities *vis-à-vis* its immediate adversaries.

NATIONAL GOVERNANCE AND INTERNAL SECURITY

There is always a crucial link between "National Governance" and "Internal Security". If Internal Security is not maintained Governance cannot be delivered and there would be grave threats to the very unity and integrity of the country. Likewise, Internal Security cannot be safeguarded if Governance is delivered by an inefficient and corrupt administration.

It is perhaps not necessary to define Governance. However, in the simplest terms, governance relates to the effective management of national affairs at all levels of functioning – guaranteeing the country's unity and integrity and securing the safety and overall welfare of its people. For the attainment of these objectives it would be essential that political, economic, executive and judicial authority is exercised in a manner which ensures that the people are enabled to enjoy their rights, discharge their obligations and resolve their disputes within the parameters of the Constitution and the Rule of Law.

Our exhaustive Constitution provides the basis of the relationship between the Union and the States and delineates the Legislative, Judicial and Executive framework within which the Union and the States shall discharge their respective responsibilities for delivering governance. The Preamble to our Constitution provides the key to its philosophy: it enshrines the sovereignty of the people and envisions a socialist, secular, democratic republic based on justice, liberty, equality and fraternity.

The principles of governance of our country are excellently enunciated in the chapter on Directive Principles of State Policy in the Constitution of India. It has been laid down (Article 37) that the provisions contained in this chapter shall be "fundamental in the governance of the country" and that it shall be the "duty of the State to apply these principles in making laws".

The founding fathers of the Constitution of India were acutely aware that political democracy would have no significance unless it was accompanied by social and economic democracy. It was their belief that, within the democratic framework, clean and efficient governance would transform the social, economic and political life of our people and build a strong, prosperous and vibrant nation. The Directive Principles, described as the `core' or the `conscience' of our Constitution, provide the goals and guidelines which, if vigorously pursued and timely implemented, would have led to removing the inequalities and disabilities suffered by large segments of our society and thus paved the way for the achievement of social and economic justice.

We have still to traverse a very long distance to achieve our nation-building goals. About a quarter of our population still lives below the poverty line. The persistence of large-scale poverty and illiteracy, the lack of employment, shelter, clean drinking water, basic sanitation and health care, food and nutrition, and the yawning gaps in the achievement of various other

vital developmental targets manifest the serious failures of national governance. The default in achieving social and economic justice has perhaps been the most signal failure.

The failures of governance have led to the recognition that governance shall become honest and effective, and inequalities shall start reducing, when the people are empowered and the communities are enabled to manage their own affairs. In this context, the 73rd and the 74th Amendments to the Constitution provide the constitutional mandate for the provision of self-governance through the establishment of duly empowered rural and urban local self governing institutions. It is a matter for deep regret that the States have still to evince the required political will to effectively pursue the path of democratic decentralisation.

Thus, today, in large parts of the country, the people's sovereignty still means no more than the right to exercise their vote whenever elections are held. It is, however, a matter for enormous satisfaction that despite failures on various fronts and despite the serious shortcomings of the electoral processes, the spirit of democracy stands deeply rooted in our country.

Among the many reasons for the continuing failures of governance a significant factor has been the instability of the political regimes in the States from around the late 1960s and at the Centre in the past decade and a half. From 1989 onwards, there were six governments at the Centre in less than a decade. It has also been seen that frequent elections have not invariably engendered conclusive outcomes. In recent years no single party or pre-poll alliance of parties has succeeded in securing a clear majority. Unstable coalition governments in the States, perennially occupied in combating threats to their survival, have failed to deliver effective governance.

It may be relevant, to observe that, over the years, the politicisation of caste and communal identities has led to divisiveness and disruption of the national ethos. The failure of the electoral system to prevent anti-social, communal, undesirable and even criminal elements from contesting and winning elections has contributed to the progressive decline of the polity and the consequential failure of the State Assemblies and the Parliament to effectively discharge their vital constitutional roles.

Consequent to the 1993 serial bomb blasts in Mumbai, a Committee was established, on the direction of the Prime Minister, to enquire into certain aspects of the bombings. In September 1993 this Committee, generally referred to as the Vohra Committee, had reported the existence of a deep nexus between political personalities, public servants and crime syndicates. As per the Director CBI's report to this Committee "all over India crime syndicates have become a law unto themselves. Even in the smaller towns and rural areas, muscle men have become the order of the day. Hired assassins have become part of these organisations. The nexus between the communal gangs, police, bureaucracy and politicians has come out clearly in various parts of the country". Quoting the Director Intelligence Bureau, the Committee reported that the Mafia network is "virtually running a parallel government, pushing the State apparatus into irrelevance" and that in certain States "these gangs enjoy the patronage of local politicians, cutting across party lines, and the protection of

functionaries …. Some political leaders become the leaders of these gangs/armed senas and, over the years, get themselves elected to local bodies, State Assemblies and national Parliament". By all accounts, over the past decade and a half, this criminal nexus has enlarged and extended its reach.

Governance has been adversely affected also because political leaders remain incessantly preoccupied with the narrow, sectarian and partisan interests of their parties and the pursuit of day-to-day political gains, and have no time or patience to attend to the crying needs of the common man. The failure of the political executive to devote sustained attention to its constitutional responsibilities has led to the governmental functioning in the States being marred by gross delays, inefficiency, insensitivity, unaccountability and pervasive corruption.

Today, thanks to the information technology revolution and the fast spreading reach of the media, the awareness and expectations of the average citizen have been significantly enhanced. This has, correspondingly, generated much deeper dissatisfaction with the failures of governance. Unless urgent and ruthless steps are taken to check maladministration and corruption the anger and disgust of the common people, particularly the disadvantaged and oppressed elements, could lead to their alienation. And past experience has shown that alienated elements can be easily lured to adopting the gun culture and joining unlawful networks whose activities cause serious public disorders.

