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FINANCIAL TECHNOLOGY LANDSCAPE IN THE KINGDOM OF CAMBODIA

TECHNICAL REPORT



Primary Supervisor : Dr. Kong Marry
Secondary Supervisor : Dr. Taing Nguonly

Researchers: Dr. Vong Rylida, Dr. Ty Makararavy, and
Ms. Chhoeun Leakhena

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Abbreviations

ABC	Association of Banks in Cambodia
ADB	Asian Development Bank
AI	Artificial Intelligence
AIB	ACLEDA Institute of Business
AML	Anti-Money Laundering
ASEAN	Association of Southeast Asian Nations
APIs	Application Programming Interfaces
Apps	Applications
ATM	Automated Teller Machine
BI	Bank of Indonesia
BNM	Bank Negara Malaysia
BOT	Bank of Thailand
BSP	Bangko Sentral ng Pilipinas
BTC	Bitcoin
CCAF	Cambridge Centre for Alternative Finance
CFA	Cambodia FinTech Association
CAFT	Cambodia Association of Finance and Technology
CFT	Countering the Financing of Terrorism
CJCC	Cambodia-Japan Cooperation Center
DE	Digital Economy
DEPA	Digital Economy Promotion Agency
DLT	Distributed Ledger Technology
e-KYC	electronic-KYC
FAOM	FinTech Association of Malaysia
FDI	Foreign Direct Investment
FinTech	Financial Technology

FTEG	Financial Technology Enabler Group
FTIG	Financial Technology and Innovation Group
GDT	General Department of Taxation
IC	Insurance Commission
ICOs	Initial Coin Offerings
ICT	Information and Communication Technology
IT	Information Technology
KYC	Know Your Customer
MAS	Monetary Authority of Singapore
MEF	Ministry of Economy and Finance
MFI	Micro Financial Institutions
ML	Machine Learning
MOCIT	Ministry of Communication and Informatics
MoEYS	Ministry of Education, Youth and Sport
MoH	Ministry of Health
MPTC	Ministry of Posts and Telecommunications
NBA	Non-Banking Authority
NBC	National Bank of Cambodia
NBFI	Non-Bank Financial Institution
NLP	Natural Language Processing
ODA	Official Development Assistance
OIC	Office of Insurance Commission
OJK	Otoritas Jasa Keuangan
P2P	Peer-to-Peer
POS	Point-of-sales
PSIs	Payment Service Institutions
PSPs	Payment Service Providers

QR codes	Quick Response codes
RegTech	Regulation Technology
RGC	Royal Government of Cambodia
RPA	Robotic Processing Automation
SBV	State Bank of Vietnam
SC	Securities Commission Malaysia
SEC	Securities and Exchange Commission
SMEs	Small and Medium-Sized Enterprises
SSC	State Securities Commission
STEM	Science, Technology, Engineering, and Mathematics
SupTech	Supervisory Technology
SWIFT	Society of Worldwide Interbank Financial Telecommunications
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TPP	Third-Party Processor
WWW	World Wide Web

Executive Summary

Thanks to openness to trade and capital flow of the Royal Government of Cambodia (RGC) that has made Cambodia achieve her rapid economic growth in the last two decades and become the lower middle-income country in 2015. The economic growth has been driven by preferential trade treatment and large inflows of official development assistance (ODA) and foreign direct investment (FDI) in garment, tourism, and construction industries (World Bank, 2017). However, to sustain her rapid economic growth and become a high-income country by 2050, Cambodia cannot depend on ODA and FDI. Cambodia needs to diversify revenue streams. The RGC strategically plans to seize opportunities of technology evolution to transform the Cambodia's economy into the digital economy (DE). Thanks to the hard work of key stakeholders in designing DE policy, Cambodia will be ready to implement the policy by 2021 and hopefully will achieve its goal to become a high-income country by 2050.

Financial technology (FinTech) is one among many critical factors such as big data, cloud computing, and other new digital technologies for digitalization of the economy. FinTech generally refers to the use of technology to deliver financial services and products (Arner et al., 2015). It has been used to describe penetration of technology in different financial areas, including the four main areas of: 1) payment, 2) savings, 3) lending, and 4) insurance (UNSGSA FinTech Working Group & Cambridge Centre for Alternative Finance, 2019). Why does FinTech matter? FinTech's potential growth will contribute largely to economic development and poverty reduction by strengthening financial development, improving financial inclusion, and increasing efficiency in delivering financial services.

Financial institutions and some startups in Cambodia have been catching up with the current trend of FinTech. However, FinTech development in Cambodia is still in the nascent stage and far behind some countries in the Association of Southeast Asian Nations (ASEAN) region. Therefore, the study aims to better understand the local context of stakeholders involving in FinTech ecosystem and draw policy recommendations to support FinTech development in Cambodia. To achieve these aims, the three following questions need to be answered:

- 1) What are the challenges of FinTech ecosystem in Cambodia?
- 2) What are strengths, weaknesses, opportunities, and threats (SWOT) of FinTech companies?
- 3) What are the existing and missing aspects of Cambodia's FinTech regulatory framework by comparing with emerging FinTech ASEAN countries?

To answer the above-mentioned questions and achieve the aims of the study, both primary and secondary data was collected. In terms of primary data collection, this study used two types of samplings, that is, purposive and snowball samplings. Purposive sampling was used because only people working in the FinTech sector with high experiences and knowledge can answer the research questions by providing deep insight information. Beside purposive sampling, snowball sampling was also used to collect data. The reason is snowball sampling could help the study include the stakeholders that we may have missed, which enables us to include as many as stakeholders as possible. The total sample size for this study is 45: 14 of them are existing payment service providers (PSPs); 02 of them are lending service provider companies; 01 of them is an InsurTech company; 01 of them is a crowdfunding company; 05 of them are accounting/banking system companies; 05 of them are investors; 10 of them are enablers, and 03 of them are regulators (with 07 interviews). In terms of secondary data collection, reliable sources of information including published reports, journal articles, official websites, and books are used.

The study reveals that lack of human resources is the cross-cutting issue among supporting stakeholders in FinTech ecosystem. Furthermore, challenges in regulation, registration, and human resource are found to be the three most outstanding challenges faced by FinTech companies. Last, the study reveals that the quality of human resources is perceived either as a main strength or weakness among those companies. Some aspects of opportunities are happening along threats such as high technology adoption rate with low level of technology literacy. Regarding regulatory framework, there are two similarities between Cambodia and other emerging FinTech countries. They are active involvement of regulators in the financial

sector in FinTech and positive attitude of the governments. Despite these similarities, there are two key differences, considered the missing aspects for FinTech development in Cambodia. Those missing aspects include lack of regulations for FinTech and lack of specific innovative regulatory initiative for FinTech development.

Based on the key findings, there are four key recommendations for the RGC and regulators to facilitate FinTech development in Cambodia. Those recommendations are: 1) regulatory reforms, 2) more incentives from the government, 3) more conducive FinTech institutional infrastructure, and 4) more capacity and skill building.

1. Introduction



Chapter 1: Introduction

1.1 Background

Rapid and sustained economic growth with an average of 7% gross domestic product growth over the past 20 years has made Cambodia become one of the world's leaders in poverty reduction. Closed to 3.6 million jobs in industry and services have been created during the past two decades, which contributes to poverty reduction. It is officially estimated that the national poverty line decreased from 47.8% to 13.5% between 2007 to 2014. By 2015, Cambodia has successfully achieved most of the Millennium Development Goals and become a lower middle-income country. The impressive achievements of the Royal Government of Cambodia (RGC) has been from openness to trade and capital flows and driven by preferential trade treatment and large inflows of official development assistance (ODA) and foreign direct investment (FDI) in garment, tourism, and construction industries (World Bank, 2017).

However, is this growth sustainable by depending on ODA and FDI? To achieve the goals in becoming an upper-middle income country by 2030 and high-income country by 2050, Cambodia cannot depend on the same factors for the growth in the past two decades. Cambodia has become a lower middle-income country, but it was ranked 110 out of 140 in competitive countries in the 2018 Global Competitiveness Report, making Cambodia become one of the least competitive countries in Association of Southeast Asian Nations (ASEAN).¹ Lack of competitiveness of Cambodia is due to poor infrastructure, an inadequately educated workforce, and low staff capacity within key government institutions (World Economic Forum, 2018). How to sustain the economic growth in Cambodia if not depending on ODA and FDI? To achieve long-term growth and achieve its goals in 2030 and 2050, the RGC strategically plans to seize opportunities of technology evolution to transform the Cambodia's economy into the digital economy (DE). Thanks to the hard work of key stakeholders in designing DE policy, Cambodia will be ready to implement the policy by 2021 and hopefully will achieve its goal to become a high-income country by 2050.

¹ There are 10 countries in ASEAN. They are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines Singapore, Thailand, and Vietnam (in alphabetical order).

What would be critical factors for transforming into DE? Financial technology (FinTech) is one among many critical factors such as big data, cloud computing, and other new digital technologies for digitalization of the economy. What is FinTech? FinTech is a new transformation of the financial sector using technology to deliver financial services and products (Arner et al., 2015). FinTech has been used to describe penetration of technology in different financial areas, including the four main areas of 1) payment, 2) savings, 3) lending, and 4) insurance (UNSGSA FinTech Working Group & CCAF, 2019). The potential growth of FinTech will contribute largely to economic development and poverty reduction by strengthening financial development, improving financial inclusion, and increase efficiency.

Although financial institutions and some startups have been catching up with this new trend, FinTech development in Cambodia is still in the nascent stage and far behind some countries in the region. Therefore, this study aims to better understand the local context of stakeholders involving in FinTech ecosystem and draw policy recommendations to support FinTech development in Cambodia. To achieve these aims, the three following questions need to be answered:

- 1) What are the challenges of FinTech ecosystem in Cambodia?
- 2) What are strengths, weaknesses, opportunities, and threats (SWOT) of FinTech companies?
- 3) What are the existing and missing aspects of Cambodia's FinTech regulatory framework by comparing with emerging FinTech ASEAN countries?

1.2 Significance of the Study

This study will help support FinTech development in Cambodia through its great benefits that contribute to regulators and other stakeholders in the FinTech sector. Regarding regulators, this study can be of great benefit for them in two ways. Firstly, understanding FinTech landscape can help regulators to gain a better understanding of the general FinTech situation in the market and, roles and perception of the other stakeholders in FinTech on regulators. Secondly, this study will also help regulators to discover appropriate innovative regulatory

initiatives, which can help create enabling FinTech ecosystem in Cambodia to catch up with FinTech development in other countries in the region. Moreover, this study will be of a great benefit to other stakeholders such as FinTech companies, enablers, investors, and crowdfunding companies. This study will allow the stakeholders to understand more about roles of each stakeholder in FinTech ecosystems and their challenges that may have affected them and the whole FinTech ecosystem.

1.3 Scope and Limitation

Given the wide cross-section of products and services that fall under FinTech, the timeline for this work, and the fast changes amongst FinTech startups, the scope of the study does not account for all the detailed specific activities that different regulators and other stakeholders in taken in respect to FinTech. The recipients of the FinTech services were not included as the scope of the study is not to find out the customers' satisfactions or to conduct market survey. To find out existing and missing aspects of FinTech regulatory framework in Cambodia, some emerging FinTech ASEAN countries are selected for making a comparison. This study focuses only on the present of the FinTech regulatory framework of those countries, not on its quality. It is based on the assumption that if the FinTech regulatory framework of those countries does not enable or support FinTech to a large extent, FinTech in those countries has not that well developed.

A part of the findings of this study depends on the primary data that is derived from perception of participants. Since perception of individuals is subjective and affected by different factors, participants' perception may reflect only a part of the reality. To avoid perception bias and biased interpretation of the study's findings, perception of each participant on a certain matter has been cross-checked with other participants or stakeholders both during data collection and consultation workshop. However, some bias may remain.

2. Financial Technology (FinTech) Development and Regulatory Framework



Chapter 2: Financial Technology (FinTech) Development and Regulatory Framework

Chapter 2 aims to describe background of FinTech in general. It also aims to provide the most up-to-date information related to FinTech development and FinTech regulatory framework in emerging FinTech countries in ASEAN and FinTech regulatory framework in Cambodia. Moreover, this chapter aims to set the ground for answering the third research question, that is, “What are the existing and missing aspects of Cambodia’s FinTech regulatory framework by comparing with emerging FinTech ASEAN countries?” In the beginning of this chapter, overview of FinTech development will be described, followed by FinTech development and regulatory framework in emerging FinTech ASEAN countries in the main second section. The last main section will be about FinTech development and regulatory framework in Cambodia.

2.1 Overview of FinTech Development

FinTech, which is a term derived from the words “finance” and “technology”, may seem like a relatively new innovation for the financial services industry. However, from the historical perspective, finance and technology have been interlinked and mutually reinforcing since their earliest stages of development during Mesopotamian civilization. Over the span of the past 150 years, FinTech has evolved over three main different eras (Arner et al., 2015).

The first FinTech evolution was from around 1866 to 1967 when the financial services industry heavily interlinked with technology. The advances in telegraph technology around 1866, leading to the laying of first trans-Atlantic (under sea) telegraphic cable or also known as Victorian Internet, kickstarted the first FinTech evolution known as FinTech 1.0. The Victorian Internet connection between North America and western Europe enabled the major financial markets of New York and London instantly transmit financial information (Arner et al., 2015; Khan, 2018). Moreover, technological improvements such as in canals, steamships, and rail roads played a part in making the first age of financial and economic globalization leading to the first evolution of FinTech. Despite heavily interconnecting with technology,

FinTech 1.0 was still largely an analogue industry focusing on infrastructure through the laying of transatlantic telegraph cables (Arner et al., 2015). FinTech 1.0 started to change the focus to computerization in terms of code development and code breakers to secure military operations after the post-World War I recession (Khan, 2018). Through these efforts, FinTech had its first major milestone, that is, the world's first Automated Teller Machine (ATM) that was placed by the Barclays Bank in the UK in 1967 (Raza, 2018).

This first major milestone, along with the establishment of a worldwide telegraph exchange network and the distinctive invention of the first handheld financial calculator help to push FinTech 1.0 into FinTech 2.0. FinTech 2.0 started in 1967. The second era of FinTech marked a shift in financial services since they changed from an analogue industry to a digital one. For example, by the 1980s, financial companies progressively stopped using most form of paper-based mechanism with innovations of FinTech like Bloomberg terminals (Arner et al., 2015). Milestones of FinTech 2.0 include the establishment of the first digital stock exchange of the world, that is, NASDAQ in 1971. This establishment is very remarkable since it shaped the electronic trading to the current one (Au Yong et al., 2020). Another milestone in FinTech 2.0 occurred in 1973. It was the launch of the Society of Worldwide Interbank Financial Telecommunications (SWIFT). The SWIFT system is the first, and up until now it is still the most commonly used global payment system since it offers the communication protocol between financial institutions, which enables large volumes of international payment among those institutions (Khan, 2018). Only in 1990s that FinTech 2.0 reached its real turning point because of the revolution of the Internet. This started in 1995 when the World Wide Web (WWW) made online account checking available. Through the founding of PayPal in 1998, e-commerce business models began to emerge, dealing with the issue of online payment processing (Ventures, 2018).

The impact of these developments made the Internet and digitalization the two main elements in the second era of FinTech, and electronic finance was considered the star in this era (Arner et al., 2015; Lee & Shin, 2018). The second era of FinTech came to an end in 2008 due to the global financial crisis making the global financial system nearly collapse. However,

it is a blessing in disguise for FinTech since the 2008 global financial crisis help develop it to extraordinary levels (Haddad & Hornuf, 2019).

Four main factors made FinTech startups play a major role in driving FinTech 2.0 despite little conventional banks' participation. The first factor is related to the public's lack of confidence toward formal financial institution after the global financial crisis, making new entrants including FinTech startups able to successfully penetrate the world of finance (Arner et al., 2015). The second factor is related to unencumbered by the stricter financial regulatory reformations imposing on the traditional banks after the crisis (Wyman et al., 2015). New stringent regulatory compliances were established while existing ones were hastened to prevent the crisis from happening again. This resulted in reduction in traditional financial firms' profitability and making those firms to massively invest in information technology (IT) to deal with these changes (Khan, 2018). The third factor leading to the sudden growth of FinTech startups is the elimination of IT teams and back office staff in firms affected by the crisis (Arner et al., 2015). The massive job loss marked the start of a new age of FinTech startups. Many of those highly skilled but unemployed people started to seek for new opportunities and found that there was a demand in the area of crowdfunding and crowdlending (Haddad & Hornuf, 2019). The fourth factor greatly accelerating FinTech's growth is related the skyrocketing popularity of smartphones, led by the launch of the Apple iPhone in 2007. The ubiquity of smartphones was perfect for those startups to provide direct point-of-sales (POS) and kept values systems (Arner et al., 2015; Khan, 2018).

