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&
N.C.BANERJEE CENTRE FOR IPR STUDIES
NALSAR UNIVERSITY OF LAW, HYDERABAD



Patent Search

Databases & Accessibility

Advanced Diploma In Patent Law
NALSAR University of Law, Hyderabad
Contact Class; November 2022.

ANINDYA SIRCAR

“Data, when organized, becomes information; information, when analyzed, becomes intelligence. Based on this model, intelligence professionals usually execute on a four-phased process, or cycle:



- 1) they identify the intelligence needs of key decision makers across the firm;*
- 2) they collect information about events in a firm’s external business environment from print, electronic, and oral sources;*
- 3) they analyze and synthesize the information; and*
- 4) they disseminate the resulting intelligence to decision makers.”*

– Jerry Miller

Millennium Intelligence: Understanding and Conducting Competitive Intelligence in the Digital Age

Prior art searching is that required optimism to draw meaningful conclusions concerning
Business
Technology
Legal

A I M

VALUE

- Maximize
- Branding

RISK

- No violation
- Sustain the business model



What is Pat-informatics?

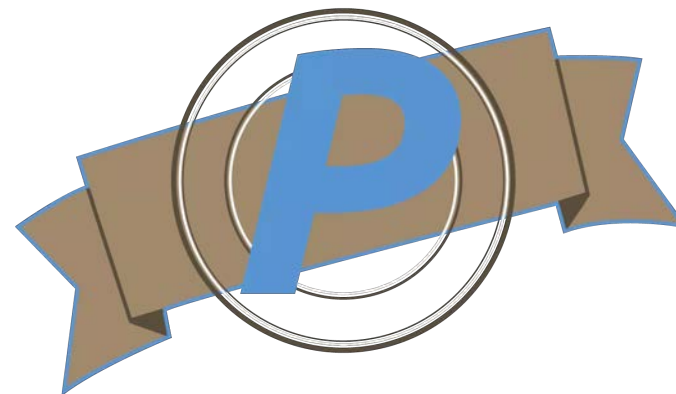
Prior Art

- Made available to public
- Anywhere in the world
- By written disclosure
- Assisting in determining the claimed invention is new and involves an inventive step
- Prior to filing date

The science of analyzing patent information to discover relationships and trends, which would be difficult to see when working with patent documents on a one-on-one basis.

Why Pat-informatics is important?

To avoid infringement of any unexpired third party patents.
To study technology trends.
To identify technology gaps (if any).
To identify technology collaborators.
Evaluate licensing opportunity.



Technology/ Patents

Define technology space

Identify key players

Identify key knowledge

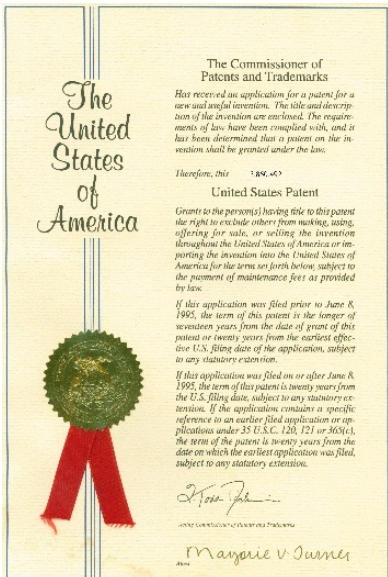
Identify business opportunities

Determine patentability

Invalidate third party patents

Determine portfolio value

Licensing
Opportunities



Pat-informatics: Some Answers

What is occurring in a particular technological area:



What are the subjects where research is being done ?

What are the emerging research lines ?

Which are the players in a technical field ?

Which are the leading research teams ?

What is the quality of research?

How financed are the research teams?

is it an ongoing serious research?

What are the technological trends ?

What are the patenting trends ?

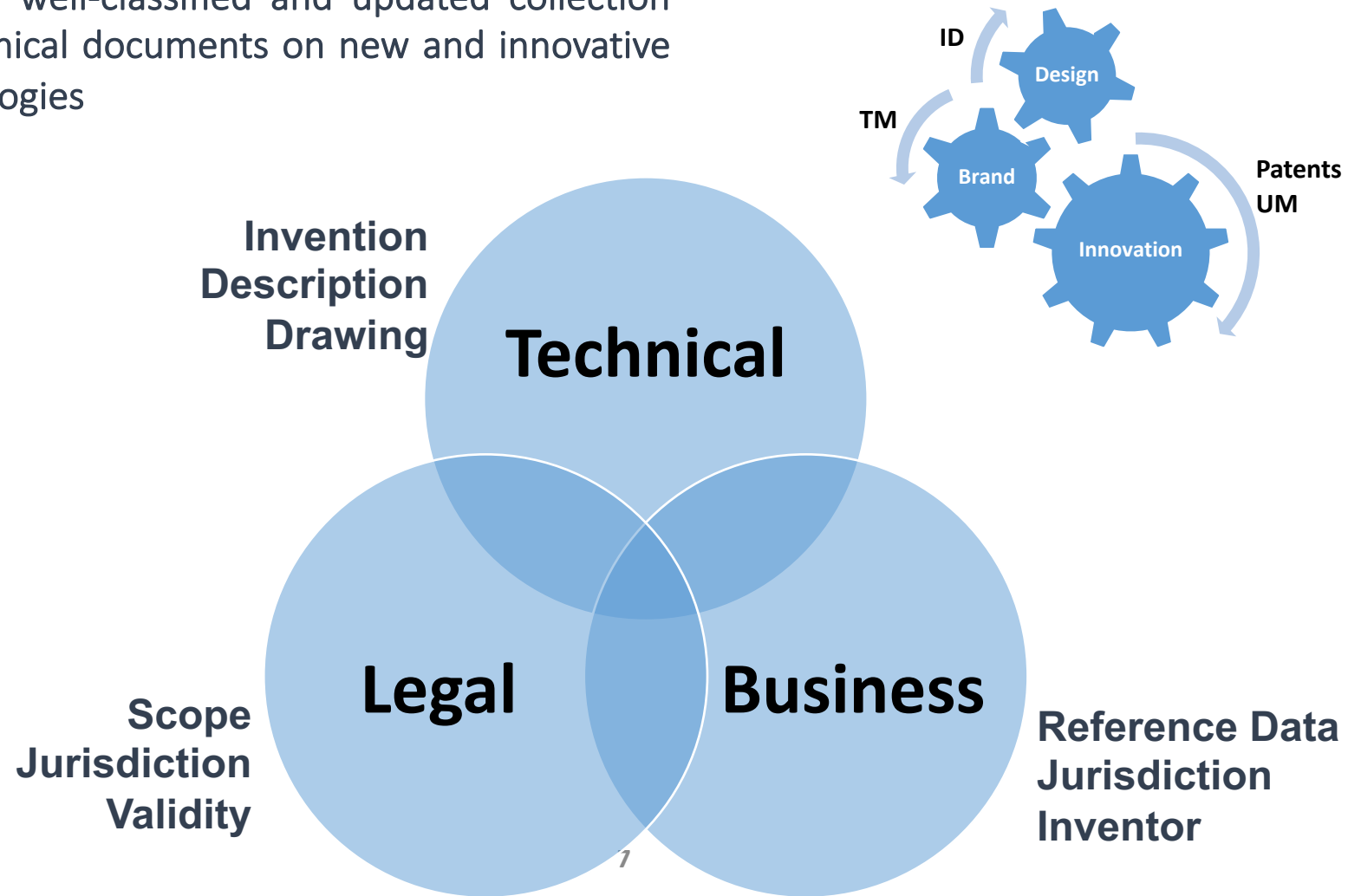
What are the technology portfolios of a company ?

What are the technical strategies of a company ?

Which are the markets in mind?

Patents

Largest, well-classified and updated collection of technical documents on new and innovative technologies



Where to Search which Prior Art

Patentability

- Patent Literature (full text)
- Non Patent Literature (full text)
- Usage

Validity

- Patent Literature (full text)
- Non Patent Literature (full text)
- Usage

Freedom to Operate

- Claims of unexpired patents (only)

Infringement

- Claim of unexpired patents (only)
- Prosecution History



Litigation History



Prior Art

- In a broad sense, technology that is relevant to an invention and was publicly available (e.g. described in a publication or offered for sale) at the time an invention was made. In a narrow sense, any such technology which would invalidate a patent or limit its scope. The process of prosecuting a patent or interpreting its claims largely consists of identifying relevant prior art and distinguishing the claimed invention from that prior art.
- PRIOR ART (PATENT) - Novelty and non-obviousness are judged against everything publicly known before the invention, as shown in earlier patents and other published material. This body of public knowledge is called "prior art."

Infringement Opinion

- Manufacturing or using an invention or improvement which someone else owns a government issued patent without receiving the patent owner's permission by contract, license or waiver. The party that infringes is liable to the patent owner for all of the profits from using the invention, as well as any harm that the inventor can prove, whether the infringement was intentional or not.



Where to Search?



Searching for Patents

How do people usually search for patents?

- Patent number
- Keyword



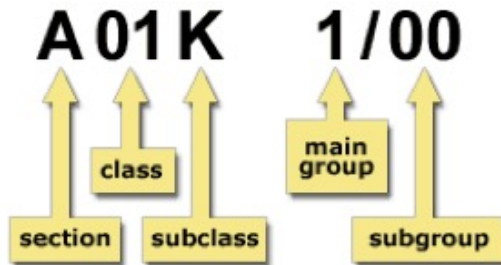
Classification	International (IPC), U.S. Classification, CPC, European Classification, etc.
Dates	Application, Issue, Publication, etc.
Names	Applicant, Inventor, Assignee, Examiner, Attorney/Agent, etc.
Numbers	Patent, Publication, Application, Priority, etc.

Patent Classifications

International Patent Classification (IPC)

- works as a universal classification for patents
- started in 1975 and periodically updated
- we currently use IPC 8th Edition.
- Section, Class & Group.

The International Patent Classification looks like this:



A 47 J 27/09 includes the safety device on your rice cooker

B 63 G 11/00 covers your various aircraft carriers

http://www.wipo.int/classifications/fulltext/new_ipc/index.htm

US Patent Classification

US Patents are classified with 400+ main classes and thousands of subclasses.

