

**International
Comparative
Legal Guides**



Practical cross-border insights into cybersecurity

Cybersecurity **2023**

Sixth Edition

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1 Cybercrime

1.1 Would any of the following activities constitute a criminal or administrative offence in your jurisdiction? If so, please provide details of the offence, the maximum penalties available, and any examples of prosecutions in your jurisdiction:

Hacking (i.e. unauthorised access)

Yes. Under section 3(1) of the Computer Misuse Act 1993 (“CMA”), it is an offence for any person to knowingly cause a computer to perform any function for the purpose of securing access without authority, to any program or data held in any computer. Upon conviction, an offender shall be liable for: a fine of up to \$5,000; imprisonment for a term of up to two years; or both for the first offence.

In *Public Prosecutor v Muhammad Nuzaib bin Kamal Luddin* [1999] 3 SLR(R) 653, the accused was found to have, *inter alia*, exploited certain vulnerabilities to hack into some of the servers of the victim, in order to gain unauthorised access to the computer files contained on the victim’s server. The accused was sentenced to two months’ imprisonment for the charge under section 3(1) of the CMA.

In *Tan Chye Guan Charles v Public Prosecutor* [2009] 4 SLR(R) 5, the accused was found to have accessed files on a laptop without authorisation, by copying them onto his thumb drive when the laptop’s owner left his laptop unattended to answer a phone call. The accused was sentenced to three weeks’ imprisonment and fined \$5,000.

Denial-of-service attacks

Yes. A denial-of-service (“DOS”) attack is a cyber attack meant to shut down a machine or network, thus making it inaccessible to its intended users.

Under section 7(1) of the CMA, any person who, knowingly and without authority or lawful excuse: (a) interferes with, or interrupts or obstructs the lawful use of, a computer; or (b) impedes or prevents access to, or impairs the usefulness or effectiveness of, any program or data stored in a computer, shall be guilty of an offence. Upon conviction, an offender shall be liable for: a fine of up to \$10,000; imprisonment for a term of up to three years; or both for the first offence.

There have not been any published judgments by the Singapore courts involving an offence involving a DOS attack.

Phishing

Possibly. Whilst phishing itself may not be an offence, a number of provisions criminalise actions that could include phishing.

Under section 3 of the CMA, it is an offence for any person to cause a computer to perform any function for the purpose of securing access without authority to any data held in any computer. It is possible, depending on the exact circumstances, for this to include phishing. An offender who is convicted under this section shall be liable for: a fine of up to \$5,000; imprisonment for a term of up to two years; or both for a first offence.

In *Public Prosecutor v Lim Yi Jie* [2019] SGDC 128, the court found the accused to have facilitated a phishing scam involving the use of a phishing website, causing a victim to divulge her two-factor-authentication and time-sensitive PIN number to the accused, as the victim assumed that the phishing website was an official bank website. Although the accused was not responsible for the execution of the phishing scam (which, in the court’s view, could be an offence under section 3(1) of the CMA, then named as the Computer Misuse and Cybersecurity Act), the accused had attempted to cash two cheques that were the criminal proceeds of the phishing scam. The accused was thus charged and convicted of an offence under the Corruption, Drug Trafficking and Other Serious Crimes (Confiscation of Benefits) Act 1992.

Infection of IT systems with malware (including ransomware, spyware, worms, trojans and viruses)

Yes. Under section 5 of the CMA, it is an offence for any person who commits any act that he or she knows will cause an unauthorised modification of the contents of any computer. As the infection of IT systems with malware would cause an unauthorised modification of the contents of the infected computer, this could be an offence under section 5 of the CMA.

Upon conviction, the offender shall be liable for: a fine of up to \$10,000; imprisonment for a term of up to three years; or both for a first offence.

There are presently no published judgments by the Singapore courts involving an offence under the CMA for the infection of IT systems with malware.

Distribution, sale or offering for sale of hardware, software or other tools used to commit cybercrime

Yes. Under section 8B(1)(b) of the Computer Misuse and Cybersecurity (Amendment) Act 2017 (“CMAA”), a person shall be

guilty of an offence if that person makes, supplies, offers to supply or makes available, by any means, any of the following items, intending it to be used to commit or facilitate the commission of an offence under sections 3, 4, 5, 6 or 7 of the CMA:

- (a) any device, including a computer program, that is primarily designed, adapted, or capable of being used for the purpose of committing an offence under sections 3, 4, 5, 6 or 7; and
- (b) a password, an access code, or similar data by which the whole or any part of a computer is capable of being accessed.

A person found guilty of this offence shall be liable on conviction for: a fine of up to \$10,000; imprisonment for a term of up to three years; or both for a first offence.

There are presently no published judgments by the Singapore courts involving the distribution, sale or offering for sale of hardware, software or other tools used to commit cybercrime.

Possession or use of hardware, software or other tools used to commit cybercrime

Yes. Under section 8B(1)(a) of the CMAA, it is an offence if a person obtains or retains certain items (as detailed in the following paragraph) and: (i) intends to use it to commit or facilitate the commission of an offence under sections 3, 4, 5, 6 or 7 of the CMA; or (ii) does so with a view to it being supplied or made available, by any means, for use in committing or in facilitating the commission of any of those offences.

The items in question are:

- (a) any device, including a computer program, that is primarily designed, adapted or is capable of being used for the purpose of committing an offence under sections 3, 4, 5, 6 or 7; and
- (b) a password, an access code, or similar data by which the whole or any part of a computer is capable of being accessed.

A person found guilty of this offence shall be liable on conviction for: a fine of up to \$10,000; imprisonment for a term of up to three years; or both for a first offence.

There are presently no published judgments by the Singapore courts involving the possession or use of hardware, software or other tools used to commit cybercrime.

