บล็อกเชน เพชรฆาตคอรัปชั่น

BLOCKCHAIN – A CORRUPTION KILLER

Received: December 12, 2018
Revised: March 18, 2019
Accepted: March 21, 2019

โกสิทธิ์ เฟื่องสวัสดิ์*
Kosit Fuangswasdi*

* นักศึกษาปริญาเอก หลักสูตรรัฐประศาสนศาสตร์ดุษฎีบัณฑิต นานาชาติ ภาควิชารัฐศาสตร์ คณะสังคมศาสตร์ มหาวิทยาลัยมหาจุฬาลงกรณราชวิทยาลัย
* Ph.D. Candidate, Public Administration International Program, Department of Political Science, Faculty of Social Sciences, Mahachulalonkornrajavidyalaya University
* Email: kositf@gmail.com

บทคัดย่อ

งานวิจัยนี้เป็นส่วนหนึ่งของโครงการวิจัยขีดความสามารถของประเทศไทยแบบยั่งยืน ซึ่งอันดับขีดความสามารถของประเทศไทยจัดอยู่ในระดับกลางของโลกโดยสถาบันชั้นนำต่างๆ โดยไม่สามารถขยับขึ้นไปในระดับที่ดีขึ้นได้ด้วยสาเหตุหลายประการ ทั้งนี้ปัจจัยหนึ่งที่สำคัญคือการคอรัปชั่นและการฉ้อฉลที่อยู่กับสังคมไทยมาอย่างยาวนานจนมีความเชื่อว่าไม่มีทางกำจัดได้ แม้ว่าเริ่มมีการตรวจสอบการทุจริตในภาครัฐมาตั้งแต่ปี พ.ศ. 2476 มีการออกกฎหมาย จัดตั้งองค์กรและมาตราการ รวมทั้งกลไกการตรวจสอบมากมาย แต่นับวันการทุจริตในภาครัฐมีแต่จะมากขึ้น ในส่วนของภาคเอกชน ได้เกิดความร่วมมือเพื่อการต่อต้านการทุจริตมาอย่างต่อเนื่องนับตั้งแต่ปี พ.ศ. 2553 แม้จะเห็นผลลัพธ์ในทางที่ดีขึ้นแต่การคอรัปชั่นได้กลายเป็นประเด็นหลักในการพัฒนาประเทศ แต่อย่างไรก็ตามในปัจจุบัน ได้มีการนำเทคโนโลยีบล็อกเชนเข้ามาเป็นส่วนหนึ่งของการบริหารจัดการข้อมูลทั้งในภาครัฐและภาคเอกชน ด้วยโครงสร้างของเทคโนโลยีบล็อกเชน ธุรกรรมทางการเงินจึงไม่เพียงมีประสิทธิภาพและประสิทธิผลสูงสุด แต่ยังมีความโปร่งใสและสามารถตรวจสอบได้ ทุกครั้งที่มีธุรกรรมการเงินเกิดขึ้น จะมีการบันทึกในระบบที่ทุกคนเห็นได้ในทันที ทั้งจำนวนเงิน วัน เวลา สถานที่ และบุคคลที่เกี่ยวข้อง และใครก็ไม่สามารถทำการลบบันทึกออกจากระบบได้ รัฐบาลในหลายประเทศจึงได้ตัดสินใจนำบล็อกเชนมาใช้เพื่อจุดประสงค์ต่างๆ รวมทั้งเพื่อกำจัดคอรัปชั่นจนประสบความสำเร็จเช่นกลุ่มประเทศนอร์ดิกในยุโรปเหนือ บทความฉบับนี้ได้นำเสนอข้อมูลบทวิเคราะห์และข้อเสนอแนะให้ประเทศไทยเริ่มให้การศึกษาบล็อกเชนกับประชาชน พัฒนาระบบและนำมาใช้ ฐานของระบบบล็อกเชนควรเป็นแบบร่วมของทุกชุมชนโดยให้ทุกภาคส่วนร่วมวางระบบและเป้าประสงค์ให้ชัดเจน ซึ่งรวมถึงการกำจัดการโกงและฉ้อฉล ถึงเวลาของบล็อกเชนแล้วที่จะกำจัดคอรัปชั่นให้หมดไปจากประเทศไทย