In the past decade and more, despite the constraints of governance under coalition governments, the rate of the country's economic growth has been consistently higher than at any time in the past. It is heartening to observe that the new economic strength is being utilised to significantly enhance the investments in human development and poverty eradication programmes and for the execution of varied schemes for improving the quality of life of the common man.

In the obtaining environment of steady economic growth and dynamism, the interest of foreign governments, companies, investors and entrepreneurs has been growing steadily. Quite understandably, foreign investors would keep a close watch on the situation in our country, to be assured of the security of their assets and holdings. In this context, national governance has the super-added responsibility of ensuring that internal security is effectively maintained to promote our growing international trade and business interests which are vital for the steady growth of our economy.

Let us now take a quick look at the constitutional position in regard to national security management in our country.

The safeguarding of national security encompasses eternal vigilance to meet every threat to the Indian State from every possible source within the country and from anywhere across its land or sea borders or from across the air space.

Broadly speaking, national security would comprise external security, i.e. safeguarding the realm against any external threat, and internal security, i.e. maintenance of security within the entire country. National security management would also encompass employment, food,

water and shelter security; fiscal and economic security; energy, science, technology and environment security; cyber security, et al. However, for the purpose of this Lecture I shall speak only about issues relating to internal security management.

For appreciating the implications of internal security it may be useful to keep in mind the physical parameters of our concerns which, while being generally well known, are invariably forgotten.

India is the seventh largest country in the world with an area of about 33 lakh sq kms. It has land boundaries of 15,200 kms, over 600 island territories, a coastline of over 7500 kms and an EEZ of 25 lakh sq kms. We have land frontiers and maritime boundaries with half a dozen neighbouring countries. Except some of our hinterland States, e.g. Haryana and Madhya Pradesh, all other States and some of the Union Territories have one or more land or sea borders which require to be guarded. Our borders with Pakistan and China are militarised; those with Pakistan have generated a variety of threats ever since Independence.

While discussing India's security concerns it would also be useful to remember that our country represents an immense cultural and geographical diversity and socio-religious traditions which go back to 5000 years of recorded history. The well over a billion people of India comprise multi-racial, multi-religious, multi-lingual and multi-cultural societies. We have 22 major languages and over 1500 dialects. Every major religion in the world is practiced in India. The roots of India's secular and pluralistic traditions are imbedded deep in our ancient history.

India's internal security problems, arising from varied sources, are influenced by a host of factors among which are its past history, geography, colonial legacy, a burgeoning population, sharp social and economic disparities and complex socio-cultural and ethno-religious traditions which interplay freely in our secular democracy. As events in the past decades have shown, regional and global developments have also been impacting significantly on our security concerns.

Under our Constitution, "Public Order" and "Police" are included in the State List (List II, Seventh Schedule). Consequently, for maintaining internal security the States have exclusive powers [Article 246(3)] to make laws and take all necessary executive action in respect of both the aforesaid subjects. Thus, in the normal circumstances, the States are responsible for maintaining internal security within their jurisdictions.

As regards the Centre's responsibility, the Constitution prescribes [Article 355] that it shall be the duty of the Union to protect the States against external aggression and internal disturbances and to ensure that the governance of every State is carried on in accordance with the Constitutional powers, failing which Presidential Rule may be imposed [Article 356] in the defaulting State, till constitutional functioning can be restored. The Constitution also provides [Article 352] for the enforcement of Emergency if a situation exists or there is an imminent danger of the security of India being threatened by war or an armed rebellion.

Looking back, from 1947 onwards the country has faced varied internal security problems. Some of the more serious threats have emanated from Pakistan's unceasing efforts to seize

J&K and its sustained strategy to create chaos and disorder to de-stabilise and "break up" India.

India has been facing increasing internal security threats in the past years and, as today, the public order in about 40% of the districts is seriously affected by insurgencies, terrorist activities or political extremism. From around the early 1980s the Pak ISI succeeded in launching terrorist activities in Punjab, which suffered enormous human and economic losses for over a decade, till the situation was normalised. Benefiting from the experience gained from its foray into Punjab, Pakistan launched a proxy-war in J&K in end 1989. Over the past nearly two decades now, the continuing wave of terrorism has resulted in the loss of thousands of innocent lives, ruined the economy and, worst of all, shattered the historical secular fabric of Kashmir. In the North East region, several States have continued to face varying insurgencies, many of which have been accentuated by Pak's ISI cross-border networks. The illegal immigration from Bangladesh has led to a demographic upheaval and generated serious communal, political, social and economic tensions and conflicts in several areas of the NE region.

Instigated by the Pak ISI, and spurred by domestic factors, there has been a steady increase in the growth of pan-Islamic militant outfits which have been preaching fundamentalism and spreading subversion and violence. Over the years, the reach of these networks has spread to areas in Central and South India.

The Left-Wing extremist groups, specially the People's War Group and the Maoist Communist Centre, have been continuing to enlarge their violent activities, which have progressively spread to cover vast tribal areas in several States.

Several organised crime and mafia groups have linked up with Pak ISI supported networks and progressively extended their criminal, subversive and communal activities. The narcotics and drug mafia outfits, also involved in the smuggling of weapons, RDX and other materials for causing death and destruction, have been carrying out large scale havala and money laundering operations. The enormous funds generated by the unlawful activities of these groups have been utilised for spreading Islamic fundamentalism, creating violence and executing terrorist activities. Serious threats to internal security have emerged from the Pak ISI linking up with organised crime and mafia outfits and exploiting this nexus to organise major violent incidents in various cities of India, virtually at their will.