Identity theft or identity fraud (e.g. in connection with access devices)

Yes. Under section 4 of the CMA, it is an offence for a person to cause a computer to perform any function for the purposes of securing access to any program or data held in any computer, with the intent to commit a number of offences, including certain offences involving fraud or dishonesty. A person convicted of such an offence is liable for: a fine not exceeding \$50,000; imprisonment for a term not exceeding 10 years; or both.

Penalties for identity theft and identity fraud are also set out in the Penal Code 1871 (“**Penal Code**”). Under section 419 read with section 416 of the Penal Code, a person who cheats by personation (i.e., if he or she cheats by pretending to be some other person, or by knowingly substituting one person for another, or representing that he/she or any other person is someone other than who he/she or such other person really is), is guilty of an offence and, upon conviction, liable for: imprisonment for a term of up to five years; a fine; or both. Whilst this offence is of general application, it could also extend to the cyber context.

Separately, section 170 of the Penal Code criminalises the offence of personating a public servant. Any person who is convicted of this offence shall be liable upon conviction for: imprisonment for a term that may extend to two years; a fine; or both.

There are presently no published judgments by the Singapore courts involving cyber-specific identity theft or identity fraud.

Electronic theft (e.g. breach of confidence by a current or former employee, or criminal copyright infringement)

Yes. Under section 8A(1) of the CMA, it is an offence for a person who, knowing or having reason to believe that any personal information about another person (being an individual) was obtained by an act done in contravention of sections 3, 4, 5 or 6 of the CMA:

- (a) obtains or retains the personal information; or
- (b) supplies, offers to supply, transmits or makes available, by any means the personal information.

Upon conviction, an offender may be sentenced to: a fine of up to \$10,000; imprisonment for a term of up to three years; or both for a first offence.

Additionally, it is also an offence under section 136(1) of the Copyright Act 2021 (“**Copyright Act**”) for a person who: (a) makes for sale or hire; (b) sells or lets for hire, or by way of trade offers or exposes for sale or hire; or (c) by way of trade exhibits in public, any article that he or she knows or ought reasonably to know to be an infringing copy of the work. Upon conviction, an offender may be liable for a fine of up to: \$10,000 for the article or for each article in respect of which the offence was committed, or \$100,000 (whichever is the lower); imprisonment for a term of up to five years; or both.

In addition, it is also an offence under section 136(3) of the Copyright Act for any person who, at the time when copyright subsists in a work, distributes, for either (a) the purposes of trade, or (b) other purposes (but to such an extent as to affect prejudicially the owner of the copyright), articles that he or she knows to be infringing copies of the work. Upon conviction, an offender may be liable for: a fine of up to \$50,000; imprisonment for a term of up to three years; or both.

Unsolicited penetration testing (i.e. the exploitation of an IT system without the permission of its owner to determine its vulnerabilities and weak points)

Yes. Under section 3(1) of the CMA, any person who knowingly causes a computer to perform any function for the purpose of securing access without authority, to any program or data held in any computer, shall be guilty of an offence. Upon the first conviction, the offender shall be liable for a fine of up to \$5,000; imprisonment for a term of up to two years; or both.

Given that penetration testing would necessarily involve gaining access to a computer system, it is possible that such unsolicited penetration testing (i.e., penetration testing done without any authorisation from the owner of the computer system) would constitute an offence under section 3(1) of the CMA.

Even if the penetration testing is unsuccessful, such an act may still be an offence. Under section 10 of the CMA, any person who attempts to commit an offence or does any act preparatory to an offence under the CMA shall be guilty of that offence and shall be liable on conviction for the punishment provided for the offence.

In *Public Prosecutor v James Raj s/o Arokiasamy* [2015] SGDC 36, the accused pleaded guilty and was convicted of the unauthorised hacking of a number of websites, including the websites of a well-known church in Singapore, the blog of a journalist, and a political party’s website, as well as the unsolicited scanning and penetration testing of various government servers. The accused was sentenced to six months’ imprisonment for the charges pertaining to the unsolicited scanning and penetration testing of various government servers under section 3(1) read with section 10 of the CMA.

Any other activity that adversely affects or threatens the security, confidentiality, integrity or availability of any IT system, infrastructure, communications network, device or data

Yes. The offences listed under Part II (i.e., sections 3 to 10) of the CMA are generally broad enough to address activities that

adversely affect or threaten the security, confidentiality, integrity or availability of any IT system, infrastructure, communications network, device or data.

For example, the unauthorised modification of computer material (i.e., adversely affecting or threatening the integrity of computer material) is an offence under section 5 of the CMA, and unauthorised obstruction of use of a computer (i.e., adversely affecting or threatening the availability of a computer system) is an offence under section 7 of the CMA.

Additionally, under section 10 of the CMA, abetments and attempts of the offences under Part II of the CMA are also treated as offences, and a person who abets or attempts to commit any act preparatory to or in furtherance of the commission of any offence shall be guilty of that offence.

1.2 Do any of the above-mentioned offences have extraterritorial application?

Yes, the above offences have extraterritorial application.

In respect of the CMA, section 11 of the CMA provides that the provisions of the CMA shall have effect, in relation to any person, whatever his or her nationality or citizenship, outside as well as within Singapore. Where an offence is committed outside Singapore, the offender may be dealt with as if the offence had been committed within Singapore, if:

- (a) for the offence in question, the accused was in Singapore at the material time;
- (b) for the offence in question (being one under sections 3, 4, 5, 6, 7 or 8 of the CMA), the computer, program or data was in Singapore at the material time; or
- (c) the offence causes, or creates a significant risk of, serious harm in Singapore.

Thus, where a person commits an offence under the CMA from a location outside Singapore, the person in question may nonetheless be prosecuted under the CMA as if the person had committed the offence within Singapore.

1.3 Are there any factors that might mitigate any penalty or otherwise constitute an exception to any of the above-mentioned offences (e.g. where the offence involves "ethical hacking", with no intent to cause damage or make a financial gain)?

Not necessarily. The offences under the CMA do not set out any general exceptions or factors that must be considered by a court in mitigation.