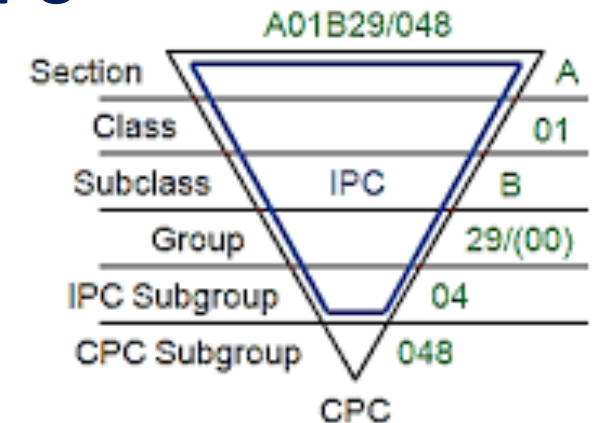
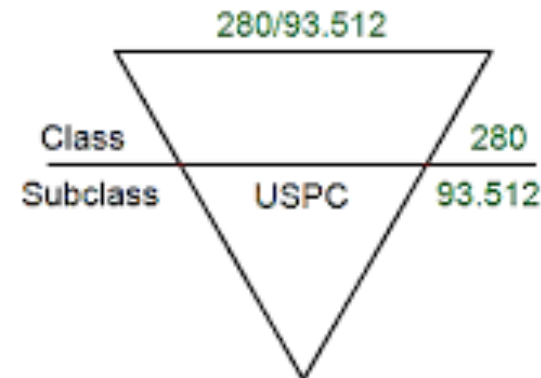
424 / 497
Class / SubClass

7/118 covers pocket knives

514/470 drugs - nitrogen bonded directly to the hetero ring

<http://www.uspto.gov/web/patents/classification>

CPC



Patent Office / Free Databases



STATE INTELLECTUAL PROPERTY OFFICE
OF THE PEOPLE'S REPUBLIC OF CHINA

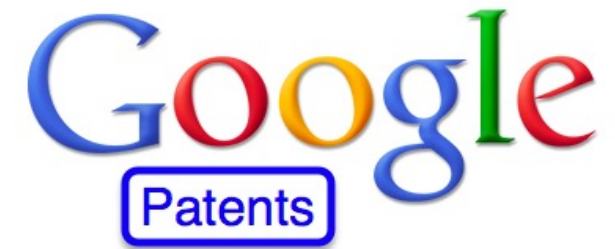


특허청

Korean Intellectual
Property Office



INTELLECTUAL
PROPERTY **INDIA**
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

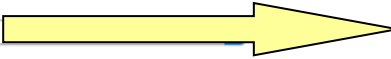


USPTO PATENT FULL-TEXT AND IMAGE DATABASE

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Data current through July 10, 2018..

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Term 1: in Field 1: 
AND
Term 2: in Field 2:

Select years [\[Help\]](#)

1976 to present [full-text]

Patents from 1790 through 1975 are searchable only by Issue Date, Patent Number, and Current Classification.

When searching for specific numbers in the Patent Number field, utility patent numbers are entered as eight numbers in length, excluding commas (which are optional, as are leading zeroes).

US PATENT & TRADEMARK OFFICE PATENT APPLICATION FULL TEXT AND IMAGE DATABASE

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Data current through July 12, 2018.

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Term 1: in Field 1: 
AND
Term 2: in Field 2:

Select years [\[Help\]](#) 2001-present

All Fields
Title
Abstract
Issue Date
Patent Number
Application Date
Application Serial Number
Application Type
Assignee Name
Assignee City
Assignee State
Assignee Country
International Classification
Current US Classification
Primary Examiner
Assistant Examiner
Inventor Name
Inventor City
Inventor State
Inventor Country
Government Interest
Attorney or Agent
PCT Information
Foreign Priority
Reissue Data
Related US App. Data
Referenced By
Foreign References
Other References
Claim(s)



Espacenet

Advanced search

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Enter your search terms - CTRL-ENTER expands the field you are in

Enter keywords

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hair Title or abstract: Tooltip

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WO2008014520 Publication number: Tooltip

DE201310112935 Application number: Tooltip

WO1995US15925 Priority number: Tooltip

Enter one or more dates or date ranges

2014-12-31 or 20141231 Publication date: Tooltip

Enter name of one or more persons/organisations

Institut Pasteur Applicant(s): Tooltip

Smith Inventor(s): Tooltip

Enter one or more classification symbols

F03G7/10 CPC Tooltip

H03M1/12 IPC Tooltip



PATENTSCOPE

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Home > IP Services > PATENTSCOPE

Field Combination

	Front Page	=	
AND	WIPO Publication Number	=	
AND	Application Number	=	
AND	Publication Date	=	
AND	English Title	=	
AND	English Abstract	=	
AND	Applicant Name	=	
AND	International Class	=	
AND	Inventor Name	=	
AND	Office Code	=	
AND	English Description	=	
AND	English Claims	=	
AND	Licensing availability	=	
AND	Inventor Name	Is Empty:	☒ N/A ☐ Yes ☐ No

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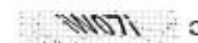
Patent Search

Publication Type:

☒ Published

☐ Granted

Application Date (National)	From: mm/dd/yyyy	To: mm/dd/yyyy	AND
Title	e.g. ONBOARD VEHICLE DIGITAL IDENTIFICATION TRANSMISSION		AND
Abstract	e.g. COMPUTER IMPLEMENTED		AND
Complete Specification	e.g. VEHICLE DIGITAL IDENTIFICATION		AND
Application Number	e.g. 2205416HP0368		AND
Patent Number	e.g. 220542		AND
Applicant Name	e.g. SRM Institute of Science and Technology		AND
Applicant Country	e.g. INDIA		AND
Applicant Address	e.g. Delhi		AND
Inventor Name	e.g. Singh		AND
Inventor Country	e.g. INDIA		AND
Inventor Address	e.g. Delhi		AND
Filing office	e.g. Delhi		AND
International Patent Classification (IPC)	e.g. F11B		AND
PGT Application Number	e.g. PCT/IN/2016/000007		AND
PGT Publication Number	e.g. WO/2016/137091		AND



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Patent Search

Patent Number:

Patent Number e.g. 220542

47Elm

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Commercial Databases

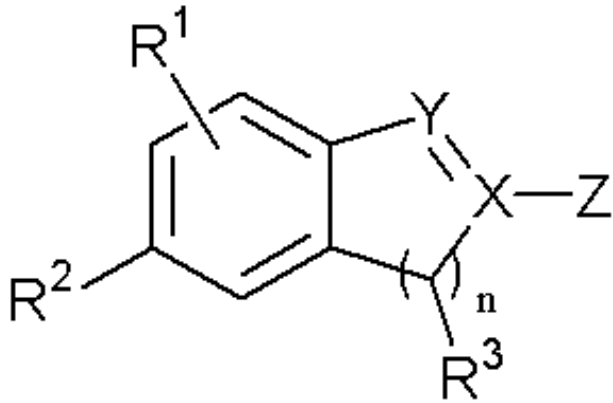


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Analytics**

Formerly the IP & Science
business of Thomson Reuters



Chemical Structures & Sequences



Chemical Search Databases

- STN
 - CA/CAPLUS
 - CASREACT
 - CAS REGISTRYSM
 - MARPAT
- Derwent World Patents Index® (DWPISM)
- Questel, Merged Markush Service

ATG TGT GGA ATC GTA GGA TTT ATT GGA GAG CAA GAT GCA AAG GAA ATT TTA TTA AAA GGT TTA GAA AAG CTA GAA
 Met Cys Gly Ile Val Gly Phe Ile Gly Glu Gln Asp Ala Lys Glu Ile Leu Leu Lys Gly Leu Glu Lys Leu Glu
 TAT CGT GGA TAT GAT TCA GCA GGT ATT GCA GTA CAA GCA GAG AAC GGT GTT GTT GTA TAC AAA GAA AAA GGC CGT
 Tyr Arg Gly Tyr Asp Ser Ala Gly Ile Ala Val Gln Ala Glu Asn Gly Val Val Val Tyr Lys Glu Lys Gly Arg
 ATC GCA AAA CTT CGC GAA ATC GTA GAT GAG AAC GTA GCA GCA AGC GTA GGT ATC GGA CAC ACA CGC TGG GCT ACA
 Ile Ala Lys Leu Arg Glu Ile Val Asp Glu Asn Val Ala Ala Ser Val Gly Ile Gly His Thr Arg Trp Ala Thr
 CAC GGT CTT CCA AGT AAA GTA AAC GCG CAT CCG CAT CAA AGT ACA TCA AAA CGC TTT ACA CTA GTT CAT AAC GGT
 His Gly Val Pro Ser Lys Val Asn Ala His Pro His Gln Ser Thr Ser Lys Arg Phe Thr Leu Val His Asn Gly

Sequence Search Databases

- GenomeQuest
 - The first intranet sequence search engine with percent identity and biological searching.
 - Works similar to premier web search engines, rapidly bubbling relevant records to the top.
 - The software automates the reporting of the most important and relevant matches, minimizing tedious research, while providing advanced search algorithms so no relevant sequences are ever missed.
- STN
 - DGENE(Thomson Reuters GENESEQTM):
 - USGENE® (The USPTO Genetic Sequence Database)
 - PCTGEN (WIPO/PCT Patent Application Biosequences, the complete collection of e-published sequences from WIPO)
 - CAS REGISTRYSM (Chemical Abstracts Service REGISTRY, worldwide value-added patent and non-patent sequence data)

Commercial Databases - Advantages

- “Value-added” data
 - Corrected bibliographic data
 - Enhanced title and abstract
 - Improved classification/indexing
- Sophisticated search, charting and analysis tools
 - Chemical formula / sequence search tools
 - Patent topographical maps
 - Citation analysis
 - Semantic search
- Provide integrated access to multiple sources of patent and non-patent literature (NPL)
- Customer Support



Derwent World Patents Index® (DWPI)

- Bibliography for 43 patent issuing authorities
- Detailed information from 10 authorities
- Enhanced abstracts and titles
- Derwent classification and subject indexing
- Classification codes include reformed IPC, CPC, ICO, NCL, and F-terms
- Patent Assignee Codes (PACO)
- Dates back to 1963

STN

- Cross-content search of patent and non-patent data
- Additional classification and abstracts (DWPI)
- Additional chemistry metadata (MARPAT, CAPlus)
- Chemical structure import and search
- Search index viewer
- Customized search term highlighting in results
- Patent family grouping

Patent Information Searching - Challenges

Challenges

- Amount of Information
 - > 120 million patents published
- Languages
 - Different languages
 - Keywords/synonyms
 - Errors
- Geography
 - Coverage
- Time periods
 - Coverage
- Time and Budget Spent

Coverage : Differences

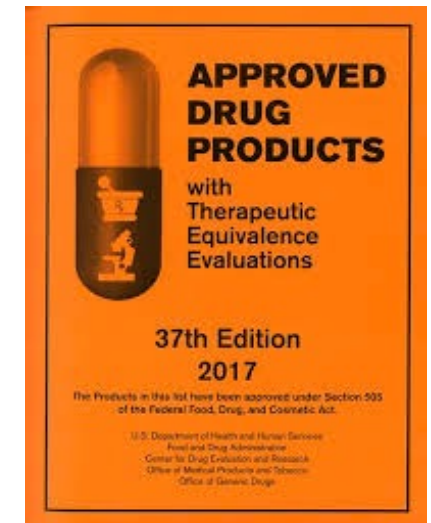
- Patent collections
 - Which countries or regions?
- Document types
 - Patent applications? Granted patents? More?
- Document elements
 - Bibliographic data? Descriptions? Claims
- Time period
- Languages
 - Multiple language versions? Translations?
- Non-Patent Literature
 - Simultaneous access to scientific and technical journals