The four factors mentioned above set the stage for another phase of FinTech, that is, FinTech 3.0 (Ventures, 2018). Very much different from FinTech 1.0 and 2.0 only aiming at improvement of the efficiency of pre-existing financial services, FinTech 3.0 (the current era of FinTech) also aims at redefining those financial services and innovating new solutions. With the help of artificial intelligence (AI), an increase in the number of participation from large financial institutions, and greater computing power, this new era of FinTech brings us a new horizon to the financial sector due to its introduction to revolutionary inventions like cryptocurrencies and blockchain technology. Due to these inventions, it is likely that traditional

fiat currencies will be obsolescent (Ventures, 2018). Bitcoin (BTC) created by Satoshi Nakamoto in 2009, which is the invention of the first and largest cryptocurrency of the world, is a major milestone in FinTech 3.0 (Au Yong et al., 2020). The creation of BTC created the concept of blockchain technology. Blockchain is a core component of Bitcoin, where it works as a public transaction ledger for the digital token. Moreover, it represents the first fully functional distributed ledger technology (DLT) that does not require a trusted party to facilitate digital relationships (Nakamoto, 2009). This innovation has led to changes in traditional banks in FinTech 3.0. Sixty-nine percent of those banks are experimenting with permissioned blockchains (EdgeVerve Systems, 2017). FinTech 3.0 has started from 2008 until the present. FinTech 3.0 emerged to react to the global financial crisis in the Western countries. However, recent FinTech development in Asia and Africa has occurred due to the pursuit of economic development. The current FinTech in Asia and Africa is characterized as FinTech 3.5. Figure 2.1 shows the timeline of FinTech development.

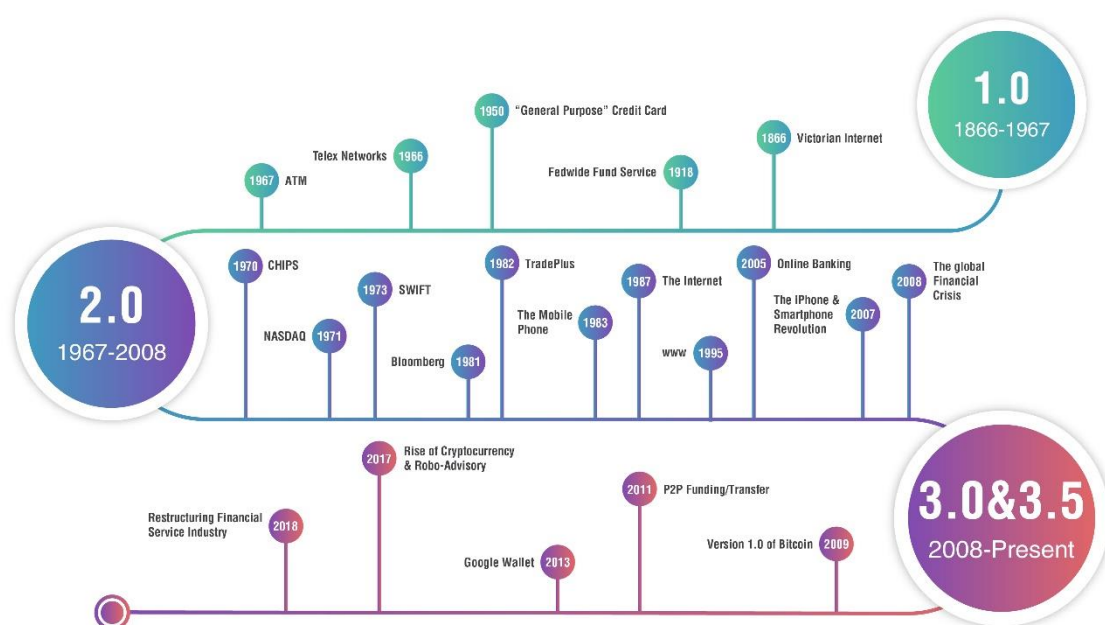


Figure 2.1: *Timeline of FinTech Development*

Source: Adapted from Arner et al. (2015)

2.2 FinTech Development and Regulatory Framework in Association of Southeast Asian Nations (ASEAN)

Although there are ten countries in ASEAN, only six countries are selected to describe in this section. Those six countries include: 1) Singapore, 2) Indonesia, 3) Malaysia, 4) Thailand, 5) the Philippines, and 6) Vietnam. Why only six countries are selected among the others? The reason for choosing these six countries is FinTech in these countries are more emerging than the other four countries in the region as well as the other countries in Southeast Asia. It would be worth learning from these six countries. It should be highlighted that the speed of development in FinTech of those six countries are not the same. According to a report by the United Overseas Bank published in 2017, among those countries, Singapore has the largest FinTech distribution (39%), followed by Indonesia (20%), Malaysia (15%), Thailand (10%), the Philippines (9%), and Vietnam (6%) (Tracxn, 2017). Figure 2.2 shows FinTech distribution in the ASEAN region.

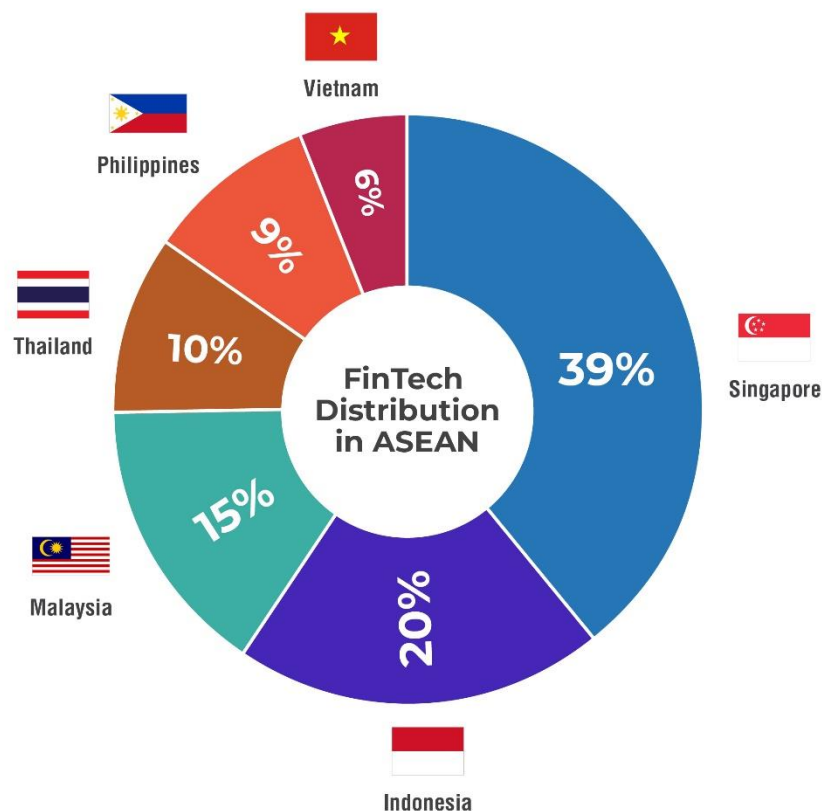


Figure 2.2: *FinTech Distribution in the ASEAN Region*
Source: Tracxn (2017)

In 2016, more than USD 24 billion were invested in the global FinTech industry, which is ten times the level of investment in 2010. The first time that FinTech investment in Asia exceeded North America was in 2016, led by blockbuster deals in China, including Alipay (USD 4.5 billion) and Lu.com (USD 1.2 billion). There was also increase of investment in FinTech industry in ASEAN in 2016. The investment increased up to around 33% between 2015 and 2016, that is, from USD 190 million to USD 252 million. Up to September 2017, the total investment in FinTech industry already reached USD 338 million. Most of investment was from seed or angel investors (Tracxn, 2017). Figure 2.3 shows the amount of FinTech investment in ASEAN in the past years.

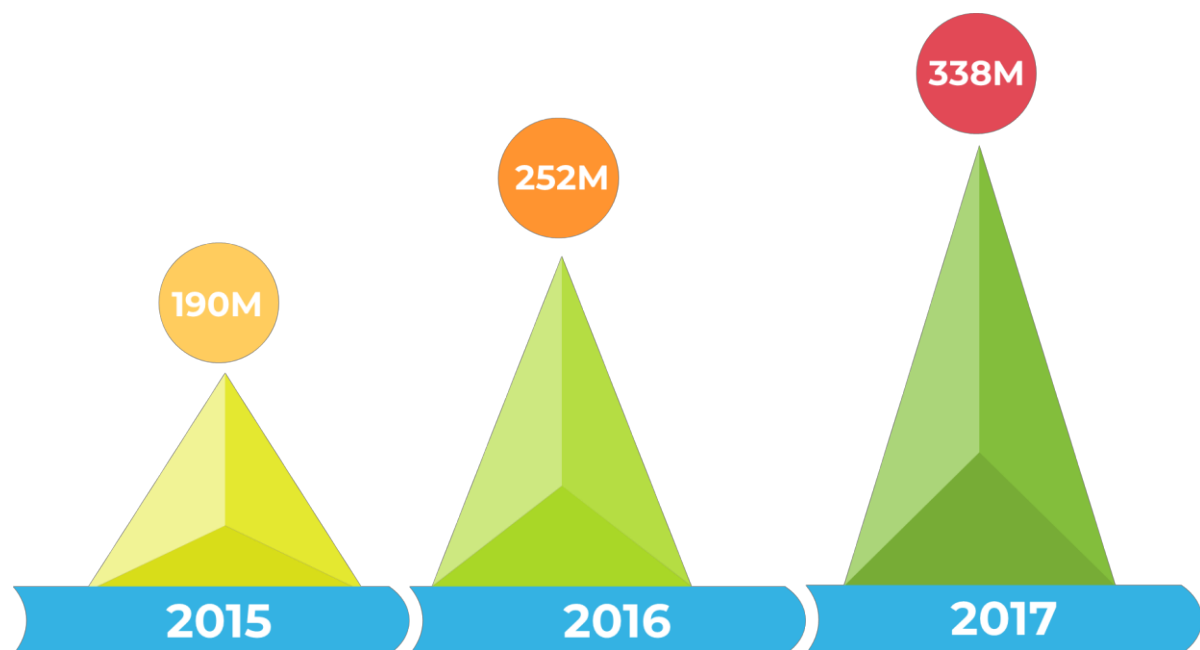


Figure 2.3: Amount of FinTech Investment in ASEAN

Source: Adapted from Tracxn (2017)

The emergence of Islamic finance is among notable developments in FinTech in the ASEAN region. Islamic finance is an alternative finance platform complying with Sharia or Islamic principles. It has led to establishment of almost another sub-sector, that is, Islamic FinTech. Regulations related to Islamic FinTech has been monitored by the Islamic Financial Services Board (CCAF et al., 2019).

Since FinTech is considered a major area for economic development by many countries, many different regulatory initiatives have been implemented to nurture a supportive

environment to foster FinTech development and financial inclusion. In some jurisdictions, due to unsuitable existing regulations, there are bespoke regulations issued to support and/or supervise FinTech development. The bespoke regulations are useful to ensure that there is a balance between market stability and innovation encouragement (CCAF et al., 2019).

Below are summaries of FinTech development and regulatory framework in each emerging FinTech ASEAN country.

2.2.1 FinTech Development and Regulatory Framework in Singapore

Among the six emerging FinTech ASEAN countries, often viewed as a top FinTech hub, Singapore stands as a lead in FinTech ASEAN market, backed by its supportive regime and progressive policy initiatives for FinTech (The United Overseas Bank, 2017). The total number of FinTech firms are more than 400. Major FinTech segments include banking, payments, wealth management, insurance, and cryptocurrencies (FinTech Hub, 2019a) . The key technologies that are used by Singapore FinTech firms include predictive analytics, blockchain, machine learning, natural language processing (NLP), robotic processing automation (RPA), image recognition, deep learning, speech recognition, virtual reality, and augmented reality. There are 10 business models that are operating by FinTech firms in Singapore. Those are: 1) digital payments, 2) digital lending, 3) enterprise tech for finance, 4) capital raising or crowdfunding, 5) trading capital markets, 6) AI/machine learning (ML)/Big Data, 7) asset management, 8) personal financial management, 9) enterprise financial management, and 10) InsurTech. It should be highlighted that one FinTech firm may use more than one business model (CCAF et al., 2019). Figure 2.4 shows the details of Singapore FinTech firms by business model.

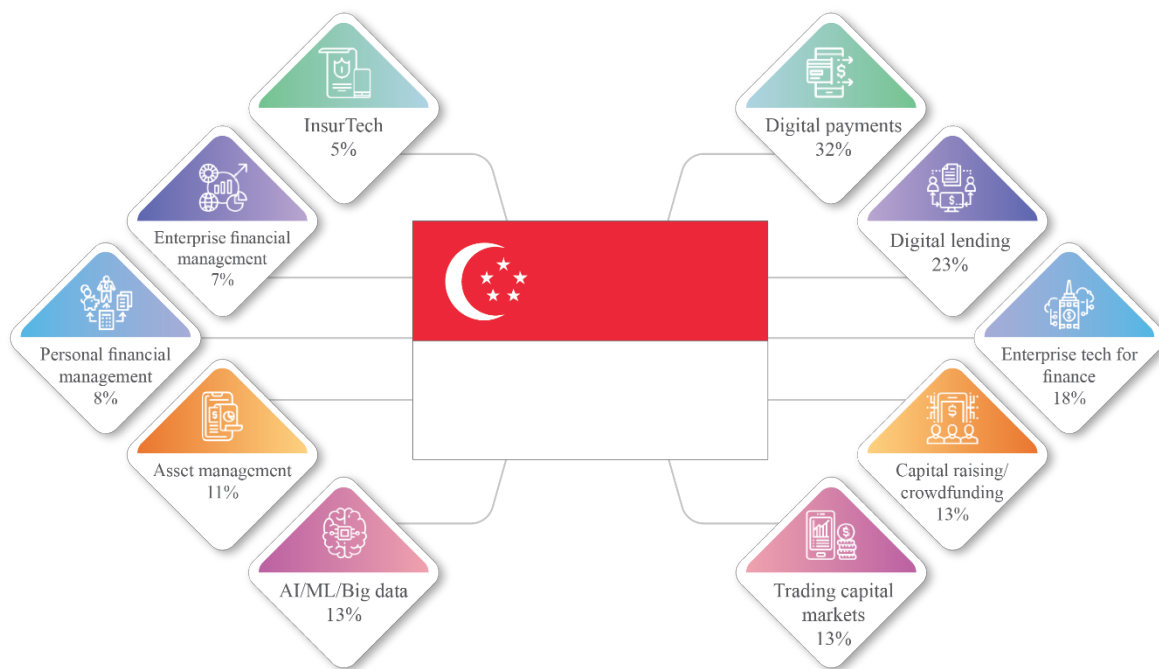


Figure 2.4: *FinTech Firms by Business Model in Singapore*

Source: Adapted from CCAF et al. (2019)

There is one main authority responsible for FinTech businesses in Singapore namely the Monetary Authority of Singapore (MAS). MAS, the central bank and integrated financial regulator, supervises the FinTech business dealing with financial services by regulating policies and developing strategies to facilitate the use of technology and innovation, improve efficiency, better manage risks, and strengthen competitiveness in the financial market (CCAF et al., 2019).

Regarding FinTech regulations or standards, there are many different regulations or standards in Singapore. They include regulation on peer-to-peer (P2P) lending and equity crowdfunding, Personal Data Protection Act, and Insurance Act, just to name a few² (CCAF et al., 2019; The United Overseas Bank, 2017). To enable FinTech development in Singapore, MAS has initiated Regulation Technology (RegTech)³ including national Know Your Customer (KYC) and Supervisory Technology (SupTech).⁴ Besides, MAS has launched

² For more details, see Appendix 2.

³ RegTech refers to the management of regulatory processes within the financial industry through technology. See more in Appendix 1.

⁴ SupTech refers the use of innovative technology by supervisory agencies to support supervision. See more in Appendix 1.

different initiatives for FinTech development facilitation. Among them is adoption of open Application Programming Interfaces (APIs) (CCAF et al., 2019), which is known as MAS Financial Industry API Register. MAS Financial Industry API Register aims to facilitate API adoption, electronic-KYC (e-KYC) and guidelines on cloud services (“MAS’ Chief Fintech Officer on Making Singapore a World Leader in Digital Banking,” 2019). There are other projects to help FinTech development such as industry-wide projects and blockchain inter-bank payments proof-of-concept projects (The United Overseas Bank, 2017). In terms of innovative regulatory initiatives for FinTech, there are two innovative offices, one regulatory sandbox, and RegTech. All of them are initiated by MAS (UNSGSA FinTech Working Group & CCAF, 2019). Table 2.1 shows regulators and innovative regulatory initiatives in Singapore.