Nonetheless, there are factors that may be taken into account by the court in determining the appropriate sentence. For example, the fact that an offender had no intention to make a financial gain through his or her actions, and did not, in fact, make any financial gain, may have some impact in mitigating the length of a sentence, or the quantum of a fine.

2 Cybersecurity Laws

2.1 Applicable Laws: Please cite any Applicable Laws in your jurisdiction applicable to cybersecurity, including laws applicable to the monitoring, detection, prevention, mitigation and management of incidents. This may include, for example, data protection and e-privacy laws, intellectual property laws, confidentiality laws, information security laws, and import/export controls, among others.

There are a number of applicable laws in Singapore relating to cybersecurity. Some of these laws are:

Cybersecurity Act 2018 ("Cybersecurity Act")

The Cybersecurity Act sets out a framework for the monitoring of Critical Information Infrastructures ("CIIs"), including imposing obligations on owners of CIIs to report cybersecurity incidents, and provides for the appointment of a Commissioner of Cybersecurity to, amongst others, oversee and promote the cybersecurity of computers and computer systems in Singapore.

In addition, the Commissioner of Cybersecurity is also empowered under the Cybersecurity Act to issue or approve one or more codes of practice of standards of performance for the regulation of owners of CIIs with respect to measures to be taken by them to ensure the cybersecurity of the CII. However, these codes of practice are meant for guidance and do not have legislative effect. As of the time of writing, the Commissioner of Cybersecurity has issued one such code: the Cybersecurity Code of Practice for Critical Information Infrastructure.

The Cybersecurity Act also provides for licensing of cybersecurity service providers. As at the time of writing, service providers who provide either or both of the following services are licensable (as specified in the Second Schedule to the Cybersecurity Act):

- (a) a managed security operations centre ("SOC") monitoring service; and
- (b) penetration testing service.

Personal Data Protection Act 2012 ("PDPA")

The PDPA imposes a number of data protection obligations on organisations, in respect of personal data. Importantly, section 24 of the PDPA requires organisations to protect personal data in its possession or under its control by making reasonable security arrangements to prevent: (a) unauthorised access, collection, use, disclosure, copying, modification, disposal or similar risks; and (b) the loss of any storage medium or device on which personal data is stored.

The PDPA was recently amended by the Personal Data Protection (Amendment) Act 2020 ("Amendment Act"), which was passed on 2 November 2020. The amendments introduced by the Amendment Act include two new data protection obligations relating to the data breach notification and data portability. Most of the amendments under the Amendment Act came into force on 1 February 2021, with one notable exception being the provisions relating to data portability (which are expected to come into force once detailed requirements have been issued by the Personal Data Protection Commission of Singapore ("PDPC") in the form of regulations or guidelines).

Computer Misuse Act 1993

As mentioned above, the CMA covers a number of cyber offences, including, but not limited to, offences such as the exploiting of computer vulnerabilities to gain unauthorised access to a computer system (section 3 of the CMA).

Copyright Act 2021

The Copyright Act criminalises copyright infringement. Specifically, it is an offence for a person to, at a time when copyright subsists in a work: (a) make for sale or hire; (b) sell or let for hire, or, by way of trade, offer or expose for sale or hire; or (c) by way of trade, exhibit in public, any article that he or she knows, or ought reasonably to know, to be an infringing copy of the work.

Strategic Goods (Control) Act 2002 ("SGCA")

The SGCA sets out provisions relating to the transfer and brokering of strategic goods and strategic goods technology. The list of items that have been prescribed by the Minister as strategic goods and strategic goods technology includes "information security" systems, equipment and components (i.e.,

systems, equipment and components designed or modified to use “cryptography for data confidentiality” having “in excess of 56 bits of symmetric key length, or equivalent”).

2.2 Critical or essential infrastructure and services: Are there any cybersecurity requirements under Applicable Laws (in addition to those outlined above) applicable specifically to critical infrastructure, operators of essential services, or similar, in your jurisdiction?

The Cybersecurity Act mainly sets out the laws that are applicable specifically to critical infrastructure. Under the Cybersecurity Act, the Commissioner of Cybersecurity may designate a computer or computer system as a CII under the Cybersecurity Act, if he is satisfied that: (a) the computer or computer system is necessary for the continuous delivery of an essential service, and the loss or compromise of the computer or computer system will have a debilitating effect on the availability of the essential service in Singapore; and (b) the computer or computer system is located wholly or partly in Singapore.

The list of essential services are set out in the First Schedule to the Cybersecurity Act, which consists of services in the following industries: energy; info-communications; water; healthcare; banking and finance; security and emergency services; aviation; land transport; maritime; services relating to the functioning of Government; and media. The Cybersecurity Agency of Singapore (“CSA”) is currently reviewing and considering an expansion of the Cybersecurity Act to improve awareness of threats over Singapore’s cyberspace, and to protect virtual assets (e.g., systems hosted on the cloud) as CII if they support essential services.

The obligations placed on owners of CIIs include having to report cybersecurity incidents to the Commissioner of Cybersecurity (section 14 of the Cybersecurity Act), conducting regular cybersecurity audits and risk assessments of CII (section 15 of the Cybersecurity Act) and furnishing information on, amongst others, the design, configuration and security of the CII to the Commissioner of Cybersecurity upon the Commissioner of Cybersecurity’s written notice to do so (section 10 of the Cybersecurity Act).

2.3 Security measures: Are organisations required under Applicable Laws to take measures to monitor, detect, prevent or mitigate Incidents? If so, please describe what measures are required to be taken.

Yes. Under section 14(2) of the Cybersecurity Act, the owner of a CII must establish mechanisms and processes for the purposes of detecting cybersecurity threats and incidents in respect of the CII, as set out in any applicable code of practice.

Separately, the Protection Obligation under the PDPA requires organisations to put in place reasonable security measures to protect personal data under its possession and/or control. However, the PDPA does not specify the specific measures that organisations should take.