Orange Book

Approved Drug Products with Therapeutic Equivalence Evaluations

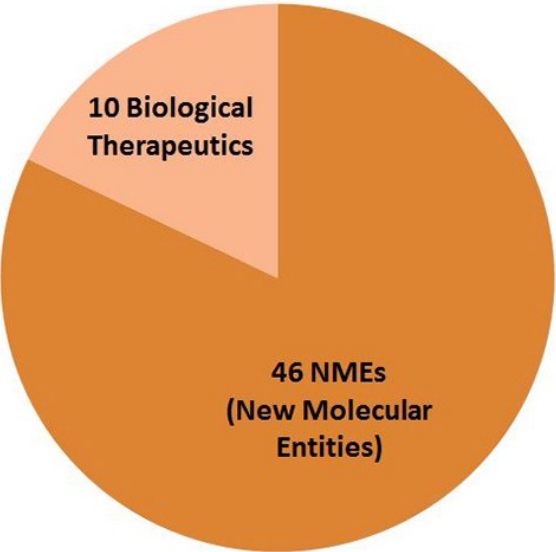
- This publication identifies drug products approved on the basis of safety and effectiveness by the Food and Drug Administration (FDA) under the Federal Food, Drug, and Cosmetic Act (the Act) and related patent and exclusivity information.
 - Search approved drug products by
 - active ingredient,
 - proprietary name,
 - applicant,
 - application number,
 - dosage form,
 - route of administration or
 - patent number.
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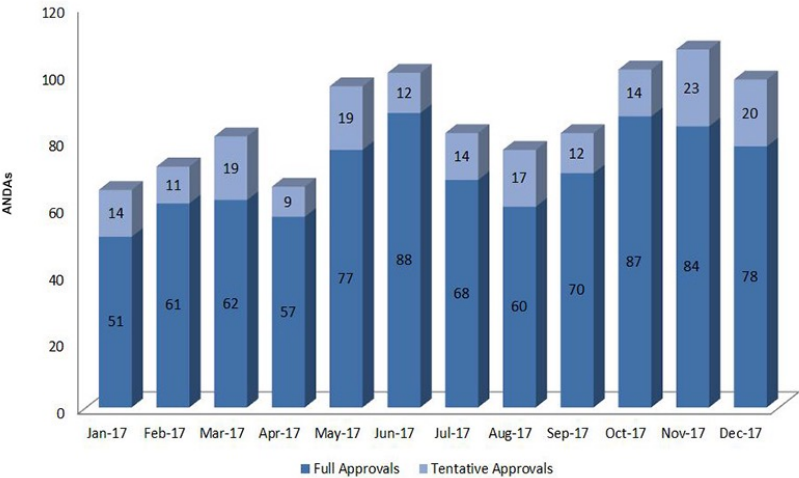
Drugs@FDA - FDA Approved Drug Products

2017 NOVEL DRUGS & BIOLOGICS APPROVALS

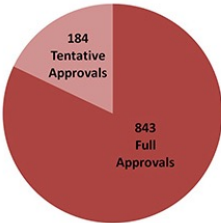
**FDA APPROVED
TOTAL OF 56
NOVEL DRUGS
& BIOLOGICS**



2017 Generic Drugs Approved



**1,027 Total
Generic Approvals**



Drugs@FDA - FDA Approved Drug Products

- Download Drugs@FDA
- Search by
 - Drug Name,
 - Active Ingredient, or
 - Application Number



<https://www.accessdata.fda.gov/scripts/cder/daf/index.cfm>

Patent Search – An Example

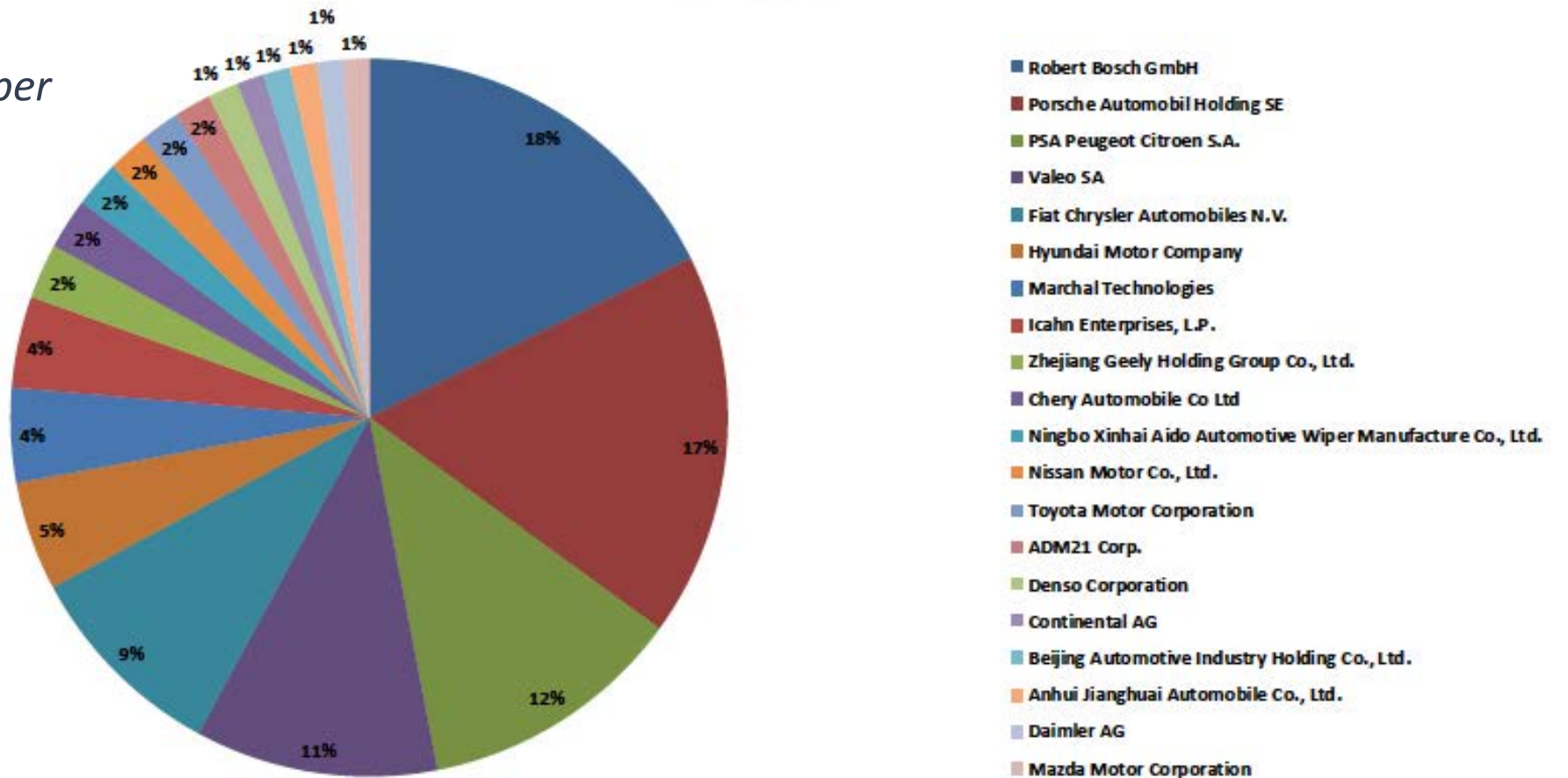
Keyword: *automobile wiper*

Organizations



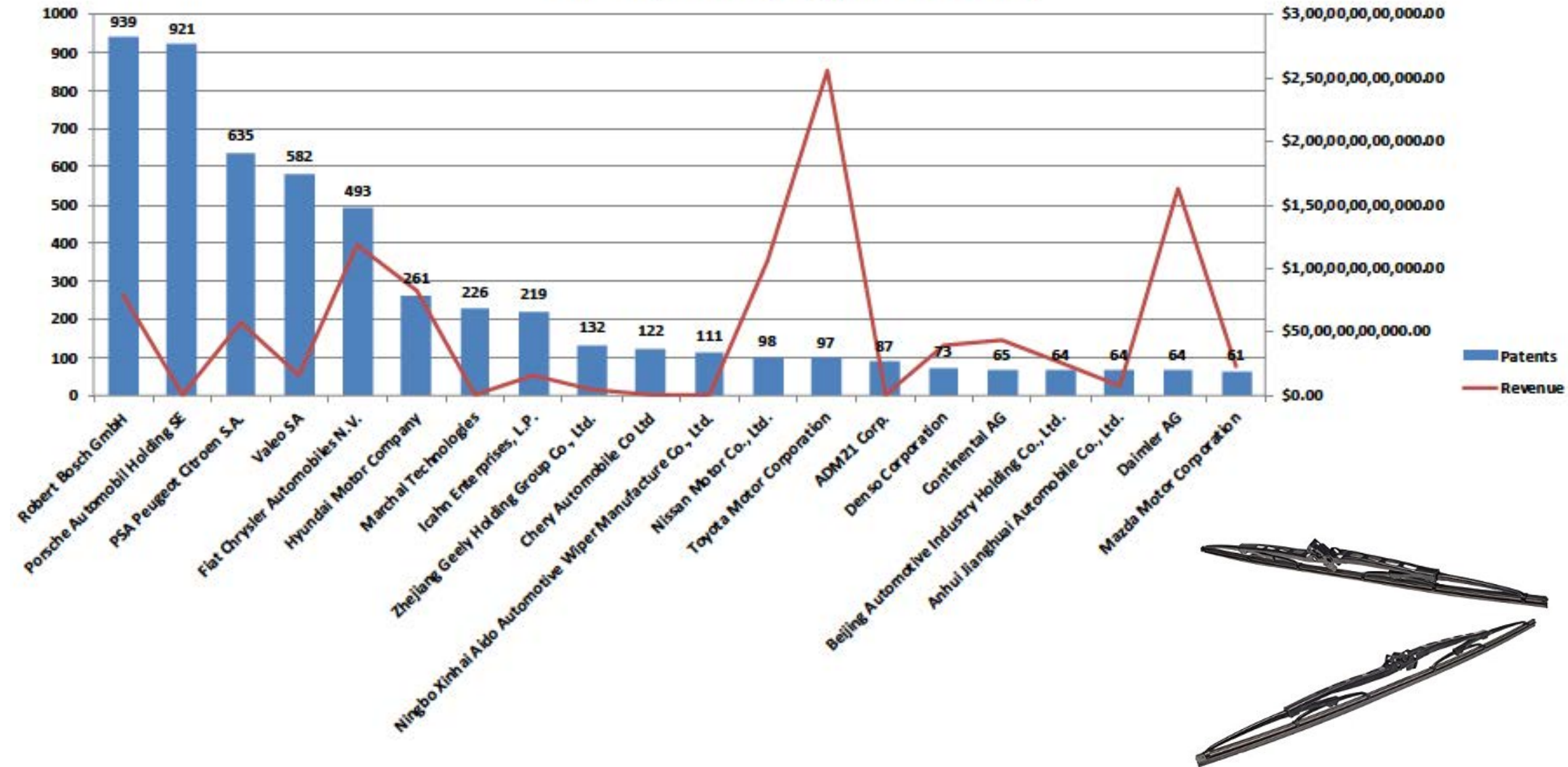
Patents: 12003
Organizations: 1978

% Patents Per Company (Top 20)

