



NANYANG
TECHNOLOGICAL
UNIVERSITY
SINGAPORE

Singapore Data Protection Regime 2021

Presented to

Advanced Diploma in
CyberSecurity & Data
Protection

NALSAR

By

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Wee Kim Wee School of Communication
& Information

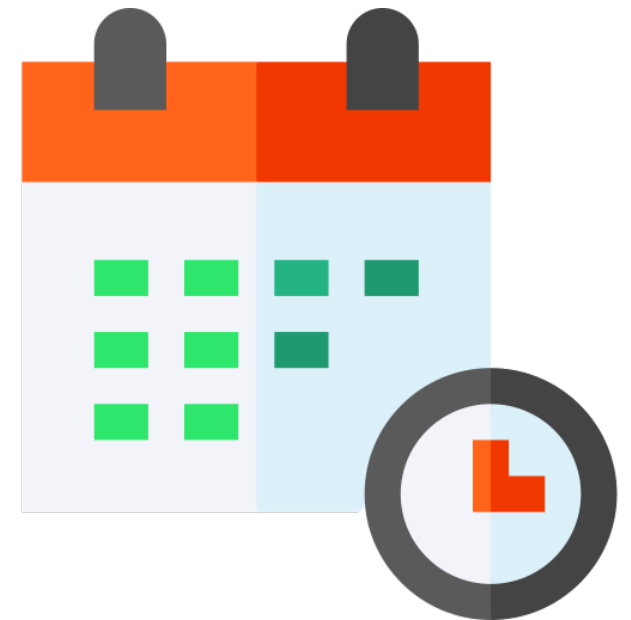


Background

- Doing media (including Internet) law and policy
- Was a member of UN Working Group on Internet Governance
- Was involved with the earliest discussions about privacy (1996)
- Was involved with the drawing up of a model code on privacy (2000)
- Currently consulting with Goodwins LLC as consultant in data protection

Agenda

- Why the need for Data Protection Laws?
- Outline of Singapore's Personal Data Protection Act 2012
- 9+1 Obligations
- The National Do-Not-Call Registry



Modern Origin of Privacy Traces to Warren & Brandeis

The Right to Privacy

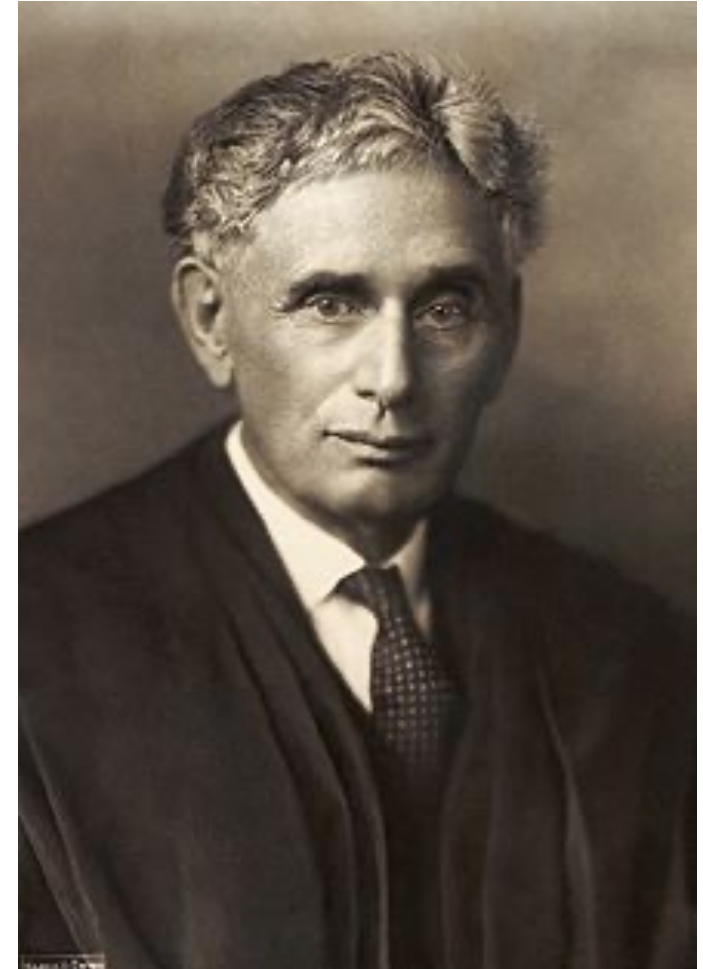
Harvard Law Review, 1890

Seminal article by:

Samuel Warren, Louis Brandeis

The right to be let (*not left*) alone, particularly by the press.

**Note: let alone = do not disturb*



Private vs Public

How did we get to this stage where being **private** is more valued *than* being **public**?

Answer: Computing power.

It enables the matching of data, something not possible earlier.



Why Europe is so Concerned About Data Protection



Privacy violation was probably a **contributory** factor to Holocaust

- European fear of data matching and profiling
- Evidence that this was used in the Holocaust
- IBM implicated

When Your Personal Data May Be Matched



Watch the full clip
here

Solution: Data Protection Laws

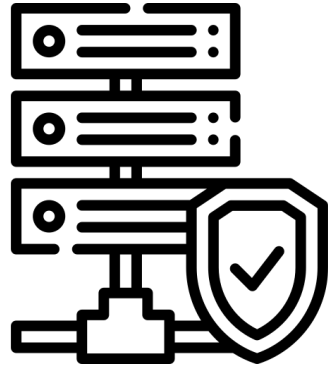
Limit collection and use of data

Can only use data for purpose collected unless waived by data subject

Empower data subject

Data protection is an inalienable fundamental human right

EU Data Protection Laws



General Data Protection Regulation

- GDPR adopted 27 April 2016
- Enforced with effect from 25 May 2018
- DP laws apply directly to all EU states

EU Data Protection Directive

- States directed to pass **Data Protection** laws
- DP varies between states
- Was on the path of tightening till the 9/11 Attack



The General Data Protection Regulation



Impact of GDPR

- Supersedes national laws
- Was effective May 2018
- Includes the right to be forgotten

However,

- Affects anyone who collects data about EU citizen anywhere in the world
 - Be extra careful if you collect personal information from an EU citizen
- It is complicated
 - 11 chapters, 99 articles, 173 recitals, 98 A4 pages
 - <https://app.www.calm.com/program/EJraCHgkB/once-upon-a-gdpr>

The Singapore Approach to Data Protection

Why?