Pursuant to the newly introduced Data Breach Notification Obligation under the PDPA, organisations are required to notify the PDPC and, in certain cases, the affected individuals, in the event of a data breach that meets certain thresholds. This will be elaborated on in our response to questions 2.4 and 2.5 below.

In its Guide to Managing Data Breaches 2.0 (the “**Data Breach Guide**”), the PDPC sets out what organisations should do to prevent data breaches. First, it states that organisations should implement monitoring measures and tools to provide early detection and warning to organisations. Examples include:

- (a) monitoring of inbound and outbound traffic for websites and databases for abnormal network activities;

- (b) usage of real-time intrusion detection software designed to detect unauthorised user activities, attacks, and network compromises; and
- (c) usage of security cameras for monitoring of internal and external perimeters of secure areas such as data centres and server rooms.

The Data Breach Guide also encourages organisations to put in place a data breach management plan, which would include the following information:

- (a) a clear explanation of what constitutes a data breach (both suspected and confirmed);
- (b) how to report a data breach internally;
- (c) how to respond to a data breach; and
- (d) responsibilities of the data breach management team.

2.4 Reporting to authorities: Are organisations required under Applicable Laws, or otherwise expected by a regulatory or other authority, to report information related to Incidents or potential Incidents (including cyber threat information, such as malware signatures, network vulnerabilities and other technical characteristics identifying a cyber attack or attack methodology) to a regulatory or other authority in your jurisdiction? If so, please provide details of: (a) the circumstance in which this reporting obligation is triggered; (b) the regulatory or other authority to which the information is required to be reported; (c) the nature and scope of information that is required to be reported; and (d) whether any defences or exemptions exist by which the organisation might prevent publication of that information.

Yes. In respect of data protection, organisations are statutorily required to report Incidents that meet certain thresholds under the Data Breach Notification Obligation of the PDPA. In respect of the Cybersecurity Act, owners of CIIs are statutorily obligated to report Incidents.

PDPA / Amendment Act

Since the PDPA was amended on 1 February 2021, all organisations are required to notify the PDPC in the event of a data breach that meets the statutory thresholds for reporting. These include where the data breach in question is: (a) likely to result in significant harm or impact to the individuals to whom the information relates; or (b) of a significant scale.

The Personal Data Protection (Notification of Data Breaches) Regulations 2021 (“**DBN Regulations**”) specifies the types of personal data that, if the subject of a data breach, are deemed to cause significant harm to the affected individuals. These data include the affected individual’s full name or alias or identification number, together with any of the prescribed personal data under the Schedule to the DBN Regulations, such as the salary of the individual. Additionally, the DBN Regulations specifies that a data breach is of significant scale if it affects at least 500 individuals.

Where an organisation has reason to believe that a data breach affecting personal data in its possession or under its control has occurred, section 26C(2) of the PDPA requires the organisation to conduct, in a reasonable and expeditious manner, an assessment of whether the data breach in question is a “notifiable data breach”, i.e., whether it meets the statutory thresholds described above. If so, under section 26D(1) of the PDPA, the organisation must notify the PDPC as soon as is practicable of the notifiable data breach, but in any case no later than three calendar days after the day the organisation makes that assessment.

Under regulation 5 of the DBN Regulations, an organisation’s data breach notification to the PDPC of a notifiable data breach

must be in the form and manner prescribed on the PDPC's website at <https://www.pdpc.gov.sg>, and must include all of the following information:

- (a) the date on which and the circumstances in which the organisation first became aware that the data breach had occurred;
- (b) a chronological account of the steps taken by the organisation after the organisation became aware that the data breach had occurred, including the organisation's assessment under section 26C(2) or (3)(b) of the PDPA that the data breach is a notifiable data breach;
- (c) information on how the notifiable data breach occurred;
- (d) the number of affected individuals affected by the notifiable data breach;
- (e) the personal data or classes of personal data affected by the notifiable data breach;
- (f) the potential harm to the affected individuals as a result of the notifiable data breach;
- (g) information on any action by the organisation, whether taken before or to be taken after the organisation notifies the Commission of the occurrence of the notifiable data breach, to:
 - (i) eliminate or mitigate any potential harm to any affected individual as a result of the notifiable data breach; and
 - (ii) address or remedy any failure or shortcoming that the organisation believes to have caused, or enabled or facilitated the occurrence of, the notifiable data breach;
- (h) information on the organisation's plan (if any) to inform, on or after notifying the Commission of the occurrence of the notifiable data breach, all or any affected individuals or the public that the notifiable data breach has occurred and how an affected individual may eliminate or mitigate any potential harm as a result of the notifiable data breach; and
- (i) the business contact information of at least one authorised representative of the organisation.

Additionally, if the organisation does not intend to notify any individual affected by a notifiable data breach of the occurrence of that notifiable data breach, the notification must specify the grounds for not notifying the affected individual(s).

The PDPA does not specify that information provided to the PDPC pursuant to a data breach notification will be published. However, persons providing information to the PDPC may identify any such information that is confidential, and provide a written statement giving reasons why the information is confidential (section 59(3) and (4) of the PDPA). In such a situation, the PDPC may nonetheless publish such information (which has been identified as confidential) in the circumstances specified in section 59(5) of the PDPA. These include, *inter alia*, to give effect to any provision of the PDPA or for the purposes of a prosecution.

Cybersecurity Act

Under section 14(1) of the Cybersecurity Act, the owner of a CII must notify the Commissioner of Cybersecurity of the occurrence of any of the following:

- (a) a prescribed cybersecurity incident in respect of the critical information infrastructure;
- (b) a prescribed cybersecurity incident in respect of any computer or computer system under the owner's control that is interconnected with or that communicates with the critical information infrastructure; and/or
- (c) any other type of cybersecurity incident in respect of the critical information infrastructure that the Commissioner has specified by written direction to the owner.