For the past nearly three decades now, ever since Pakistan's initial venture to foment militancy in Punjab, the Centre has been kept incessantly engaged in dealing with serious internal security problems—in the North East region, Punjab, J&K, in the various States affected by the activities of the Naxalite groups, and in all the areas affected by violence caused by Islamic fundamentalist groups. The restoration of normalcy in any disturbed area has inescapably involved the application of coercive power, which, in other words, means the deployment of the required strength of Central Police Forces and, as required, contingents of the Indian Army.

From the experience gained in combating militancy, insurgencies and terrorist activities in the past years it has become abundantly clear that the responsibility of the disturbed States does not end merely with the deployment of State or Central Police Forces, or even the Army, to restore the disturbed area to normalcy. The Armed Forces of the Union are deployed in aid of the civil authority and, constitutionally, the concerned State remains entirely responsible till normalcy is fully restored.

It is necessary to recognise that the deployment of Central Police Forces, or the Army, for carrying out anti- insurgency/terrorist operations may not yield the expected outcome unless the entire State administrative machinery, led by the Chief Minister, devotes continuous organised attention to sensitively dealing with the root causes which contributed to the breakdown of public order. Time bound initiatives would need to be implemented to identify and resolve the social and economic problems or the political demands and aspirations of the agitating groups. Simultaneously, the entire State administration apparatus would require to devote close and continuous attention to providing effective governance, systematic attention being paid to resolve the day-to-day difficulties faced by the common man, particularly those which may have emerged on account of the ongoing disturbed situation. Instead of slackening its functioning on account of the prevailing disturbed environment, the administrative apparatus would need to work overtime to ensure that all socio-economic development and poverty alleviation programmes are implemented with high efficiency and honesty and within an urgent time frame.

For timely dealing with arising internal security problems, the State Governments need to exercise constant vigilance, particularly in regard to the resolution of complex pending issues, and launch prompt initiatives to open meaningful dialogue with the leaders of the aggrieved groups or communities. Past experience has shown that very high human and economic costs have to be paid if there is a failure to deal timely with issues which can lead to conflicts and violence. The situation is further complicated when a violent agitation, arising from a sensitive demand, is dealt with merely as a law and order problem and the disturbance sought to be quelled with the application of force. In many such cases the agitating elements are supported and incited by adversary external agencies and, when this happens, we see the beginning of much larger problems.

The deep despair and consequent alienation of the disadvantaged communities is heightened by the social, economic and political exploitation to which they are subjected. Feudal systems continue to exist in several parts of the country where the much needed land, agrarian and other, reforms have still to be carried through. It is indeed most unfortunate that despite the economic disparities and severe disadvantages from which they suffer, the neglected and oppressed segments of society are further subjected to continuing harassments which arise from the various political parties exploiting religious, ethnic and caste factors merely to secure electoral gains.

Besides the gross failures of governance to pursue the avowed welfare-state goals and deliver social and economic justice to the masses, there has also been failure to timely and

sensitively respond to the felt needs and aspirations of ethnic and tribal communities, most of whom live in remote, difficult and harsh areas. The demands of such neglected communities have been ignored for prolonged periods and if and when any ameliorative action has been taken it has happened essentially to secure an envisaged electoral gain for the party in power. Such failures of governance have promoted distrust and alienation among the neglected communities, which no longer have any faith or trust in their State Governments.

The poor and neglected people have many other reasons to be angry and frustrated. For example, the large outlays provided to the States for poverty alleviation schemes are not timely or fully utilised. In many cases, the funds are diverted to other purposes or even embezzled. Such gross failures result in despair, cynicism and deep seated alienation among the poorest segments of society.

Failures of this kind arise from continuing mal-administration, unaccountability and corruption. Despite endless public criticism in the past several decades, effective steps have still to be taken to deal with corruption at the highest levels and to enforce efficiency, honesty and accountability in the functioning of governmental and public institutions. The Lok Pal Bill has been awaiting enactment for the past nearly four decades now, and the functioning of the Lok Ayukts, established in many States, has still to see even the known crooks being brought to book. Needless to stress, if good governance is to be delivered perhaps the most crucial challenge is to restore ethical and moral values to public life in our country.

Corruption erodes and weakens the very foundations of the administrative and legal framework and disrupts the Rule of Law. Thus, internal security cannot be safeguarded unless the governmental apparatus is rid of corruption.

Corruption has the subversive effect of destroying discipline. And indiscipline leads to the unaccountability which has permeated the administrative apparatus and also led to the growth of the threatening politico-bureaucratic-criminal nexus, about which a reference was made earlier.

Efforts to reduce corruption do not invariably yield the expected outcome as most of the tainted elements enjoy the patronage and protection of their political masters who have placed them in key positions and continue to use them for the execution of their unlawful behests. As I had stated earlier, from the perspective of effective internal security management it is a matter for deep concern that even persons of highly questionable integrity, who may have close linkages with criminal and anti-national elements, could continue to hold responsible positions in the administrative system. The potential of such elements subverting national interests from within the system poses a most serious threat to the security of the State.

The continuing determined efforts of adversary external agencies to destabilise India by spreading religious fundamentalism, inciting tensions which lead to conflicts, and perpetrating violence and subversion, have generated challenges which impinge on issues of external security management. In this context it needs to be recognised that issues relating to

the management of internal and external security have got inextricably interwoven and, as such, the Centre would need to evolve a holistic approach to internal security management, in close coordination with the States. I would re-iterate that in the security scenario, which has evolved over the past three decades and more, it would be impractical, in fact extremely hazardous, to deal sectorally with the management of internal and external security issues.