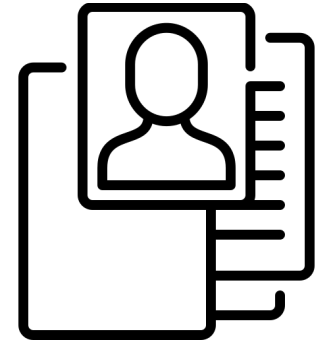
1. Desire to meet European Standard
 - General Data Protection Regulation
 - Data may only be transferred to third countries with “adequate” data protection
2. Creates trust in consumer
3. Support data storage and management industry in Singapore

Personal Data Protection Act 2012

- ✓ Non-Human Right view of Privacy
- ✓ Does not apply to Government and related agencies
- ✓ Also applies to those below 21 (age of legal majority)

Three rounds of public consultation

- Probably one of the best formulated laws in Singapore
- Probably one of the best formulated data protection laws in the world
 - Low cost of compliance
 - High certainty that one has complied
- Came into force mid- 2014 after 18 months of sunrise provision



Non-Human Right View of Privacy



Privacy is a contractual right

- It can be negotiated/bargained...
 - To minimise hassle
 - Form filling
 - “Efficient invasion”

No criminal sanctions for violations

- A breach of Singapore’s PDPA leads to payment of **penalties**, not **fin**es
- **Except for new provision regarding recalcitrant offender**

Objectives of Singapore's Data Protection Law



1. Consistency with International Standards

Based on OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data (OECD Guidelines)



2. Facilitate Cross-Sector Data Flows

Especially cloud and data warehousing



3. Manage compliance costs

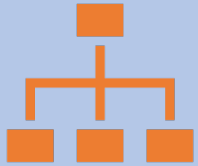
Minimum baseline law
Complaints-based regime (most efficient enforcement mode)

Minimum Baseline Law

It's ok to *rattle* the bar but just don't let it *drop*.



Territorial Scope



Applies to any organisation anywhere that processes personal data from Singapore.



It has to be the case. If I can bypass Singapore law by transferring data outside Singapore, then the law would not have any force.

The PDPA in a nutshell

#1-#4 are the minimal requirements necessary for data protection laws.

1. Have **reasonable purposes**, **notify** purposes and obtain **consent** for the collection, use or disclosure of personal data

2. Allow individuals to access and **correct** their personal data

3. Take care of personal data (i.e. ensuring accuracy), **secure** personal data (including during transfers) and do not retain personal data if no longer needed

4. **Develop policies and practices** to comply with the PDPA, including appointing an Officer-in-Charge

5. And the National Do-Not-Call Registry

Liability in PDPA



Organisation

- Have robust (aka bullet-proof) policies
 - Can
 - Policies may need updating
- Appoint a DPO (data protection officer)

Otherwise, company may be penalised (not fined) up to \$1 million or 10% of turnover, whichever is higher

Employee

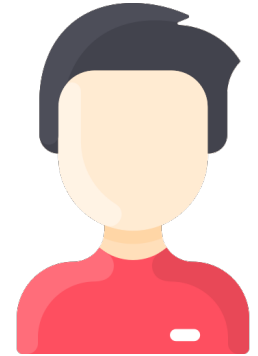
- Be familiar with the rules
 - Go for training esp. if employer sends you
 - Like this one
- Obey the rules
- Be updated on the rules

Personal Data Under PDPA

S. 2

“**personal data**” means data, whether true or not, about an individual who can be identified —

- a) from that data; or
 - b) from that data and other information to which the organisation has or is likely to have access;
-
- Deliberately left unspecific, not just NRIC – instead examples used, such as NRIC and mobile number
 - Includes the deceased for up to 10 years



Exclusions of Personal Data

- Public agencies
 - Public agencies “gazette” are excluded
- Natural person acting in personal or domestic capacity
 - The data of my domestic help is personal data but it is not protected under the PDPA
- Private trust

What is Personal Data?

- Information (whether true or not) about an **individual who can be identified** from that

AND/OR

- Other data to which the **organisation may have access** to



PDPA Does Not Apply to the Following Types of Personal Data

Business information is NOT personal data under the PDPA



Business contact information;



Personal data that is contained in a record that has been in existence for at least 100 years; and



Personal data about a deceased individual who has been dead for more than 10 years

Personal Data vs Business Data (Part I)

Please read the following scenarios and answer the questions:

- The owner of a business engages a real estate agent to buy commercial space with the intent of opening a new branch. Can the agent pass on the owner's contact details (without consent) to other agents to help him with the purchase?

Personal Data vs Business Data (Part II)

- The same business owner hires the same agent to buy a condominium for his own stay. Can the agent pass on the owner's contact details (without consent) to other agents to help him with the purchase?

The Business Card – Part I

Please read the following scenarios and answer the questions:

- You give your name card for this training course. Can we contact you for future courses?



The Business Card – Part III

Please read the following scenarios and answer the questions:

- One of your sales staff has collected name cards at an exhibition. May you market to these individuals?



