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# Legal Challenges in Digitalization and Privacy in Industry 4.0

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## Legal Challenges in Digitalization and Privacy in Industry 4.0

- Industry 4.0

  Convergence of

  - Physical
  - Digital
  - Biological
- What about this?
  - Physical + Digital + Biological + Legal?



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## Legal Challenges in Digitalization and Privacy in Industry 4.0

- E-commerce and IoT
  - Big Data
  - Speed
  - Smart things
- Convergence and combination
  - Scale and impact – lightning speed
- How do we define or categorize things?
  - Is it a car, camera, refrigerator, printer or a computer?
  - Or a little bit of each? A hybrid?



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# Legal Challenges in Digitalization and Privacy in Industry 4.0

What about the processes?

- A service provider or a platform?

| Service/platform | Legislation |
|---|---|
| Matching drivers, cars and passengers | s.52 of the Road Traffic Ordinance (Cap 374) – hire car permit |
| Matching home owners and tourists | Hotel and Guesthouse Accommodation Ordinance (Cap 349) |
| Crowdfunding; P2P lending | Collective investment scheme (Securities and Futures Ordinance)(Cap 571); Money Lenders Ordinance (Cap 163) |



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**Legal Challenges in Digitalization and Privacy in Industry 4.0**

Prevention of Copyright Piracy Ordinance (Cap 544)

s31C:

(1) Any person who, without lawful authority or reasonable excuse, has in his possession in a place of public entertainment [e.g. cinema] any video recording equipment commits an offence.

(3) For the purposes of subsection (1), a person has lawful authority to possess video recording equipment in a place of public entertainment if the manager of the place, or any person authorized in that behalf by the manager, expressly consents to that possession.

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"video recording equipment" (攝錄器材) means any device that is capable of making a recording, on any medium, from which a moving image may by any means be produced or that may enable such recordings to be made, either in the same place at which it is used, or by electronic or other transmission at another place.

- Does it include a smartphone?
- Do you bring your smartphones to cinemas to watch a movie?
- Do you have the cinema manager’s express consent?
- Any lawful authority or reasonable excuse?

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S161 of Crimes Ordinance (Cap 200):

(1) Any person who obtains access to a **computer**-

(a) with **intent** to commit an offence;
(b) with a **dishonest intent** to deceive;
(c) with a view to **dishonest** gain for himself or another; or
(d) with a **dishonest intent** to cause loss to another,

whether on the same occasion as he obtains such access or on any future occasion, commits an offence.

No definition of what is a “computer”. A smart X? X can be anything: car, refrigerator, camera, light bulbs etc

A banana?

## Legal Challenges in Digitalization and Privacy in Industry 4.0

How to define?

Can it be defined?

- Cloud
- Drones
- A.I.
- Bitcoin, cryptocurrency, distributed ledger technology
- Forceful browsing; Web scraping; SQL Injections; Field Manipulation; Cross-site scripting; Command Injection; Bots; Cookie manipulation; Brute Force Attacks; Parameter Tampering; Zero-day attacks
- Cybersecurity

Rule of Law

- Certainty of the law
- Affects rights

## Ransomware

- Your company’s computers have been hit by ransomware and the files have been encrypted and the criminals ask for a ransom to be paid in Bitcoins for decrypting the files
- To have access to the files, Bitcoins were bought and paid and the files were decrypted
- Any issues or risks?
- Any reporting or notification requirement?

# Legal Challenges in Digitalization and Privacy in Industry 4.0

## S.25(1) of Organized and Serious Crimes Ordinance (Cap 455)("OSCO")

- A person commits an offence if:-

1. **Knowing** or **having reasonable grounds to believe** that any property in whole or in part directly or indirectly represents any person's **proceeds of an indictable offence**; and

2. **Deals** with the property



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## Legal Challenges in Digitalization and Privacy in Industry 4.0

- Indictable offence

    - Includes conduct which would constitute an indictable offence if it had occurred in HK (s.25(4) of OSCO)

**→ The place where the indictable offence occurred is irrelevant!**



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## Legal Challenges in Digitalization and Privacy in Industry 4.0

- “Dealing” (s.2 of DTRPO and OSCO)

1. Receiving or acquiring the property
2. Concealing or disguising the property
3. Disposing of or converting the property
4. Bringing into or removing from HK the property
5. Using the property to borrow money or as security

## Legal Challenges in Digitalization and Privacy in Industry 4.0

a person's proceeds of organized crime are-

- (i) any payments or other rewards received by him at any time in connection with the commission of one or more organized crimes;
  (ii) any property derived or realised, directly or indirectly, by him from any of the payments or other rewards; and
  (iii) any pecuniary advantage obtained in connection with the commission of one or more organized crimes

# Legal Challenges in Digitalization and Privacy in Industry 4.0

**S.25A(1) of OSCO**

- Any person who **knows or suspects** that

1. Any property
   a. In whole or in part directly or indirectly represents any person's proceeds of;
   b. Was used in connection with; or
   c. Is intended to be used in connection with

   an **indictable offence**

2. **Disclose** that knowledge or suspicion, together with the relevant information to the authorized officer

- Timing of disclosure: as soon as it is reasonable for him to do so



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# Legal Challenges in Digitalization and Privacy in Industry 4.0

Failure to report

**Punishment**

- Imprisonment of 3 months
- Fine of HK$50,000

(s.25A(7) of OSCO)



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## Legal Challenges in Digitalization and Privacy in Industry 4.0

Bitcoin – is it a “property”?

OSCO – “property” includes both movable and immovable property within the meaning of s3 of the IGCO.