Table 2.1: *Regulators and Innovative Regulatory Initiatives in Singapore*

Regulators	Innovative Regulatory Initiatives
MAS	<ul style="list-style-type: none"> ▪ Innovation office called Financial Technology and Innovation Group (FTIG): Serve as a primary point of coordination for its initiatives, particularly development of FinTech-related regulatory policies and mobilization of the use of technological innovations in the financial industry. There are three offices: 1) Payment & Technological Solutions Office, 2) Technology Infrastructure Office, and 3) Technology Innovation (Lin, 2019). ▪ FinTech regulatory sandbox: Enable financial innovators to experiment with their ideas for a fixed duration in an environment where specific regulatory requirements are relaxed on a case-by-case basis (Lin, 2019). ▪ RegTech: Use advanced technology systems and algorithms to enhance risk management and regulatory compliance. Singapore has promulgated various RegTech initiatives, including “KYC” and “SupTech”. To better inform and implement these far-reaching initiatives, MAS organizes RegTech-Financial-Institution dialogues, which are regular closed-door dialogues allowing for mutual sharing. Through such exchanges, MAS can better recognize financial institutions’ pain points and needs, leading to design initiative that can address real needs. Moreover, financial institutions can better understand MAS’s regulatory rationales at the same time (Lin, 2019). ▪ Innovation Office called Global FinTech Hackcelerator: Allow regulators to work with FinTech firms to solve problems in the industry (KPMG, 2019).

2.2.2 FinTech Development and Regulatory Framework in Indonesia

According to EY (2018), in South East Asia region, after Singapore, Indonesia is the second country with the highest number of FinTech. There are 262 FinTech firms in Indonesia. “Booming digital payments market” is a name given to Indonesia, while “Asia’s FinTech hotspot” is a name given to Singapore. The key technologies that are used by Indonesia FinTech firms are predictive analytics, machine learning, image recognition, RPA, deep learning, blockchain, NLP, and speech recognition. There are eight business models operated by Indonesia FinTech firms. They include: 1) digital lending, 2) capital raising or crowdfunding, 3) digital payments, 4) AI/ML/Big Data, 5) trading capital markets, 6) enterprise tech for finance, 7) asset management, and 8) enterprise financial management (CCAF et al., 2019).

Figure 2.5 shows the details of Indonesia FinTech firms by business model.

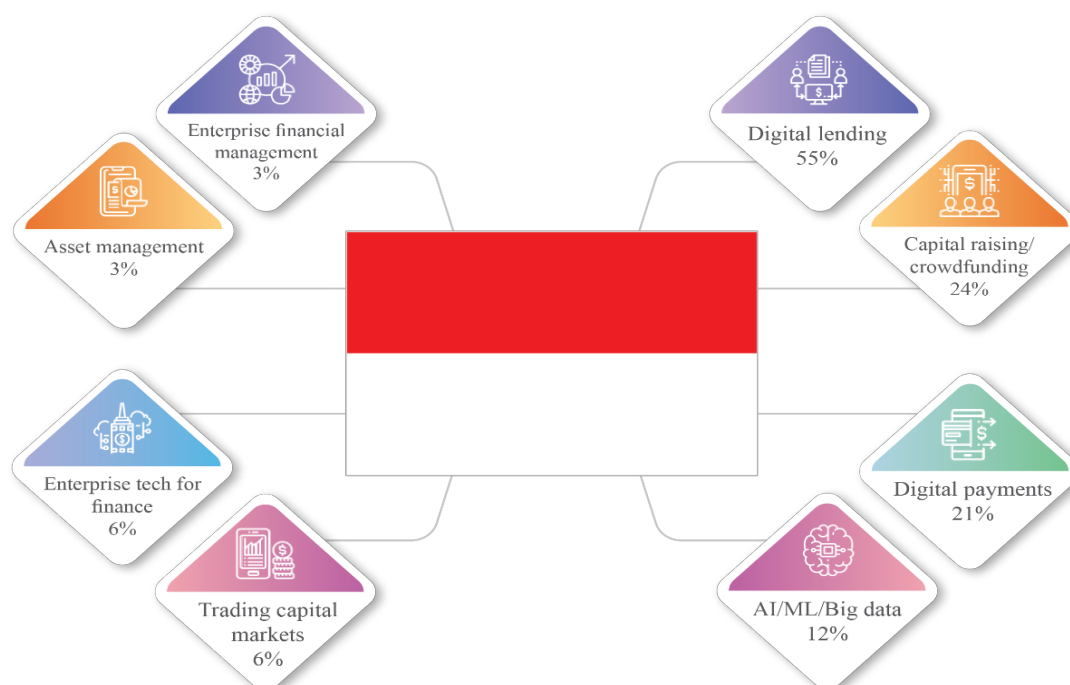


Figure 2.5: *FinTech Firms by Business Model in Indonesia*

Source: Adapted from CCAF et al. (2019)

There are two main authorities regulating the financial services in Indonesia namely Bank of Indonesia (BI) and financial services authority or Otoritas Jasa Keuangan (OJK). Law of Republic of Indonesia No.21 of 2011 on OJK states that OJK is responsible for regulating and supervising the whole financial service industry in the country, including banking sector (DFDL, 2018). Regarding FinTech, those that are related to loan are under OJK’s regulations,

while those that are related to payment are under BI's regulations (Agustia & Anridho, 2020). However, BI is still responsible for supervising monetary policy, payment system, and other macroprudential issues to achieve financial stability in the country. Besides these two authorities, Ministry of Communication and Informatics (MOCIT) also has its role in FinTech. MOCIT is responsible for telecommunications, IT, and every aspect of FinTech falling under IT (DFDL, 2018). Indonesia's Commodity Futures Trading Regulatory Agency, known as Bappebti, under Ministry of Trade also involves in FinTech in terms of cryptoassets. Bappebti issued regulations that provide the legal framework for cryptoasset trading in the future (*Regulatory Approaches to Cryptoassets: Indonesia*, 2019)

Similar to Singapore, there are many regulations or standards for FinTech businesses in Indonesia. There are thirteen regulations for FinTech by BI and OJK for various sectors of FinTech such as the regulation on P2P lending, the regulation on minimum capital requisite for FinTech, digital signature, the regulation on equity crowdfunding, and the regulation on the Implementation of Financial Technology, etc. 5 (Batunanggar, 2019; DFDL, 2018; The United Overseas Bank, 2017) . In terms of enablers for FinTech in Indonesia, Pundi X has provided POS solution by using cryptocurrency. Moreover, OJK initiates Indonesia FinTech conferences and festivals. There is also a FinTech Office serving as a form for FinTech business assessment, risk mitigation, and evaluation of FinTech business models. Unlike Singapore, Indonesia has one innovation office initiated by OJK and two regulatory sandboxes initiated by BI and OJK (The United Overseas Bank, 2017; UNSGSA FinTech Working Group & CCAF, 2019). Table 2.2 shows regulators and innovative regulatory initiative in Indonesia.

⁵ For more details, see Appendix 3.

Table 2.2: *Regulators and Innovative Regulatory Initiatives in Indonesia*

Regulators	Innovative Regulatory Initiatives
OJK	<ul style="list-style-type: none"> ▪ OJK regulatory sandbox: Govern on digital finance innovations, particularly those in respect of non-payment activities including transaction settlement, fund-raising, investment management, crowdfunding and distribution, insurance, market support and other digital finance support (Tang et al., 2020). ▪ Innovative Office Center for Digital Financial Technology called OJK Infinity: Introduce the existence of FinTech system as a digital business in Indonesia. The roles of OJK Infinity are learning and innovation center on FinTech, media for coordination and collaboration among stakeholders, and laboratory for regulatory sandbox (Batunanggar, 2019).
FinTech Office of BI	<ul style="list-style-type: none"> ▪ BI regulatory sandbox: Capture all activities utilized technology in the financial service sector. This leads to the use of new products, services, technology or business models that might have impacts on monetary stability, financial system stability or payment system efficiency, security or dependability (Tang et al., 2020).
MOCIT	<ul style="list-style-type: none"> ▪ None
Bappebti of Ministry of Trade	<ul style="list-style-type: none"> ▪ None

2.2.3 FinTech Development and Regulatory Framework in Malaysia

Malaysia is the third largest ASEAN market for FinTech after Singapore and Indonesia (CCAF et al., 2019). As of January 2018, there were 166 FinTech firms operating in Malaysia. Malaysia FinTech firms are foraying into Islamic finance by testing and launching Shariah-compliant products (FinTech Hub, 2019c). Technologies used by Malaysia FinTech firms include predictive analytics, image recognition, machine learning, blockchain, and RPA. Ten business models are operated by those FinTech firms. They include: 1) capital raising or crowdfunding, 2) digital payments, 3) digital lending, 4) personal financial management, 5) enterprise tech for finance, 6) trading capital markets, 7) InsurTech, 8) asset management, 9)

enterprise financial management, and 10) AI/ML/Big Data (CCAF et al., 2019). Figure 2.6 shows the details of Malaysia FinTech firms by business model.

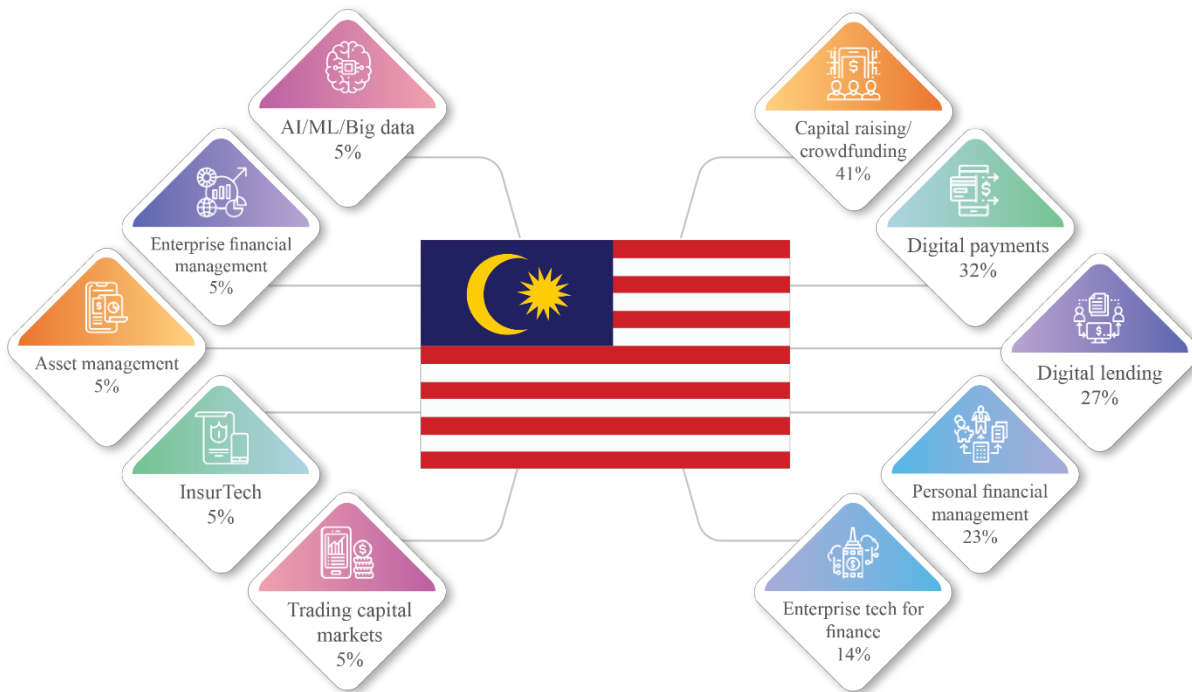


Figure 2.6: *FinTech Firms by Business Model in Malaysia*
 Source: Adapted from CCAF et al. (2019)

The central bank called Bank Negara Malaysia (BNM) and Securities Commission Malaysia (SC) are the authorities who are responsible for FinTech businesses in the country. Generally, BNM is responsible for regulating monetary policy, financial institutions, and credit system. In terms of FinTech, BNM’s role is to improve regulatory policies in order to facilitate adoption of technological innovation in the financial market. SC’s responsibility is to regulate and systematically develop capital markets in Malaysia (CCAF et al., 2019).

There are five main regulations or standards for FinTech in Malaysia. Those regulations include the equity crowdfunding law, the regulatory framework on P2P financing, the digital investment management framework, e-KYC, and the regulation on cryptocurrency (FinTech Hub, 2019c; The United Overseas Bank, 2017). In terms of enablers for FinTech in Malaysia, Malaysia government has established different types of enablers. Those enablers include such as Financial Technology Enabler Group (FTEG) under BNM, Alliance of FinTech community,

and FinTech Association of Malaysia (FAOM).⁶ In terms of innovative regulatory initiatives, Malaysia has 01 innovation office and 01 regulatory sandbox. Both are initiated by BNM. Table 2.3 shows regulators and innovative regulatory initiatives in Malaysia.

Table 2.3: *Regulators and Innovative Regulatory Initiatives in Malaysia*

Regulators	Innovative Regulatory Initiatives
BNM	<ul style="list-style-type: none"> ▪ Regulatory Sandbox called Financial Technology Regulatory Sandbox: Enable innovation of FinTech to be deployed and tested in a live environment, within specified parameters and timeframes (Central Bank of Malaysia, 2016). ▪ Innovation Office called FTEG, comprising of cross functional groups within BNM: Support innovations that will improve the quality, efficiency and accessibility of financial services in Malaysia by formulating and enhancing regulatory policies to facilitate adoption of technological innovations in the Malaysian Financial services industry (<i>FTEG: Financial Technology Enabler Group</i>, 2017).
SC	<ul style="list-style-type: none"> ▪ None

2.2.4 FinTech Development and Regulatory Framework in Thailand

Thailand stands in the fourth rank in FinTech development after Singapore, Indonesia, and Malaysia. Thailand is a potential FinTech powerhouse in the ASEAN region due to its commitment to its 4.0 policy and plans to create DE (DFDL, 2018). Sixty six out of 124 members in Thai FinTech association are FinTech startups that operate across different sectors (EY, 2019). The technologies used by FinTech firms in Thailand include predictive analytics, machine learning, blockchain, RPA, and NLP. There are only five types of technologies used by Thailand FinTech firms. Those technologies include predictive analytics, machine learning, blockchain, RPA, and NLP. There are eight business models operated by those FinTech firms in Thailand. They include: 1) capital raising or crowdfunding, 2) digital lending, 3) InsurTech, 4) trading capital markets, 5) personal financial management, 6) enterprise financial

⁶ For more details, see Appendix 4.

management, 7) enterprise tech for finance, and 8) digital payments (CCAF et al., 2019). Figure 2.7 shows the details of Thailand FinTech firms by business model.

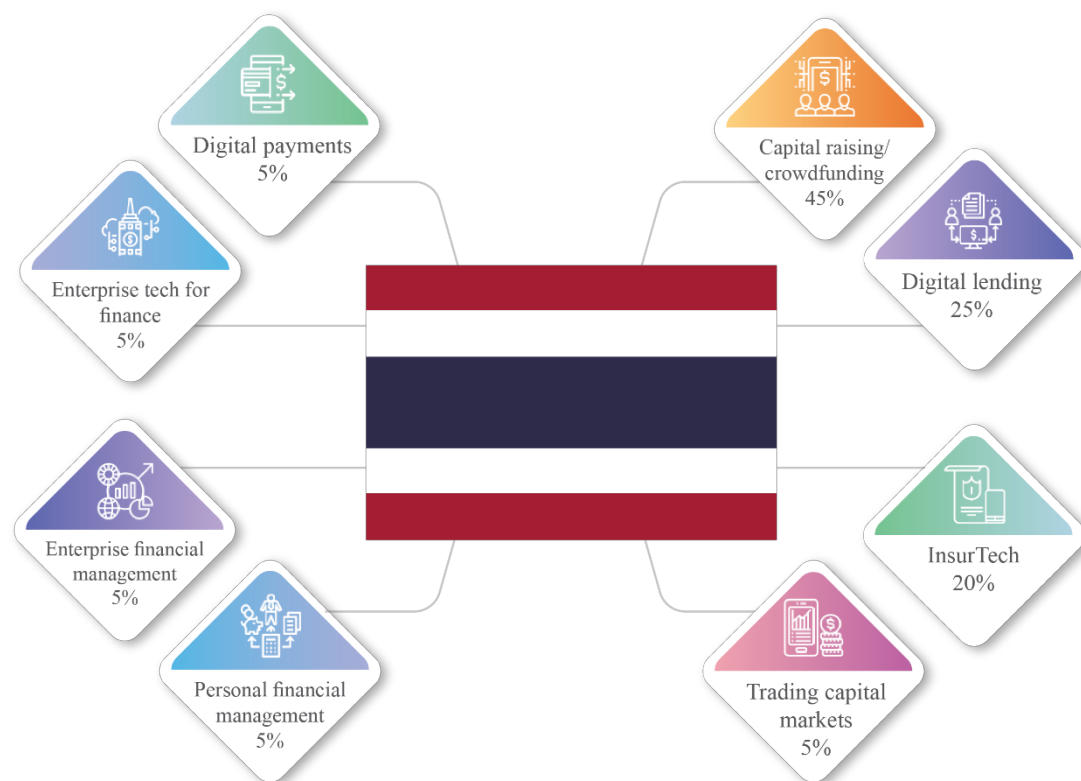


Figure 2.7: *FinTech Firms by Business Model in Thailand*
 Source: Adapted from CCAF et al. (2019)

In Thailand, there are three key authorities responsible for FinTech. Those key authorities include the Bank of Thailand (BOT), the Office of Securities and Exchange Commission (SEC), and the Office of Insurance Commission (OIC). BOT, the central bank, has a leading role in creating and promoting FinTech environment in the country. SEC, whose role is to oversee the securities market, facilitates innovative financial services and products leveraging technology to save cost and time, and provide secured services or products. Besides, SEC serves as a channel for sharing, discussing, and consulting among academics, startups, incumbents, and regulators in order to work together to align with DE initiatives of the government (SEC, 2019). OIC oversees participants in the insurance business (DFDL, 2018).