In particular, as per regulation 5 of the Cybersecurity (Critical Information Infrastructure Regulations) 2018, the owner of the CII is required to notify the Commissioner of Cybersecurity, within two hours after a cybersecurity incident, of the following:

- (i) the critical information infrastructure affected;
- (ii) the name and contact number of the owner of the critical information infrastructure;
- (iii) the nature of the cybersecurity incident, whether it was in respect of the critical information infrastructure or an interconnected computer or computer system, and when and how it occurred;
- (iv) the resulting effect that has been observed, including how the critical information infrastructure or any interconnected computer or computer system has been affected; and
- (v) the name, designation, organisation and contact number of the individual submitting the notification.

The owner of the CII is then required to provide the following supplementary details within 14 days via the CSA's website:

- (i) the cause of the cybersecurity incident;
- (ii) its impact on the critical information infrastructure, or any interconnected computer or computer system; and
- (iii) what remedial measures have been taken.

The Cybersecurity Act also generally empowers the Commissioner of Cybersecurity to investigate and prevent cybersecurity incidents (not limited to those involving CIIs), including but not limited to requiring any person to answer any question or to produce any physical or electronic record that is in possession of that person to the incident response officer, which the incident response officer considers to be related to any matter relevant to the investigation.

Under section 43 of the Cybersecurity Act, every person must preserve, and aid in preserving, *inter alia*, all matters relating to a computer or computer system of any person that may have come to the Commissioner of Cybersecurity's and/or incident response officer's knowledge in the performance of his or her functions or the discharge of his or her duties under the Cybersecurity Act. For this reason (amongst others), any information furnished would not likely be published.

2.5 Reporting to affected individuals or third parties: Are organisations required under Applicable Laws, or otherwise expected by a regulatory or other authority, to report information related to Incidents or potential Incidents to any affected individuals? If so, please provide details of: (a) the circumstance in which this reporting obligation is triggered; and (b) the nature and scope of information that is required to be reported.

Yes, organisations may be required to do so pursuant to the Data Breach Notification Obligation under the PDPA. Under section 26D(2) of the PDPA, on or after notifying the PDPC of a notifiable data breach, the organisation must also notify each affected individual where the data breach in question is likely to result in significant harm to the individual. Notification may be done in any manner that is reasonable in the circumstances.

Notification to the affected individuals is not required or may be prohibited in certain situations specified in the PDPA. Section 26D(5) of the PDPA states that organisations are not required to notify affected individuals if the organisation:

- (a) on or after assessing that the data breach is a notifiable data breach, takes any action, in accordance with any prescribed requirements, that renders it unlikely that the notifiable data breach will result in significant harm to the affected individual; or
- (b) had implemented, prior to the occurrence of the notifiable data breach, any technological measure that renders it unlikely that the notifiable data breach will result in significant harm to the affected individual.

Further, section 26D(6) of the PDPA specifies that an organisation must not notify any affected individual if a prescribed law enforcement agency so instructs or the PDPC so directs.

An organisation may apply to the PDPC for a waiver of the requirement to notify the affected individuals under section 26D(7) of the PDPA.

With respect to the information that must be contained within such a notification to affected individuals, regulation 6 of the DBN Regulations requires such notifications to contain all of the following information:

- (a) the circumstances in which the organisation first became aware that the notifiable data breach had occurred;
- (b) the personal data or classes of personal data relating to the individual affected by the notifiable data breach;
- (c) the potential harm to the affected individual as a result of the notifiable data breach;
- (d) information on any action by the organisation, whether taken before or to be taken after the organisation notifies the affected individual:
 - (i) to eliminate or mitigate any potential harm to the affected individual as a result of the notifiable data breach; and
 - (ii) to address or remedy any failure or shortcoming that the organisation believes to have caused, or enabled or facilitated the occurrence of, the notifiable data breach;
- (e) the steps that the affected individual may take to eliminate or mitigate any potential harm as a result of the notifiable data breach, including preventing the misuse of the affected individual's personal data affected by the notifiable data breach; and
- (f) the business contact information of at least one authorised representative of the organisation.

2.6 *Responsible authority(ies): Please provide details of the regulator(s) or authority(ies) responsible for the above-mentioned requirements.*

There are different regulators responsible for enforcing the above requirements.

The PDPC, which is a division within the Infocomm Media Development Authority (“**IMDA**”), is the regulator responsible for enforcing the provisions under the PDPA.

The Commissioner of Cybersecurity, working together with his team at the CSA, is responsible for the enforcement of the provisions under the Cybersecurity Act.

2.7 *Penalties: What are the penalties for not complying with the above-mentioned requirements?*

There are a range of potential penalties, depending on the exact requirements that have not been complied with.

Under the PDPA, the PDPC is empowered to issue directions to ensure that organisations comply with the PDPA, including imposing a financial penalty. From 1 October 2022, pursuant to the Amendment Act, the PDPC is empowered to impose a financial penalty of (a) up to a maximum of 10% of an organisation's annual turnover in Singapore, or (b) \$1 million, whichever is higher.

Under the Cybersecurity Act, the failure of a CII owner to report a cybersecurity incident in respect of a CII, without reasonable excuse, is an offence and the owner shall be liable on conviction to: a fine of up to \$100,000; imprisonment for a term of up to two years; or both.

2.8 *Enforcement: Please cite any specific examples of enforcement action taken in cases of non-compliance with the above-mentioned requirements.*

In respect of non-compliance with the PDPA, the PDPC has published a number of its enforcement decisions.

One of the more notable enforcement cases is *Re Singapore Health Services Pte. Ltd. & Ors.* [2019] SGPDP 3. In that case, the PDPC took enforcement action against (1) Singapore Health Services Pte. Ltd. (“**SingHealth**”), and (2) Integrated Health Information Systems Pte. Ltd. (“**IHiS**”), for failing to put in place reasonable security measures to protect personal data under its possession and control, leading to a data breach wherein the medical records of 1.5 million patients were leaked. The PDPC imposed a financial penalty of \$250,000 on SingHealth and \$750,000 on IHiS.