9+1 Obligations Under the PDPA

The main test to keep in mind: Reasonableness

The 9+1 Obligations

1. Consent

2. Purpose Limitation

3. Notification

4. Access & Correction

5. Accuracy

6. Protection

7. Retention

8. Transfer

9. Openness

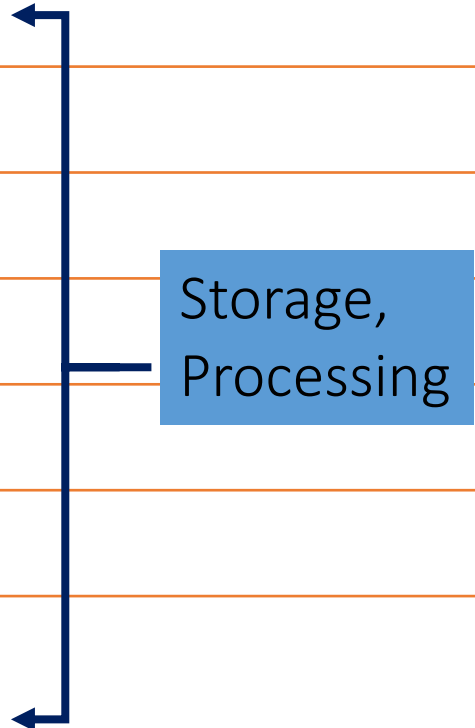
10. Mandatory data breach notification*

11. Data portability (when regulations are issued)

Collection



Storage,
Processing



* Feb 2021

Obligation #1: Consent

Consent Obligation

*“Organisations must get the consent of the individual before **collecting, using or disclosing** his personal data for a purpose.”*

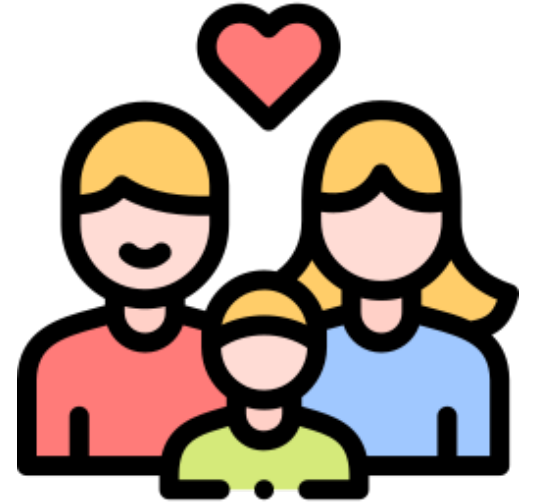
(PDPA ss, 13 – 17)

But there are lots of exceptions...



Exclusions

- Individuals acting in personal or domestic capacity
 - Individuals do not need to comply with PDPA
 - You may collect, use and disclose personal information of family
 - Eg passport number of children, sister, spouse to hotel
- Individuals acting as employees
 - You may collect information about other staff



But organisations must protect ALL data collected

Is Consent Always Needed?

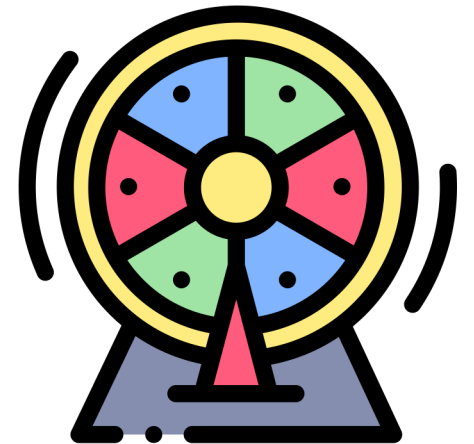


- No consent needed for publicly available data
 - E.g. Open Facebook page, phone directory
- If data was collected when they were publicly available, data may be used
 - Even if at the time of use, the data was no longer publicly available

Consent Obligation: Consent May Be Deemed

Consent does not have to be explicit.

- An individual voluntarily provided his/her personal data;
- The individual was aware of the purpose for which the personal data was provided; and
- The circumstances are such that it is reasonable for the individual to have provided his personal data
 - E.g. Lucky draw winner did not tick box to contact him/her*



Deemed Consent Framework Expanded (Feb 2021)

1. Contractual Necessity (S.15)

- Where personal data must be transferred to perform a transaction
 - E-payment, e-deliveries

2. Notification (S.15A PDPA)

- Adequately notified and given a reasonable opt-out period
- Has NOT taken any action to opt out of the collection, use or disclosure of their personal data
- Deemed consent by notification cannot be used for sending direct marketing messages

Obligation #2 : Purpose Limitation

Purpose Limitation Obligation (PDPA Ss.18-20):

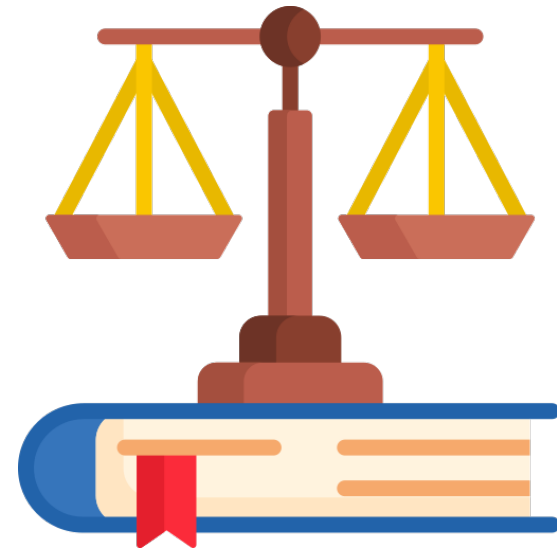
Organisations may collect, use or disclose personal data about an individual only for the purposes that he/she has given consent.

Organisations may not as a condition of providing a service or product, use the personal data of the individual beyond what is reasonable or for a new purpose.



Purpose of Use Obligation

- Must be reasonable and only for the purposes for which the consent was obtained (S.18)
 - No such thing as “*and any other purpose the company may deem fit*”
- Fresh consent is need if personal data collected are to be used for a different purpose (S.20)
- Exceptions:
 - Court order
 - Public and Law enforcement agency
- **New: Business Improvement**
 - Eg R&D



Example of Breach: Hong Kong Octopus Card

- Collection of personal data for rewards programme was legal and legitimate
- But collection of HK ID number, passport, birth certificate number, month and year of birth found to be excessive



Obligation #3: Notification

Notification Obligation: PDPA S.20

Organisations are required to notify the individual of the purpose(s) for which it intends to collect, use or disclose the individual's personal data on or before such collection, use or disclosure of the personal data.