To regulate FinTech businesses in Thailand, the government has developed different regulations or standards. Those regulations or standards include the regulation on equity

crowdfunding and P2P lending, the Payment Systems Act, the Royal Decree on digital asset business, and the Credit Information Business Act, etc.⁷ (*Credit Information Business Act (No.3) B.E.2551 (2008)*, 2008; *Payment Systems Act B.E. 2560 (2017)*, 2016; *Thailand: Fintech 2019, 2020*; The United Overseas Bank, 2017). In terms of enablers for FinTech, the Thai government has initiated many actions and plans. Those actions and plans are standardized of quick response (QR) codes, investment promotion for FinTech, five-year corporate income tax exemption for new startups, just to name a few⁸ (EY, 2019; The United Overseas Bank, 2017). Different from the other emerging FinTech ASEAN countries, in Thailand there are four regulatory sandboxes and RegTech. Those regulatory sandbox are BOT regulatory sandbox, SEC regulatory sandbox, OIC sandbox and FinTech Hub of Thailand or called F13 (EY, 2019; The United Overseas Bank, 2017). RegTech is initiated by BOT (UNSGSA FinTech Working Group & CCAF, 2019). Table 2.4 shows regulators and innovative regulatory initiatives in Thailand.

⁷ For more details, see Appendix 5.

⁸ For more details, see Appendix 5.

Table 2.4: *Regulators and Innovative Regulatory Initiatives in Thailand*

Regulators	Innovative Regulatory Initiatives
BOT	<ul style="list-style-type: none"> ▪ Regulatory sandbox: Open to any fresh, never-seen-before innovation or open for participation to financial institutions, FinTech firms, and general tech firms. Provide an opportunity for new players to enter the market through a government sanctioned platform, protect both consumers and business operators from financial damages in the event of a successful business, and introduce new FinTech startups to established players like large financial institutions through the regulatory platform and give them an opportunity to partner with one another (Corbett, 2017). ▪ RegTech: Driven by new compliance regulations that concern digital disruption and data privacy protection (Suchit, 2018).
SEC	<ul style="list-style-type: none"> ▪ SEC regulatory sandbox: Allow applicants to test their KYC technology within one year under the supervision (EY, 2019; The United Overseas Bank, 2017).
OIC	<ul style="list-style-type: none"> ▪ OIC sandbox: Allow InsurTech, insurers, and agents to test their innovation (EY, 2019).
Others	<ul style="list-style-type: none"> ▪ F13: Initiated by Thai FinTech Association. It has three functions: 1) Accelerating Thailand’s FinTech industry development, 2) Being a lab for FinTech startups to test their services and products, and 3) A sandbox for those startups to test and validate their services and products in the live environment (EY, 2019).

2.2.5 FinTech Development and Regulatory Framework in the Philippines

The Economist Intelligence Unit (2018) shows that comparing to Singapore, Indonesia, Malaysia, and Thailand, the Philippines has a smaller FinTech ecosystem with only 111 FinTech firms in the country. There are eight types of technologies operated by FinTech firms in the Philippines. Those technologies include predictive analytics, machine learning, RPA, image recognition, blockchain, NLP, speech recognition, and deep learning. In terms of business models, there are six business models run by those FinTech firms namely digital lending, digital payments, enterprise tech for finance, capital raising and crowdfunding, AI/ML/Big Data, and personal financial management (CCAF et al., 2019). Figure 2.8 shows the details of Philippines FinTech firms by business model.

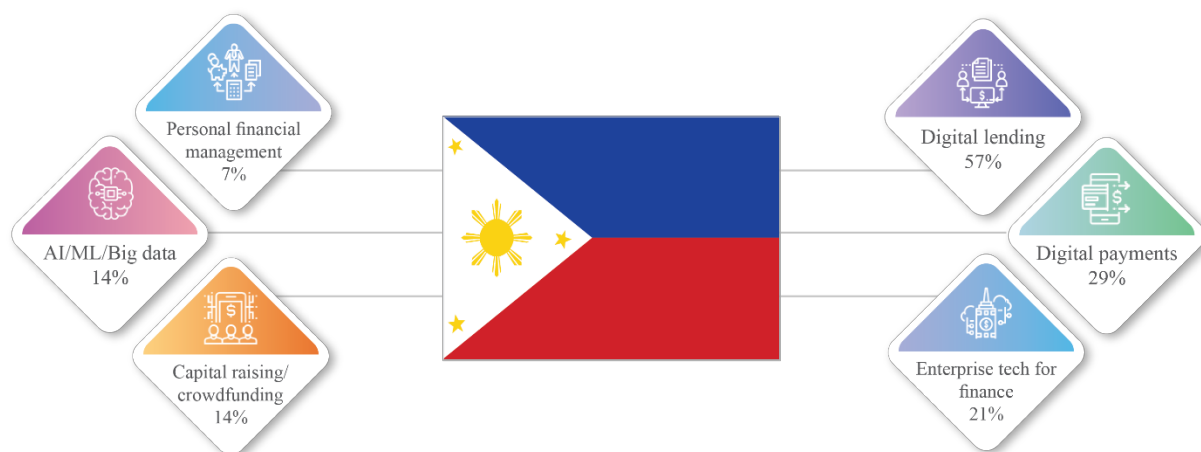


Figure 2.8: *FinTech Firms by Business Model in the Philippines*

Source: Adapted from CCAF et al. (2019)

The Bangko Sentral ng Pilipinas (BSP), the Securities and Exchange Commission (SEC), and the Insurance Commission (IC) are the main authorities responsible for FinTech businesses in the Philippines. BSP, the central banks of the Philippines, is responsible for providing policy directions in the sectors of money, banking, and credit. Moreover, it is responsible for exercising supervisory and regulatory powers over finance companies' operations, non-bank financial institutions that perform quasi-banking functions, and other institutions that perform similar functions. Generally, the role of SEC in the Philippines is to formulate policies and regulate the securities market. In terms of FinTech businesses, its role is to supervise and regulate lending and equity crowdfunding companies. As the name suggested, IC is responsible for supervising and regulating insurance companies. For FinTech businesses, IC's role is to facilitate insurance companies to use available technology to provide better services and products (CCAF et al., 2019).

In terms of regulations for FinTech, the Philippines focuses on various types of FinTech businesses and risks associated with those FinTech businesses. The regulations relating to those businesses include leading regulations on operations and reporting obligations of non-bank entities, and Lending Company Regulation Act of 2007...etc.⁹ (CCAF et al., 2019; The United Overseas Bank, 2017). The regulations related to risk management are Circular 949 and

⁹ For more details, see Appendix 6.

Circular 982 (DFDL, 2018). To enable FinTech businesses to grow well, the government has initiated many activities which include QBO Innovation Hub, cutting-edge digital supervision tools and techniques, the plan to adopt an automated compliant handling portal and API system, securities market policies and regulations, and InsurTech supervision (CCAF et al., 2019; The United Overseas Bank, 2017). The Philippines has adopted a “test and learn” approach to engage the e-money pioneers, that is, Gcash and Smart Money, leading to establishment of the regulatory framework for e-money and EMIs’ operations in 2009 (DFDL, 2018). The regulatory sandbox is initiated by BSP together with RegTech supported by a program called RegTech for Regulators Accelerator (R2A).¹⁰ the Gate Foundation, Omidyar Network, and USAID (UNSGSA FinTech Working Group & CCAF, 2019). Table 2.5 shows regulators and innovative regulatory initiatives in the Philippines.

Table 2.5: *Regulators and Innovative Regulatory Initiatives in the Philippines*

Regulators	Innovative Regulatory Initiatives
BSP	<ul style="list-style-type: none"> ▪ Regulatory sandbox: Initially known as “Test and Learn” approach used to engage e-money pioneers in the country to pilot their e-money products. The regulatory framework governing the issuance e-money and operation of EMIs was developed from this regulatory sandbox (DFDL, 2018). ▪ RegTech: Offer guidance and technical support, a phase approach to define problems and finding solutions, a neutral platform encouraging engagement between regulators and RegTech firms (UNSGSA FinTech Working Group & CCAF, 2019).
SEC	<ul style="list-style-type: none"> ▪ None
IC	<ul style="list-style-type: none"> ▪ None

2.2.6 FinTech Development and Regulatory Framework in Vietnam

Although Vietnam ranks in the last among emerging FinTech ASEAN countries, it is considered a sleeping FinTech giant (DFDL, 2018). In total, there are 74 FinTech firms in

¹⁰ R2A is considered a model to help regulators in emerging and developing economies improve effectiveness by using technology. It was established by the Gates Foundation, Omidyar Network, and USAID in 2016 (UNSGSA FinTech Working Group & CCAF, 2019).

Vietnam (The Economist Intelligence Unit, 2018). Although there is no source stating exactly what technologies that those FinTech firms are using to operate their businesses, it can be inferred from different reliable sources of information including the United Overseas Bank, (2017) and CCAF et al. (2019) that technologies used by the FinTech firms include blockchain and RPA. The FinTech firms operating in Vietnam include digital payments, wealth management, P2P lending, data/credit scoring/management, digital banking, crowdfunding, cryptocurrency, POS, small and medium-sized enterprises (SMEs) financing, comparison sites, and InsurTech (Fintechnews Vietnam, 2019). Although there has not been any source mentioned in details about business models operated by FinTech firms in Vietnam, based on the list provided by Fintechnews Vietnam (2019) and the classification of CCAF et al. (2019) on business models of FinTech firms in general, there are seven the business models of FinTech firms in Vietnam, which include: 1) digital payments, 2) digital lending, 3) asset management, 4) capital raising/crowdfunding, 5) personal financial management, 6) AI/ML/Big Data, and 7) InsurTech. Figure 2.9 shows Vietnam FinTech firms by business model. Figure 2.9 shows FinTech firms by business model in Vietnam.

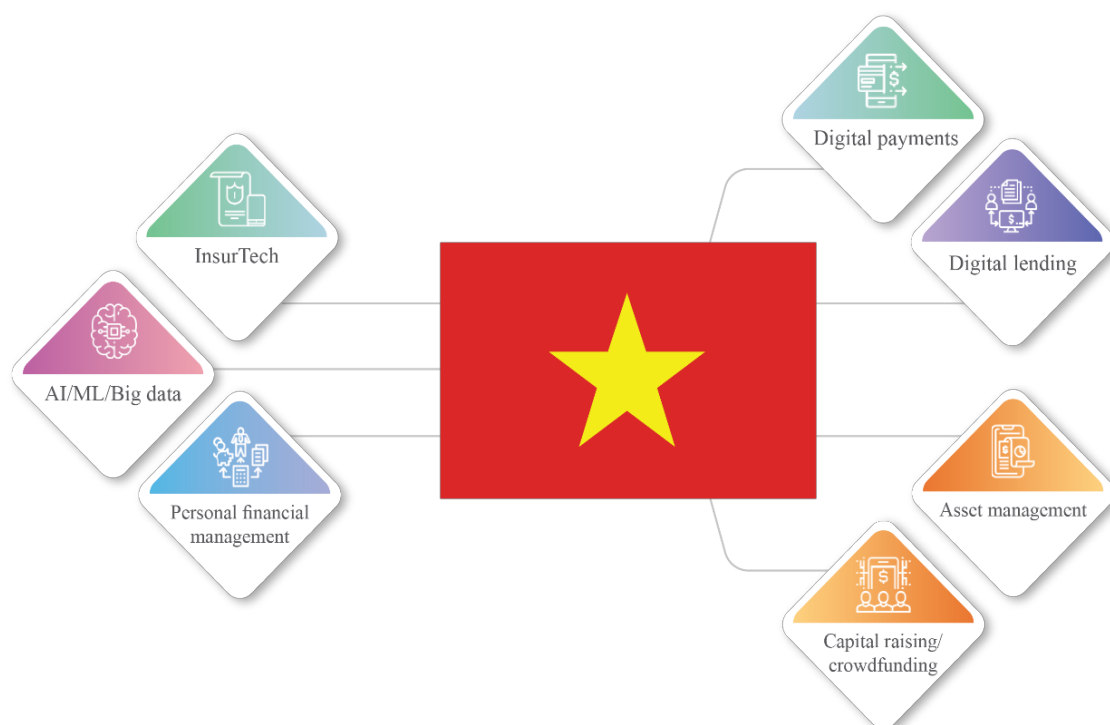


Figure 2.9: *FinTech Firms by Business Model in Vietnam*

The central bank of Vietnam, that is, the State Bank of Vietnam (SBV) and the State Securities Commission (SSC), under the Ministry of Finance, are the main authorities dealing with FinTech in Vietnam. SBC is responsible for managing the monetary and banking activities, and foreign exchange (CCAF et al., 2019). In terms of FinTech, SBV has a role to advise the government on FinTech ecosystem development including a regulatory framework to ensure that there is market growth and support for FinTech innovation in the country (FinTech Hub, 2019b). SBV established a steering committee on FinTech with the aim to encourage the development of FinTech companies in the country with guidance from the government (Das, 2017). The general role of SCC is to regulate the securities market. Regarding its role in FinTech businesses, SCC has its role in regulating equity crowdfunding (CCAF et al., 2019).

There are many different regulations governing FinTech in Vietnam. Those regulations include the Law on Enterprises, the Law on Electronic Transaction, and the Decree on No-Cash Payments, just to name a few¹¹(CCAF et al., 2019; DFDL, 2018). To facilitate FinTech development, the Vietnamese government has fully legalized digital assets and cryptocurrencies, planned to publish frameworks that can help and accelerate FinTech startups (The United Overseas Bank, 2017). Different from the more developed economies in the ASEAN region taking hard approaches to regulate FinTech, SBV has adopted the “wait and see approach” for FinTech development in Vietnam (DFDL, 2018). Table 2.6 shows regulators and innovative regulatory initiatives in Vietnam.

¹¹ For more details, see Appendix 7.

Table 2.6: *Regulators and Innovative Regulatory Initiatives in Vietnam*

Regulators	Innovative Regulatory Initiatives
SBV	<ul style="list-style-type: none"> ▪ Steering committee on FinTech: Encourage the development of FinTech companies in the country with guidance from the government ((Das, 2017).
SSC	<ul style="list-style-type: none"> ▪ None

2.3 FinTech Development and Regulatory Framework in Cambodia

It is worth mentioning that FinTech in the banking sector is more developed than that in the non-banking sector because the majority of the FinTech companies’ business model in Cambodia is digital payment that is under the banking sector. In terms of FinTech development, Cambodia’s FinTech development is far behind other emerging FinTech ASEAN countries mentioned above. However, with her vibrant and dynamic digital startup ecosystem, Cambodia does have everything that can make her become a vibrant FinTech ecosystem in the future. Therefore, this report would like to view Cambodia as “the Kingdom of Promising FinTech Startups”. Besides from comparative advantages in terms of her agile consumer market due to young population, high smartphone penetration, and cheap Internet data (Raintree, 2019), the RGC has committed to make Cambodia’ economy become digital by focusing on five pillars namely digital infrastructure, digital government and cyber security, startup and digital SME ecosystem, workforce for the digital era, and laws and regulations (RGC, 2018). Digital leadership from the RGC is a must to achieve DE. The RGC has demonstrated what they commit. With hard-work and perseverance, the RGC has achieved one of the major milestones to become DE by successfully launching an integrated business registration system or also known as the Single Portal on the 15th of June 2020. The system intends to make the process of business registration opening in Cambodia easier and more efficient, improving investment climate and enhancing overall competitiveness in the market (Thou, 2020). Aside from that,

MEF has also drafted DE policy planned to be implemented by 2021, and soon there will be an establishment of the Council for Digital Economy and Society Development¹² under MEF.