คำสำคัญ: บล็อกเชน คอรัปชั่น ความโปร่งใส สามารถตรวจสอบได้

Abstract

This paper is part of the research project on Thailand's sustainable competitiveness. The competitiveness ranking for Thailand assessed by several international institutions has been moving in the middle group of countries with no chance to rise due to many factors including corruption, believed that cannot be eliminated. The government system audit was firstly introduced in Thailand in 1933. Since then, several state organizations and mechanisms have been put in place, but all the efforts have failed to succeed to eliminate malpractices in the government sector. In the private sector, higher number of coalition business parties have jointly fought against corruption, but still far from the reality. Obviously, corruption in Thailand is a national issue. Nevertheless, the technology of blockchain has been recently brought in to partially support data management in both public and private sectors. Blockchain, a modern financial technology, has been well developed. Because of its architectural design, blockchain provides not only efficiency and effectiveness of financial transactions, but also transparency and auditability. All data are recorded and visible to all connected in the platform, cannot be deleted but can be tracked with all the digital value including numbers, dates, locations, people involved. More governments worldwide have decided to adopt blockchain as a national system for many applications, partly to strive for zero corruption, including members of the Nordic group. Thailand should employ blockchain seriously, beginning with the public learning about the technology, development and implementation. The crowdsourcing Government as a Platform (GaaP) should be initiated to help define a clear strategy on the specific innovations and applications tailored to fit with the national requirements, specifically to eliminate corruption completely. It is the time for Thailand to terminate corruption totally with a disruptive technology known as Blockchain.

Keywords: Blockchain, Corruption, Transparency, Auditability

Introduction

The national competitiveness of all countries is annually assessed and published by the International Institute for Management Development or IMD, the World Economic Forum or WEF, and the World Bank. These annual competitiveness reports are direct indicators of where the global investments and fund flows would take place. The IMD World Competitiveness ranking is evaluated 4 main categories; economic performance, government efficiency, business efficiency, and infrastructure of which transparency and bribing and corruption are two distinct matters under the government efficiency. The WEF's annual Global Competitiveness Index (GCI) is a weighted average of 12 components of which the first one focuses on transparency, fraud and mismanagement including corruption which are crucial factors prohibiting advancement of the national competitiveness. The World Bank Group, initiated by Simeon Djankov, annually publishes the World's Ease of Doing Business Index with ranking of countries. Global institutional and major independent investors routinely employ these annual research reports as guides to their decision making on moving enormous amount of capital to invest in high ranking countries to increase their portfolio wealth where risks are measurably low. Transparency and non-compliance including corrupt practices are therefore vital criteria for the measurement of the index.

Thailand's ranking of corruption perception index has been fluctuating from 34th in 1995 to 102nd in 2013 with an average of 71.04 during the period of 1994-2018.

Research Objectives

1. To learn where Thailand is in the world's corruption perception ranking and what Thailand has done to fight and resolve corruption and eventually better its ranking position.
2. To understand the technological evolution of blockchain and how it works.
3. To learn from actual examples of other countries who have implemented blockchain successfully.
4. To recommend how Thailand should adopt blockchain and implementation options.

Background

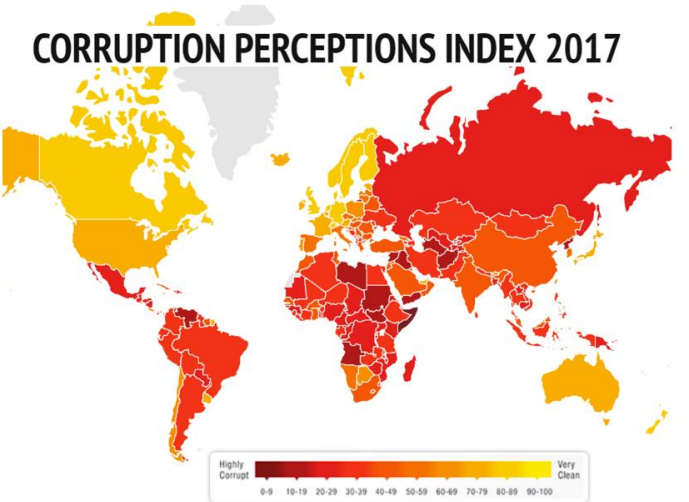
It has been said that corruption and fraud are born with Thai people and cannot be eliminated totally. The reality is that corruption has no boundary and takes place in every country. However, some countries are ranked better and some have developed ways to counter or even eliminate it successfully. With failures to fight against corruption for over a century, corruption is getting worse in Thailand. This clearly shows that all rules and regulations, and measures implemented throughout our history have failed. Thailand certainly needs a new tool and a new way of thinking to counter corruption and financial technology could be an answer.

Research Methodology

The first step of this research is to clearly understand how the Corruption Perception Index (CPI) process is generated and published by the Transparency International (TI), and where Thailand is in the world's ranking. This can be done by documentary research through reports and publications of TI, Office of the National Anti-Corruption Commission (NACC) and GAN Business Anti-Corruption Portal, an organization financially supported by the EU; followed by an

in-depth interview with the Thai CAC (Thailand's Private Sector Collective Action Coalition Against Corruption). The second step is to learn what Thai government and private sectors have done to counter corruption and how successful our cumulative efforts are. Documentary research and brief interview with NACC officials are the main source of the data. Understanding the evolution of financial technology called blockchain is the next step. Actual cases of countries where blockchain has been implemented are exemplified in the following step. Accenture, American consulting firm, provides data sources on distributed ledger technology including Blockchain. The last step is to conclude with recommendations that Thailand should adopt this financial technology to counter corruption, and how to kick off.