Notification Obligation: PDPA S.20

Without Notification, there is no consent

1.When to notify?

- On or before collection, use or disclosure

2.How?

- Not stated. May be oral but best in writing

3.What details to be included when stating purpose

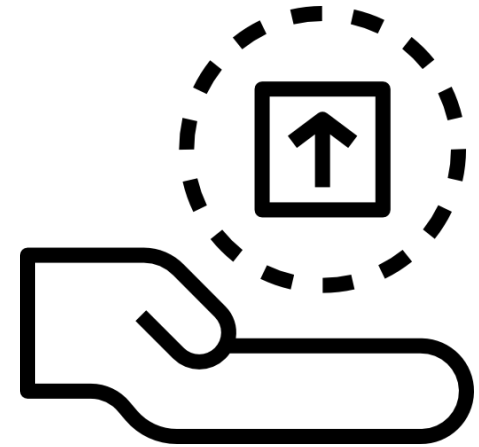
- Not stated, but may include circumstances, amount of information, frequency of collection

Obligation #4: Access & Correction

Accountability to Individuals

Access and Correction Obligation (PDPA ss. 21 - 22):

Upon request, organisations *should provide* individuals, details of their personal data and all information about the ways in which his/her personal data was *used or disclosed in the past year*. Organisations are also *required to amend* any error or omission pertaining to the individual's personal data upon his/her request.



Access

Individuals should be able to obtain access:

- Data about **themselves**
- Data about how their data were used

Organisations may refuse frivolous & vexatious requests:

- Exception in 5th Schedule

May charge reasonable fee:

- This is silent in the Act but was intended in the consultation
- PDPC *declined* to specify amount;
- Can take up to **30 days** for the organisation to respond

Exceptions to Access Requirement (5th Schedule)

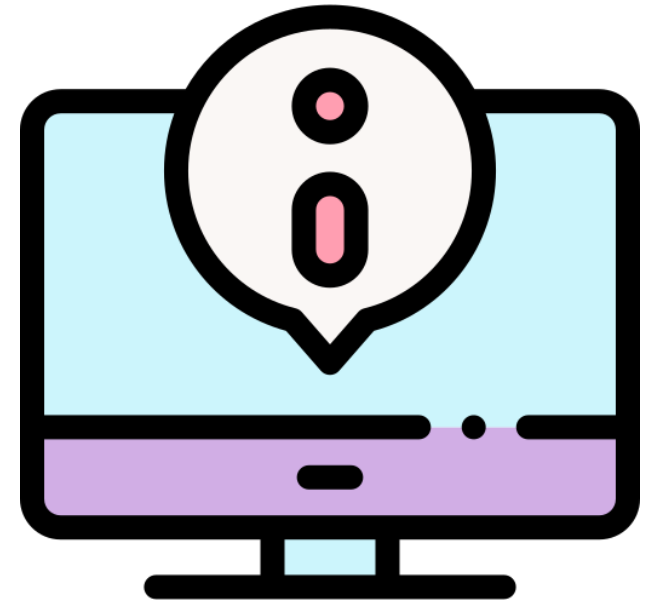
An organisation **MUST NOT** provide access to personal data if access may reasonably be expected to:

- a) threaten the safety or physical or mental health of an individual other than the individual who made the request; (unless possible to do without compromising safety & health)
- b) cause immediate or grave harm to the safety or to the physical or mental health of the individual who made the request;
- c) reveal personal data about another individual;
- d) reveal the identity of an individual who has provided personal data about another individual and the individual providing the personal data does not consent to the disclosure of his identity; or
- e) be contrary to the national interest.

Exceptions to Access Requirement (S.21(4))

(4) An organisation **MUST NOT** inform any individual under subsection:

- (1)(b) that the organisation has disclosed personal data about the individual to a prescribed law enforcement agency if the disclosure was made under this Act or any other written law without the consent of the individual.



Exceptions to Correction Obligation (S.22(6))

Sixth Schedule

Six exceptions, including:

1. opinion data kept solely for an evaluative purpose;
2. personal data kept by an arbitral institution or a mediation centre solely for the purposes of arbitration or mediation proceedings administered by the arbitral institution or mediation centre; and
3. a document related to a prosecution if all proceedings related to the prosecution have not been completed.

Correction Obligation

- a) Correct the personal data **as soon as practicable** *(30days?)*; and
- b) Send the corrected personal data to every other organisation to which the personal data was disclosed by the organisation **within a year** before the date the correction request was made, unless that other organisation does not need the corrected personal data for any legal or business purpose.
 - ✓ Warranty expired, no business purpose and so no need to correct
 - ✓ Non-corrections must be annotated, i.e. have a note attached

Obligation #5: Accuracy

Obligation #5: Accuracy (PDPA S.23)

*Organisations should **ensure** that all personal data collected from individuals is reasonably accurate and complete.*



Accuracy Obligation

Must make reasonable effort* to ensure that:

1. personal data are accurately recorded;
2. personal data are complete—ie, includes all relevant parts thereof;
3. it has taken the appropriate (reasonable) steps in the circumstances to ensure the accuracy and correctness of the personal data; and
4. it has considered whether it is necessary to update the information.