There are no published enforcement actions that have been taken against owners of CIIs under the Cybersecurity Act.

3 Preventing Attacks

3.1 *Are organisations permitted to use any of the following measures to protect their IT systems in your jurisdiction (including to detect and deflect incidents on their IT systems)?*

Beacons (i.e. imperceptible, remotely hosted graphics inserted into content to trigger a contact with a remote server that will reveal the IP address of a computer that is viewing such content)

There are likely to be no restrictions on the usage of beacons for protection purposes, *unless* the data collected by such beacons constitutes personal data under the PDPA.

Under the Consent Obligation of the PDPA, organisations are required to obtain consent (or deemed consent) from individuals before the collection, use and disclosure of that individual's personal data. Thus, beacons would not be permissible if they collect personal data without the consent (or deemed consent) of the individuals in question, unless an exception to the Consent Obligation applies under the PDPA.

Honeypots (i.e. digital traps designed to trick cyber threat actors into taking action against a synthetic network, thereby allowing an organisation to detect and counteract attempts to attack its network without causing any damage to the organisation's real network or data)

There are likely to be no restrictions on the usage of honeypots for the purpose of protection of IT systems. Neither the Cybersecurity Act nor the PDPA restrict the usage of honeypots as a way of protecting IT systems.

In fact, the relevant regulators have addressed the use of honeypots, and do not appear to object to their usage. In an article published by the CSA in 2019, it explained honeypots and their role in cyber defence. Additionally, the PDPC's Guide to Securing Personal Data in Electronic Medium encourages the use of “*defences that may be used to improve the security of networks*”.

Sinkholes (i.e. measures to re-direct malicious traffic away from an organisation's own IP addresses and servers, commonly used to prevent DDoS attacks)

There are likely to be no restrictions on the usage of sinkholes for the purpose of protection of IT systems. As is the case for honeypots, neither the Cybersecurity Act nor the PDPA restrict the usage of sinkholes for the purpose of protecting IT systems.

3.2 Are organisations permitted to monitor or intercept electronic communications on their networks (e.g. email and internet usage of employees) in order to prevent or mitigate the impact of cyber attacks?

Yes, organisations are permitted to monitor or intercept electronic communications on their networks in order to prevent or mitigate the impact of cyber attacks.

There is no law prohibiting an organisation from monitoring or intercepting electronic communications on their *own* networks. However, if such data falls within the definition of personal data, then the organisation may be required to obtain consent from the relevant individuals.

We note that, under the Protection Obligation of the PDPA, organisations are required to put in place reasonable security measures to protect personal data under its possession or control. Depending on a number of factors, the monitoring or intercepting of electronic communications on an organisation's networks may be considered to be one such reasonable security measure.

3.3 Does your jurisdiction restrict the import or export of technology (e.g. encryption software and hardware) designed to prevent or mitigate the impact of cyber attacks?

Yes. Under the SGCA, the import and export of certain types of strategic goods and strategic goods technology is controlled, including "information security" systems, equipment and components (i.e., systems, equipment and components designed or modified to use "cryptography for data confidentiality" having "in excess of 56 bits of symmetric key length, or equivalent").

4 Specific Sectors

4.1 Does market practice with respect to information security vary across different business sectors in your jurisdiction? Please include details of any common deviations from the strict legal requirements under Applicable Laws.

Yes. The PDPA sets out the baseline standards that all organisations must meet, in respect of the protection of personal data. However, certain sectoral regulators may impose higher standards on a particular industry, especially where the personal data commonly collected, used and disclosed in these industries are sensitive in nature.

4.2 Excluding the requirements outlined at 2.2 in relation to the operation of essential services and critical infrastructure, are there any specific legal requirements in relation to cybersecurity applicable to organisations in specific sectors (e.g. financial services or telecommunications)?

Financial Services Sector

In respect of the Financial Services Sector, the Monetary Authority of Singapore ("MAS") has set out, in its published Guidelines on Technology Risk Management ("MAS TRM Guidelines"), risk management principles and best practice standards to guide financial institutions in: (a) establishing a sound and robust technology risk management framework; (b) strengthening system security, reliability, resiliency, and recoverability; and (c) deploying strong authentication processes to protect customer data, transactions and systems. These include (non-exhaustively) requiring

financial institutions to establish a technology risk management framework with oversight by the board and senior management to identify, assess, monitor, report and treat technology risks.

Additionally, the MAS has also issued a Notice on Cyber Hygiene, which requires financial institutions to, amongst others, ensure that security patches are applied to address vulnerabilities in their computer systems, as well as a set of Outsourcing Guidelines, which sets out the MAS's expectations of financial institutions that enter into any outsourcing arrangement or that are planning to outsource its business activities to a service provider.

Healthcare sector

In the healthcare sector, the Ministry of Health issued Cybersecurity Advisory 1/2019 in the wake of the SingHealth data breach in 2018 (*Re Singapore Health Services Pte. Ltd. & Ors.* [2019] SGPDP 3), which involved the medical personal data of 1.5 million individuals being leaked.

In this Cybersecurity Advisory, all licensees (i.e., hospitals, clinics, etc.) are strongly encouraged to review the Committee of Inquiry's recommendations and cybersecurity best practices, and to implement relevant measures, where appropriate.

The Ministry of Health has also developed a set of Healthcare Cybersecurity Essentials (MOH Circular No. 105/2021) to guide licensees under the Private Hospitals and Medical Clinics Act in adopting basic safeguards for their IT assets and data.

Telecommunications sector

The IMDA has published the Telecommunication Cybersecurity Codes of Practice ("the Codes"), which are currently imposed on major Internet Service Providers in Singapore for mandatory compliance. Apart from security incident management requirements, the Codes include requirements to prevent, protect, detect and respond to cybersecurity threats. The Codes were formulated using international standards and best practices, including the ISO/IEC 27011 and IETF Best Current Practices.