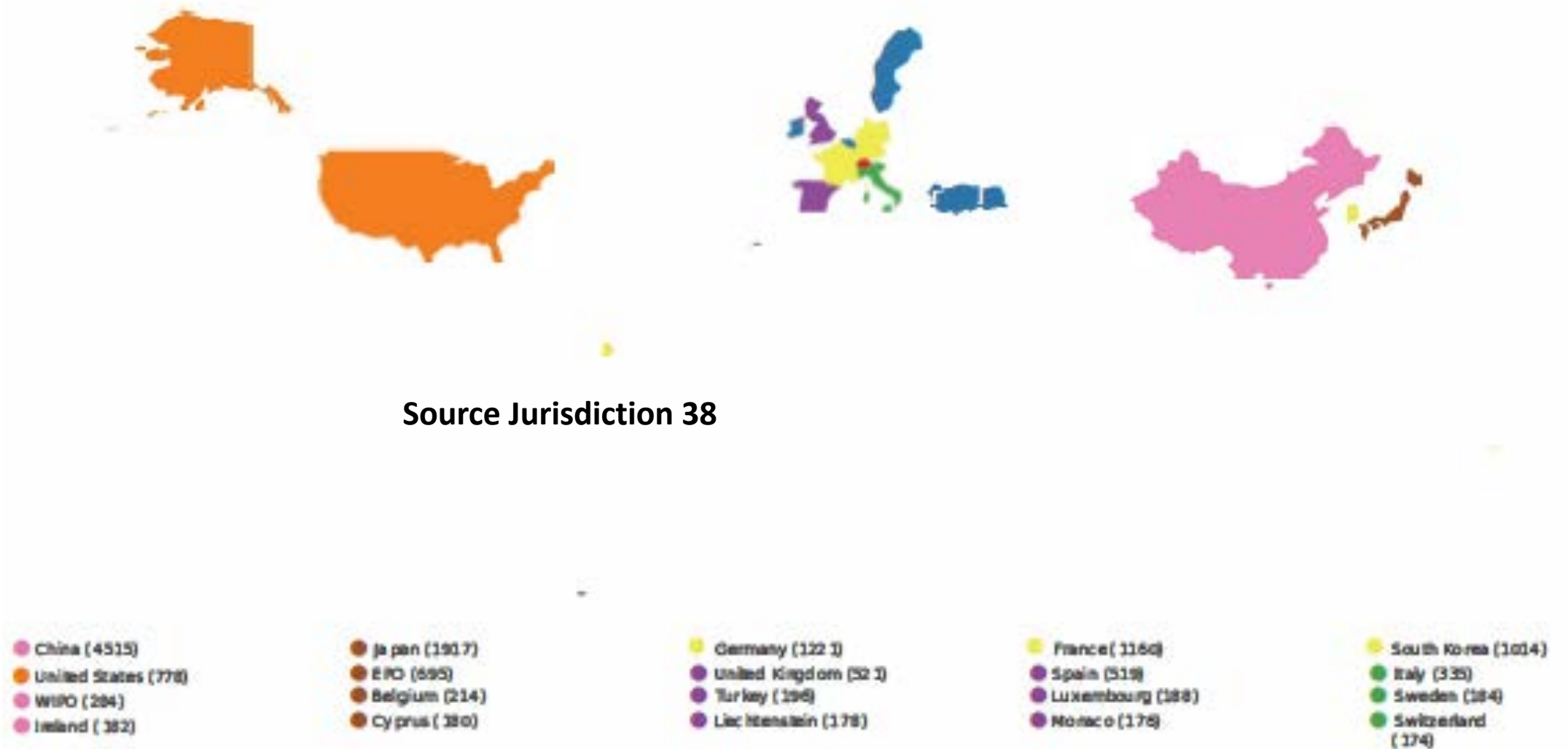


Search carried out on June 19, 2018

Patents per Company (with Revenue)



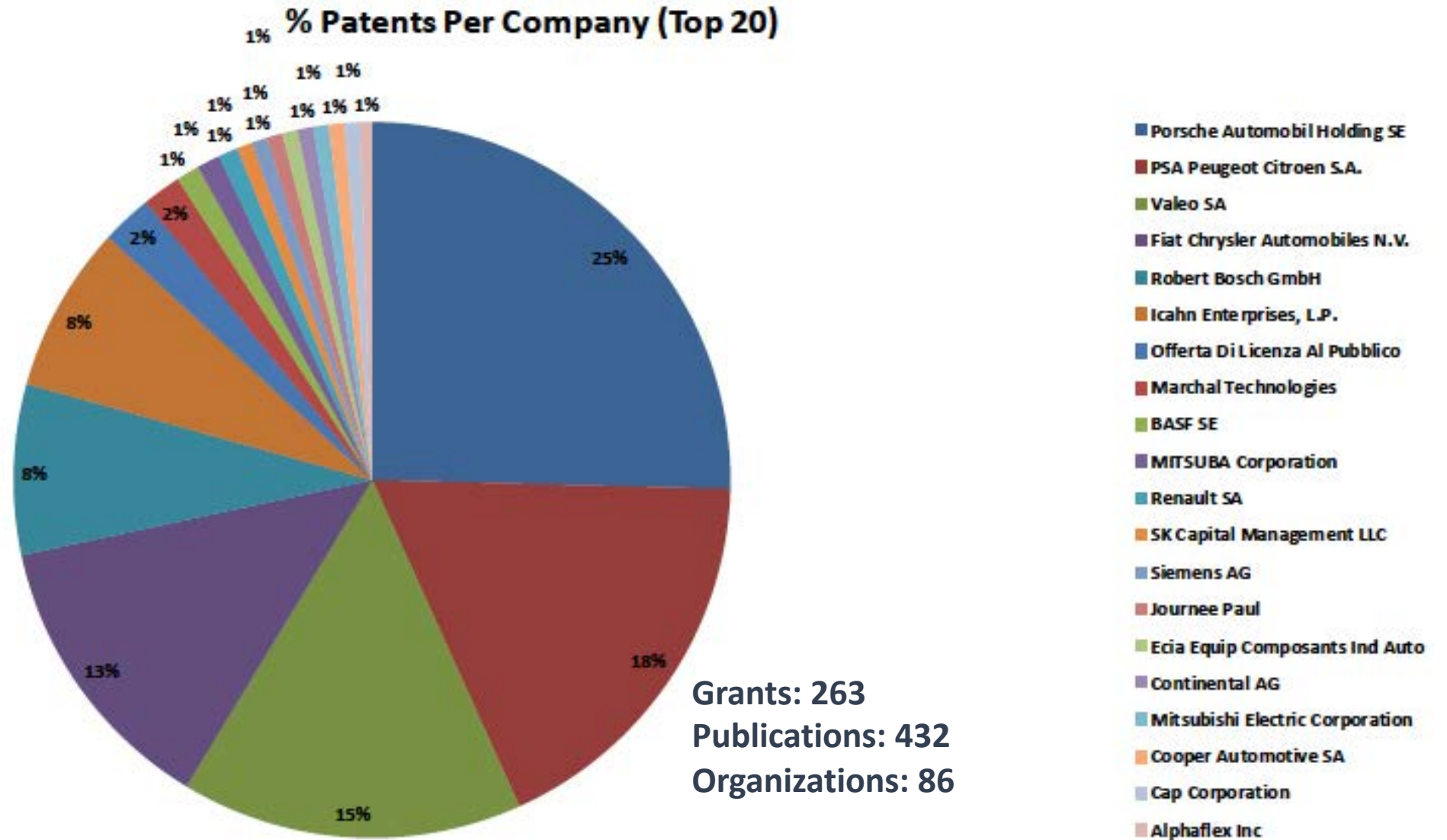
Patents per Source Jurisdiction (Incl Designated States)



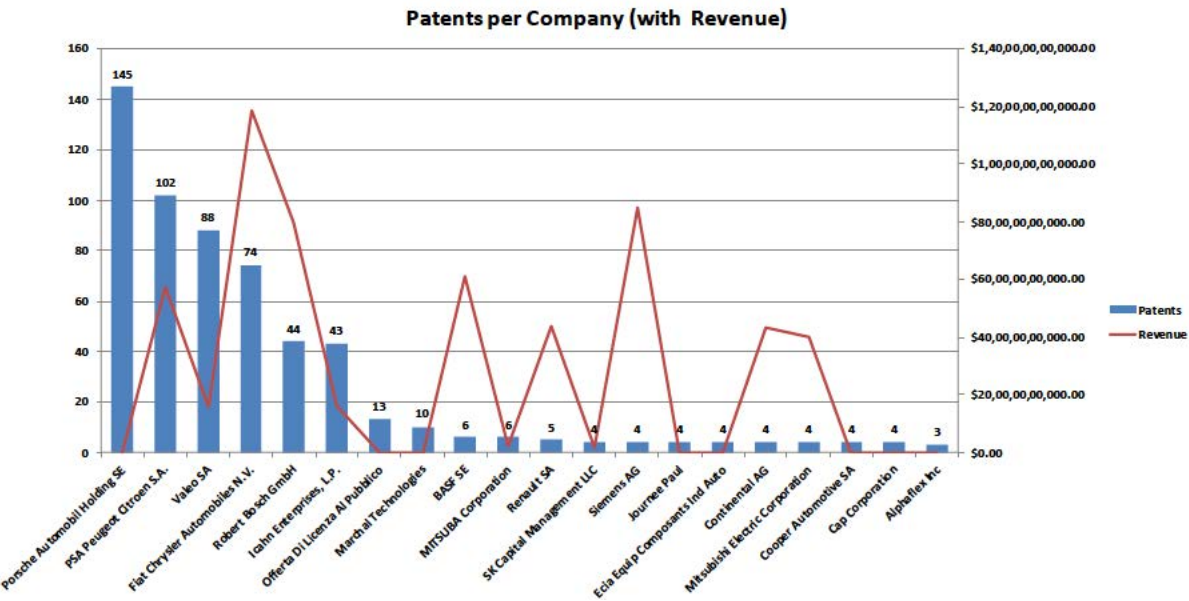
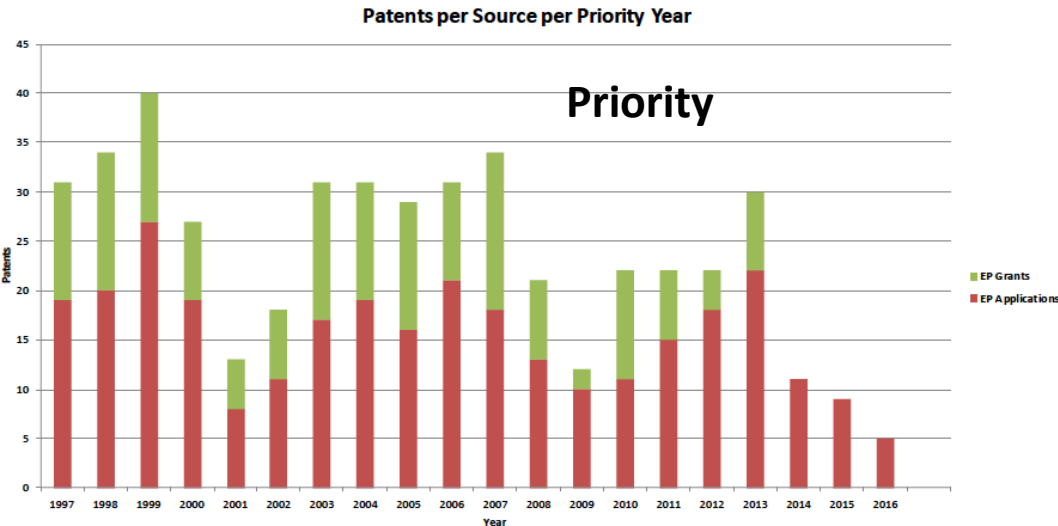
Source Jurisdiction 38