**Note: not “every” or “best” effort.*

Obligation #6: Protection

Protection Obligation (PDPA s. 24)

*Organisations are **required** to make security arrangements to **protect** the personal data in their possession or take measures to **prevent** unauthorised access, collection, use, disclosure or any other threats to safeguard both personal data in electronic and non electronic forms.*

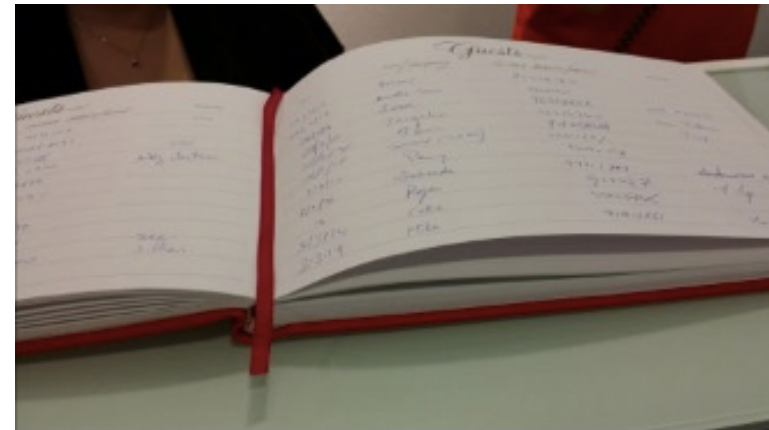
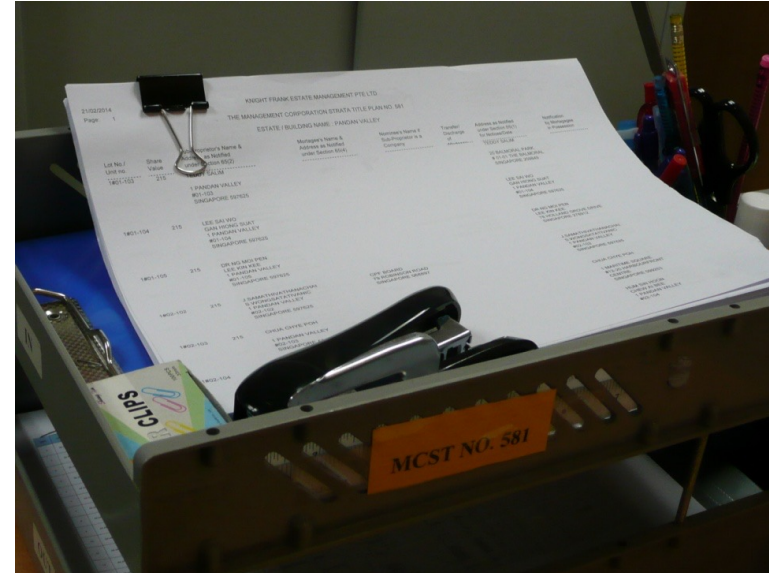


Protection Obligation (PDPA s. 24)

- ✓ Design appropriate security arrangements
(does not have to be hi-tech)
- ✓ Ensure staff are trained
- ✓ Implement sound security policies
- ✓ Develop policies to respond to security breaches