Research Findings



Source: *Transparency International*

Figure 1: World's Corruption Perception Index Map 2017

First launched in 1995, the Corruption Perception Index (CPI) is published annually by the Transparency International (TI) and has been widely used by all industries worldwide. The latest published index was made in February 2018 with Thailand ranked at 96th from 180 total countries in the survey, with the CPI of 37 (the higher the index, the smaller the corruption). New Zealand and Denmark were ranked as the world's top leaders in anti-corruption success, with CPI of 89 and 88 respectively. Singapore and Hong Kong are the only 2 countries in Asia that can make it in the top 15.

The TI is a non-partisan organization created in 1993. The TI Organization is truly independent and is run by a 12 board-members, elected by associate countries in its annual TI conference. The Secretariat Office is in Berlin. The office is supervised and supported by a group of 31 dignitaries of the Advisory Council, including Khun Anand Panyarachun, a former Thai Prime Minister.

In Thailand, the first national audit committee was appointed by the Thai government in 1933. Since then, several laws have been promulgated to officiate and empower the anti-corruption officers. The Office of the National Anti-Corruption Commission (NACC) was legally officiated on November 17, 1999. Specific laws, rules and regulations have been enforced but fail to counter corruption practices. The NACC is managed by a 9-member Commission and tasked to combat all corruption activities. Unfortunately, the organization is perceived by many as a paper tiger or a tiger without authoritative power.

The anti-corruption activities in the business sector have been more progressive and advanced. The Thai CAC – Thailand's Private Sector Collective Action Coalition Against Corruption, is the only associated chapter of TI and approved by various sectors including the government and businesses. As of mid-October 2018, there are 921 private companies expressed their intention to join the chapter, only 332 companies have been certified.

Thailand's ranking in the last 10 years has been up and down with the worst in 2013. After staging a coup and becoming the prime minister, Gen. Prayut Chan-o-cha and his administration managed the national CPI to up markedly in 2015 to 76th, best for the last decade. However, his administration was beset by various corruption scandals (Chachavalpongpan, 2014). The national CPI was skyrocketed to 101st in the following year ranking. For the record between 1995 through to 2018, Thailand's CPI ranking averaged 71.04, reaching an all-time high of 102nd in 2013 during the Yingluck's government and a record low of 34th in 1995 during the Chuan Leekpai's government (Note: 1995 ranking reflects the 1994 data).

Figure 2: Thailand's Corruption Rank, between 2008-2017

In the snapshot report presented by GAN Business Anti-Corruption Portal, Thailand has successfully deployed the legal framework and a range of institutions to counter corruption. However, anti-corruption legislation is inadequately enforced, and facilitation payments and gifts are common in several areas including judicial system, public services; land, tax, and customs administrations, public procurement and civil society. GAN Integrity concluded in conjunction with the Corruption Perception Index that there are high risks of corruption in most sectors in Thailand.

Using Blockchain to Disrupt Corruption

The chronic disease of corruption has been proven its persistent to all mechanisms in the past decade, with the lowest and highest corruption perception ranking of 76th and 102nd. At least one technique or mechanism Thailand has never been tried, a disruptive financial technology known as "Blockchain".

Blockchain is an incorruptible digital ledger of economic transactions that can be programmed to record not just financial transactions but virtually everything of value (Tapscott & Tapscott, 2016). In a conventional financial database architecture, all of customers' financial data is stored at the data center of banking institutions. In practice, each of these banking institutions not only store customers' data, but also edit, copy, distribute or share, and modify. All these activities are routinely done by bank staff without our permissions, based upon the fact that all customers had already given their assigned banks the authority to do so when opening accounts. This practice is also against the EU GDPR or General Data Protection Regulation which has been deployed in the EU since 1995 but was later universally adopted on April 14, 2016 and globally enforced on May 25, 2018. From a legal perspective, customers worldwide cannot claim any losses from their respective assigned banking institutions. Not only we cannot protect our own financial and personal data, even our account can be involved with legal and illegal transactions without our consent and awareness due to the flaw in the database architecture. In a blockchain architecture, each customer fully controls his or her own data. All data points of customers' database are up in the single trusted platform and only each customer can edit, move or remove, modify and update his or her own data. Anyone or any banking institution can use any pieces of data of each customer only on that particular transaction without permission to edit or modify or else.