Active Patents
EPO Grants
EPO Publications

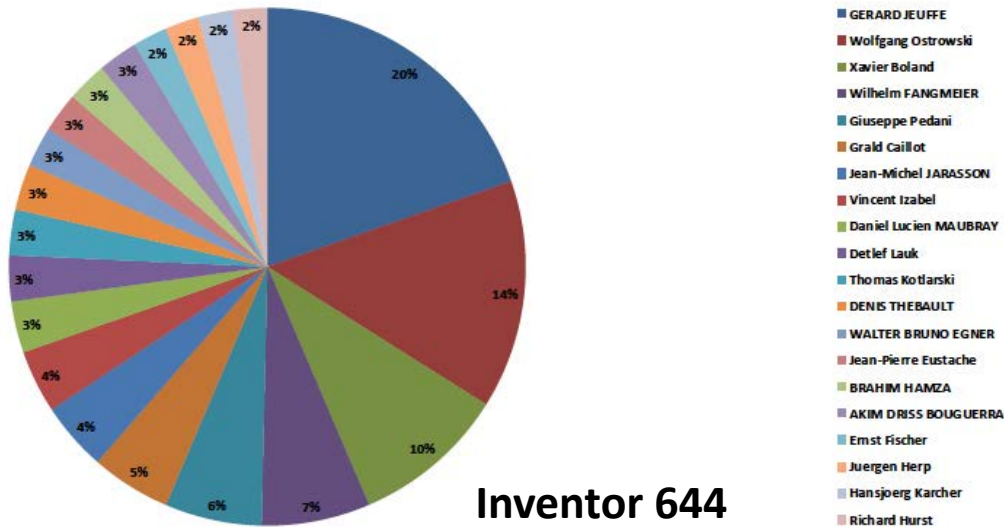
Organizations



Patents & Publications - EPO

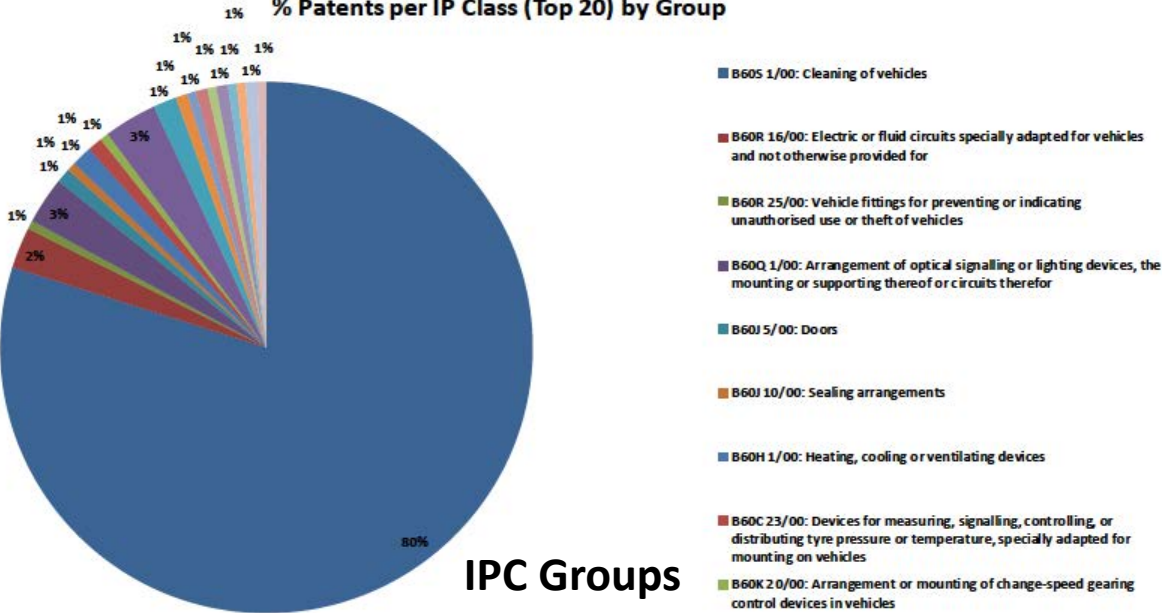


% Patent Share per Inventor (Top 20)



Inventor 644

% Patents per IP Class (Top 20) by Group

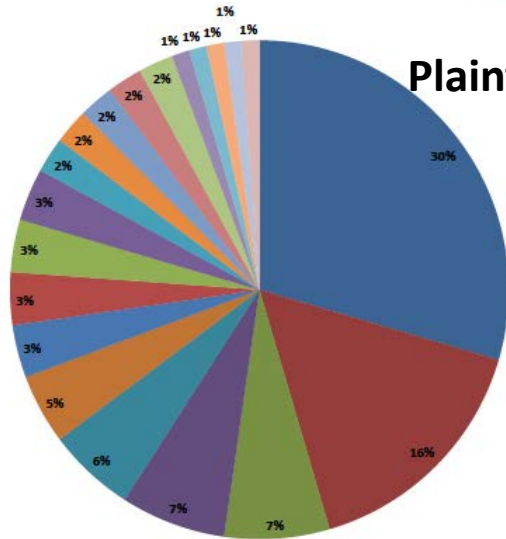


IPC Groups

Patent Litigations – 107 Cases

% Cases per Plaintiff (Top 20]

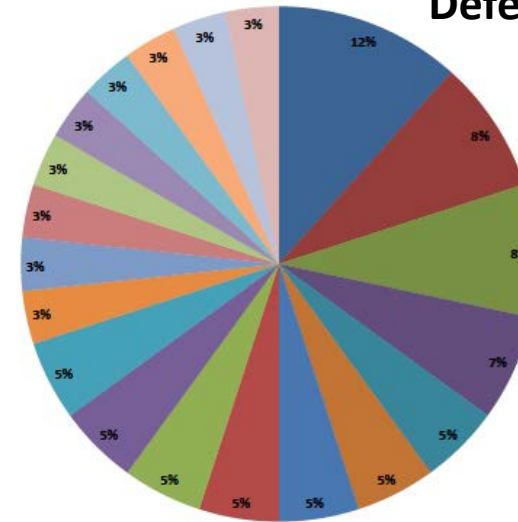
Plaintiff 43



Charlesbank Capital Partners, LLC
Robert Bosch GmbH
Magna International Inc.
Velo city Patent LLC
Costco Wholesale Corporation
ZF Friedrichshafen AG
One Pass Water Blade, LLC
Kearns Robert W
E-Watch, Inc.
Winplus North America, Inc.
American Calcar Inc
Omega Patents LLC
Vehicle Interface Technologies, LLC, Delaware
Icahn Enterprises, L.P.
Porsche Automobil Holding SE
Gauge Works, LLC
Voxx International Corporation
Jay Ryu
Terry Bumi Ryu
Eaton Leonard Inc

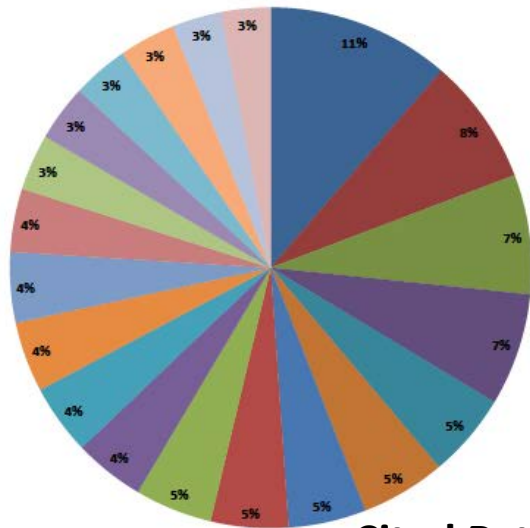
% Cases per Defendant (Top 20]

Defendant 180



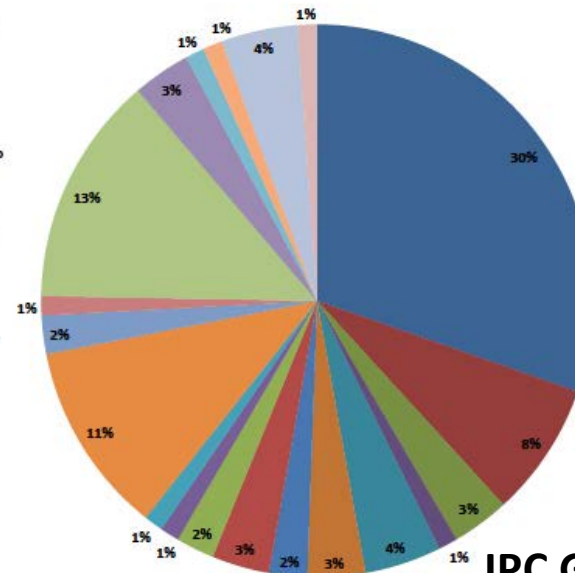
Robert Bosch GmbH
Fiat Chrysler Automobiles N.V.
Scan Top Enterprise Co
Magna International Inc.
Honda Motor Co., Ltd.
Bayerische Motoren Werke AG
Trico Products Corp
ZF Friedrichshafen AG
Porsche Automobil Holding SE
Corea Autoparts Producing Corporation
Cap America, Inc.
Sun-Mate Corporation
Hallelujah Auto Sound, Inc.
sound master
Thunderous Sounders Electronic Co Ltd
Central Glass Co., Ltd.
Koch Industries
Guardian Glass Company
Guardian Industries Distribution Center, Incorporated
Toyota Motor Corporation

% Cases per Patent (Top 20]



US5534845: Advanced automotive automation and security system
US4584569: Motion sensitive security system
US5646591: Advanced method of indicating incoming threat level to an electronically secured vehicle and apparatus therefor
US5532670: Method of indicating the threat level of an incoming shock to an electronically secured vehicle and apparatus therefor
US5572185: Car alarm having a soft chirp arming signal
US6944905: Wiper blade for cleaning screens in particular on motor vehicles
US5783989: Alarm sensor multiplexing
US5872519: Advanced embedded code hopping system
USD419474: Remote control transmitter