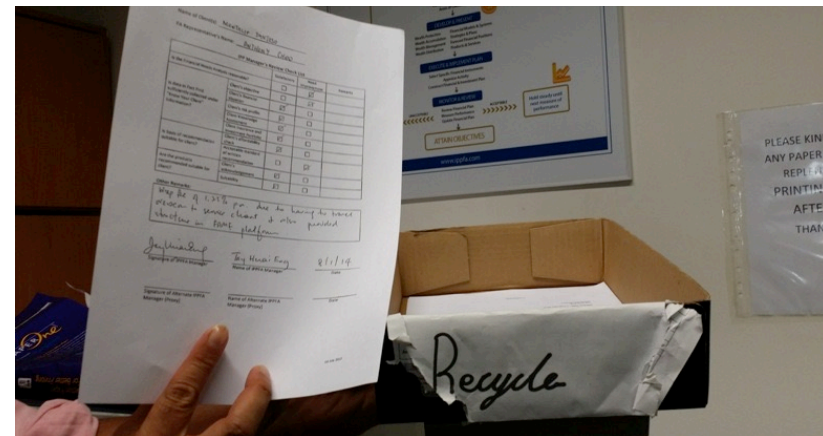
Reception Area and Service Counter



In/Out Trays & Recycled Paper



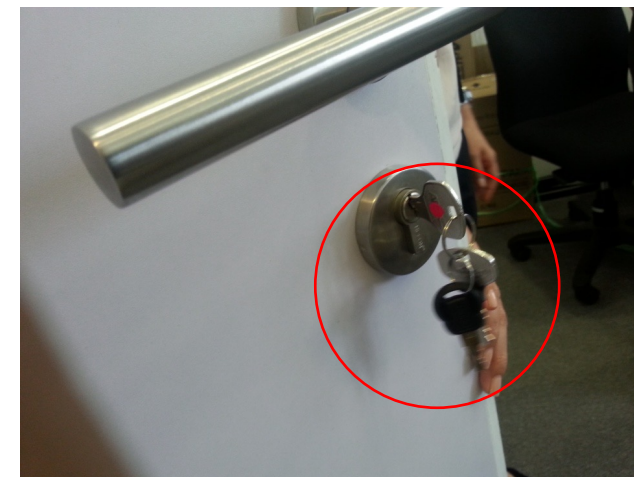
Recycled paper with Personal Data found



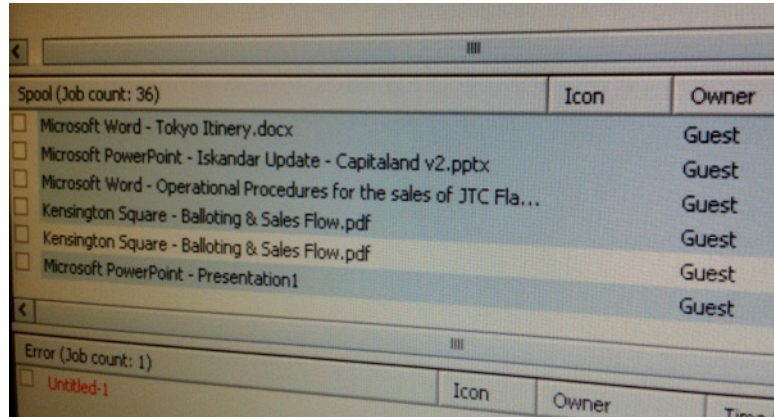
Meeting Rooms



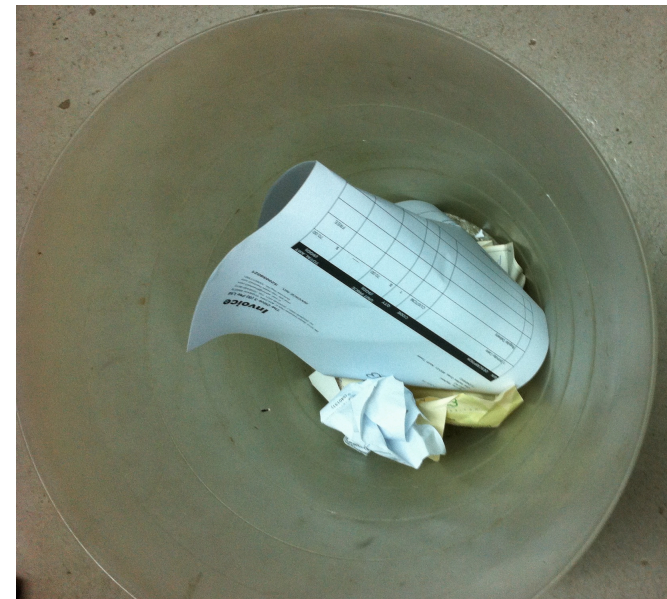
Keys in Shelves and Cabinets



Copier/Fax Machines



Wastepaper
baskets next to machines



Key Press Areas



Key press
not locked



Exit door just
beside
unlocked
cabinets

Unlocked Server/Storage Rooms



Server
room



Unsecured
room with
personnel files

Unlocked Computer Screens & Desktops

PowerSearch is available here.

My Documents

File Edit View Format Tools Help

AnthonyAng1 - Microsoft Excel

Home Insert Page Layout Formulas Data Review View

D16 37

	A	B	C	D	E	F	G	H	I	J	K	L
1				Project Weekly Update								
2				8/6/2013								
3	S/No	District	Project	Total	Sold	Balance	Comm	Co-Broke	Huttons	IC	Remarks	Newly Sold
4	1	15	The Cristallo	74	54	20	1.30	0.80	0.50	Mary Tan	90088001	
5	2	10	The Liberty	46	35	11	1.10	0.80	0.30	Mary Tan	90088001	
6	3	15	8M Residences	68	20	48	2.10	1.10	1.10	Desmond Lim	90901888	
7	4	11	26 Newton	180			2.10	1.50	0.60	Mr Boon	86868989	
8	5	3	Alexandra Central	116	113	3	1.10	0.80	0.30	Stan Chng	92292232	
9	6	19	Bliss @ Kovan	140	129	11	1.5 + \$30k	1.00	0.5 + \$30k	William Heng	91900545	
10	7	14	Tropica East 105	105	91	14	1.00	0.70	0.30	Allyson Lim	90667017	
11	8	16	uffer 388	95	83	12	2.10	1.50	0.80	Stanley Tan	91066655	
12	9	11	Lincoln Suites	175	155	20	3.50	3.30	0.20	Desmond im	90901888	
13	10	12	Regent Residence	180	176	4	5.10	2.50	2.60	Desmond im	90901888	
14	11	9	Espada	332	212	20	2.10	1.50	0.60	Mr Boon	86868989	
15	12	12	Sky Suites 17	115	114	1	3.50	1.00	2.50	William Heng	91900545	
16	13	15	The Lush	37	36	1	1.90	0.70	1.20	Daniel Lim	93889900	
17	14	26	Poets Villas	48	38	2	1.30	0.50	0.80	Terence Lian	96967000	
18	15	1	Robinson Suites	170	165	5	2.00	1.00		Terence Lian	96967000	
19	16	10	Steven Suites	32	27	5	2.50	1.50	1.00	Mr Boon	86868989	
20	17	9	Residence @ Killney	68	66	2	1.20	1.20		Allyson Lim	90667017	
21	18	12	I Residence	70	68	2	1.65			Allyson Lim	90667017	
22	19	11	Lucida	62	60	2	1.65	1.00		Richard Tong	96216543	
23	20	3	Alexis	21	13	8	1.00	0.60	0.40	Terence Wan	96967000	
24	21	4	The Foresta @ MT Faber	141	140	1	4.10	2.00	2.10	Julynn Ngiam	90906999	
25	22	19	One Robey	18	14	4	3.00	2.00	1.00	Roy Chan	92788885	
26	23	14	Oxley Bizhub	728	725	teen / 1 ware	3.5 / 1.1	1.5 / 0.8	2 / 0.9	KI Tan	98577618	
27	24	14	Oxley Bizhub	271	270	1 canteen		1.10	0.80	KI Tan	98577618	
28	25	19	Spazio @ Kovan	82	70	12 Shops	3, 5	2, 2.5	1, 2.5	Roy Chan	92788885	
29	26	27	Skies Miltonia	422	390	32	2.40	1.00	2.30	Mary Tan	90088001	
30	27	28	Seletar Park Residence	276	262	14	2.00	1.60	0.40	William Heng	91900545	
31	28											
32	29											
33	30											
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35	32											
36	33											
37	34											

Ready

Sheet1 - Weekly Update | Showflat Closed By Appointment

Start My Documents Microsoft Excel - Ant...