5 Corporate Governance

5.1 In what circumstances, if any, might a failure by a company (whether listed or private) to prevent, mitigate, manage or respond to an Incident amount to a breach of directors' or officers' duties in your jurisdiction?

Under section 157 of the Companies Act 1967, directors of a company are required to, amongst others, act honestly and use reasonable diligence in the discharge of the duties of their office. In addition, under the common law, directors are also required to carry out their duties with skill, care and diligence.

Thus, if a company fails to prevent, mitigate, manage or respond to an Incident due to a lack of honesty, or a lack of the requisite skill, care and diligence on the part of its directors, this may constitute a breach of directors' duties.

5.2 Are companies (whether listed or private) required under Applicable Laws to: (a) designate a CISO (or equivalent); (b) establish a written Incident response plan or policy; (c) conduct periodic cyber risk assessments, including for third party vendors; and (d) perform penetration tests or vulnerability assessments?

- (a) There is no present requirement for companies to designate a CISO under the relevant cybersecurity laws. The provisions of the Cybersecurity Act generally apply to owners of CIIs.

In respect of the PDPA, companies are required to appoint a Data Protection Officer (“DPO”) under section 11(3) of the PDPA, whose duties include, amongst others, to:

- ensure compliance of PDPA when developing and implementing policies and processes for handling personal data;
- foster a data protection culture among employees and communicate data protection policies to stakeholders;
- manage data protection-related queries and complaints;
- alert management to any risks that might arise with regard to personal data; and
- liaise with the PDPC on data protection matters, if necessary.

- (b) Under the Cybersecurity Act and the Cybersecurity Code of Practice for Critical Information Infrastructure, owners of a CII may be required to establish a written Incident response plan or policy in respect of that CII.

In respect of the PDPA, there is no specific requirement to establish a written Incident response plan or policy. However, section 12 of the PDPA requires organisations to, amongst others, develop and implement policies and practices that are necessary for the organisation to meet its obligations under the PDPA. This would likely include developing a policy relating to the handling of security incidents and data breaches.

In respect of the above, the PDPC has recommended in its Data Breach Guide that organisations put in place a data breach management plan, which should set out, amongst others, how the organisation should respond to a data breach.

- (c) Under the Cybersecurity Act and the Cybersecurity Code of Practice for Critical Information Infrastructure, owners of a CII may be required to conduct periodic cyber risk assessments.

There is no specific requirement under the PDPA for companies to conduct periodic cyber risk assessments, including for third-party vendors. However, in its Advisory Guidelines on Key Concepts in the PDPA, the PDPC has stated that organisations should take steps to ensure, amongst others, that its computer networks are secure, and that its IT service providers are able to provide the requisite standard of IT security.

- (d) Under the Cybersecurity Act and the Cybersecurity Code of Practice for Critical Information Infrastructure, owners of a CII may be required to conduct periodic cyber risk assessments, which may include penetration testing and vulnerability assessments.

There is no specific requirement for companies to perform penetration tests or vulnerability assessments under the PDPA. However, as above, the PDPC has stated in its Guide to Data Protection Impact Assessments that organisations may conduct penetration tests as part of their reasonable security arrangements to protect personal data. We further highlight that certain sectoral regulators in Singapore impose more stringent requirements on organisations within that sector. For example, the MAS imposes certain requirements in respect of cybersecurity on its licensees, including requiring its licensees to implement robust security measures to ensure that their systems and customer data are well protected against any breach or loss.

5.3 Are companies (whether listed or private) subject to any specific disclosure requirements (other than those mentioned in section 2) in relation to cybersecurity risks or Incidents (e.g. to listing authorities, the market or otherwise in their annual reports)?

No, companies are not subject to any specific disclosure

requirements in relation to cybersecurity risks or Incidents, other than those already mentioned above (i.e., to the relevant regulatory bodies).

6 Litigation

6.1 Please provide details of any civil or other private actions that may be brought in relation to any Incident and the elements of that action that would need to be met.

If an Incident gives rise to a private actionable claim, the affected individual may have recourse against the organisation that caused the Incident.

Section 48O of the PDPA (which replaced the previous section 32 of the PDPA when the PDPA was amended by the Amendment Act) provides for a right of private action. Under this section, any person who suffers loss or damage directly as a result of a contravention of the organisation’s obligations under Parts IV, V, VI, or VIA of the PDPA (which set out organisations’ obligations to protect individuals’ personal data) shall have a right of action for relief in civil proceedings in a court. This includes a breach of section 24 of the PDPA, which requires organisations to protect personal data that is in its possession or under its control (as outlined further above).

Under the CMA, a court may order an offender to pay a compensation amount to a victim of the offence. The victim may also pursue a civil remedy against the offender separately, as the order for payment of compensation does not prejudice the right of the victim to recover more than was compensated to him or her under the compensation order.

6.2 Please cite any specific examples of published civil or other private actions that have been brought in your jurisdiction in relation to Incidents.

In *IP Investment Management Pte Ltd and others v Alex Bellingham* [2019] SGDC 207, the third plaintiff (a natural person) successfully obtained an order enjoining the defendant, a former employee of the first and second plaintiffs (which were corporate entities engaged in a fund management business), from using, disclosing or communicating his personal data, and also obtained an order for the defendant to deliver up any copies of his personal data.

Finding the case in favour of the third plaintiff, the court held that the defendant had breached his obligations under the PDPA; in particular, the Consent Obligation and Purpose Limitation Obligation. The court also found that the third plaintiff had suffered loss as a result of the defendant’s breach of the Consent Obligation and Purpose Limitation Obligation.

It is worth noting that the court found that the first and second plaintiffs had no legal standing to bring the claim under the then section 32 of the PDPA (before the PDPA was amended under the Amendment Act), as it held that the then section 32 of the PDPA did not extend to corporate entities. Thus, as the first and second plaintiffs were corporate entities, their applications were disallowed by the court.