Internal security cannot be maintained satisfactorily in the country unless the States effectively discharge their constitutional duty of maintaining peace and public order in their realms. The States cannot pass on this crucial responsibility to the Centre, as has been the continuing trend in the past years. A signal failure of the States has been the continued neglect and the political exploitation of their Police organisations. This has most adversely affected the discipline, morale, efficiency, honesty and trustworthiness of the constabulary. It is essential that every State undertakes a time-bound programme to enlarge, train and equip its Police to effectively manage the existing and emerging challenges as well as to provide very strong support for the implementation of the Centre's initiatives to maintain public order in the entire country.

It may be noted that a stable security environment cannot be engendered merely by promulgating new laws. In the ultimate analysis every citizen must discharge his duty to uphold and protect the sovereignty, unity and integrity of the country. It is indeed unfortunate that while the vast majority of our educated people are concerned only about their Fundamental Rights there are not very many who are even aware of their Fundamental Duties, laid down in Article 51A of the Constitution. Even if action were to be taken to enforce the Fundamental Duties of our citizens it would be unsound to assume that the citizenry of India would be overnight imbued with patriotic feelings to protect national interests if the environment in which they live and work continues to be vitiated by discrimination, corruption and injustice. The requisite environment can be engendered only if the States perpetually demonstrate and ensure that the laws of the land apply equally also to the rich and influential and the highest placed public servants. Simultaneously, it must be particularly ensured that no injustice is done to the poor and the disadvantaged segments of society as this would result only in promoting distrust and despair among the masses and further eroding their loyalties.

In the aforesaid context it has also to be noted that lawlessness cannot be controlled and internal security maintained unless the entire framework of the criminal justice system functions with speed, fairness and transparent honesty. In 2005, of the over 23 million cases awaiting disposal in the country over 7 million IPC crime cases were pending trial. The ever increasing number of criminal cases awaiting investigation and trial and the correspondingly declining conviction rates, have generated the growing public perception that crime is a "low-risk, high-profit business".

Besides the enormous logistical inadequacies in the justice delivery system, the integrity of the magistracy and the subordinate judiciary is seriously tainted. In the recent past serious allegations of questionable integrity have been raised even against those who man the

superior echelons in our judicial structure. Needless to say, the most urgent measures need to be taken to clean up the justice administration apparatus and enlarge and strengthen it to deliver speedy and effective justice. Another cause for serious concern is that while we continue to have hundreds of altogether obsolete and irrelevant laws, most of which were enacted during the colonial period, we do not have an adequately stringent law, applicable all over the country, which can effectively meet the requirements of dealing with terrorist offences, cyber crimes and the fast growing areas of organised criminality which pose a grave threat to national security. We also do not have a Federal Crime Agency which can deal with the serious offences committed by criminal networks whose activities may spread across the States, across the entire country and across various foreign lands. We also need a comprehensive law for dealing with serious economic offences which, if not timely checked, have the potential of disrupting the national economy. Today, terrorist and criminal networks operate in a border-less world and, needless to say, the grave challenges posed by their activities cannot be tackled if the various concerned law enforcing agencies continue to operate within their respective limited jurisdictions. What is urgently required is an appropriate legal framework and an extremely well considered strategy which is executed in the most effective coordination between the Centre and the States, to deal with each and every aspect of internal security management.

Another matter for serious concern relates to the failure, over the past six decades, to develop a pool of functionaries who have been especially trained to manage the security apparatus at the Centre. Only the Intelligence Bureau has a sub-cadre of deputationist Indian Police Officers who, after acquiring the required experience, comprise the core of the Bureau and can spend their entire careers in this agency. RAW, the agency for external intelligence, has been facing serious personnel problems and recently there have been a number of incidents of grave professional failures. As per the continuing practice, the officers assigned to posts in the Home Ministry, drawn from various services and cadres, are not required to possess any past experience in the field of security management. The situation in the States is much worse. It is a matter for deep concern that despite the serious challenges to national security faced by the country it has still not been recognised that security management cannot any longer be entrusted to persons who have no training or experience in this field. It is also no longer viable to entrust the work of Intelligence agencies only to officers of one particular service. It is necessary that very high priority is accorded for raising a pool of adequately trained and trusted officers who can be assigned to posts in the Intelligence Agencies and the Departments and Ministries which are responsible for managing internal and external security.

In the aforesaid context, particularly keeping in view that even key posts in the Home and Defence Ministries and their related agencies are, on many occasions, assigned to functionaries who have no prior experience of working in the security administration arena, I had proposed (in the Task Force Report on Internal Security, September 2000) that Government may consider the establishment of a dedicated Security Administration Cadre

which is comprised of officers selected from among volunteers from the Civil and Police Services, Defence Services, Defence Science Research Organisation, Science and Technology, Information and Communication Technology, Broadcasting and Media and other relevant areas. It was envisaged that such a pool of officers, in various age groups, would be properly trained and assigned to posts in the security management machinery. After critically assessing their performance, the selected officers could be allowed, as is done in the Intelligence Bureau, to enjoy open-ended tenures so that, over time, they acquire the much needed professional expertise which is sorely lacking in the existing set-up. It was projected that, once such a dedicated cadre gets adequately established, Government would be able to select the most suitable officers, from within this pool of officers, to man posts at given levels in the Union Home Ministry, the Intelligence Agencies, National Security Council Secretariat, Ministry of Defence and other security management related areas. Side by side, the States could be provided required support, particularly well designed training facilities, to raise similar cadres. The Government had approved the aforesaid approach in early 2001. Nearly seven years have since elapsed. It is apparent that Government do not intend to terminate the continuing practice of even the topmost posts in the security apparatus being filled by persons who have no past experience in security management.