There are many features and applications of blockchain. Blockchain provides a decentralized database, as mentioned above, or distributed ledger, of transactions that everyone in the network can see. This network is essentially a chain of computers, also known as nodes, that must all approve an exchange before it can be verified and recorded (Borrows, et al. 2017). In other words, blockchain is truly transparent. Assuming we transfer cash to a friend, the blockchain structure would have to create one transaction process at our end for the out-going transfer and create another transaction process at our friend's account. The transaction record includes not only a financial figure of the transaction but also from a person to a person, date and time of transfer, from where to where, and all relevant information of the transaction. This record is not destructible but forwarded to all other following transactions. The technology of blockchain is therefore truly transparent and auditable at all time. Moreover, all transaction processes and audit processes are done in parts of a second, through millions of computers worldwide connected to the single trusted platform. Another advantage of this distributed model is that if one node fails, the remainder of the blockchain ecosystem still works. Blockchain stores an immutable log of transactions that cannot be changed after the transactions are completed. The system is powered by cryptography and includes consensus mechanisms that minimize fraud.

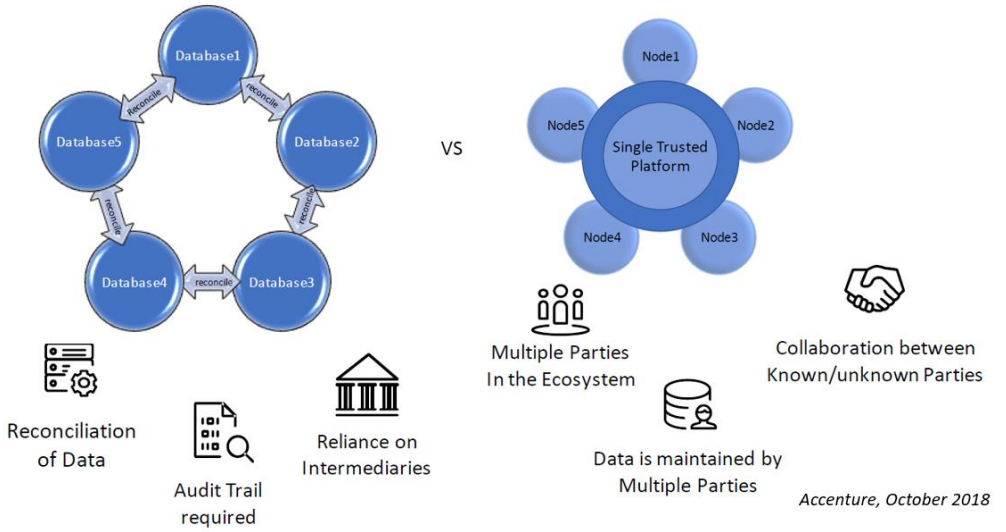


Figure 3: Comparison between conventional banking databases and blockchain.

In any blockchain transaction, several millions on the system are inter-connected. The ecosystem is shared and used by several million people at all time. Everyone keeps current of his or her own data automatically. All activities are fully and thoroughly recorded, and all parties can collaborate among parties or across parties without knowing each other. Because of different nature of needs of each user, data are reconciled at all time automatically. Anyone can track any record and perform audit trail of all transactions, including those involved in the money laundering. Under a conventional banking system, banks act as intermediary and charge banking or brokering fees and others cannot check or audit. Under the blockchain architecture, we can perform all transactions without banks. This is what Bill Gates, founder of Microsoft, said in 1994, "banking is necessary, banks are not" (O'Hernaes, 2017). William Mougayar, venture advisor of Blockgeeks explains the differences between conventional and blockchain technologies with a simple sense. Banks maintain money balances and transfers by briefly locking access while they make a transfer, then update the other side, then re-open access or update again. During this period, customers like us cannot do anything. This period can last for minutes or up to two weeks. With a blockchain technology, both parties have access to the same document or transaction at the same time, and the single version of that document is always visible to both. It acts like a shared ledger. Blockchain cannot be controlled by any single entity and it has no single point of failure in the system. With blockchain, we can dismiss the intermediary. With blockchain, there is no banking or brokering fee. With blockchain, we do not have to wait for minutes or up to two weeks anymore. The blockchain architecture provides not only transparency and auditability, but also efficiency and effectiveness; which are the desires of all governments in the world to handle the public management. Blockchain has the potential to enable radical public services transformation in a more profound way than all other previous Internet-based technologies. Blockchain is a unique technology as it allows the control of identity data to move from government to the citizen, more importantly securely and efficiently (Zyskind, et al. 2014). It would enable everyone to view his or her public service identity via an identity app on his or her smartphone and share relevant

data with government to access public services. This is a totally different model from the past where the government was acting as the controller. In this new Blockchain model, government would become the verifier. Blockchain technology offers a shift in data ownership, from database administrator to the individual who owns the original data. Many governments have foreseen the use of blockchain to transform identity management and all subsequent value-added applications. It is noted that certain type of blockchain has been developed into virtual money or digital money known as cryptocurrency. There are many currencies of this type traded actively worldwide, with Bitcoin as the most well-known. Cryptocurrency is run on the technology of blockchain. To incentivize users of Bitcoin to increase trading activities, a transaction fee known as miner's fee or blockchain fee is collected to reward miners for maintaining the Bitcoin network.

