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FIGHTING GRAFT WITH TECH

How the Corrupt Practices Investigation Bureau's work has changed

BY ANGELA TAN



ILLUSTRATION: SIMON ANG

About 16 years ago, Chng Tze Wei was editing and creating videos for a living. Now, the 39-year-old heads the computer forensic branch/technology unit at Corrupt Practices Investigation Bureau (CPIB), Singapore's corruption fighters under the Prime Minister. His team comprises nine officers, who on a daily basis examine mobile devices, laptops, computers, cloud, and various multimedia devices including videos and audio enhancers that have been seized to extract evidence that can help CPIB's investigation officers establish cases. >>>

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It was one such fateful search that gave the team its major breakthrough in the match-fixing scandal, which saw nightclub owner Eric Ding jailed for bribing three Lebanese referees with the services of prostitutes before an Asian Football Confederation Cup match in 2013.

"The digital evidence taken out was very crucial to the court case," Mr Chng says. "Ding did not confess. The case depended a lot on our collaborative effort and digital evidence we found."

Ding had used sophisticated levels of encryption for the things he was trying to hide. With patience and technical expertise, the team managed to uncover crucial evidence from his phone and encrypted communications.

"Once opened, we found teaching instructions given to the referees on how to blow their whistle and give away penalties so that spectators would not be aware that a penalty had been given when it was not a penalty," Mr Chng says.

In another case, the forensic branch encountered an invisible application on a phone that had been seized.

"Because it was invisible, you wouldn't know it exists. But through forensic means, we managed to find out about its existence," Mr Chng says of the invisible application that was triggered when a specific pin-code was pressed.

Technology advancement is helping the fight against corruption, just as it is also changing the nature of crimes and how forensic investigation is being conducted. Lam Jun Zhi, CPIB's deputy chief transformation officer elaborates: "Previously, evidence presented itself in physical formats like papers and files. We needed people to go through it. Today, evidence presents itself in digital forms, often in huge terabytes. We can't do it manually anymore."

The Internet of crimes

When CPIB was set up in the 1950s by the British, the anti-corruption officers sought out large-scale corrupters, namely the organisers of opium-smuggling, gold smuggling and gambling promotion. These days, the Internet of Things has become the fountainhead from where many new forms of corruption flow. "Technology has made things easy and hard for everyone. It exists in our daily lives - WhatsApp, Telegram, etc. Many of us may not even realise it because the level of encryption is very tight," Mr Chng says.

The Internet has made forensic investigation



Nightclub owner Eric Ding, who was jailed for bribing three Lebanese referees with the services of prostitutes before an Asian Football Confederation Cup match in 2013, was caught after crucial evidence was uncovered from his phone and encrypted communications.



more challenging as data can now travel faster and is no longer just stored in a static place.

"Digital evidence now exists in many places. As long as there is digital storage, there is a possible place to uncover. It is no longer feasible for an investigation officer to look for evidence manually, or one by one, as storage gets bigger and information that needs to be processed is increasing," says Mr Chng, who started his career at CPIB back in 2004, the same year the bureau initiated its forensic capability.

Those days, the department was manned by investigation officers like him who had volunteered to take on additional forensic work on a part time basis. It was only in 2010 that a full-time forensic outfit - manned by three officers - was set up by the ex-director, Soh Kee Hean, before he left.

CPIB's director Denis Tang says the bureau is well regarded for its resolve and effectiveness in combating corruption. The city-state is widely acknowledged to be one of the least corrupt places in the world by agencies like Transparency International and the Political & Economic Risk Consultancy.

"Along with our officers' tenacity and determination, the CPIB always seeks to keep ourselves well informed of the evolving operating challenges, changing criminal modus operandi, and new technologies to ensure that we remain effective in fighting corruption," Mr Tang says.

"We have strengthened our investigative capabilities by leveraging digital technologies such as data science and digital forensics," he says.

"For instance, data analytic tools will enable us to better detect non-obvious relationships and irregularities that can lead to the self-discovery of

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Chng Tze Wei, head, computer forensic branch/technology unit, CPIB



For Surbana Jurong, the ISO 37001-Anti-bribery Management Systems certification "says 'Don't bribe me' and provides our partners the added confidence when working with us. So, it is very important", says group chairman Liew Mun Leong.

corrupt acts, which would otherwise remain undetected," he elaborates.

Based on market development and trend observation, the bureau has decided to focus on four key forensic areas - mobile, computer, cloud and multimedia - that help solve crime. Cloud forensics was introduced two years ago when the bureau observed it brewing with the onslaught of Gmail, Dropbox and mega storage applications.

"The four key areas are growing daily. They will continue to exist and grow as long as mobile phones are here to stay. We close any knowledge gap by training," Mr Chng says.

Crypto-currencies also caught the bureau's attention some years ago.

"We came out with a standard operating procedure, shared with many law enforcement agencies - locally and overseas - to prepare officers in the event there is a case involving crypto-currencies, so that officers are aware of the existence of such cases," Mr Chng says.

Strategic collaborations

CPIB's transformation is aligned with the entire public service transformation that is based on the philosophy that "Transformation Starts with an I.D.E.A." - which stands for Innovate, Digitalise, Engage, and Adapt and Skill Up - to serve Singapore and its citizens better.

It does not work alone in its fight against graft. It collaborates with strategic partners like Home Team Science and Technology Agency (HTX) and Defence Science Organisation (DSO) in its fight to keep Singapore graft-free.