According to the classification of CCAF et al. (2019) on business models of FinTech firms in general, there are six business models of FinTech firms in Cambodia. They include: 1) digital payments, 2) digital lending, 3) InsurTech, 4) enterprise financial management, 5) enterprise tech for finance, and 6) AI/ML/Big Data. Figure 2.10 shows Cambodia FinTech firms by business model.

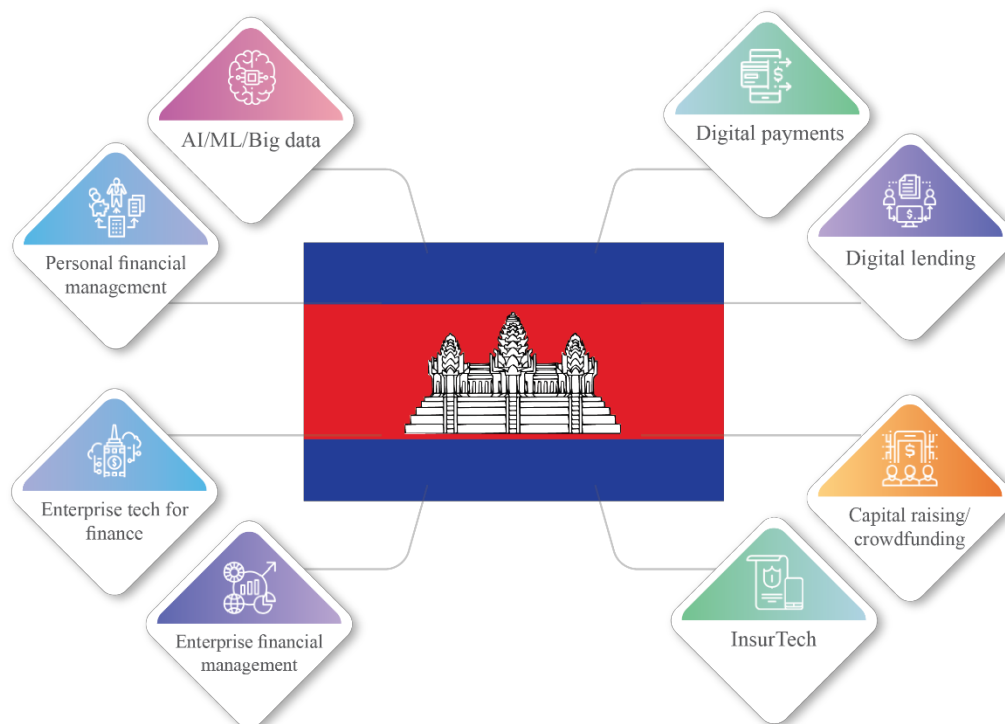


Figure 2.10: *FinTech Firms by Business Model in Cambodia*

There are two main financial regulators in Cambodia. They are National Bank of Cambodia (NBC), the nation’s central bank, and the Securities and Exchange Commission of Cambodia (SECC) under Ministry of Economy and Finance (MEF). However, in terms of regulating FinTech, there are three regulators: 1) MEF, 2) SECC, and 3) NBC. The roles of MEF is to lead and supervise the economic and financial sectors in order to develop economics and enhance people’s lives in Cambodia based on the principles of the market economy and social equity (MEF, 2019). In terms of regulating FinTech businesses in Cambodia, MEF regulates

¹² This is an unofficial translation.

FinTech with general laws. There are two FinTech business models that are currently regulated by MEF, that is, InsurTech and P2P lending. BIMA was the only InsurTech firm in the country during the period of the study (from October 2019 to January 2020), operating under Insurance Law. Spean Luy and Sonatra Easy Money were the only two P2P lending firms during the period of the study, operating under Prakas on the Management of Pawn and Pledge Business by Consignment.

The SECC's role is to regulate the securities industry to contribute to socio-economic development through mobilizing capital from securities investors or public to meet financing for investors' demand (SECC, 2017). In terms of regulating FinTech business in the country, SECC regulates equity crowdfunding based on Law on the Issuance and Trading of Non-Government Securities (Law on Securities). SECC issues the "fund management company" license that allows companies to mobilize capital from institutional and individual investors for investment projects. As of February 2020, there were four companies obtained the "fund management company" license from SECC (Stronghold Trustee Cambodia, 2020). However, so far, there has not been any crowdfunding platform formally operating in the country yet.

The NBC's role is to determine and direct the monetary policy that is aimed at maintaining price stability to facilitate economic development in the country (NBC, 2019). In terms of regulating FinTech businesses in the country, NBC is the one who provides Payment Service Institutions (PSIs) license to payment gateways operating in Cambodia. PSIs license is based on Prakas on Management of Payment Service Providers (PSPs) (now known PSIs). NBC has also launched its project called Bakong, which is claimed to be a national payment gateway in Cambodia ("Project Bakong," 2020). In February 2020, NBC has also signed MOU with the central bank of Thailand to create a payment system based on QR codes, aimed at facilitating cross-border exchange in local currencies (Sok, 2019).

It is worth mentioning so far there has been only one regulatory authority, that is, NBC, responsible for regulating the banking sector in Cambodia. There has not been any regulatory authority responsible for overseeing the non-banking sector although so far this sector has

been regulated by MEF and SECC. Since the first quarter of 2020, MEF and other related government institutions including Council of Ministers, Ministry of Commerce, Ministry of Justice, NBC, and SECC have been actively working on revising the draft law for establishment of non-banking authority (NBA)¹³ in Cambodia. The law will aim to strengthen and ensure effectiveness of management, supervision, and development of the non-banking sector in Cambodia. This means that all FinTech business activities in the non-banking sector will be under NBA's supervision when the law comes into effect in the very near future.

There are some regulations or standards related to FinTech in Cambodia. Those regulations or standards include E-commerce law (effective from May 2020), consumer protection law, draft on cybercrime act, and Prakas on Management of PSIs, just to name a few.¹⁴ In terms of FinTech enablers in Cambodia, there are many initiatives and plans that have been developed or ongoing. Those initiatives and plans include Bakong, QR code cross border payment, the plans for FinTech and payment gateway roadmaps, and three associations working with FinTech namely Association of Banks in Cambodia (ABC) FinTech Working Group, Cambodian Association of Finance and Technology (CAFT), and Cambodia FinTech Association (CFA).¹⁵ However, there is no any specific innovative regulatory initiative yet. So far, NBC has adopted "Test and Learn" approach to deal with FinTech in Cambodia, while MEF has used "Stretch-to-Fit" approach to regulate the sectors of FinTech, P2P lending and InsurTech, under her jurisdiction.

Overall, there is more than one regulator (except Singapore) supervising FinTech in each country. Development of FinTech in those six emerging FinTech ASEAN countries has been attributed to proactiveness of the regulator. Their proactiveness is evident by their regulatory frameworks and FinTech innovative regulatory initiatives. Figure 2.11 shows regulators and innovative regulatory initiatives in the emerging FinTech ASEAN countries and Cambodia.

¹³ This is an unofficial translation.

¹⁴ For more details, see Appendix 8.

¹⁵ On July 2020, CFT-CAFT merger was announced. The name for this new combined association is CAFT. However, this study stills considered them as two samples since this study was conducted before their combination.

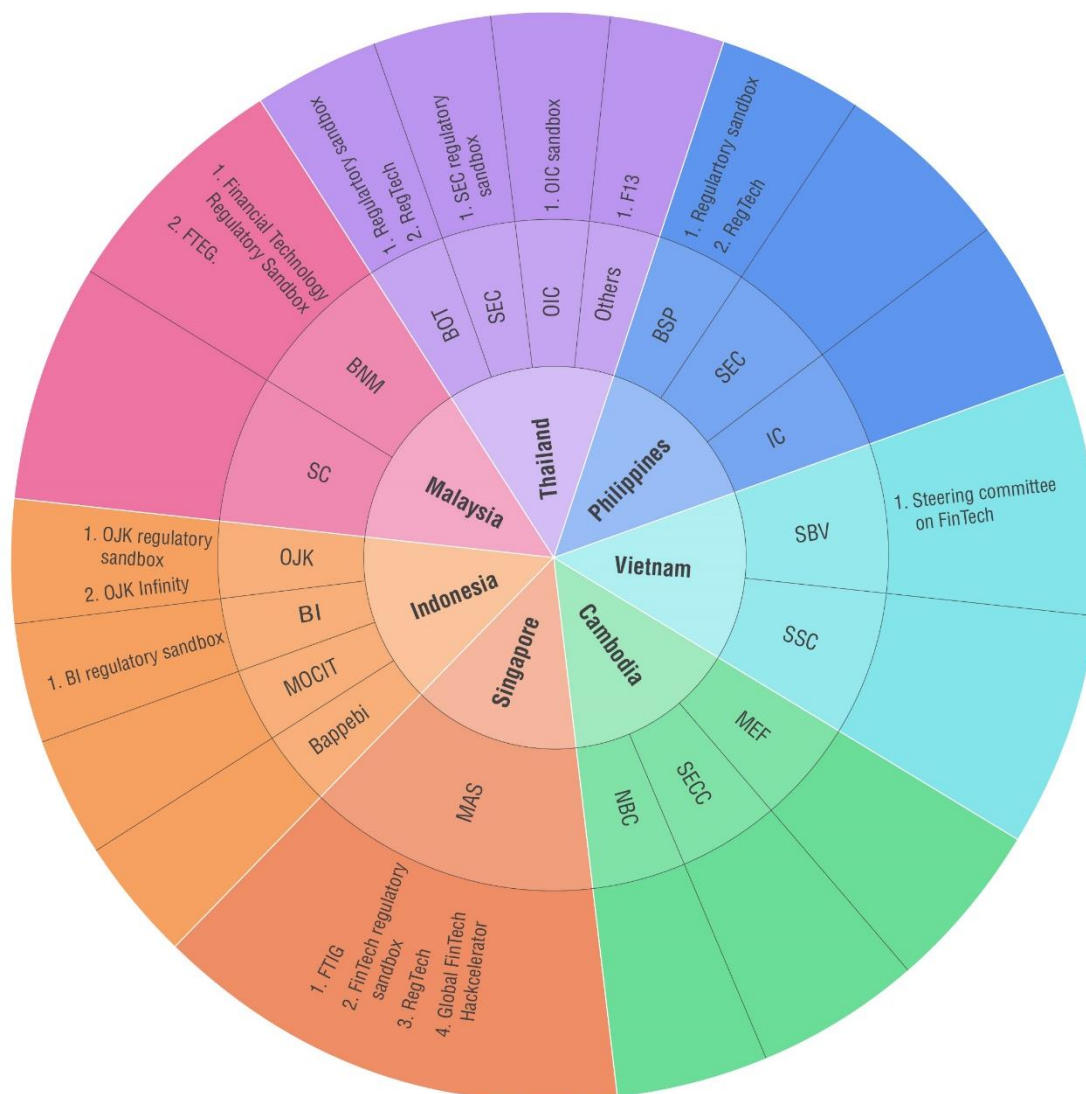


Figure 2.11: Regulators and Innovative Regulatory Initiatives in Emerging FinTech ASEAN Countries and Cambodia
 Source: Adapted from different sources

3. Research Methodology



Chapter 3: Research Methodology

Chapter 3 aims to explain rationale for research methodology used in the study. This chapter will start with Research Paradigm and Approach section, followed by Sampling Methods, Data Collection and Analysis section, Ethical Considerations section, and Verification section.

3.1 Research Paradigm and Approach

There are four paradigms widely discussed in the literature. Those paradigms are: 1) post-positivism, 2) constructivism or interpretivism, 3) transformative, and 4) pragmatism (Creswell & Creswell, 2018).¹⁶ Among these four paradigms, the most suitable paradigm that we adopted in this study is the constructivism or social constructivism paradigm. It is based on three reasons. Firstly, the post-positivist paradigm was not used in this study because the study does not aim at testing a theory or hypothesis related to FinTech in Cambodia by using any statistical analysis of the quantitative method. This study is a qualitative one, aiming at understanding deeply about FinTech in Cambodia by depending on the points of view or knowledge of research participants. Secondly, this study does not aim to study any social oppression issues on the marginalized in Cambodia. Therefore, the transformative paradigm could not be used as an approach for the study. Thirdly, the reason that this study does not use the pragmatic paradigm because the study aims to find challenges or problems related to FinTech and draw policy recommendations to deal with those challenges or problems. The study does not aim to examine what has been working or has not been working to deal with challenges or problems related to FinTech in Cambodia.

Among three types of research approach, that is, deductive, inductive, and abductive¹⁷, this study lends itself more to the inductive approach. The deductive and abductive approaches are not appropriate for this study. The reason is the nature of this study is an explorative one. Its emphasis lies on understanding and knowledge of different stakeholders in FinTech in Cambodia, not on testing theory related to FinTech.

¹⁶ See more details of each paradigm in Creswell and Creswell (2018), Crotty (1998), Mertens (2010), and Morgan (2007).

¹⁷ See more details of each research approach in Saunders et al. (2016).

3.2 Sampling Methods

There are two types of sampling methods used to select samples: probability or representative and non-probability samplings (Saunders et al., 2016). This study used non-probability sampling to select the samples because it does not aim to do any statistical estimation of FinTech in Cambodia. This study used two types of samplings in the non-probability sampling, that is, purposive and snowball samplings to collect data, that is, purposive and snowball samplings.¹⁸

Purposive sampling was used in this study because only people working in the FinTech sector with high experiences and knowledge can answer research questions. Due to fast changing in the FinTech sector and to include stakeholders as many as possible, besides purposive sampling, snowball sampling was also used. The total sample size for this study is 45: 14 of them are existing PSPs; 02 of them are lending service provider companies; 01 of them is an InsurTech company; 01 of them is a crowdfunding company; 05 of them are accounting/banking system companies; 05 of them are investors; 10 of them are enablers, and 03 of them are regulators (with 07 interviews). Figure 3.1 shows the FinTech landscape in this



Figure 3.1: *FinTech Landscape in the Study*
Source: Authors (2020)

¹⁸ See more details of each sampling method in Collis and Hussey (2013) and Saunders et al. (2016).

3.3 Data Collection and Analysis

3.3.1 Data Collection

There are three typologies of interviews categorized by different scholars. Those typologies of interview can be based on 1) levels of formality, 2) levels of structure, and 3) leaders in an interview, but those typologies somehow overlap with one another. Among them, the most used typology is the levels of structures of interviews, which include structured, semi-structured, and unstructured or in-depth interviews.¹⁹

To answer the research questions for this study, semi-structured interviews²⁰ were used to collect the primary data. Since the nature of this study is qualitative, semi-structured interviews is the most appropriate to use for data collection. Besides, using semi-structured interviews allowed us to control the discussion with our study participants and cover all aspects or themes in our research. During the interviews, we also gave the opportunity to the participants (interviewees) to talk freely related to our research topics so that we could elucidate about their opinions and beliefs pertinent to our research. Regarding the choice of questions, we used both closed and open-ended questions²¹ for our interviews. There are five types of questionnaires used to collect data. Each type of questionnaire targets different stakeholders involving in FinTech in Cambodia. Those stakeholders are: 1) FinTech companies, 2) regulators, 3) investors, 4) universities, and 5) incubators.

In terms of secondary data collection, reliable sources of information including published reports, journal articles, official websites, and books, etc. are used. The secondary data was used to answer the third research objectives related to comparison between FinTech regulatory framework in Cambodia and emerging FinTech ASEAN countries.

3.3.2 Data Analysis

There are different approaches for qualitative data analysis. Some of the commonly used ones include Thematic Analysis, Grounded Theory, Narrative Analysis, Discourse Analysis,

¹⁹ See more details of levels of interviews' structures in Saunders et al. (2016).

²⁰ Questionnaires used to collect data is from Appendix 10 to Appendix 14.