The Government of Singapore saw the opportunity of blockchain deployment and picked customs and formality services as the first attempt. With approval of a regulatory sandbox, the National Trade Platform was initiated for the selected team of experts from both state and private sectors to develop from June 2016 through to January 2017. With a vision to develop a national trade info-ecosystem that provides the foundation for Singapore to be the world's leading trade, supply chain and trade financing hub; the Singaporean Government has successfully developed a platform that connecting all businesses, boosting competitiveness of Singapore to be the world's number 1 and creating tremendous opportunities for the future of their country. The result of this adoption of technology leads Singapore to become more competitive, with a rank of world's number 3 in the 2018 IMD World Competitiveness, and world's number 6 in the 2017 Transparency International's Corruption Perception Index.

South Korea is one of the very advanced employers of Blockchain technology and related FinTech applications. However, adopting this highly advanced technology comes at a big cost to South Korea. With a jump to adopt disruptive financial technologies including ICOs – initial coin offerings, investors were deceived to several corrupt practices. The government took an immediate action in 2017 to ban the use of cryptocurrency trading including the ICOs. The ban was enforced for all citizens including government officials. However, to compete with rival countries like Singapore and Hong Kong, the South Korean government in early 2018 lifted the blanket ban of ICOs and Bitcoin. New policies that govern blockchain technologies including decentralized applications (dapps) and platform are being developed to provide a leading edge for South Korea. With a series of corrupt practices discovered in many chaebol (family-owned Korean conglomerates) and government offices including the office of the President, blockchain has been widely used and supported by the government for transparency and security. Currently, almost half of the workforce routinely interacts with blockchain and more than 20 percent of all the crypto trading in the world is either operated in South Korea or in other countries but managed by South Korean entities. At present, the government is on the way to establish the Financial Innovation Bureau, a dedicated organization to provide stewardship for emerging financial technologies including blockchain and cryptocurrencies. The Ministry of Science and ICT is kicking off with pilot blockchain projects involving using the technology for online voting, customs clearance, supply chain management, logistics, real estate, and cross-border e-document distribution.

The case study of E. coli outbreak in the United States is probably the simplest and best analogy of blockchain application (Collak, 2018). The outbreak took place in 2006. The U.S. Food & Drug Administration (US FDA) launched a nationwide investigation to search for the origin of the outbreak. After millions of dollars, hundreds of state officials and weeks of investigation process, the source of E. coli bacteria was discovered in spinach from a specific farm delivered to Walmart. Walmart immediately halted the distribution and sales of all spinach in all 26 states, resulting in a big loss of revenue and trust to consumers. Walmart recently announced a requirement for their suppliers to leverage blockchain. With the use of blockchain, Walmart can now trace the source of food in seconds and trigger disaster management plan immediately including protection of its consumers and financial loss.

Probably the most advanced blockchain technology is being deployed in the Nordic region led by Denmark, Finland, Iceland, Norway, and Sweden. The Nordic group took an early adopter in strategic approach on the use of blockchain and has seen the political implications and opportunities of this unlimited technology. They perceive that the technology will eventually shape their society and the social environment would, vice versa, also shapes the technology. Realizing the drastic change in both technology and social environment, as well as political implications, the Nordic countries have collectively developed blockchain systems which designs and uses will set standards for future development. The "Nordic Model Blockchain" is built around liberal, social democratic values, where trusted and appreciated social institutions are not bypassed, but streamlined and strengthened.

Trond Benstestuen, Norway's largest bank DNB executive, said in January 2016 that half of all cash transfers in Norway were made without the bank's control. He also stated that those cash transfers could be used for illegal purposes including under-the-table payments and laundering activities. Two members of the Nordic Group, Sweden and Denmark, decided to adopt a national policy of becoming cashless. The Danish government has set a 2030 deadline to completely do away with paper money. Sweden, on the other hand, has reduced money paper in the market to only 60 percent and plan to become the world's first cashless country. Aina Eidsvik, president of the Thai-Norwegian Chamber of Commerce, made a speech during the Thailand's 9th National Conference on Collective Action against Corruption in Bangkok on October 11, 2018 to commemorate the signing of Joint MOU with Thailand Institute of Director to support activities in Thailand to counter corruptions. With these features, blockchain has been deployed by many enterprises and state governments as a platform for more and more applications. The IDG Computerworld UK recently reported that blockchain has become more and more popular as more applications are proven to benefit the public services particularly records of health and personal data, election voting, taxation and financial transactions, logistics and procurement (Macaulay, 2018).