11:08 AM

ThePier RenewalAgreement - Microsoft Word

Home Insert Page Layout References Mailings Review View

Cut Copy Paste Format Painter Clipboard Font Paragraph Styles

Calibri 11 A A⁺ A⁻ B I U Color Text Background Color Bullets Numbering Indentation Decrease Increase Line and Paragraph Spacing Show/Hide Paragraph Marks Styles Emphasis Heading 1 Heading 2 Normal Strong Change Styles Select Editing Find Replace

1. Leaseperiod: 25 December 2015 to 22 December 2015

2. Monthly Rental: Dollars Six Thousand and Eight Hundred Only (SGD\$6,800/xx).

3. Landlord requires the Tenant to provide a copy of the Airconditioner Maintenance Service Contract covering the lease period.

4. All other Terms and Conditions as stipulated in the Tenancy Agreement remain unchanged save for the renewal clause under clause 5(d).

Signed by _____

the Landlord Lai Siu Chiu

In the presence of:-

Signed by _____

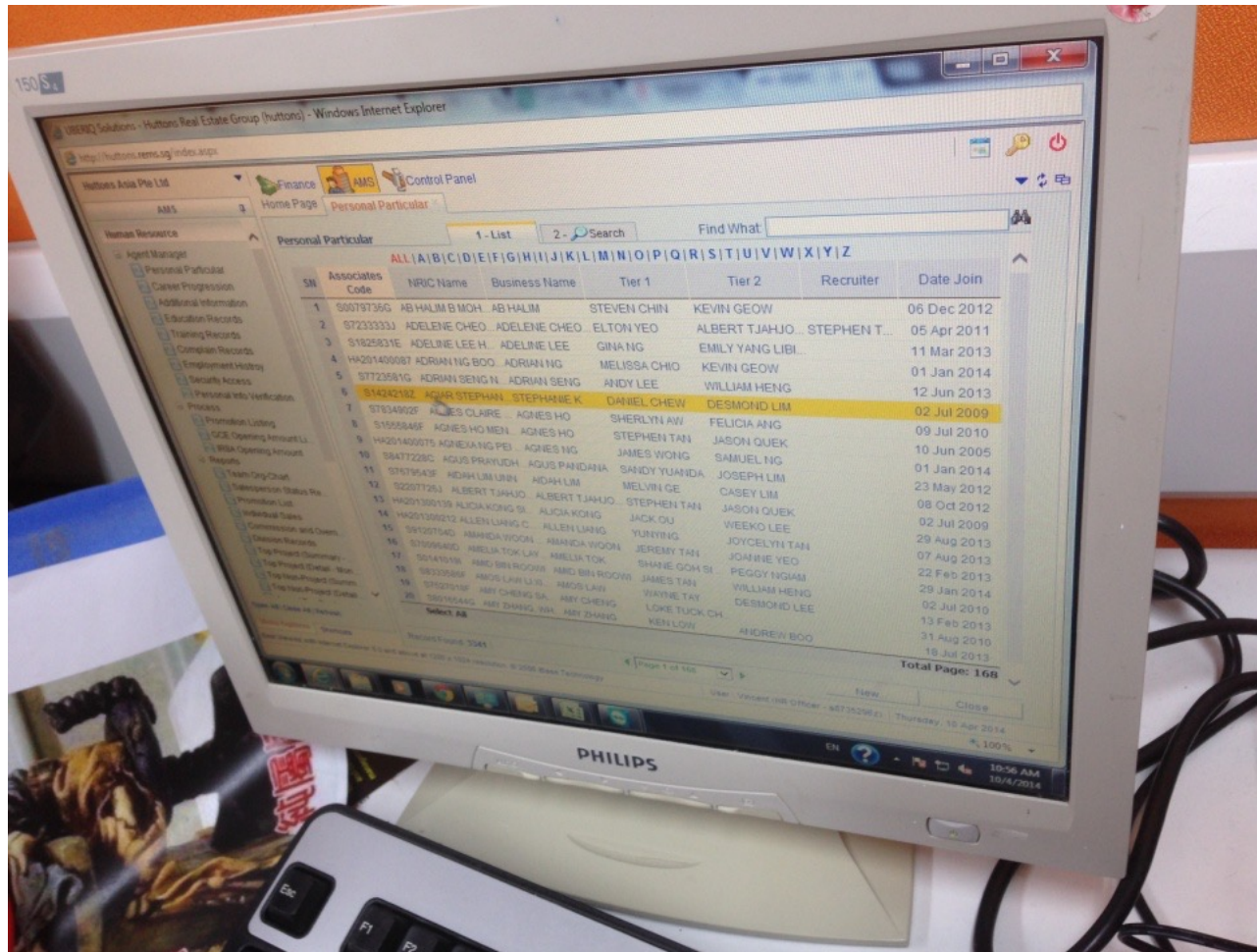
for and on behalf of the Tenant

Yazawa Meat Pte Ltd

In the presence of:-

Page: 1 of 1 Words: 136 English (U.S.)

Unlocked Computer Screens & Desktops



Unprotected file sharing
through Dropbox

Secured cabinets; Shredder near copier



Negative Example

Server room
unsecured



Need to Develop Sound Security Policies



- **Sound administrative policies**
 - ✓ Train staff
 - ✓ Implement business continuity plan
- **Physical security measures**
 - ✓ Label documents prominently
 - ✓ Restrict access to confidential documents
 - ✓ Proper disposal of shredded confidential documents
- **Technical measures**
 - ✓ Change passwords regularly
 - ✓ Encrypt personal data

Protection #7: Retention Limitation

Retention Limitation Obligation (PDPA s. 25):

*Organisations must **cease** to **retain** documents containing personal data, or **remove** the means by which the personal data can be associated with particular individuals when it is no longer necessary for any business or legal purposes.*



7. Retention Limitation Obligation

- No period for data retention is specified but it **cannot** be **forever**
- Retention period will **depend** on the purpose(s) for which the personal data was collected. That is:
 - personal data may be retained so long as one or more of the purposes for which it was collected remains valid; and
 - personal data should not be kept by an organisation “just in case” it may be needed.
- Archiving or warehousing data is **retention**
 - Destroying or anonymising data would not be retaining

Obligation #8: Transfer Limitation

Transfer Limitation Obligation (PDPA s. 26):