²¹ Close questions refer to those that demands Yes or No answer or very briefly. Open-ended questions are those that need a long and detailed answer from the interviewee, and they are not possible to be answered by Yes or No (Collis & Hussey, 2013).

and Content Analysis (Saunders et al., 2016).²² The qualitative data analysis for this study is Thematic Analysis. Besides from the reason that this research approach is inductive, this study does not aim to create a new theory that is the aim of Grounded Theory. However, this study aims to find emerging themes or perception related to FinTech in Cambodia. Narrative Analysis and Discourse Analysis are not appropriate methods for this study since this research objectives do not aim to generate narratives or analyze discourses used in a social context. Content Analysis is not an appropriate one since this study does not intend to quantify qualitative data for quantitative analysis. To analyze data for this study, qualitative research software NVivo 12 was used.

3.4 Ethical Considerations

According to Saunders et al. (2016), ethics in the context of research refer to the standards of behavior guiding researchers to conduct in relation to the rights of either those becoming your research participants or those who are affected by it. Similar to Saunders et al. (2016), Collis and Hussey (2013) state that the ethics of research is related to how researchers conduct their research and how they report the results of their research. Researchers should consider research ethics from the beginning to the end of their research (Webster et al., 2014). To make research become ethical, that research needs to be valuable. Moreover, research participants should be well informed about the research that they are going to participate, and researchers should not make any paradoxical request to their participants and avoid any kind of pressure on them. Besides, researchers should respect confidentiality and anonymity of their research participants (Webster et al., 2014).

To ensure that this study is the ethical one, before data collection process, we had sent research participants an invitation letter and/or email to ask if they can participate in our research. The content of the letter and email informs them clearly about the purpose of our study. After getting their consent to participate in our study, we sent them questions that we

²² See more details of each approach for qualitative data analysis in Saunders et al. (2016).

planned to ask in advance. We refrained from sending them the questions in advance in the case that they did not want us to do so.

Before starting the interviews, we informed our research participants again about the purpose of our study and institution's background and ensured that there was not any kind of misunderstanding. We also informed them that they have freedom to refrain from answering any question that they do not want to answer. Since we had to record the interview to better analyze data and avoid any kind of misinterpretation, we asked for their permission to record their voice before the start of the interviews. We refrained from voice recording when they did not allow us to do so.

In terms of confidentiality and anonymity, during data analysis, we did not use the name of each participant or institution, but we used code instead. When writing up the results, we did not mention or cite names of our research participants or their institutions. In terms of the information or answers that the research participants asked us not to include in our research, we did not use those information and answers for analysis. All voice recordings can only be accessed by us as researchers. Those voice recordings will be deleted when this study is completed.

3.5 Validity and Reliability

Validity is one of the strengths of qualitative research and is based on determining if the findings are accurate from the standpoint of the researchers, participants, or the readers (Creswell & Miller, 2000). Four strategies were used to ensure internal validity of this study. Those strategies are: 1) triangulating different data sources, 2) using member checking, 3) presenting discrepant findings, and 4) using peer debriefing. The first strategy, data triangulation, was used by involving as many different stakeholders in FinTech as possible to validate the study's findings. Additionally, documents from different sources were also used to confirm or clarify the information and findings in this study where appropriate. The second strategy, member checking, was used by presenting major findings from the study in a consultation workshop where all the participants in the study were invited. The consultation

workshop provided an opportunity for them to comment on the findings. The third strategy, presenting discrepant findings, was used by presenting those findings and made a discussion where possible. Last, the fourth strategy, peer debriefing, was used by involving board members of TSC, having knowledge in the research methods and have familiarity with the subject areas, that is, FinTech, to review all aspects of the research, including the procedures deployed to gather and analyze the data and interpretations of the findings from the study.

To ensure reliability of the study, two strategies were used. The first strategy is to ensure that transcripts did not contain obvious mistakes. The transcripts were double checked by at least two people before coding for data analysis. The second strategy is to make sure that there is not a drift in the codes' definition. Definition of each was continually comparing data with the codes.

4. Findings



Chapter 4: Findings

Chapter 4 aims to answer the study's research questions. Those research questions are: 1) "What are the challenges of FinTech ecosystem in Cambodia?"; 2) "What are SWOT of FinTech companies?"; and 3) "What are the existing and missing aspects of Cambodia's FinTech regulatory framework by comparing with emerging FinTech ASEAN countries?".

4.1 Challenges in FinTech Ecosystem in Cambodia

4.1.1 Challenges in FinTech for Regulators

There are three regulators in FinTech that we interviewed. To be confidential, we name those three regulators as Regulator 01, Regulator 02, and Regulator 03 in our study. Regulator 01 has more departments involved in the FinTech sector than Regulator 02 and Regulator 03. Therefore, Regulator 01 had a greater number of interviews in the study than the other two. There were four interviews conducted with Regulator 01, while there were two interviews conducted with Regulator 02 and one interview conducted with Regulator 03. In total, there are seven interviews with these three regulators.

From the regulators' point of view, there are six challenges in regulating FinTech in Cambodia. Those six challenges are: 1) resource constrains (See Figure 4.2 for more details), 2) lack of collaboration between regulators and FinTech startups, 3) lack of trust from consumers in the market, 4) lack of government support in FinTech, 5) no dedicated FinTech team in the government, and 6) lack of interagency coordination across government institutions. Figure 4.1 shows the challenges in regulating FinTech in the country. If we look across the regulators having different jurisdictions, interestingly we can notice that although they have different points of view in terms of challenges in regulating FinTech startups, they face a common challenge, that is, resource constraints. The resources that the regulators thought are insufficient to regulate FinTech startups in Cambodia include: 1) capacity to understand FinTech in general including its impact and potential risks, 2) financial resources, 3) technical staff to manage data provided by FinTech startups, and 4) software for data management. Figure 4.2 illustrates the types of resource constraints among the regulators.

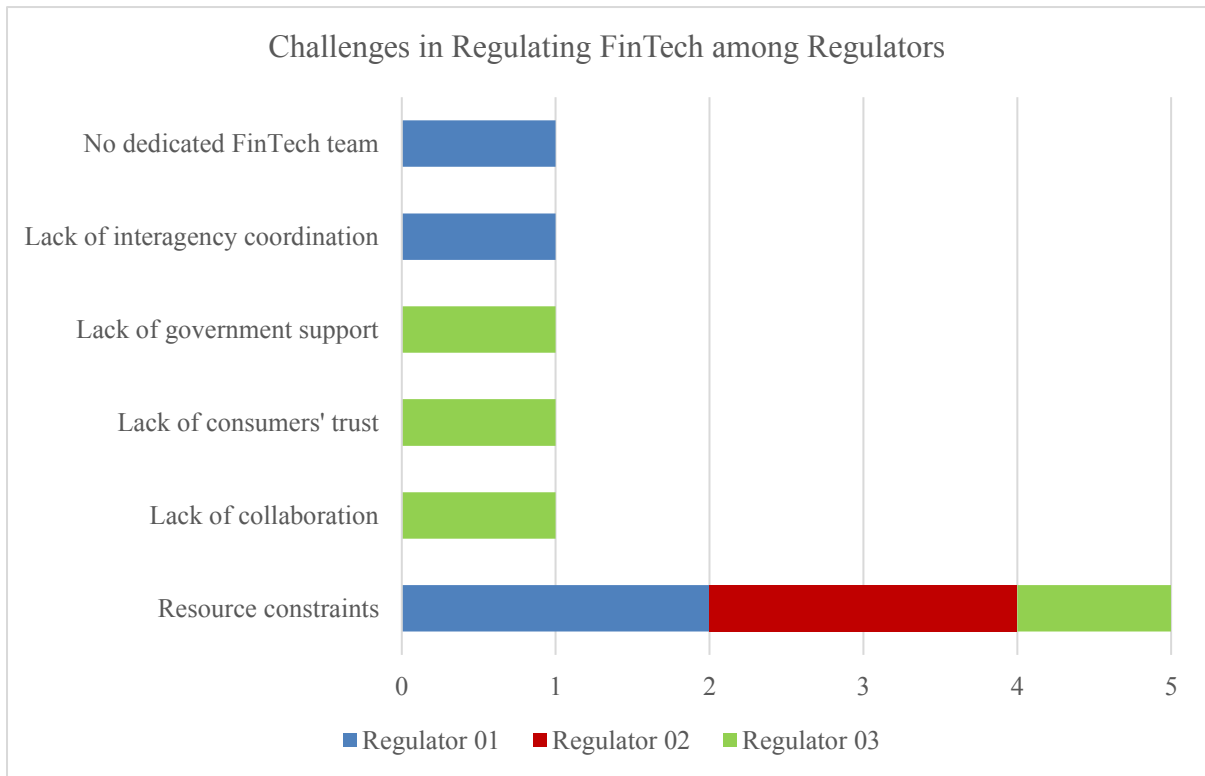


Figure 4.1: *Challenges in Regulating FinTech among Regulators*
 Source: Authors (2020)

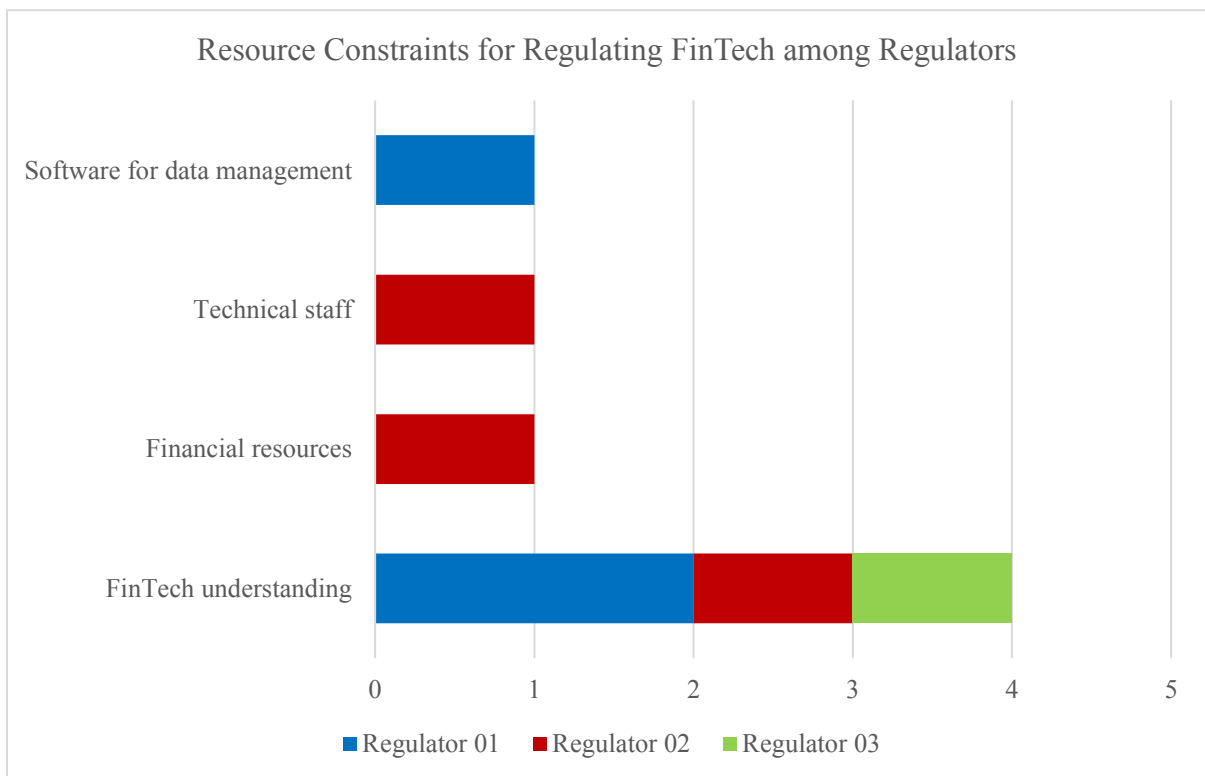


Figure 4.2: *Resource Constraints for Regulating FinTech among Regulators*
 Source: Authors (2020)

4.1.2 Challenges in FinTech for Enablers

A. Associations

We interviewed three associations involving in FinTech in Cambodia. All of them stated that lack of regulatory framework for FinTech is a main challenge for regulating FinTech in Cambodia. They stated that there should be a regulatory framework for FinTech; however, it should be flexible enough to enable innovation, not to hinder it. Besides, one of them mentioned that there is still lack of regulatory framework for data privacy protection for FinTech users or end consumers.

B. Development Partners

There are two main development partners involving in FinTech development with the RGC. To be confidential, we name those development partners as Donor 01 and Donor 02 in our study. We managed to interview all of them. From their points of view, there are two major challenges for regulating FinTech in Cambodia. Those factors include lack of regulatory framework for FinTech and lack of interagency coordination to develop FinTech. Both have a common point of view that there is no interagency coordination between regulators and related stakeholders to ensure that FinTech can develop well to meet the common goals in terms of financial stability and inclusion in Cambodia. Besides, Donor 02 also stated that it is quite challenging for Cambodia to regulate and develop FinTech because of lack of regulatory framework in FinTech.

C. Funder and Incubator

At the time of the survey, there was only one funder that actively provided the fund for civil society, social enterprise, young innovators, and technology companies to design and use different information and communication technologies to advance development. However, so far that funder had not funded any FinTech startup yet. Therefore, we could not get any data for the challenges related to FinTech.

We interviewed an incubator that was well-known for its activities in business capacity building for startups. However, that incubator had not help any FinTech startups. Consequently, we could not get any data for the challenges related to FinTech.

D. University and Academic Institutions

In terms of FinTech capacity building in the field of higher education, there are one university and two academic institutions that are providing a course or degree related to FinTech. We interviewed three of them. To be confidential, we name them as Academic 01, Academic 02, and Academic 03. From their points of views as educators, there are three main challenges to provide a course or degree related to FinTech. Those challenges include: 1) lack of human resources, 2) lack of financial resource, and 3) changing students' mindset. It should be highlighted that among them, only Academic 01 claimed that they have no challenge since they have enough human resources who have expertise in or related to FinTech to teach the students. Academic 01 also has no challenge in financial resources since it provides scholarships for some students only.

Contradictory, the other two, Academic 02 and Academic 03, stated that they lack human resources who have expertise in or related to FinTech to teach their students. Moreover, Academic 03 claimed that it is a challenge for her in terms of financial resources and convince the students to take the major in FinTech. Financial resources are a constraint for her because Academic 03 provides scholarships for majority of the students. Besides, it is a challenge to convince students to take the major in FinTech. The reason is that the concept of FinTech is too new for them to understand. Moreover, those students are concerned about their employment opportunities after graduation. Figure 4.3 shows the challenges in FinTech capacity building in the field of higher education.

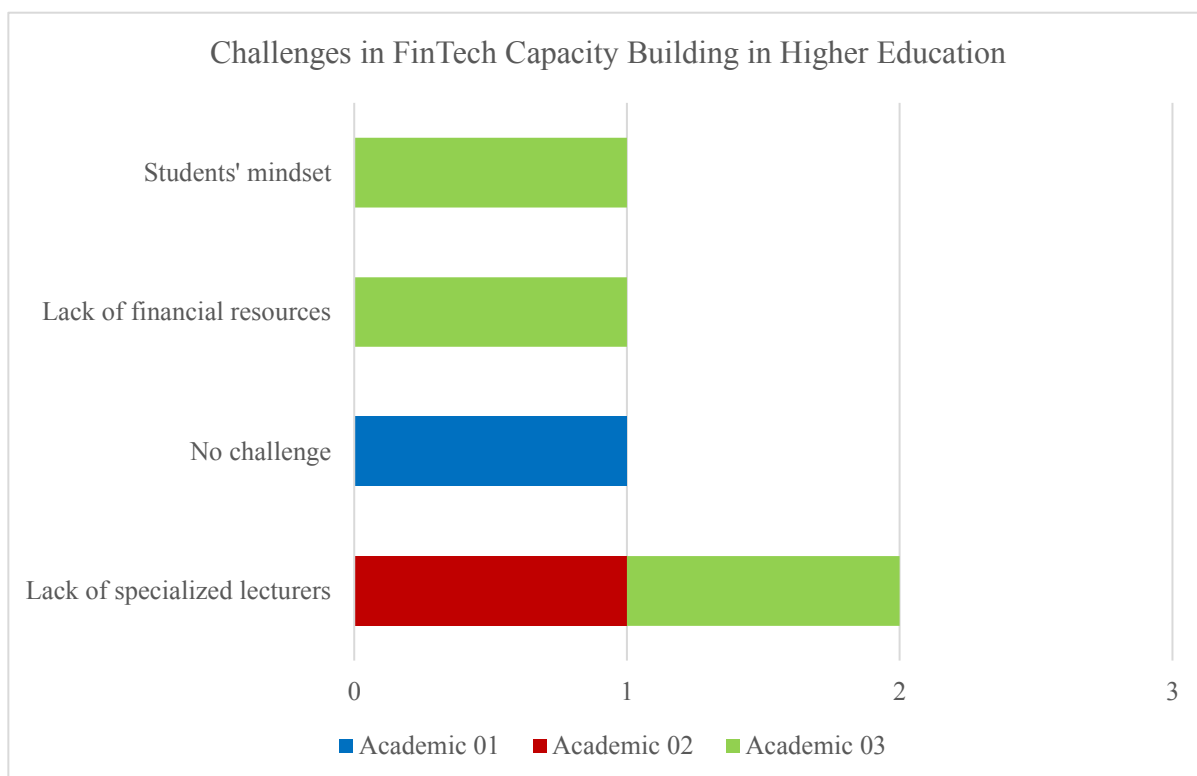


Figure 4.3: *Challenges in FinTech Capacity Building in Higher Education*
 Source: Authors (2020)

4.1.3 Challenges in FinTech for Investors

At the time of the survey, to our knowledge and accessibility, there are five investors that we managed to interview. To be confidential, we name those Investor 01, Investor 02, Investor 03, Investor 04, and Investor 05 in our study. Among them, there was one investor invested in FinTech startups, while the other four are looking for investment in FinTech startups. It is worth mentioning that one among these four investors is the fund manager for the investor who has invested in FinTech startups in Cambodia.