INTERNAL SECURITY CHALLENGES

India was partitioned in the backdrop of large-scale communal riots, but the partition of the country on religious lines, without taking into consideration its multiple identities, instead of bringing the communal tensions down, in fact, worsened the situation. The two-nation theory created Pakistan, and it still survives on this theory. Pakistan finds it difficult to accept the reality that India continues to be a democratic, plural, multireligious society and that India today has more Muslim citizens than Pakistan. The Government of Pakistan has taken upon itself the responsibility of not only protecting its own citizens, but also the Indian Muslims. The power structure in theocratic Pakistan, dominated by the army, the feudal landlords, the bureaucracy and the religious leaders has been able to retain its hold over the levers of power by playing the anti- India and Islamic cards. Pakistan plays the Islamic card in its foreign policy also. It misses no opportunity to club India as an anti-Islamic country where Muslims are not safe. The continuing tensions between India and Pakistan have a direct bearing on the internal situation in India. They have further complicated the internal security situation.

The management of internal security, therefore, assumes great importance. If the internal security issues are tackled effectively, subversion by the external forces to that extent becomes more difficult. Unfortunately, the rise of contentious politics based on sectarian, ethnic, linguistic or other divisive criteria, is primarily responsible for the many communal and secessionist movements flourishing in India. The presence of hostile neighbours enables the internal conflicts to get external support, which includes money, arms and sanctuaries. The vested interests exploit these conditions to pursue their own agenda.

In a well-established political system and a developed economy, conflicts between the various group identities are kept under check as in due course they get assimilated into the

national identity. But that has not happened in India as yet, where the wounds of the partition and the colonial rule have still not fully healed. Moreover, the dependence on the government by a large section of our people for their very survival sharpens these conflicts among them. The democratic institutions and the state structures are still not strong enough to fully harmonise these conflicts in a peaceful manner. Violence erupts when conflicting interests cannot be consensually reconciled. The hostile external forces, taking advantage of this situation through subversive propaganda, further accentuate these conflicts. They give material and ideological support to aggravate this sense of grievance to such an extent that a small minority are willing to become tools in their hands to subvert the stability and security of the country.

In addition, a number of secessionist and the so-called revolutionary movements are operating in India today. Their goal could be to overthrow the government and bring about revolutionary changes in the structure and functioning of the state, or even secession from the Indian Union. Ever since independence, India has been facing all types of violent conflicts based on religion, caste, language, ethnicity and regional loyalties. Political insecurity further compounds the problem. Preoccupied with the problem of survival, the governments in some of the most affected states are not looking at the problem from a long-term perspective. They have bought temporary peace by compromising with the subversive forces. Such shortsighted policies can have disastrous consequences in the long run. Instead of effectively dealing with them in the initial stages when the problem is manageable, they have allowed these anti-national forces to take roots and spread their tentacles far and wide. When a state government is unable to effectively deal with them, instead of strengthening the state police machinery, it rushes to the Centre to hand over its responsibility at the first sign of any serious trouble. It is not surprising that in these states some sections of the police have actually joined hands with the subversive forces against the central forces. “If you cannot fight them, join them”. Finding themselves at the mercy of these subversive forces, the people tend to change sides and start supporting them instead of supporting the security forces. It would be wrong to assume that all those supporting, directly or indirectly, these forces are sympathetic to their ideology. Far from it! For most of them, preoccupied with the daily battle of survival, this is the obvious choice, because the police are unable to protect them. Polarisation on caste and religious lines can further reduce the credibility of the police in the minds of the people.

The police-politician-criminal nexus can embolden the criminal elements. Their activities can create an environment of lawlessness, where influential and rich people violate the law with impunity. The police is not the only component of the criminal justice system that has suffered because of this nexus. In fact, the entire criminal justice system is under strain. Not all crimes are being registered and those registered are not being properly investigated; and even out of those charge-sheeted, very few are ending in conviction. The conviction rate in case of heinous crimes is steadily falling. In some North-Eastern states it has reached almost zero level, where the police have stopped even submitting the charge sheets in the insurgency-related cases. When the fear of legal punishment disappears, organised crime

finds it convenient to spread its tentacles. The crime syndicates are finding the new communication and information technology very useful. Extortion and payment of the so-called 'protection money' is more widespread than we would like to believe. According to some reports, direct extortion from the government funds runs into hundreds of crores of rupees. Many of the insurgent and militant groups are not driven by ideology, but by sheer greed. Money power is a bigger motivating factor than ideology. Vested interests have developed around these groups with active connivance of corrupt politicians, police officers and civil servants. Some politicians even take their assistance during election times. They have to return their favours when they come to power. This mutually beneficial relationship has seriously damaged the quality of governance in the interior areas. The real losers are the people. The development process gets seriously hampered in a violent environment. When large development funds are siphoned out by this unholy alliance between the criminal and corrupt forces, even the delivery of the most basic services like water, power, healthcare, education and communications becomes a stupendous task.

A vicious circle starts. The deprived and the marginalised sections of the society, unable to survive in the present system, get alienated. The militant and extremist forces thrive in this environment. The rise of Left extremism is more due to these compulsions than on ideological grounds. There are media reports about the carving out of a corridor by the Left extremist forces from Nepal to Tamil Nadu. Even if there is no truth in these reports, the involvement of hostile external forces in support of the Left extremist forces to destabilise the country cannot be ruled out.

The mushrooming of armed 'Senas' on caste and ethnic lines in some parts of the country is a direct consequence of the polarisation of the society. This phenomenon has also affected the police and the administration in general. Loss of public confidence in the capacity of the state to protect their life and property is the primary cause of this dangerous development. Far from controlling them, a politicised and partisan police actually encourages this development. The tensions in some parts of the country, especially in the tribal areas, due to a perceived threat to their identity is not new, but the rise of so many violent movements is a relatively recent development. In the border states these movements become secessionist because of the support they receive from the hostile neighbouring states.