In Thailand, academic reports suggest total damage from rampant graft and irregularities range between Baht50 billion and Baht100 billion for 2018 (, 2018). An associate professor and dean of the College of Social Innovation at Rangsit University, Mr. Piriyarangsan elaborated that the transgressions were committed by state officials at all levels at agencies in Bangkok and provincial offices nationwide. He cited that a closed Thai political system is the root cause and that there is no agency that truly scrutinizes government officials and particularly politicians. Not surprisingly to many that his view on corrupt practices in Thailand in the future will inevitably be worse and the damage can only go higher. His findings and conclusions may be true if all mechanisms currently in place will still be used to counter all these transgressions.

Now that financial technology of blockchain is available and it is real. It has a proven track record in many developed countries for absolute transparency and auditability. All transactions are real-time recorded under a single trusted platform where the entire history related to that suspected transaction can be trailed and scrutinized. All transaction activities are processed in real-time and visible not only to both ends of the transaction, but also every person or entity in the platform. All records stay forever in the trusted system where no one can manipulate, move or remove, modify or change. All intermediary activities or interventions are not permitted, Baht100 transfer from the Comptroller General's Department to Company A or Government Department B is subject to no fee at the most secured, transparent, visible by all, and most efficiently and effectively. All money laundering from narcotics trading and political patronage can be tracked fully and thoroughly, and probably more importantly in real-time. The scrutinization process can be done very efficiently. Ironically, once the technology is fully applied, there is no need for the scrutinization as all parties will see all the records of the transaction during the transaction process which all irregularities, transgressions and other corrupt practices are visible to all.

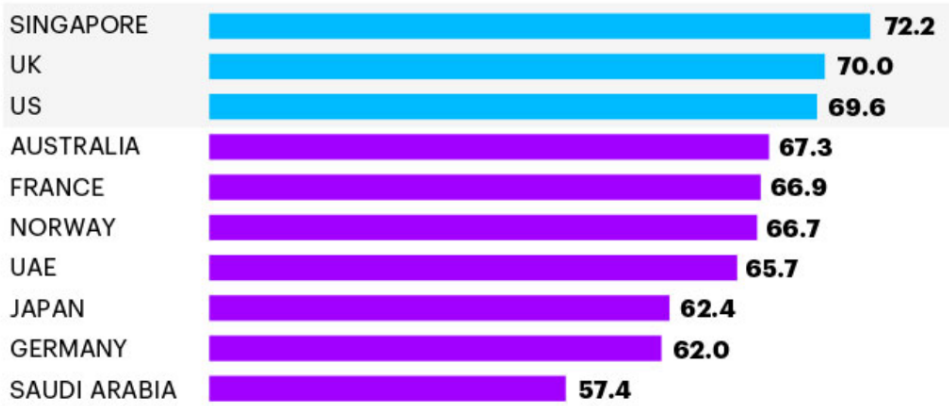
Two important things the government shall be fully aware of, the two-sided coin effect and the application limitation. All technologies come with two sides like coin. Tremendous opportunities are awaiting as well as cybersecurity hacking and fraud or corrupt practices. The case of South Korea is a classic mistake of adopting the technology too early and not knowing the flaws and possibility of illicit transactions. Because of complexity of the technology itself and related internet protocol and applications, through study and true understanding of all users are essential. Blockchain depends on the network size. The larger the network, the more secure and anti-fragile the technology becomes. Size also does matter to the cost of maintaining the system. There is a huge cost to maintain transaction activities and the network speed. The dark side of technology is the unavoidable security flaw. There are always people who love to challenge the technology, mostly for personal profits, like the case of South Korean ICOs. All technologies interfacing with human are subject to human errors. Education and intensive trainings and governance can help minimize the errors. Blockchain is a distributed ledger technology, developed under a democratic concept which everyone is the owner. Like the politics, where there is a democracy, there is a need for governance structure. There is a need for development of governance structure for blockchain. The blockchain system must therefore be fully equipped with cybersecurity protection facilities, and all citizens shall be sufficiently trained and encouraged to continually learn. All applications have limitation, blockchain is not exempted. The reality is that blockchain is merely a tool, it is a technology and not an outcome. The government needs to fully understand the objectivity of blockchain application, then develop application model for using the technology. Blockchain is not a canned program sitting on a shelf waiting for users to buy and install in their computers.

South Korea is one of the very advanced employers of Blockchain technology and related FinTech applications. However, adopting this highly advanced technology comes at a big cost to South Korea. With a jump to adopt disruptive financial technologies including ICOs – initial coin offerings, investors were deceived to several corrupt practices. The government took an immediate action in 2017 to ban the use of cryptocurrency trading including the ICOs. The ban was enforced for all citizens including government officials.