"These efforts are in line with public service transformation efforts to digitalise and develop win-win collaborations with the community and non-governmental stakeholders," Mr Tang says.

Public-private partnerships through platforms like the Anti-Corruption Partnership Network (ACPN) are pertinent as CPIB taps on more helping hands across various sectors to curb corruption. It set up the ACPN in 2018 to promote ownership on the prevention of corruption in the private sector, which accounts of around 90 per cent of the 100 new corruption cases investigated every year.

"We cannot do it alone," Mr Tang said at an ACPN event in December. "We need our business sectors to take ownership and be effective when it

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CPIB director Denis Tang



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comes to corruption prevention.

"We have to recognise that if we allow corruption to taint the way we conduct our business, Singapore's competitive edge and value proposition will slowly but surely be eroded," he warned.

To date, Surbana Jurong is one of the eight corporations thus far to obtain certification for ISO 37001-Anti-bribery Management Systems, which is a standard that specifies requirements for implementing, reviewing and improving an organisation's anti-bribery management system.

Liew Mun Leong, group chairman of Surbana Jurong, says: "I told management to get the ISO certification done at all cost, and implement it... This can also be a non-tariff barrier to our companies winning contracts internationally. It says 'Don't bribe me' and provides our partners the added confidence when working with us. So, it is very important."

CPIB has been actively engaging financial institutions and banks in its fight against graft. In December 2019, it worked closely with OCBC Group, a member of ACPN, on Project POET (Production Orders: Electronic Transmission), an automated system which shortens the turnaround time to retrieve banking information for investigation. This was implemented in January.

The digitisation of information enhances an investigation officer's efficiency in retrieving, accessing and analysing tons of information that come in the form of bank documents, invoices and statements, among others. For banks, it



OCBC's Project POET "helps in the speedy detection of possible cases of money laundering or suspicious transactions, which we can then report to the relevant authorities", says OCBC's Head of Group Legal and Regulatory Compliance, Loretta Yuen.

ators of a subject and assists our interviewers in assessing the truthfulness during their interviews. This is a key area that the CPIB is looking at in order to explore science and technologies such as the analysis of voice, pupil and even blood flow and volume of the subjects to complement credibility assessment," Mr Lim says.

CPIB is also working on an enhanced case management system called VISION (Various Intelligent Systems in One Network), where all available data for investigation can be easily assessed by CPIB users. Some of the capabilities include a one-stop screening function. It also acts as a virtual mentor to provide CPIB officers with a library of information for their investigation.

Technology, too, is tapped to improve services to the public. For example, CPIB is embarking on a pilot phase with its electronic bail system where an accused and his surety no longer requires to physically head down to the bureau - thus, potentially saving the public 2,500 man-hours annually.

Big data is used to "proactively" detect corruption. Alvin Yew, CPIB's senior deputy director operations management and support, shares that the bureau has recently set up a new data analytic unit to leverage data.

"The idea is to be as proactive as possible rather than reactive all the time," Mr Yew explains. "The traditional way of looking at cases was someone makes a report, or a whistle blower, we look into it. If we think there is sufficient evidence to probe deeper, we will go in. Again, we only know what we know."

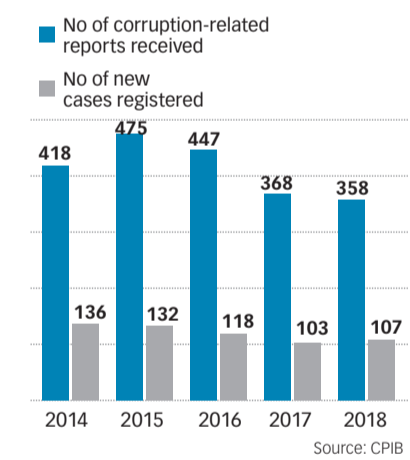
"So, the idea we have is, if we have sufficient data points, will we be able to identify potential unreported cases? That's a potential holy grail. That's what we are doing now," says Mr Yew, who has been seconded to CPIB from the Ministry of Home Affairs.

At the end of the day, it is about probability. "It is about writing scripts, understanding what the business case is, if you have a certain hypothesis, identifying whether there are sufficient data points to either validate or debunk this hypothesis. Once you have that, we will be writing scripts with a checklist and based on probability we will look into cases further," Mr Yew says.

Clearly, with evolving technology and a vastly improved infrastructure, CPIB has moved on. One thing remains unchanged - that is, the unwavering commitment of CPIB officers to keep Singapore graft-free.

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Corruption firmly under control



"We are continually exploring new technology that looks at different physiological indicators of a subject and assists our interviewers in assessing the truthfulness during their interviews."

Vincent Lim, CPIB's director of investigations



provides additional surveillance risk indicators, as well as intelligence data mining and transactional link analysis to identify hidden relationships and clustering relationships that may pose money laundering risks to the bank.

"This helps in the speedy detection of possible cases of money laundering or suspicious transactions, which we can then report to the relevant authorities," says OCBC's Head of Group Legal and Regulatory Compliance, Loretta Yuen.

The holy grail

Science and technology are explored to improve how investigative interviews, a critical part of CPIB's investigation process, are conducted.

"In Singapore's context, both the giver and receiver of a bribe are culpable and subjected to the same punishment set out in our laws. This reduces the motivation for both the giver and receiver of the bribe to be truthful," Vincent Lim, CPIB's director of investigations, says.

Because of this, CPIB is looking to science to help find ways to find whether people are telling the truth. "We are continually exploring new technology that looks at different physiological indic-