The rise of fundamentalist forces is posing the most serious threat to India's security. Fired with religious zeal these forces have created an entirely new situation. The intelligence agencies in our neighbourhood and the organisations, like Al Qaida, and Jaish-e-Mohammad, are encouraging the so-called 'Jehadis' to enter India from outside. After first targeting the border states they have now spread deep inside the country. These bands of fanatics are not only indulging in subversive activities, but are spreading the virus of fundamentalism among the Indian Muslims. The break-up of the Indian Union continues to be the main goal of Pakistan's domestic and foreign policy. Easy availability of deadly weapons with the subversive groups operating in India has created new dangers for India's security.

With the 'Golden Crescent', and the 'Golden Triangle' in India's neighbourhood, drug trafficking poses yet another threat to our security. Drug syndicates are generating huge funds, a part of which is being used to give financial support to some of these subversive groups. The intelligence agencies like the ISI are recruiting a number of 'carriers' in drug trafficking as their agents. These agencies provide legal immunity for their criminal activities in their own country in addition to giving them financial and logistical support. Internal security challenges are not confined to any one area, but the North-East, Jammu and Kashmir, and the areas afflicted by Left extremism deserve special mention.

North-East

The Naga leadership under Z.A. Phizo had challenged their integration into the Indian Union even before India became independent in 1947. The Naga insurgency started way back in the early 1950s. Since then the insurgencies in this region have multiplied and spread to many new areas. In this extremely diverse and strategically sensitive region, there are different reasons for the ethnic upsurges and insurgencies in different states. Some seek secession from the Indian Union, some others seek separate states and yet others greater autonomy within the existing state. The number of such insurgent groups could reach three-digit figures. In Manipur alone, more than twenty-five groups are operating. Thousands have died in the insurgency-related violence. Insurgencies have seriously affected the economic life of the region. The whole developmental process is seriously hampered because of this unending violence. One can imagine the plight of the people who are already living on the margin. What to talk of getting a share of the fruits of development, they are deprived even of the most basic services. Unfortunately, unlike Jammu & Kashmir, these violent movements do not stir much response in national consciousness. Even serious incidents of violence hardly find any mention in the so-called mainstream media. The geo-strategic importance of the North-East is not sufficiently appreciated even in the security establishment. All the states in the North-East share an international border with other countries and the seven North-Eastern states are linked to the rest of the country only by a narrow strip of land. The lack of physical, cultural and emotional links has encouraged a feeling of alienation, which is being exploited by the nottoo- friendly neighbours to pursue their own agenda. They are giving support and sanctuaries to many of these groups to use them as leverage against a much bigger and more powerful neighbour.

The roots of these many insurgencies in the North-East lie deep in its history and its geography. But, it would be wrong to treat it as one homogeneous region with common problems, or social systems and customs. Even physiographically, the region can be divided into three broad areas — hills, plateaus, and plains. The many ethnic groups, speaking many different languages and dialects, who inhabit this remote part of the country consider themselves as separate people with little in common with the people in the rest of the country. The lack of physical, cultural and emotional links has encouraged this feeling of separation.

The partition of the country seriously dislocated the old system of communications with serious demographic consequences. At the heart of the problem, however, is the new political consciousness and an urge for asserting their identity, especially among the fiercely independent tribal communities. The partition left the entire region land-locked, and even the old road, railway and river-waterway links with the rest of the country were severed, because they all passed through East Pakistan (now Bangladesh). The new rail link via North Bengal is circuitous and too long and expensive for easy access to the region. The air link is not only expensive, but also unreliable due to climatic conditions. The people have to bear enormous additional transport cost for all their supplies. Another intractable problem is created by the influx of migrants from East Pakistan and now continuing from Bangladesh. In the beginning it was confined to the Hindus leaving East Pakistan due to insecure conditions, but later, because of intense population pressure even Muslims started migrating. The fear that immigrant population will one day dominate them is keeping many of the insurgent and secessionist movements alive.

The terrain in this region is eminently suitable for insurgency. The hilly terrain and dense forests provide convenient hiding places to mount ambushes on the moving convoys of the security forces. Large parts of the interior areas have little or no police presence. The insurgent groups virtually control the administration in these areas. After attacking the security force they can easily disappear into the local population. Because of deprivation and alienation, a large section of the people tend to be sympathetic to the members of these groups. It is the alienation of the people that has sustained insurgency all these years, though logistic support and sanctuaries provided by the neighbouring states play a vital role in sustaining them. The dispersion of ethnic groups across the international boundaries has profoundly influenced the nature of political conflicts. However, it needs to be emphasised that internal-external linkages originate with the failure of the domestic political and administrative system in coping with the internal conflicts.

Secessionist leaders often adopt alternative strategies to achieve their goal. They keep on changing their tactics and demands according to the ground situation. The intensity of the conflict depends very much on how strong the public support is. Ethnicity can become an important dimension of internal conflict when it becomes intertwined with other social, political and economic issues. As conflicting groups go from one crisis to the next, they learn by experience to raise their demands to increase their bargaining power. Political changes that offer new opportunities for personal gain and extending their influence can spark violent conflicts. Even though most of them are conscious of the fact that secession is not a viable option, they keep on raising this demand to bring together the various contending conflicts on one platform. Making common cause against the Indian state is how many of these groups with conflicting ideologies cooperate with each other in their fight against the Indian state. The United Liberation Front of Assam (ULFA) was born out of the demand to throw out the migrants from Bangladesh, and yet its top leaders are today finding sanctuary in that country.