% Cases per IP Class (Top 20) by Group



B60S 1/00: Cleaning of vehicles
B60K 28/00: Safety devices for propulsion-unit control, specially adapted for, or arranged in, vehicles, e.g. preventing fuel supply or ignition in the event of potentially dangerous conditions
B60K 35/00: Arrangement or adaptations of instruments
B60K 37/00: Dashboards
B60R 25/00: Vehicle fittings for preventing or indicating unauthorised use or theft of vehicles
B60Q 1/00: Arrangement of optical signalling or lighting devices, the mounting or supporting thereof or circuits therefor
B60J 1/00: Windows
B64D 45/00: Aircraft indicators or protectors not otherwise provided for
B62D 65/00: Designing, manufacturing, e.g. assembling, facilitating disassembly, or structurally modifying motor vehicles or trailers, not otherwise provided for
B65D 75/00: Packages comprising articles or materials partially or wholly enclosed in strips, sheets, blanks, tubes, or webs of flexible sheet material, e.g. in folded wrappers
B21D 7/00: Bending rods, profiles, or tubes
G08B 13/00: Burglar, theft, or intruder alarms

Cited Patents 1356

IPC Groups 33

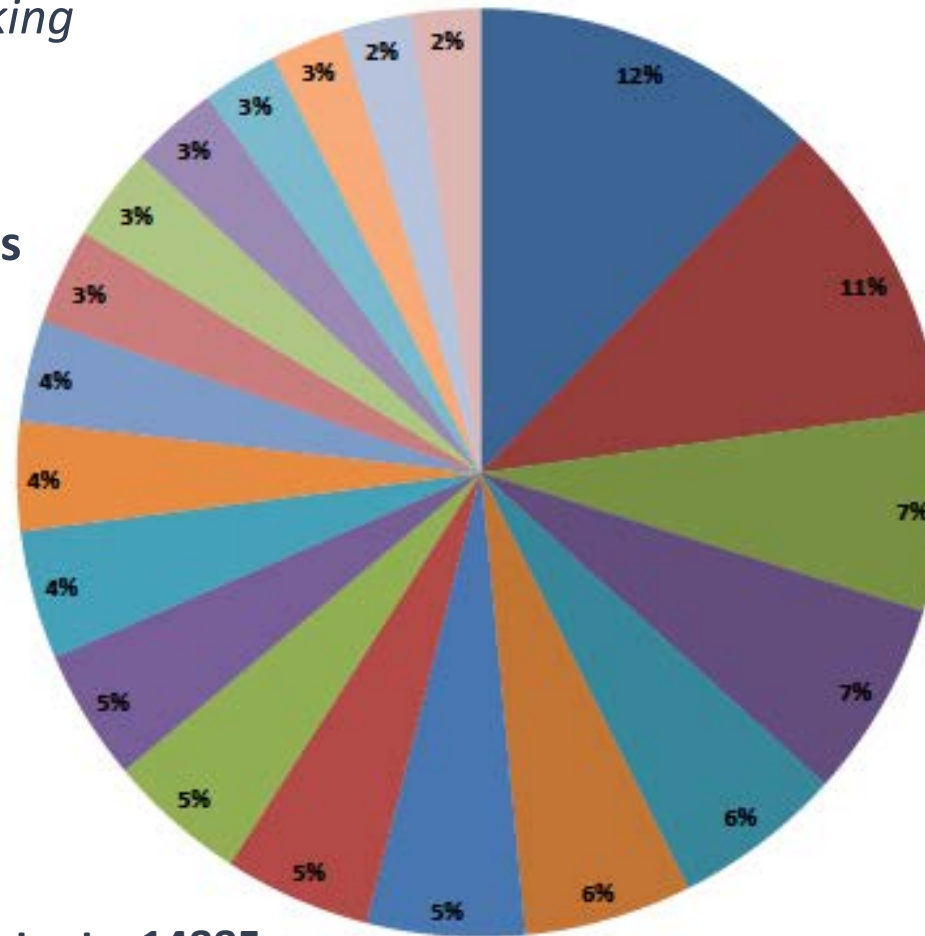
Patent Search – Another Example

Keyword: *blister packing*

Organizations



% Patents Per Company (Top 20)

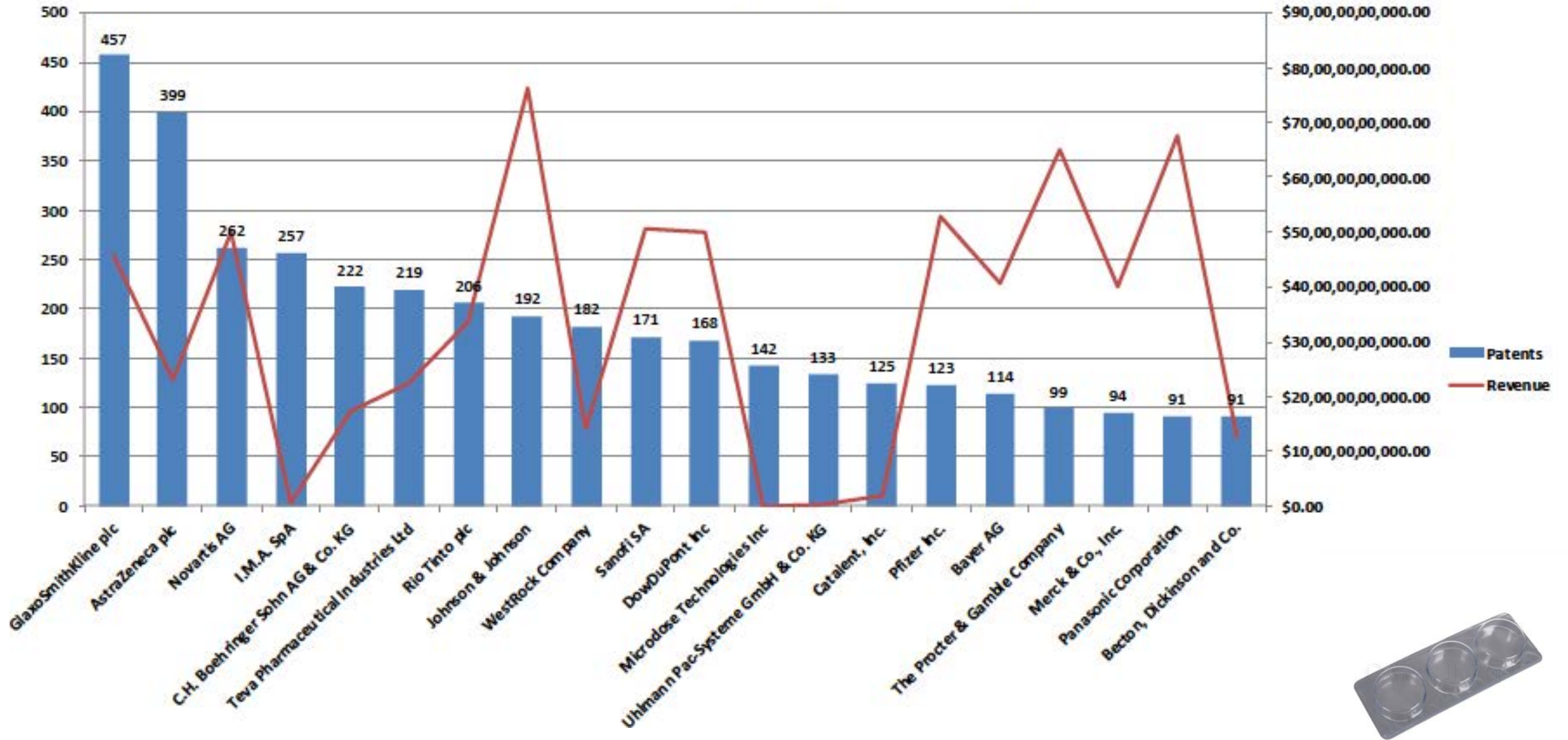


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- I.M.A. SpA
- C.H. Boehringer Sohn AG & Co. KG
- Teva Pharmaceutical Industries Ltd
- Rio Tinto plc
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- Microdose Technologies Inc
- Uhlmann Pac-Systeme GmbH & Co. KG
- Catalent, Inc.
- Pfizer Inc.
- Bayer AG
- The Procter & Gamble Company
- Merck & Co., Inc.
- Panasonic Corporation
- Becton, Dickinson and Co.

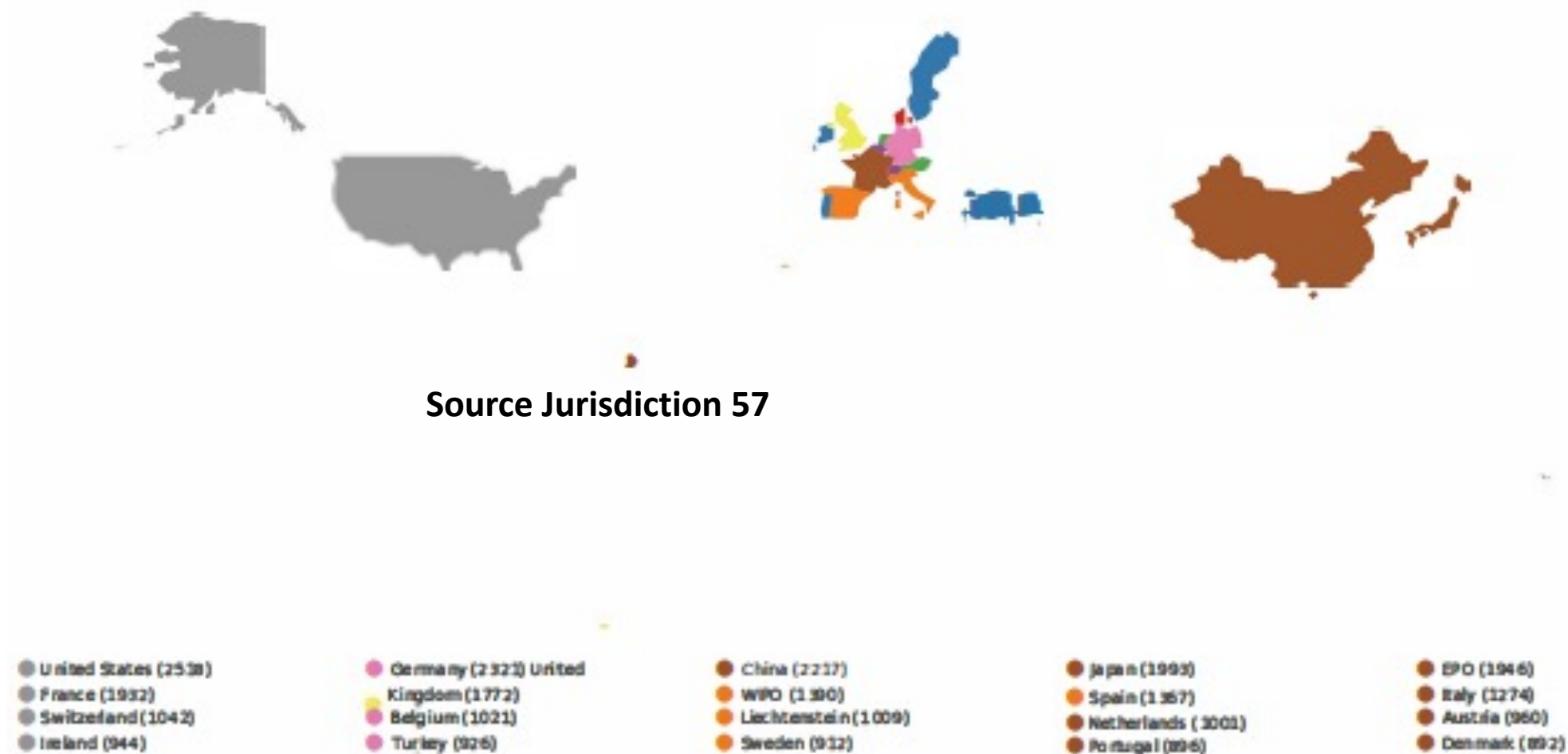
Patents: 14885
Organizations: 3408

Search carried out on June 19, 2018

Patents per Company (with Revenue)