IGCO – “property” includes

- (a) money, goods, choses in action and land; and
- Obligations, easements and every description of estate, interest and profit, present or future, vested or contingent, arising out of or incident to property as defined in paragraph (a)

“immovable property” means –

- Land, whether covered by water or not;
- Any estate, right, interest or easement in or over any land; and
- Things attached to land or permanently fastened to anything attached to land



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## Legal Challenges in Digitalization and Privacy in Industry 4.0

- Cryptocurrency
- US Court in 2016 – for the purpose of a bankruptcy case treats bitcoin as a kind of “intangible personal property”.
- US IRS treats bitcoin as property for tax purposes.
- Dealing?
- Reporting?

## Legal Challenges in Digitalization and Privacy in Industry 4.0

Challenge to privacy

Focus

- Mainly on Business
- Privacy by design?

Where is the data stored?

What would happen if the data is lost?

- Who is liable?



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## Legal Challenges in Digitalization and Privacy in Industry 4.0

Cross border transfer of personal data – s.33 of PDPO

- Still no indication when it will come into force

PRC Cybersecurity Law – 1 June 2017

- Data localization rule: imposed an obligation on operators of "Critical Information Infrastructure" (**CII**) to store personal information and other important data collected and generated during operations within China.

## Legal Challenges in Digitalization and Privacy in Industry 4.0

- Requires CII operators and Network Operators to undertake security assessment before transferring such data abroad

# Legal Challenges in Digitalization and Privacy in Industry 4.0

PRC Cybersecurity Law

Personal information is defined as including:

- All kinds of information, recorded electronically or through other means which is sufficient to identify a natural person's identity, including but not limited to:
  - Full names
  - Birth dates
  - Identification numbers
  - Personal biometric information
  - Addresses
  - Telephone numbers

## Unauthorized stock trading

“Hacking of internet trading accounts is the most serious cybersecurity risk faced by internet brokers in Hong Kong,” said Mr Ashley Alder, the SFC’s Chief Executive Officer.

"If you ask regulators in the industry what is the number one threat, not surprisingly it’s all about cyber attacks," "We've seen that happen not only in banking but also at brokers in Hong Kong, in particular recent attacks to do with basically hijacking share trading accounts."

- Ashley Alder, CEO of the SFC and chairman of the International Organization of Securities Commissions, said in a speech to the local legislature – Reuters, Feb 2017

## Unauthorized stock trading

On 8 May 2017, SFC launched a 2-month consultation on proposals to reduce and mitigate hacking risks associated with internet trading

- For the 18 months ended 31 March 2017,12 licensed corporations (LCs) reported 27 cybersecurity incidents, most of which involved hackers gaining access to customers internet-based trading accounts with securities brokers resulting in unauthorised trades totalling more than $110 million when some others involved DDoS attacks targeting their websites accompanied by threats of extortion.

# Unauthorized stock trading

## Hacking incidents and potential root causes

The hacking incidents reported by licensed internet brokers remain under Police investigation. However, the Police shared case studies suggesting that hackers used compromised internet trading accounts to carry out a pump-and-dump scheme which could lead to substantial financial losses. Such schemes typically follow these steps:

(a) Hackers first gain control of clients' internet trading accounts (hacked accounts) which enables them to log into the accounts "legitimately" to effect unauthorised transactions;

(b) Hackers then employ people to open other internet trading accounts to accumulate penny stocks;

**Unauthorized stock trading**

(c) Using the cash in the hacked accounts, or cash raised by selling off existing stock holdings in the hacked accounts, hackers then buy these penny stocks in order to pump up their stock prices; and

(d) After the prices of the penny stocks go up, hackers off-load them and make a profit, leaving the owners of the hacked accounts to suffer significant losses.

## Unauthorized stock trading

SFC's proposal in the consultation:

- Propose to incorporate new guidelines which set out baseline cybersecurity requirements for internet brokers to address hacking risks and vulnerabilities and to clarify expected standards of cybersecurity controls.

- Key proposed requirements include 2-factor authentication for clients' system login and prompt notification to clients of certain activities in their internet trading accounts.

## Unauthorized stock trading

- In addition, the SFC proposes to expand the scope of cybersecurity-related regulatory principles and requirements which now apply to electronic trading of securities and futures on exchanges to cover the internet trading of securities which are not listed or traded on an exchange. This includes authorised unit trusts and mutual funds because they are subject to the same hacking risks.

- The SFC also proposes to update the definition of “internet trading” to clarify that an internet-based trading facility may be accessed through a computer, mobile phone or other electronic device.

## Legal Challenges in Digitalization and Privacy in Industry 4.0

- Lightning speed vs non-lightning speed
- Business vs Rights
- Usage vs Understanding/Definitions
- Old vs New
- Humans?



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# What advice do you have for people writing laws?

- **Kay Firth-Butterfield:** Well I think the advice to lawyers is that very soon, you will be receiving... You will see those cases coming across your desk, and you need to get up to speed around artificial intelligence. And, what's going on in artificial intelligence now, I think just going back to that job creation thing, there are going to be a lot of jobs around, so we're not going to kill all the lawyers by automating them just yet because we are going to see experts needed in court. For example, instead of cross-examining a driver, we might have to cross-examine an algorithm, a.k.a. an expert on the system. If you are in any business, you need to be looking at what AI can do for you, and what the impact of AI will be on your business. So there are two pieces of that because I genuinely believe that AI will change everything. And if you don't start looking now, you will be too far behind.

*ZDNet 30 Jan 2017*

- *http://www.zdnet.com/article/artificial-intelligence-legal-ethical-and-policy-issues/*



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# THANK YOU





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