On appeal, the High Court found that the third plaintiff did not have a right of private action under the then section 32 of the PDPA, because he had not suffered any loss or damage within the meaning of the provision. The appeal was allowed and the order made by the state court was set aside.

6.3 Is there any potential liability in tort (or equivalent legal theory) in relation to failure to prevent an Incident (e.g. negligence)?

Yes. Depending on the circumstances of the Incident, it is possible that one or more causes of action in tort may be applicable. For example, if an organisation had breached its duty of care under the tort of negligence, by failing to put in place measures to prevent an Incident, the organisation may be found liable under this tort.

7 Insurance

7.1 Are organisations permitted to take out insurance against Incidents in your jurisdiction?

Yes, organisations are permitted to take out insurance against Incidents in Singapore.

As of the date of writing, a number of insurance providers in Singapore provide cyber insurance, which covers, amongst others, data protection/personal data liability and corporate data liability.

7.2 Are there any regulatory limitations to insurance coverage against specific types of loss, such as business interruption, system failures, cyber extortion or digital asset restoration? If so, are there any legal limits placed on what the insurance policy can cover?

No, there are presently no regulatory limitations to insurance coverage against specific types of loss in respect of cyber insurance.

However, it bears noting that as insurance contracts are ultimately contracts, they are also subject to contractual law principles. These principles include, amongst others, that such a contract will be enforceable only if it is not tainted by illegality or is contrary to public policy.

8 Investigatory and Police Powers

8.1 Please provide details of any investigatory powers of law enforcement or other authorities under Applicable Laws in your jurisdiction (e.g. anti-terrorism laws) that may be relied upon to investigate an Incident.

There are a number of laws that would provide investigatory powers to the relevant regulators/law enforcement personnel.

Generally, the Singapore law enforcement authorities have fairly broad powers under the Criminal Procedure Code 2010 (“CPC”) to access, inspect and check the operation of any computer that they suspect is or has been used in connection with, or contains or contained evidence relating to, an arrestable offence. This may include offences under the CMA.

In relation to the PDPA, section 50 of the PDPA empowers the PDPC with powers of investigation to investigate whether organisations are in compliance with the PDPA. The powers are set out in the Ninth Schedule of the PDPA, which includes, amongst others, the power to require documents or information to be produced by the organisation to the PDPC, as well as the power to enter premises (both without and with a warrant), subject to certain conditions being satisfied.

In relation to the Cybersecurity Act, the Commissioner of Cybersecurity is empowered under sections 19 and 20 to investigate and prevent cybersecurity incidents. These powers include requiring, by written notice, any person to produce to the incident response officer appointed by the Commissioner of Cybersecurity, any physical or electronic record, or document that is in the possession of that person.

8.2 Are there any requirements under Applicable Laws for organisations to implement backdoors in their IT systems for law enforcement authorities or to provide law enforcement authorities with encryption keys?

No, there are no requirements for organisations to implement backdoors in their IT systems for law enforcement authorities. However, there is a requirement (under certain circumstances) to provide law enforcement authorities with encryption keys.

Under section 40 of the CPC, for the purposes of investigating an arrestable offence, an authorised police officer or other authorised person can require any person whom he or she reasonably suspects to be in possession of any decryption information, to grant him or her access to such decryption information as may be necessary to decrypt any data required for the purposes of investigating the arrestable offence.



Lim Chong Kin is the Managing Director of Drew & Napier's Corporate & Finance department and co-heads the Data Protection, Privacy & Cybersecurity Practice. Under Chong Kin's leadership, these practices are consistently ranked as the leading practices in Singapore. With his strong background in competition, data protection and technology laws, Chong Kin is often depended upon by his clients to deliver commercially savvy advice.

Chong Kin has been an external legal and regulatory advisor for the PDPC of Singapore since 2013, and he played a key role in the liberalisation of Singapore's telecoms, media and postal sectors, where he drafted the competition frameworks. Chong Kin is highly regarded by his peers, clients and rivals alike for his expertise, and is consistently recommended as a leading lawyer by major international legal publications such as *Chambers Asia-Pacific*, *The Legal 500 Asia Pacific*, *Who's Who Legal*, *Global Competition Review*, and *Practical Law Company Which Lawyer?*.

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David's practice over the last 10 years has focused on data protection and cybersecurity. He has substantial experience advising on data protection compliance, public policy and legislation, regulatory enforcement, data breaches and international aspects of data protection.

Prior to joining the firm, David was the first Chief Counsel to Singapore's data protection authority, the PDPC. He has also worked in other in-house roles, including with Singapore's media and telecom regulator, the IMDA.

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Prior to joining the firm, Albert worked for over 10 years in the public sector in Singapore. Most recently, he worked with Singapore's data protection authority, the PDPC, where he was involved in technology and cybersecurity assessments for data protection compliance and enforcement cases. Prior to that, he was the technical manager for common criteria certifications with the Info-communications Development Authority of Singapore.

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Drew & Napier LLC has provided exceptional legal advice and representation to discerning clients since 1889 and is one of the leading and largest law firms in Singapore.

The firm's work in data protection, privacy and cybersecurity precedes the advent of Singapore's Personal Data Protection Act 2012 and Cybersecurity Act 2018. Over the last decade, Drew & Napier has been one of the leading Singapore practices in the fields of data protection, privacy and cybersecurity. The firm has advised and acted for a wide range of clients on a variety of matters that run the full gamut. These include the implementation of group-wide data protection compliance programmes, localisation of global data privacy policies, data protection training programmes, requirements of Singapore's Cybersecurity Act 2018, developing a data breach management plan, dealing with data breaches and cybersecurity incidents

(whether involving hacking, malware or accidental disclosure), data breach reporting requirements, conducting data protection and regulatory risk audits and addressing *ad hoc* legal queries.

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