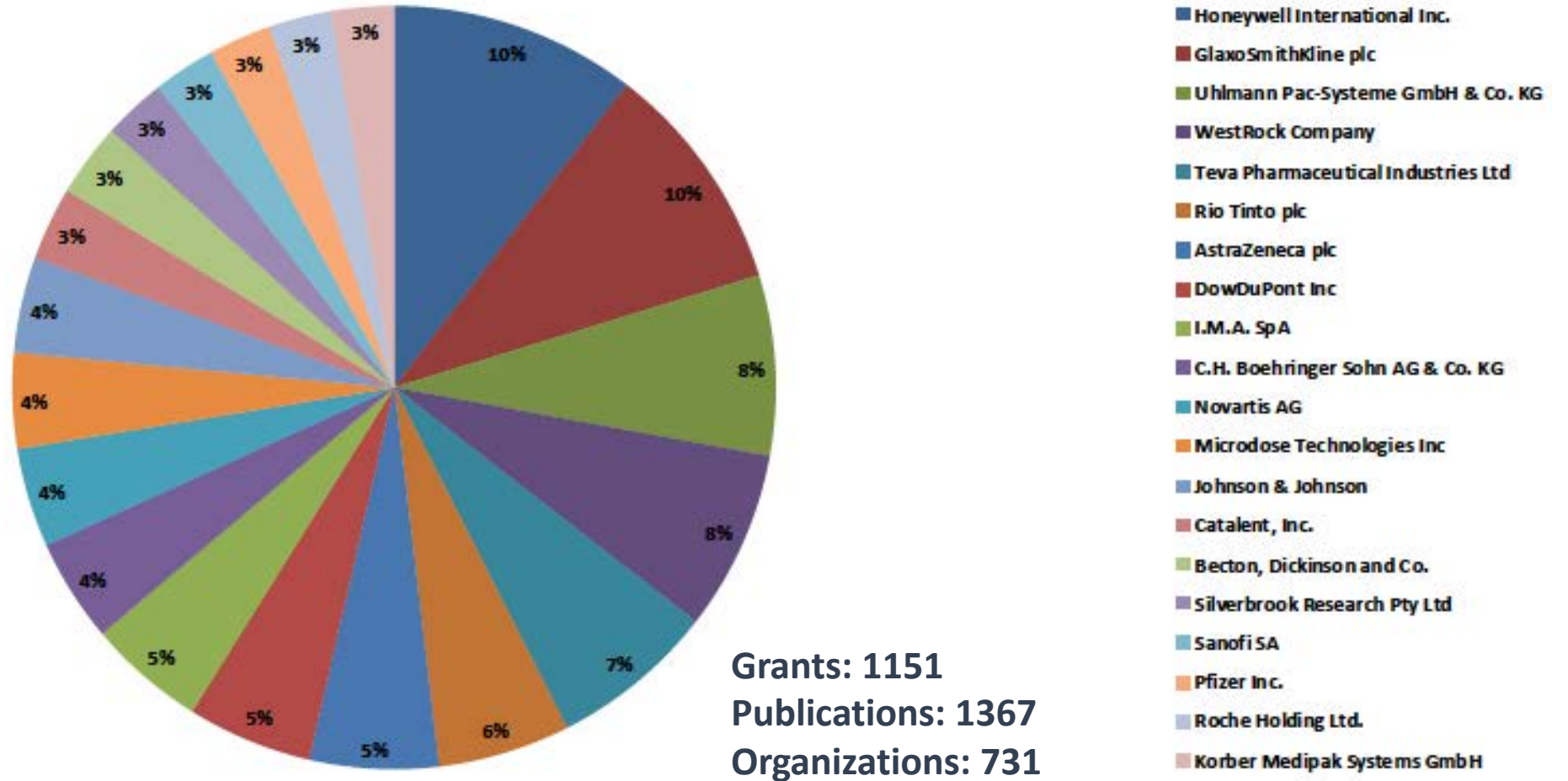


Patents per Source Jurisdiction (incl Designated States)



Source Jurisdiction 57

% Patents Per Company (Top 20)



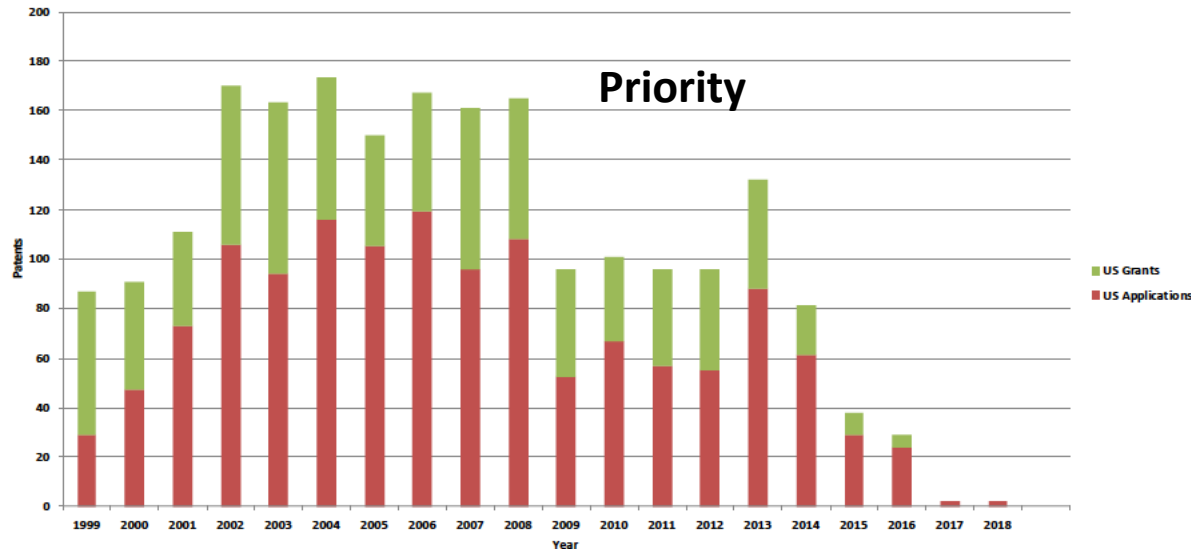
Active Patents
US Grants
US Publications

Organizations

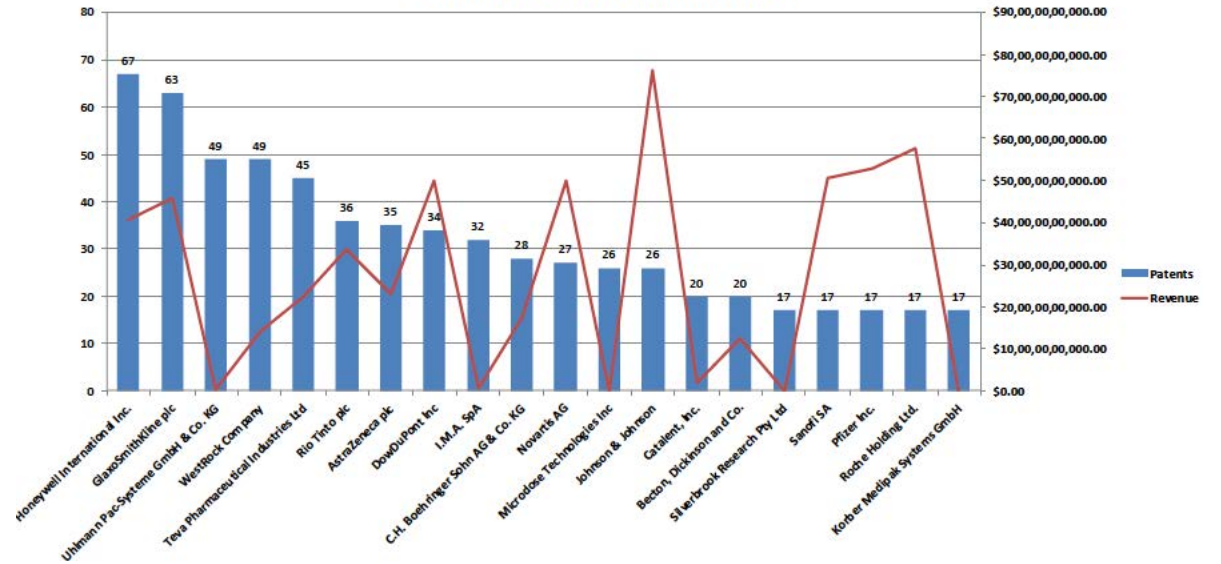
Grants: 1151
Publications: 1367
Organizations: 731

Patents & Publications - USPTO

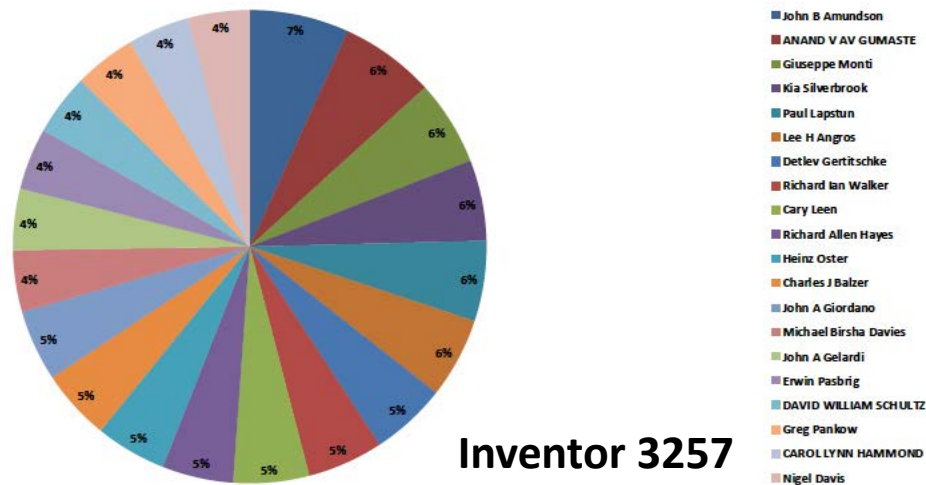
Patents per Source per Priority Year



Patents per Company (with Revenue)