Developing a blockchain technology for the entire nation as a platform is certainly not an easy task but very possible. Several consulting and academic institutions worldwide have developed a disruptive technology framework with indicators and indices to measure how ready each government is ready to deploy blockchain technology with highest degree of success. GaaP or Government as a Platform is a synonym for a system with key factors for any government to prepare for the readiness to launch a disruptive blockchain technology as a platform for all the transactions, identity management, trade, e-documents, and opportunities for competitiveness development into the future. GaaP Index is an indicator of how ready each country can deploy blockchain technology successfully. The GaaP Readiness Index analyzes more than 100 data points from proprietary and secondary data sources, including amongst others the World Bank, International Telecommunication Union, Global Entrepreneurship Monitor, World Economic Forum, United Nations, and Open data barometer. Data are measured from 4 key factors known as 4 pillars including the following;

1. Fostering a mindset of change & innovation: Government as a Platform requires an entrepreneurial, innovation-oriented culture that displays a capacity for change.
2. Innovating for public service delivery: It is critical to innovate and improve public service delivery through ecosystem collaboration with citizens, NGOs and businesses.
3. Enabling economic growth: Government as a Platform plays a key role in enabling businesses to seize the opportunities of the rising platform economy.
4. Building the foundation: A strong Government as a Platform foundation relies on workforce skills, information and communication technology infrastructure and regulation, digital savvy and trust in society.

Accenture Consulting published the first attempt on August 31, 2018 the GaaP global readiness rankings, beginning with the first batch of 10 target countries. With criteria of 4 key factors mentioned above, the final top 3 winners went to Singapore, United Kingdom and United States of America.



Source: Accenture Government as a Platform Research 2018

Figure 4: The global readiness ranking on Government-as-a-Platform by Accenture Consulting.

There are 4 models for GaaP or 4 choices of platform for any government to adopt; (1) Whole-of-Government Platform: Focused on the role of government as the centralized service provider, (2) Peer Platform: A service-centric and vertically integrated platform established by two or more government entities, (3) Ecosystem Platform: An open and outcome-focused platform in which government collaborates or offers services jointly with non-governmental actors, and (4) Crowdsourcing Platform: An innovation-focused approach in which governments collaborate with citizens, companies, other government organizations or NGOs.

The Prayut Chan-o-cha administration and the Ministry of Digital Economy and Society have been driving under the Thailand 4.0 toward a centralized government platform on a basis of security, rather upon transparency and auditability. Under the current scheme, the focus is on the development of e-government pertaining to identity management and e-document. Blockchain technology and its applications have never been mentioned, particularly pertaining to anti-corruption practices.

Like all other technologies, Blockchain is one of financial technologies and still new to all of us. It is very young and evolving very fast. The world is now experiencing this technology in the same way to what we all were experiencing the Internet back in the mid-1990s. There are unlimited number of challenges as we have not truly found all the applications blockchain can offer. Regulatory challenges dominate the fear of using this technology. The U.S. Securities Exchange Commission (SEC) treats blockchain and cryptocurrencies as securities and therefore all the SEC rules are applied. On the other hand, the U.S. Internal Revenue Service (IRS) treats cryptocurrencies including blockchain as property and therefore subject to tax assessment and payment. In Thailand, the Bank of Thailand has gradually and slowly recognized the use of blockchain and cryptocurrencies, but still treated under a strict regulatory control.

Conclusions and Recommendations

Since 1933, tremendous efforts have been taken by the administrative and private sectors in Thailand to fight against corruption but to no avail. The corruption perception index of Thailand has been relatively lower than the world's average and shown no sign of positive development. Because of its efficiency and effectiveness as well as transparency and auditability features, blockchain is a proven technology to minimize or eliminate corrupt practices. Like many developed countries, Thailand should seriously consider the blockchain applications.

The present Thai government and the Bank of Thailand have initiated discussions about this technology but very much hesitated to seriously learn and adopted the use of blockchain. With the fact that once the technology is implemented, effects would likely be nationwide and therefore, the learning shall be widely exercised at the public scale. The government should clearly define at the policy level beginning with the development of GaaP or government as a platform. The whole-of-government platform and peer platform models seem to be easy to develop as they are more centralized, however applications are limited. The ecosystem platform is an open and outcome-focused platform and could be suitable for Thailand. This platform provides highest efficiency and effectiveness but because of involvement of the state authorities, it could still create loopholes and flaws in matters pertaining to transparency and audit trailing. The crowdsourcing platform is widely chosen by most of global enterprises and state governments as it is an innovation-focused platform in which governments' roles are to collaborate with citizens, enterprises and entities.

Once the platform is established, all financial transactions, not limited to companies and citizens, but all state incomes and payments shall be expedited through the blockchain platform. Scandals that the underprivileged nationwide did not receive the welfare of state allowance would not be possible if all the underprivileged could receive the allowance directly without intermediary including government officials, and all transfers of allowance are transparent and can be audited in real-time. The education fund corruption could never take place. Disbursement of all national budgets to contractors contracted to provide works and services can be directly forwarded without state officials' involvement, and all related values and documents can be tracked and audited in association with the financial transactions. Payments like under-the-table and corrupt practices at the airport immigration for visa-on-arrival fees, for instance, can be visible to all and therefore prevented.