There are four challenges faced by those investors to invest in FinTech startups. Those challenges are: 1) lack of appropriate team members in FinTech startups, 2) small market size, 3) weak business model, and 4) mindset of users. The first challenge mentioned by the majority of investors is lack of appropriate team members in FinTech startups. Investor 01, Investor 02, Investor 03, and Investor 04 claimed that some startups (not only exclusively referred to FinTech startups) are founded by a group of members that do not have skills in doing business. Those skills include financial management and entrepreneurship skills. The second challenge

faced by the investors in small market size in the market. This challenge was raised three investors, Investor 01, Investor 03, and Investor 04. Because the market size of Cambodia is small, it is hard for them to get good return if investing in FinTech startups and it may take them long to get the return. The third challenge is weak business models, which was raised by two investors, Investor 02 and Investor 04. One of the investors, that is Investor 02, there were many startups approached Investor 02 for investment. However, Investors 02 perceived that the idea or concepts in the business models of those startups were just copy and paste from the others, meaning that there is no uniqueness. Besides, those business models cannot solve real problems happening in Cambodia, let alone its inability to execute the idea or concepts in the market. Investor 04 said that some startups have to depend so much on the third party to do their business. Consequently, they cannot get enough profits to scale up their business. The fourth challenge in investing in FinTech startups is the users' mindset. This challenge was raised by Investor 05. Investor 05 said that the users, both merchants and customers, need to change the mindset that payment from mobile apps need to be free of charge. If they do not change their mindset, it is hard for any investor to invest in the payment sector of FinTech. Figure 4.4 shows challenges for investors to invest in FinTech startups.

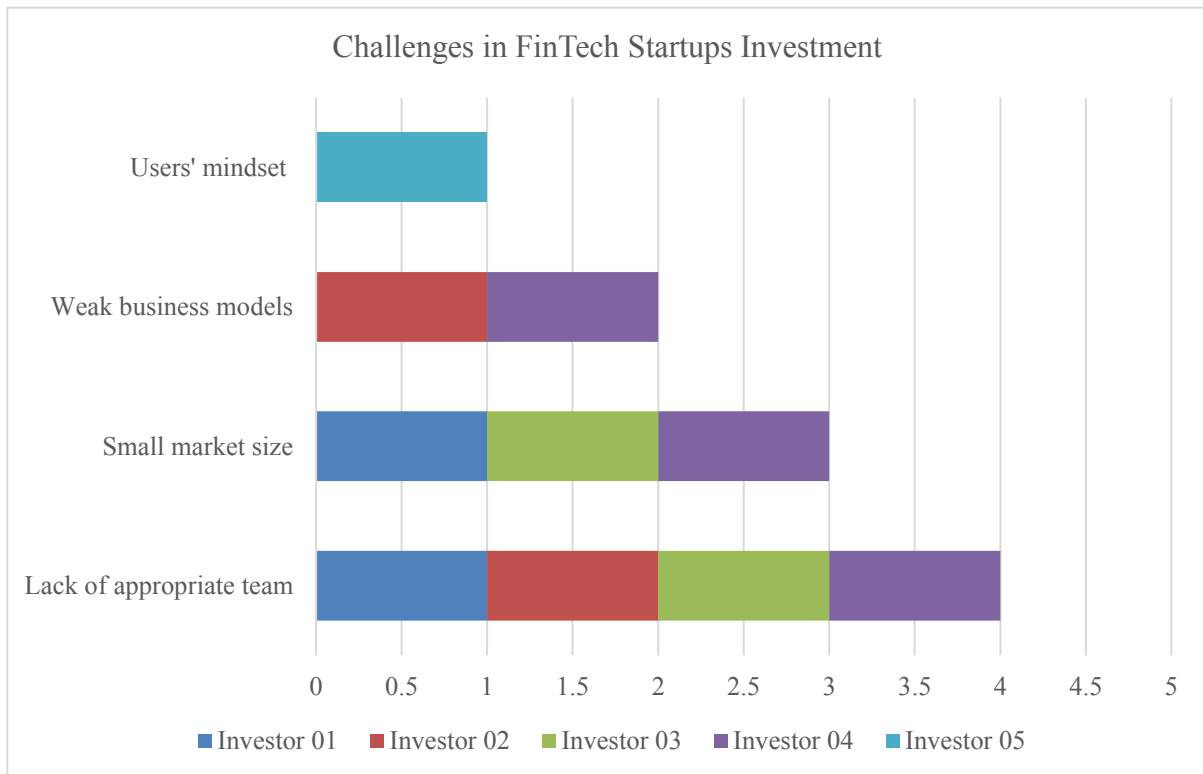


Figure 4.4: *Challenges in FinTech Startups Investment*
 Source: Authors (2020)

4.1.4 Challenges in FinTech for Crowdfunding

At the time of the study, we were managed to interview one crowdfunding company. This crowdfunding company had just received the license for crowdfunding under Collective Investment Scheme under Anukret on the Implementation of the Law on Issuance and Trading of Non-Government Securities of Cambodia in June 2019.

According to the interview with the company, so far it has not invested in any FinTech startup yet. However, it plans to invest in startups in general including FinTech as equity crowdfunding. The average value of investment for one startup ranges from 50,000 to 500,000 US dollars within 5 to 7 years. According to the interview, the challenges or barriers that prevent this company to invest in FinTech startups include high cost of investment demanded by FinTech startups and small market size making it hard to get high return on investment.

4.1.5 Challenges in FinTech for Accounting/Banking System Companies

There are five accounting/banking system companies that we interviewed. To be confidential, we call those companies as System 01, System 02, System 03, System 04, and System 05. The followings are the challenges faced by those companies.

A. Challenges in terms of Financial Resources

Financial resources are not a challenge faced by four of those accounting/banking system companies that we interviewed. Only one of them, that is, System 02 stated that the company needs more funding to grow the business.

B. Challenges in terms of Human Resources

There are seven challenges faced by those accounting/banking system companies in terms of human resources. Those challenges include lack of skills and capacity or talent, lack of commitment, time-consuming for training, mindset, high salary expectation, high market demand, and job-hunting strategies. As illustrated in Figure 4.5, lack of skills and capacity or talent is the most challenging aspect since four out of these five companies namely System 01, System 02, System 03, and System 5 claimed that it is hard for them to recruit staff with either advanced technical skills or combination of necessary skills besides IT skills for their companies (See details in Figure 4.6). Another second outstanding challenge is commitment to work in companies. Three companies namely System 01, System 02, and System 04 mentioned that it is quite challenging for them since some of their staff do not want to work in one place for long period of time. As a result, there are high turnover rates among these companies. Time-consuming for training new staff, high market demand for talented staff, job hunting strategies, mindset to work in a large company rather than a startup, and/or high salary expectation are the third challenges mentioned among these five companies.

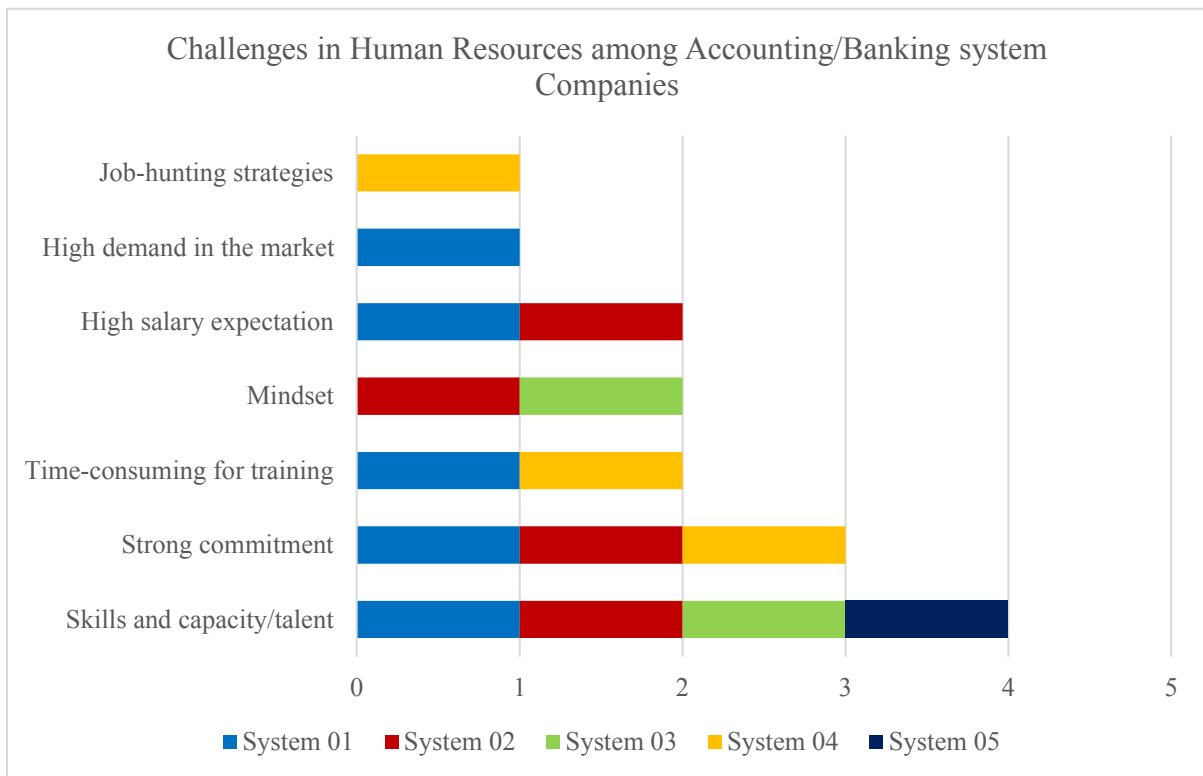


Figure 4.5: *Challenges in Human Resources among Accounting/Banking System Companies*
 Source: Authors (2020)

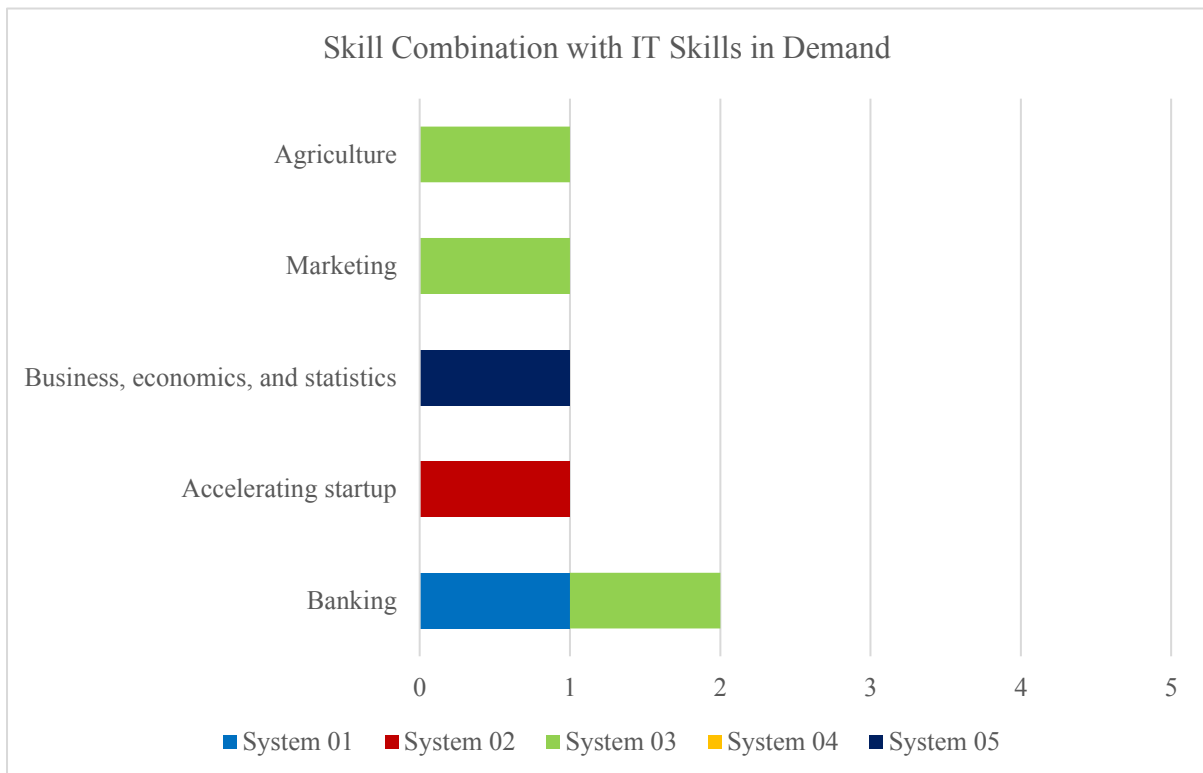


Figure 4.6: *Skill Combination with IT Skills in Demand*
 Source: Authors (2020)

C. Challenges in terms of Technology

At the time of the survey, among the five accounting/banking system companies, four of them said that they do not have any challenge in terms of technology. Only one of them, System 02, said that the company is having a challenge in technology since it needs to redesign its technology infrastructure.

D. Challenges in terms of Registration

There are three companies namely System 02, System 03, and System 05 had no challenge for their business registration, although System 05 thinks that it was time-consuming, taking the company around one year to get the license. System 04 has no opinion for this challenge since the interview did not involve in the registration procedure. Only System 01 said that it faced a challenge in terms of registration. System 01 said that it is not clear whether to register the company with Ministry of Posts and Telecommunications (MPTC) since the company has not had any trademark or IP yet.

E. Challenges in terms of Competition

In terms of competition, two of those companies namely System 03 and System 05 said that they do not have any challenge due to no competitor or very few competitors in the market. However, the other three companies including System 01, System 02, and System 04 claimed that they have to compete with companies from abroad such as India or Vietnam that can provide cheaper price or companies that are well recognized by the international. Worse than that, System 02 added that the actual competitor for the company is not another company, but customers' mindset. Although System 02 provides free software with Khmer language and have the same solutions as the products that are well recognized by the international, customers still prefer using those well recognized products. They still view the products made by startups as less valued than those made by international companies. Figure 4.7 shows challenges in competitions among accounting/banking system companies.