*Organisations must **not transfer** personal data to **another country or territory outside Singapore** except in accordance with the requirements prescribed under the PDPA.*



Transfer

When you transfer data to an intermediary, you **MUST** have a **contract**:

1. To bind/indemnify the company,
2. And specifies:
 - Purpose
 - Use and disclosure
 - Accuracy
 - Protection
 - Retention
 - Policies regarding handling of data



Transfer Rules

- Legally binding contracts for inter-corporate transfers
- Internal rules (Body Corporate Rules, BCR) for intra-corporate transfers
 - BCR need for data transfer from Singapore office to offices elsewhere
- Must **specify** obligations of receiving organisation



Obligation #9: Openness

Obligations: Openness

9. Openness Obligation

Data Protection policies must be communicated:

1. To public
2. To staff, who must be trained



9. Openness Obligation

S.12

1. Develop and implement guidelines and policies to **comply** with PDPA
2. Develop complaint mechanism
3. Communicate guidelines and policies to staff
4. Make information about guidelines, policies and complaint mechanism available.

Accountability

- **Appoint DPO** to ensure compliance (S.11(3))
 - Contact information of Data Protection Officer must be publicly available
- DPO has to be **familiar** with organisation's policy of collection, use and disclosure of data (S.20(1c))
- Employers **liable** for acts of employees unless employer can show steps were taken to prevent the employee from breaching data privacy
- **Penalty** of up to **\$1,000,000** for organisations
- Those who suffer loss or damage **may sue**

Obligation #10: Mandatory Breach Reporting

Effective February 2021

Obligation #10: Mandatory Data Breach Notification

- **Notifiable** data breach; a data breach that:
 - results in or is likely to result in significant harm to an affected individual; or
 - is or likely to be of a significant scale.
- Generally, data breaches involving prescribed personal data are deemed to **result in significant harm** to an individual, so they are notifiable.
- Prescribed personal data **includes** individuals' full name or full national identification number, together with details of their wages, income, bank account numbers, net worth and financial transactions.
- A data breach is deemed to be of a significant scale (and therefore notifiable) if the data breach **affects 500 or more individuals**.

Obligation #10: Mandatory Data Breach Notification



Who **must** be notified?

- **Personal Data Protection Commission (PDPC)** as soon as is practicable, and in any event within three calendar days of the organisation's assessment.
- **Affected individuals** must also be notified if the data breach is likely to cause them significant harm.

New obligation #11: Data Portability

Effective when regulations are promulgated

Data Portability Obligation

Upon request, transmit the individual's data in an organisation's possession or control to another organisation in Singapore in a commonly used machine-readable format.

- **Includes** business contact information
- Does **not** include data in paper format

Effective when detailed regulations are issued.

- Obligation will **not** apply to all data of an individual; this is to give certainty to business



Also new: criminal offence for the
recalcitrant

Introduction of Criminal Offences (Feb 2021)

- **Knowingly or recklessly committing any unauthorised:**
 - Disclosure of personal data
 - Use of personal data for wrongful gain or causing a wrongful loss to any person
 - Re-identification of anonymised data.
- **Penalties**
 - A maximum fine of \$5,000 or a maximum two years imprisonment or both.



The Do-not-call registry

DNC Registry Part IX Ss. 36-48



- Applies only to services that use a phone number:
 - Voice calls, SMS and fax
 - Emails are NOT included
 - Includes Instant Messaging services such as Whatsapp, WeChat, Line, etc
 - 3 separate registries—for calls, sms, fax
- Applies when sender or receiver is in Singapore
- Applies to “specified” (aka commercial) messages

Do-Not-Call

Principles:

- You may opt out of marketing/cold calls & text messages
- By registering
 - But there are exceptions*
 - Especially if you an “on-going” customer relationship
- Does NOT mean you will not get spam calls*



The On-Going Relationship Exemption

- There must be an on-going relationship between the sender and the subscriber of the phone number
- The purpose of the specified message must be related to the on-going relationship
- The exemption applies **only to fax and text messages**, not voice calls
- The exemption is only for not having to check the number with the DNC Registry. Other provisions of the DNC apply

Examples of On-Going Relationship



- Existing credit card holder
- Life insurance policy owner
- Subscriber to magazine/phone service/rewards programme/
- Mortgagor
- Club member
- Regular donor to charity

DNC

1. Singapore Telephone Numbers
2. Either sender or recipient in Singapore when accessed
3. Specified messages
 - 1) “Advertise, promote or offer to supply”:
 - Goods or services, land or interest in land, business or investment opportunity
 - 2) “Advertise or promote”
 - A supplier of the above, any other prescribed or purpose relating to obtaining or providing information

Note: You **CAN call** for market research

Exceptions to DNC: Schedule 8

Big Picture

- Messages sent without use of phone numbers
 - E.g cell-broadcast, location-based advertising messages
- Public agency
- Essentially, notifications of transactions, status, and change of terms



Questions & Answers



Trainer Profile



Ang Peng Hwa (Prof.)

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Professor Ang teaches and researches law, ethics and policy around the media and Internet. He was among the group of legal professionals who helped work out a model code of privacy in the early 2000s.

A lawyer by training, he worked as a journalist before going on to pursue a Master's in communication management at the University of Southern California and a Ph.D. in the mass media at Michigan State University. At NTU, he has served on the Senate and is currently the Director of the Master's in Media and Communication.

He is the author of *Ordering Chaos*, one of the early books on Internet governance and was appointed by then United Nations Secretary-General Kofi Annan to the Working Group on Internet Governance in 2004. He was a co-founder of the Global Internet Governance Academic Network (GigaNet) and the Asia-Pacific Regional Internet Governance Forum (APrIGF) and served as inaugural chair for both groups.

He is one of the Vice-Presidents of the Consumers Association of Singapore (CASE) and Chair of the Advertising Standards Authority of Singapore (ASAS). He currently consults with Goodwins Law Corporation on data protection.

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