The South Asian countries have more in common with India than with other countries in the region. They do not even have a common boundary with each other. But this reality has not made them friendlier towards India. History and geography have encouraged negative sentiments rather than positive sentiments about India in these countries. The big powers too have not hesitated to fish in troubled waters. Till the 1970s, China was directly supporting the insurgencies in the North-East. Strategically, politically and economically the North-East is the most sensitive part of the country and should receive the serious attention it deserves.

The ongoing dialogue between the government and the NSCN (IM) is a positive development, but it is going to take a long and torturous route. The NSCN (IM)'s claim on the Naga-inhabited areas in the neighbouring states has created serious complications. The riots in Manipur in 2001 following the extension of the ceasefire to the areas beyond the boundaries of Nagaland are a pointer to the difficult road ahead. The situation in Assam has shown some signs of improvement, but large-scale extortion by the ULFA and other groups is posing serious problems. The NLFT and the ATTF continue to be active in Tripura. They have sanctuaries in Bangladesh. Mizoram is quiet, but there are problems between the Mizos and the Chakmas, and the Mizos and the Reangs. Thousands of Reang refugees from Mizoram are staying in camps in Tripura. In spite of many rounds of negotiations between the Mizoram government and the representatives of the Reangs, so far no solution appears to be in sight. The unending internecine feud between the NSCN (IM) and the NSCN (K) has spilled over from Nagaland to the neighbouring states and even to Myanmar. A number of Meitie and Kuki groups have sanctuaries in the Chin Hills in Myanmar. The ULFA and the Bodo groups have sanctuaries in the forests of Bhutan. There are unconfirmed reports of some sort of tie-up between the ULFA and the LTTE. A number of groups have also come up in Meghalaya and Arunachal Pradesh. Many experts have called the Naga insurgencies as the mother of all insurgencies in the North-East. The level of violence, however, in this explosive region continues to be high in spite of the fact that the ceasefire agreement with the NSCN (IM) has been in place since 1997. This only goes to show how difficult the road to peace is going to be in this trouble-torn region.

It is truism to say that it is not only a law and order problem. It has many other dimensions. No strategy will succeed unless it strikes a right balance between political, economic and security measures. There is need for closer co-ordination among the policymakers. Ideally, there is need for a consensus among the major political parties. The pursuit of narrow political agenda can be exploited by the subversive groups. Many political leaders in this region indulge in double-speak. They mouth nationalist slogans in Delhi but have no hesitation in making strong anti-national statements and collaborating with the insurgent groups in the state. Nor do they have any reservation in changing parties. They frequently hop from one political party to another. In Manipur some politicians have changed sides as many as six times in a year. A chief minister changed his party three times in one month, and his coalition partners three times in 48 hours. A party label has very little meaning. Money and muscle power with active support of the insurgent groups play a key role in the elections.

Most of these states are not financially viable. They hardly collect any revenue and depend almost entirely on the Union government for financial support. This has caused lack of responsibility in incurring public expenditure. For example, Manipur has created a huge bureaucratic structure with a workforce of almost 100,000 on its pay roll. Over 80% of its total revenue (both Plan and non-Plan) is spent on payment of salaries and pensions. Extortion by the insurgent groups, the leakage's of huge funds through corrupt practices leave very little for development. And they conveniently put the blame on the Centre for not giving them adequate funds. Through years of neglect this potentially rich region is today the most backward, almost primitive, part of our country. In these appalling conditions an alienated population becomes an easy target for the secessionist propaganda.

Jammu & Kashmir

The problem has been with us since independence even though Pakistan has no legal case. The ruler of this erstwhile princely state decided to accede to India. According to the Independence Act it was for the rulers of the princely states to decide to join India or Pakistan. Pakistan has been disputing the legality of the accession signed by the then J&K ruler, Maharaja Hari Singh. The initial hesitation of the Maharaja to accede to either India or Pakistan and the unilateral Indian offer to find out the wishes of the people of the state has given Pakistan an excuse to challenge the legality of the accession. It has been doing everything for the last 56 years to grab this state. It has not been able to achieve its objective through wars with India. So, it has started a proxy war since 1989. Waging of a proxy war fits into the Pakistani designs of bleeding India. Unfortunately, the weaknesses of the state and of the administrative systems have provided Pakistan with opportunities to fish in troubled waters. More interested in perpetuating their rule than governing the state, its rulers have been exploiting regional and religious differences. Anti-national forces thrived in this environment and Pakistan has missed no opportunity to support and encourage them. Over the years it has succeeded in building a pro- Pakistan base in the state. Frustrated in their efforts to gain power through democratic means, some politicians joined the anti-India front, more to put pressure on the Indian government than on ideological grounds. In a state, where the overwhelming population was against communal politics at the time of partition, the fundamentalist forces have managed to penetrate into the secular polity. The many serious problems of the people have to be addressed. It is not a coincidence that Pakistan's efforts to destabilise the situation in the state received some success only when our own political mismanagement provided it with an opportunity to intervene, as in 1965 and again in 1989. One of Pakistan's main aims is to divide the polity on communal lines.

The attitude of the Pakistani military government is unlikely to change in the near future. But that does not mean that Pakistan should be allowed to set the Kashmir agenda. Moves will have to be made on all fronts to regain the initiative on both political and diplomatic fronts. The proposals made in the announcements by the Cabinet Committee on Security on October 22 are steps in the right direction, but the ground situation does not justify over-optimism.

There are likely to be many ups and downs on this long torturous road to peace in Jammu and Kashmir.