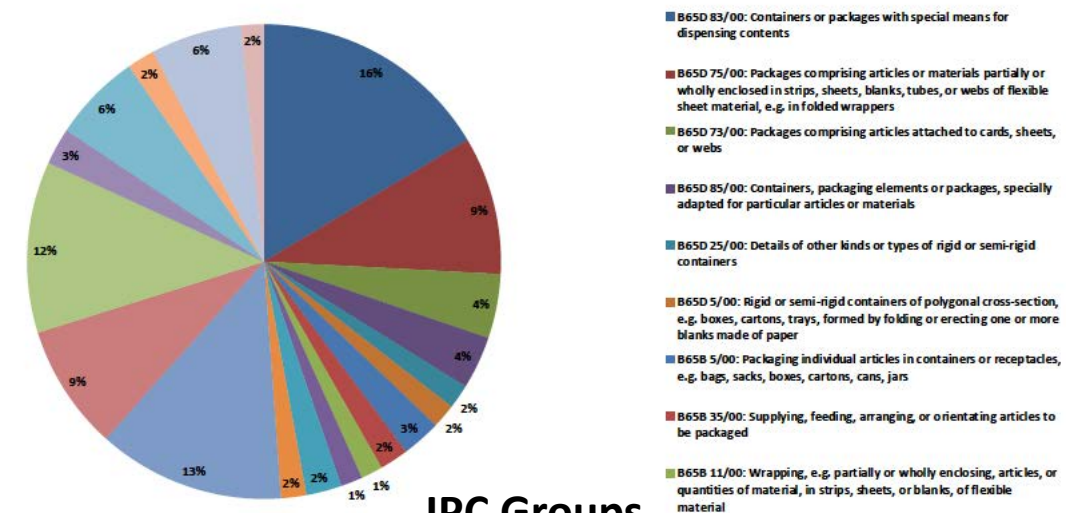


% Patent Share per Inventor (Top 20)



Inventor 3257

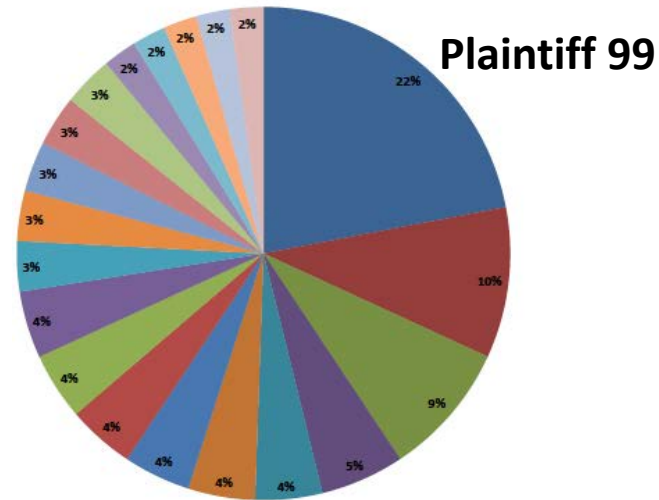
% Patents per IP Class (Top 20) by Group



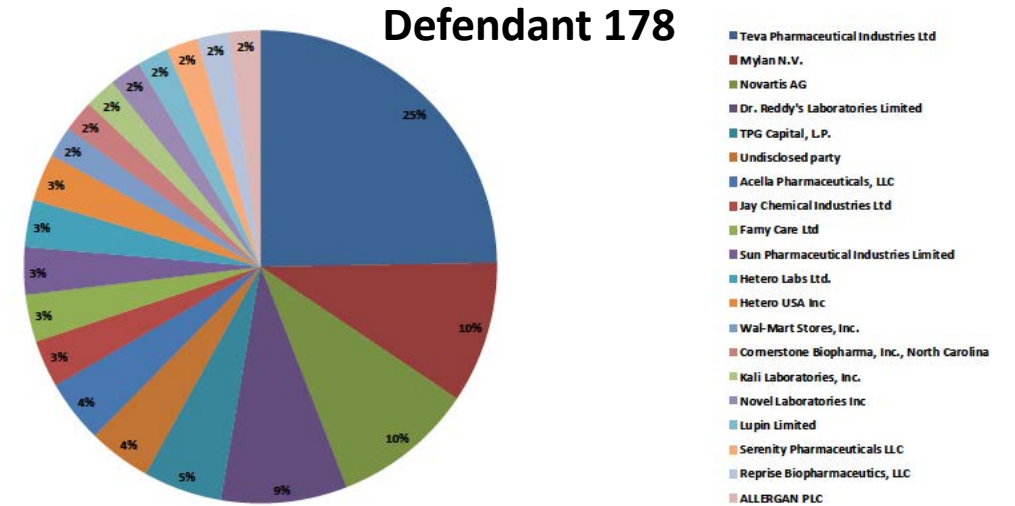
IPC Groups

Patent Litigations – 147 Cases

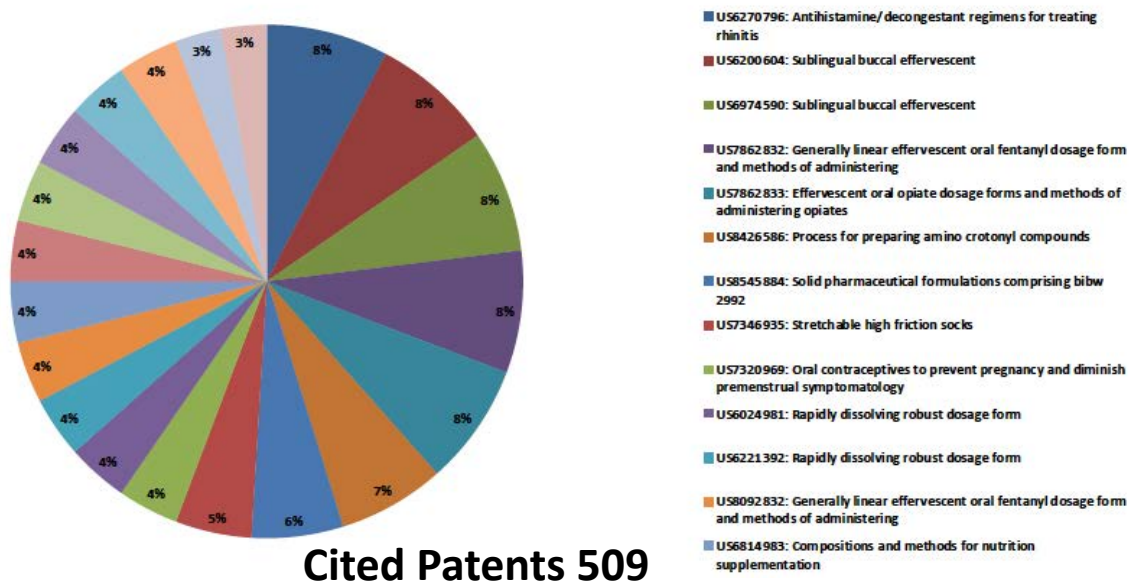
% Cases per Plaintiff (Top 20]



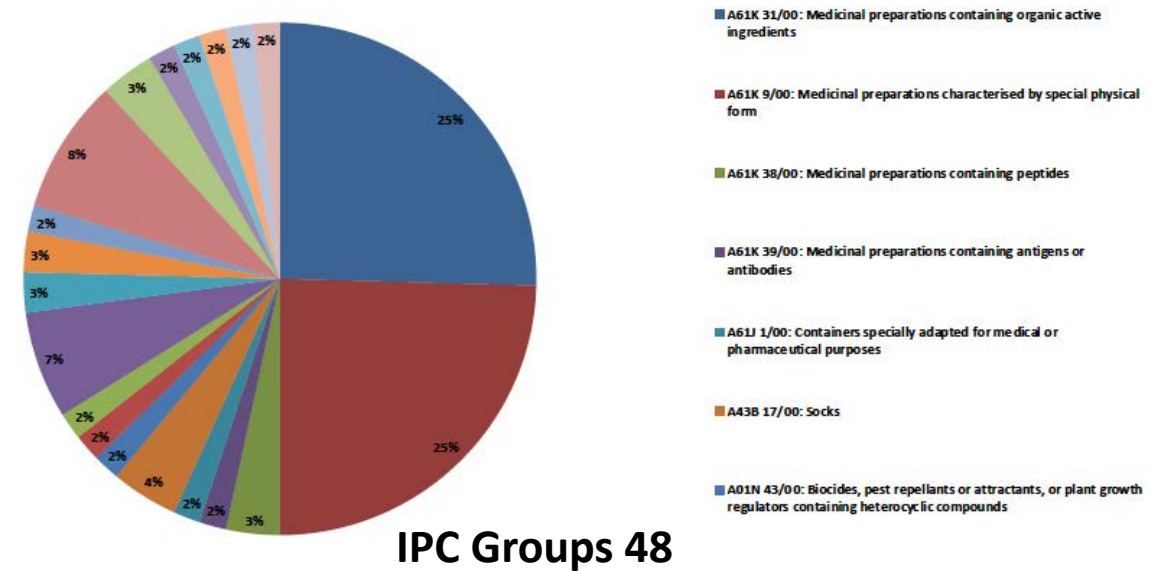
% Cases per Defendant (Top 20]



% Cases per Patent (Top 20]



% Cases per IP Class (Top 20) by Group



Strategy



- What information is needed?
- The state of the art in a research area
 - New literature - technical and patent
 - New substances - sequences, polymers, compounds, ..
- New technology/patent from key competitors
- Status of known patents
 - New family equivalents
 - New granted patents
 - Post issue office actions
 - Patent expiry dates
 - Litigation history
- Those citing our patents

Challenges

- What should be monitored ?
- How often should the sources be checked ?
- Will the same literature be retrieved more than once?
- How much time will this activity consume?
- Can the process be automated ?
- How should the current literature be delivered ?

Current Awareness information is useful only when

- Relevant from a technical perspective
- Current
- Delivered in a meaningful way

Smart Searching

- Use terms and codes from documents already known.
- Extensive citation searching Search for inventors (authors) and companies active in the field
- Display controlled terms, patent classifications and database specific codes of relevant documents
- Add relevant codes and terms to strategies
- Keeping control: do not mix up narrow and broad key terms/codes in “OR” term sets
- Use many different strategies with a low number of key terms/codes to explore the technology step by step
- For multi-featured technology start with strategies focusing on two features at a time and if necessary add additional key terms/codes in a second step if answer sets are too broad
- Start with searches in Titles and Abstracts and depending on precision expand to Claims and further to the Description
- Look in adjacent technical fields (patent classifications) for those features which objectively constitute the characterizing features
- Iterative process: keep the search process interactive by checking retrieved answer sets on the basis of low-cost formats and refine
- Generate a list of synonyms



thank
you



NALSAR University of Law

Justice City, Shameerpet, Medchal District, Hyderabad - 500101

Annexure

Directory of Intellectual Property Offices
National IP offices
Regional Offices

<<https://www.wipo.int/directory/en/urls.jsp>>