Now that all the prerequisite technologies including smartphone, cross-border connection and telecommunication, and internet have become available for blockchain, and the technology has been proven to hold a great potential to positively impact the enterprises, state government and the public at large; it is the time for Thailand to adopt the implementation of blockchain at the national scale. Time will tell if blockchain could become a true corruption killer.

References

Blockgeeks Inc. (2018). *What is blockchain technology? A step-by-step guide for beginners.* Retrieved October 13, 2018, from https://blockgeeks.com/guides/what-is-blockchain-technology/

Borrows, M., Harwich, E. & Heselwood, L. (2017). *The Future of public service identity: blockchain.* Accenture Consulting U.K., 16 pp.

Bris, A. & Cabolis, C. (2018). *IMD World Competitiveness Ranking 2018.* IMD World Competitiveness Center. p. 5, 16-37, 44-50, 279-282

Chachavalpongpun, P. (2014). Thai junta beset by corruption scandals. *The Diplomat – Asia-Pacific Magazine,* October 12, 2014. Retrieved October 24, 2018, from https://thediplomat.com/2014/10/thai-junta-beset-by-corruption-scandals/

Collak, V. (2018). Blockchain Q&A. *Forbes Magazine,* October 25, 2018. Retrieved October 25, 2018, from https://www.forbes.com/sites/forbestechcouncil/2018/10/25/blockchain-qa/#a0f449b5ef7e

EU GDPR Organization. (2018). The EU General Data Protection Regulation. Retrieved October 13, 2018, from https://eugdpr.org/

GAN Integrity. (2018). *Thailand Corruption Report – September 2018.* Retrieved October 14, 2018, from https://www.business-anti-corruption.com/country-profiles/thailand/

Georgieva, K. (2018). *Doing Business – Measuring Business Regulations.* World Bank. 312 pp.

Le Masson, B. & Ward, C. (2018). Government as a Platform. Accenture Consulting. Retrieved October 16, 2018, from https://www.accenture.com/us-en/insights/public-service/government-as-a-platform

Lyon, N. (2016). Norway, Sweden and Denmark say "No" to cash. *Cointelegraph – The Future of Money.* Retrieved October 20, 2018, from https://cointelegraph.com/news/cash-electronic-money-scandinavia

Macaulay, T. (2018). How government around the world are using blockchain. *IDG Computerworld.* Retrieved October 18, 2018, from https://www.computerworlduk.com/galleries/applications/how-governments-are-using-blockchain-3680393/

Ministry of Finance. (2017). Building a new National Trade Platform – A Vision for the Future of Singapore Trade. Ministry of Finance report to the Parliament and the public. 16 pp.

Office of the National Anti-Corruption Commission. (2018). Power and Duties of the National Anti-Corruption Commission. Retrieved October 12, 2018, from https://www.nacc.go.th/ewt_news.php?nid=937

O'Hernaes, C. (September 2017). Banking is necessary, banks are not. *Sbanken, Norway's first online bank.* Retrieved October 19, 2018, from https://hernaes.com/2017/09/11/banking-is-necessary-banks-are-not/

Piriyarangsan, S. (2018). The cost of corruption: Bt100 billion. Public Sector Anti-Corruption Commission (PACC). *The Nation,* September 19, 2018. p. 2A

Poomchusri, N. (2018). Blockchain and other modern tools to tackle corruption – Disrupting Corruption. Thailand's 9th National Conference on Collective Action against Corruption Conference, Bangkok. 6 pp.

Ramvi, J. (2018). Blockchain in the Nordic Model. *Blockchangers,* April 23, 2018. Retrieved October 25, 2018 from https://medium.com/blockchangers/blockchain-in-the-nordic-model-6f2deff43a5

Schwab, K. (2018). *The Global Competitiveness Report 2017-2018.* World Economic Forum. p. 317-325.

Tapscott, D. & Tapscott, A. (2016). *Blockchain Revolution.* Portfolio Publishing. 368 pp.

Trading Economics. (2018). Thailand Corruption Index 1995-2018, Trading Economics. Retrieved October 19, 2018, from https://tradingeconomics.com/thailand/corruption-rank

Transparency International. (2018). *Corruption Perceptions Index,* Transparency International Organization. Retrieved October 13, 2018, from https://www.transparency.org/research/cpi

Vilner, Y. (2018). South Korea is Cementing its Place as a Global Blockchain Leader. *Forbes Magazine,* August 23, 2018. Retrieved October 25, 2018, from https://www.forbes.com/sites/yoavvilner/2018/08/23/south-korea-is-cementing-its-place-as-a-global-blockchain-leader/#63849d579bc7

Zyskind, G., Oz, N. & Pentland, A. (2014). Decentralizing Privacy: Using Blockchain to Protect Personal Data. USA: MIT Press.