Left Extremism

Making a beginning in Naxalbari in West Bengal and Telengana in Andhra Pradesh in the 1970s, the movement has since spread to many states: Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh and Orissa. The root cause for the rise in Left extremism is the inability of the states to address the many genuine grievances of the people. The gap between the unrealistic expectations, fuelled by populist rhetoric, and their actual fulfilment has increased and not decreased over the years. The younger generation is no longer willing to put up passively with injustice and humiliation without a fight. The bitterness of the angry young man against the prevailing unjust socio-economic system is spilling over. The older generation is not unsympathetic to them. An educational system which produces unemployable young boys and girls has not helped. Pressure on land has made the task of survival on agriculture more difficult. A callous district administration, especially in the rural areas, a clogged judicial system and feudal attitudes have compounded the problem. The land disputes have multiplied, but the land records and the judicial system to settle them is in disarray. There is a sense of frustration and anger.

The most prominent among the groups, that have mushroomed in the recent years, are the People's War Group (PWG) and the Marxist Communist Centre (MCC) . But it is not ideology and revolutionary zeal that is driving them. For many, joining these groups is the only way to survive. Their main activity is extortion. Huge funds amounting to hundreds of crores of rupees are being extorted by them. What they cannot get through legitimate means they obtain through arms and explosives. Their tactics are no different from the insurgents and terrorists. Create terror and extort money. They are, however, not secessionists. Their aim is to overthrow what they call an unjust socio-economic system. But they are in no hurry to achieve their ideological aims as long as they can extort enough money. Corrupt politicians, policemen and civil servants have made their own adjustments with these groups. A live-and-let live attitude is mutually beneficial to all of them. Who knows how much money goes to the extremists and how much goes to the others. The real sufferers are the very people for whom the extremists are waging this war against the state.

In public perception a government that is unable to discharge all its responsibilities is more likely to respond when the demand is loud, organised and backed by acts of violence. The many progressive, wellintentioned legislations are not being implemented effectively and sometimes have done more harm than good by creating more bitterness and frustration, e.g., the Minimum Wages Act. The marginal and deprived sections of the society are the worst hit.

Social and economic factors are important, but even more important are religion and identity. The secessionist movement in J&K is politically motivated, but its ideological base is built around religious funda-mentalism. Fired by religious fervour, the young recruits have no hesitation in attacking ruthlessly what they consider the decayed political and moral order,

which they perceive as hedonistic. Once the instruments of governance are discredited, it is not too difficult to justify their destruction as in J&K, the North-East or in the states afflicted by Left extremism. In another sense, however, the aim of all these movements is no different from the aim of legitimate political movements. They too seek to acquire power, measured in terms of exercising influence or control over the people and acquisition of wealth for them is the source of all power. Extortion, therefore, becomes an essential part of their strategy. Their goal and strategy could change during the course of the movement. In the initial stages some of them may only demand economic and political justice or more autonomy in the existing political system, like the Bodos in Assam, but they can take a more extremist stand and demand secession in the later stages.

Effective steps to reduce ethnic and social inequalities, disparities in educational and employment opportunities, and for creating an effective machinery for the redressal of public grievance, are absolutely essential to improve the environment in which extremist violence flourishes. Steps to reduce economic deprivation and improve the delivery of essential services can erode the base of public support on which the extremist movements survive. It is relatively easier to find solutions to seemingly intractable political problems, like in J&K, in an environment where people are by and large satisfied with the functioning of the government agencies and are not deprived of essential services. More than anything else, it is the economic policies that would ultimately determine the future of these movements. A thriving economy, which gives hope and opportunity to the people, is more likely to defeat all types of extremist movements than any other strategy.

The need for a well co-ordinated security apparatus can hardly be overemphasised. It should include the police, the paramilitary forces, the army and the intelligence agencies. A composite force on the lines of the National Security Guards (NSG) should be organised in all the states, even in those states where the internal security situation is not so serious. It is easier to deal with the problems at the initial stages, than later, when the state police is no longer able to cope with them.

But in the states where the situation has gone beyond their control, the Centre, as laid down in the Constitution, is duty-bound to intervene, notwithstanding the fact that law and order is under the State List. The Union government is charged with the responsibility of protecting the states from internal disturbances under Article 353 of the Constitution, even though law and order comes under List-II, the State List. The Union government can issue directions to the state under Articles 257-258. Action for non-compliance of the directions from the Union government can be taken under Article 365. A state government can be dismissed under Article 356, if a situation arises in which the administration of the state cannot be carried on in accordance with the provisions of the Constitution. A national emergency can be declared under Article 352.

But, even if the Centre decides to intervene, the state's role cannot be minimised. The primary responsibility to deal with the security challenges must rest with the state governments. A situation should not be allowed to develop where the state government

washes its hands off, or its forces instead of cooperating with the central forces, actually work against them. The many internal security challenges can be met effectively only with full cooperation between the central and the state governments. The police, the paramilitary forces, the army and all the intelligence agencies must act in close co-ordination. The hostile foreign forces can and will take advantage of the internal situation to destabilise the country in pursuit of their own agenda. All serious internal security problems: communal and sectarian violence, organised crime, drug-trafficking, labour and students' unrest, political violence and even economic crimes, if not checked effectively can develop an external dimension. There is an urgent need to make the police and the paramilitary forces more professional. The emphasis has to shift from 'more numbers' to 'more professionally trained forces'.

The internal security problems should not be treated as merely law and order problems. They have to be dealt with comprehensively in all their dimensions and at all levels — political, economic and social. They are all interlinked. At times, the required measures will conflict with each other. Going too far in one direction could be counter-productive. The security requirements have to be met, but that does not mean giving the security agencies a free hand. Striking the right balance is the key to success in meeting these challenges effectively. We need a comprehensive security policy that will be implemented effectively at all levels.