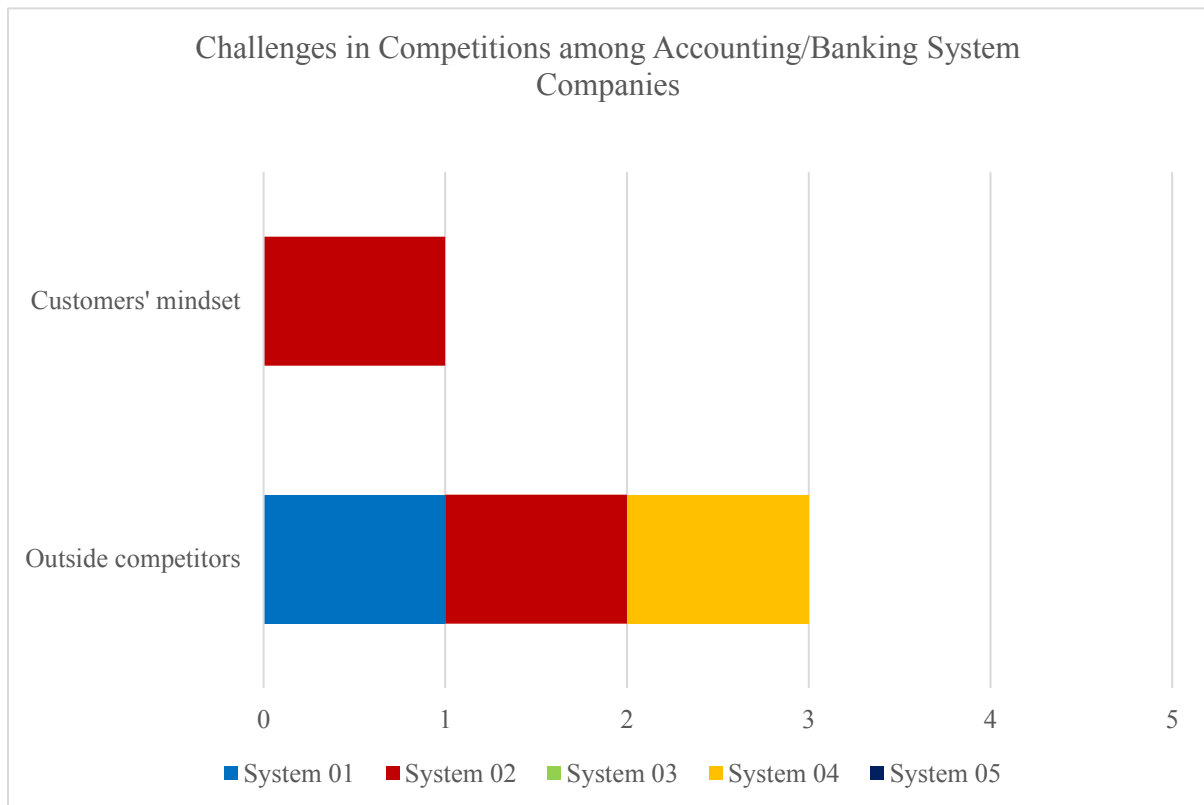


Figure 4.7: *Challenges in Competitions among Accounting/Banking System Companies*
 Source: Authors (2020)

F. Challenges in terms of Support

There is one company namely System 05 claimed that it does not face any challenge in terms of support since the regulator always supports the company, while two other companies, System 01 and System 02, did not mention anything when asking about the challenges of support. It is likely related to the reason that they have not received any support so that they could not give any opinion. Besides, there are two accounting/banking system companies said that they face the challenges in terms of support. Those companies are System 03 and System 04. System 03 mentioned that the company faces a challenge in support for operation since working with some of government institutions related to transparency can be a little bit tricky. Moreover, System 04 stated that despite without getting any support from the government, they do not think it is a challenge as long as it is trusted and understood in terms of tax compliance. System 04 has been questioned about the cheap customer services that the company charges to customer by General Department of Taxation (GDT). However, that is our marketing strategy to get customers. According to System 04, the reason that the company is

still in the stage of developing human resources is the company need to charge customers less cost to convince them to use our services.

G. Challenges in terms of Regulation

In terms of regulation, there is only one company, that is, System 05 claimed that there is no challenge, while the other four companies, System 01, System 02, System 03, and System 04 claimed that they face at least one challenge. There are four challenges, and they include lack of regulatory clarity, lack of incentive, lack of regulatory framework, and bureaucracy. Lack of regulatory clarity and lack of incentive are the most outstanding challenges among the above-mentioned challenges. System 03 mentioned that it is hard for the company to understand some regulations including the ones related to tax. Interpretation of some regulations related to tax is different from one law firm to another. In terms of incentive, System 01 mentioned that there is no tax exemption or incentive for IT companies that are the core sector for DE. At this stage, the government should not give any pressure on this sector so that it can grow fast to achieve DE. Furthermore, System 04 mentioned that it is a challenge for them to launch any new products in the market because there are no relevant laws or regulations for launching such products. In terms of bureaucracy, System 02 said that although they would like to apply for benefits for a tech startup company, they have not applied for it yet. The reason is that documentation is very complicated, and there are many requirements to follow. Figure 4.8 indicates the challenges faced by the accounting/banking system companies in regulation.

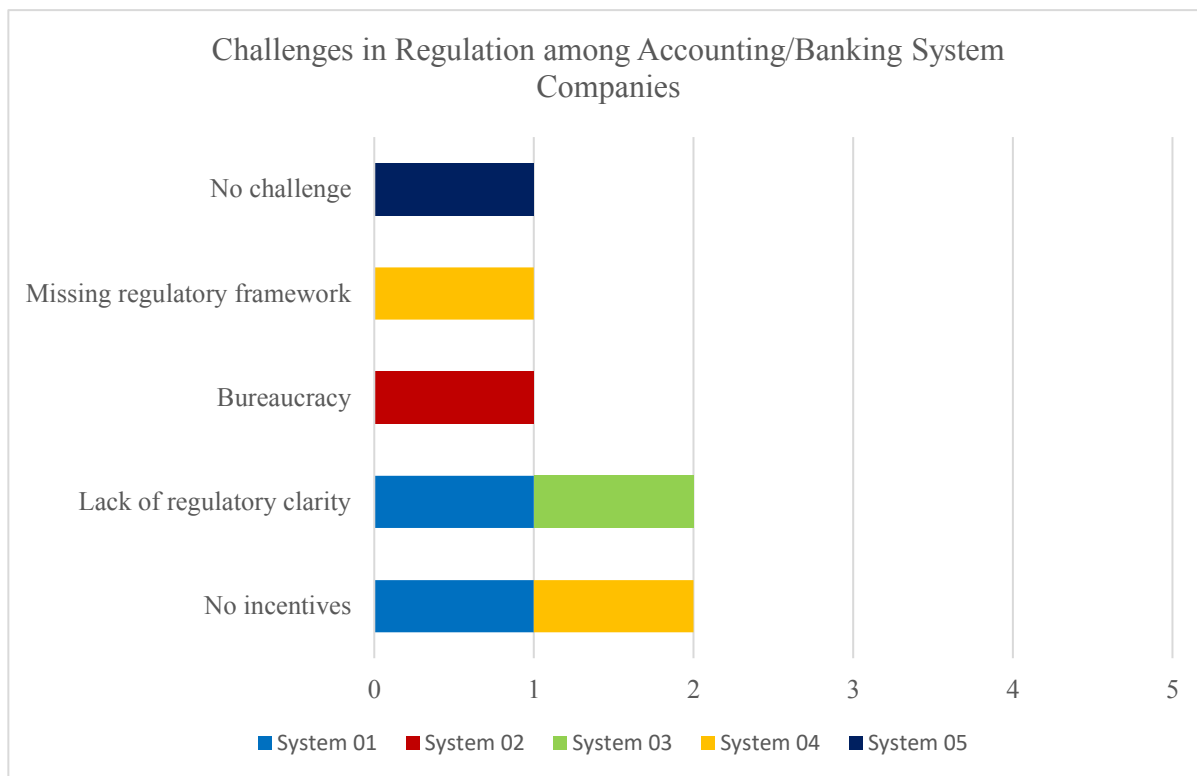


Figure 4.8: *Challenges in Regulation among Accounting/Banking System Companies*
Source: Authors (2020)

4.1.6 Challenges in FinTech for InsurTech

There is only one InsurTech company operated in Cambodia. There has not been any regulation related to InsurTech yet in Cambodia. The InsurTech company is operated under the Insurance license, which is under MEF's supervision. The following are the challenges faced by the InsurTech company that we interviewed.

A. Challenges in terms of Financial Resources

Although the InsurTech company that we interviewed did not mention any challenge in terms of financial resources, the interviewee said that it is difficult for the company to reach to a greater number of customers because the company is quite strict on selecting the agents to sell the products. At the time of the survey, there were only two agents namely Smart Axiata and iCare Benefits Cambodia with which this InsurTech company has partnership.

B. Challenges in terms of Human Resources

Regarding human resources, although the company did not mention that the company has any challenge related to human resources, the interviewee mentioned that the company needs

to provide staff a lot of coaching and training both in soft and technical skills before they can perform their jobs well. The reason that the company needs to provide the staff, in particular those in the call center a lot of coaching and training, is the majority of them were fresh graduated coming from different major backgrounds or have no previous working experiences working with such kind of company.

C. Challenges in terms of Technology

In terms of the challenged in technology, the InsurTech company claimed that the company does not have any challenges in technology. However, the company is concerned that people need to adopt technology to be able to use FinTech services and products provided in the market.

D. Challenges in terms of Registration

Time-consuming is a challenge mentioned by the company in business registration. The reason for taking long time to register the business is due to lack of regulatory clarity since there is no regulation related to InsurTech in Cambodia.

E. Challenges in terms of Competition

In terms of the challenges in competition, since there is only one InsurTech company operated in Cambodia, there is no challenge in competition in the market for this InsurTech company.

F. Challenges in terms of Support

The InsurTech company claimed that the company can ask for support from MEF and MLVT. However, it is not sure if the company can ask for support from Ministry of Health (MoH). The reason is the company is working on health insurance products, and the customer services including health consultation and prescription are provided via phone, which may not be aligned with the traditional way of provision of health care services.

G. Challenges in terms of Regulation

In terms of regulation, the InsurTech company mentioned that there are two facing challenges. The first challenge is that there is a missing regulatory framework for micro-

insurance in terms of consent forms. Consequently, this company cannot scale up their business with banks and microfinance institutions (MFIs). NBC requires physical consents forms for any products or services provided by banks and MFIs to customers including insurance products. However, as microinsurance is insurance with low caps and low premiums, the company cannot afford to have an agent to go to meet customers in person to get their physical consent forms. The second challenge faced by this InsurTech company is that the company is not clear if the customer services (including health consultation and prescription provided via phone) for the company's health insurance products are aligned with the existing regulations or laws of the provision of health care services in the country.

4.1.7 Challenges in FinTech for Lending Service Providers

There are two lending service providers operated in Cambodia. There has not been any P2P lending regulation yet in Cambodia. Therefore, these lending service providers are operated under the Pawnshop license under MEF's supervision. To be confidential, we call those lending service providers Lending 01 and Lending 02.

A. Challenges in terms of Financial Resources

Financial resources are not a challenge for one of the lending service providers, that is, Lending 01 since it has its parent company to support. However, financial resources are a challenge for another lending service provider, Lending 02, which is just a startup. It is a struggle for Lending 02 to acquire customers since it is just a new startup, and most people have not known it well.

B. Challenges in terms of Human Resources

Although claiming that human resources are not a challenge, both lending service providers still mentioned that it is hard for them to find qualified staff or staff with multiple skills for operating their business models in Cambodia. Lending 01 complained about the high turnover rate, while Lending 02 said that the turnover rate is low.

C. Challenges in terms of Technology

Regarding technology, both lending service providers claimed that they have no challenge. One of them has developed technology in house, while the other has technology from Russia.

D. Challenges in terms of Registration

Registration is not a challenge for Lending 01 to register the business. However, Lending 02 another claimed that it was time-consuming since it had taken the company around four to five months to complete it.

E. Challenges in terms of Competition

Both lending service providers claimed that they have no challenge in competition since their business models are unique in Cambodia market.

F. Challenges in terms of Support

Both lending service providers said that they do not have any challenge in terms of support.

G. Challenges in terms of Regulation

In terms of regulation, the lending service providers have faced different challenges. Lending 01 said that there is lack of regulatory framework for P2P lending in Cambodia. In the beginning, it was a challenge for the company to register the business since there was no license for P2P lending, and the company did not know where to get the license to do such business. Different from this lending service provider that faced challenges in regulation itself, Lending 02 faced another challenge related to bureaucracy and behavior of government staff implementing the regulation. At the time of the survey, it had already taken this company more than three months just to change the address of the company.

4.1.8 Challenges in FinTech for Payment Service Providers (PSPs)

There were fourteen PSPs that we interviewed. Eleven of them that we interviewed are under the PSI license. One of them does not have the PSI license. One company is under the specialized bank license, and another one is under the bank license. These licenses are under NBC's supervision. To be confidential, we call those payment service providers as PSP 01, PSP 02, PSP 03...PSP 14.

A. Challenges in terms of Financial Resources

There are eight PSPs said that they have no financial constraint. However, the other six PSPs said that they have one or two challenges related to financial resources to operate or invest more in their business. Those PSPs are PSP 01, PSP 02, PSP 03, PSP 09, PSP 10, and PSP 12. As shown in Figure 4.9, there are three challenges faced by those PSPs which include high minimum capital requirement for getting the PSI license, high cost for technology due to lack of infrastructure, and lack of profits.

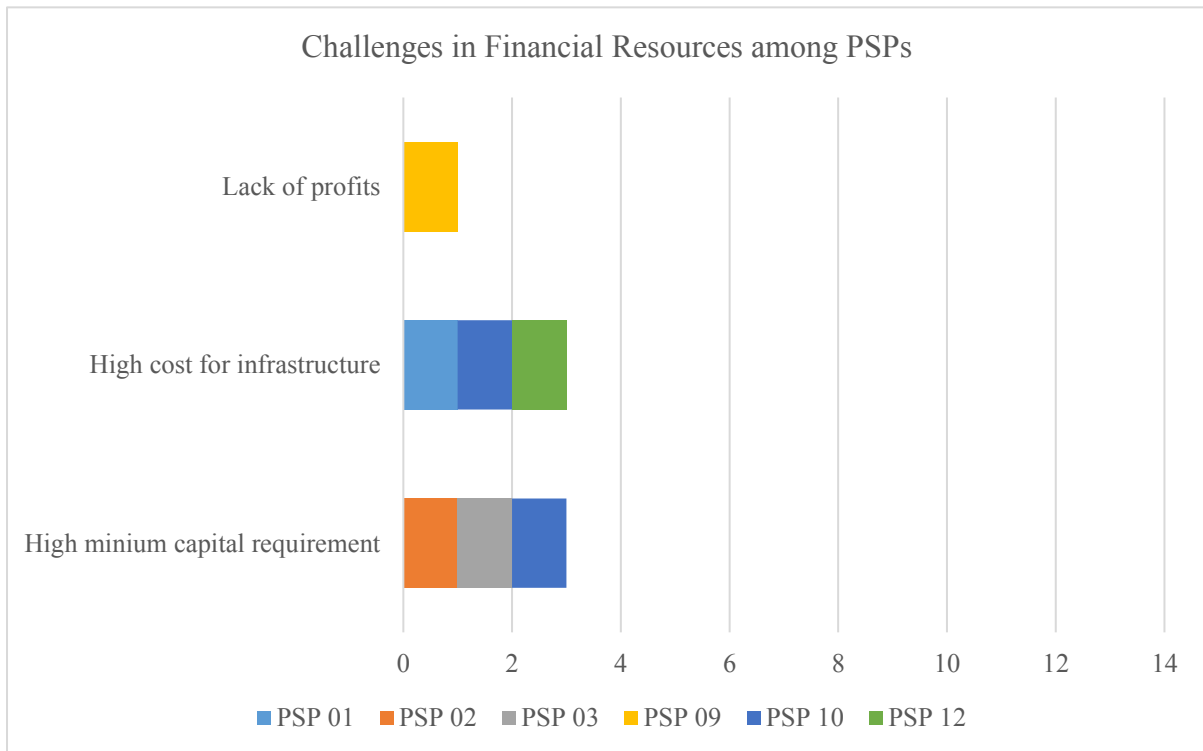


Figure 4.9: *Challenges in Financial Resources among PSPs*
Source: Authors (2020)

The first and second challenges are the most outstanding challenges raised by the PSP companies. A few companies namely PSP 02, PSP 03, and PSP 10 complained that the amount of capital requirement to get the PSI license is too high, 2 million USD, excluding 5000 USD for renewing the license every year. In terms of high cost for technology, PSP 10 stated that since the company needs to use Cloud and other systems, it needs to spend around 25,000 to 30,000 USD per month. Besides, one company, that is, PSP 09 claimed that so far, the company has not made any profits yet, and it is not sure when the company can get profits from investment.

B. Challenges in terms of Human Resources

Five out of the fourteen PSP companies said that they have no challenges in terms of human resources, while the rest of the companies face different challenges. The PSP companies that face the challenges include PSP 01, PSP 03, PSP 04, PSP 07, PSP 08, PSP 10, PSP 11, PSP12, and PSP 14. As illustrated in Figure 4.10, skills and capacity/talent, demand in the market, and time spent on staff training are the three most challenging aspects for human resources. Eight companies, except PSP 14, mentioned that lack of skills is the most challenging aspect for their companies. Those skills include either advanced skill such as software development and network engineering or multiple skills such as software development and banking or IT with accounting skills. Six of PSP companies, PSP 04, PSP 07, PSP 08, PSP 10, PSP 11, and PSP 14, said that high demand in the market makes it hard for them to recruit new staff or causes high turnover rate in the companies. One of these companies stated that high market demand, particularly from banks, for staff makes low-level and high-level staff leave the company. Four companies complained that they need to spend at least three to four months to teach new staff to understand business models or write codes.

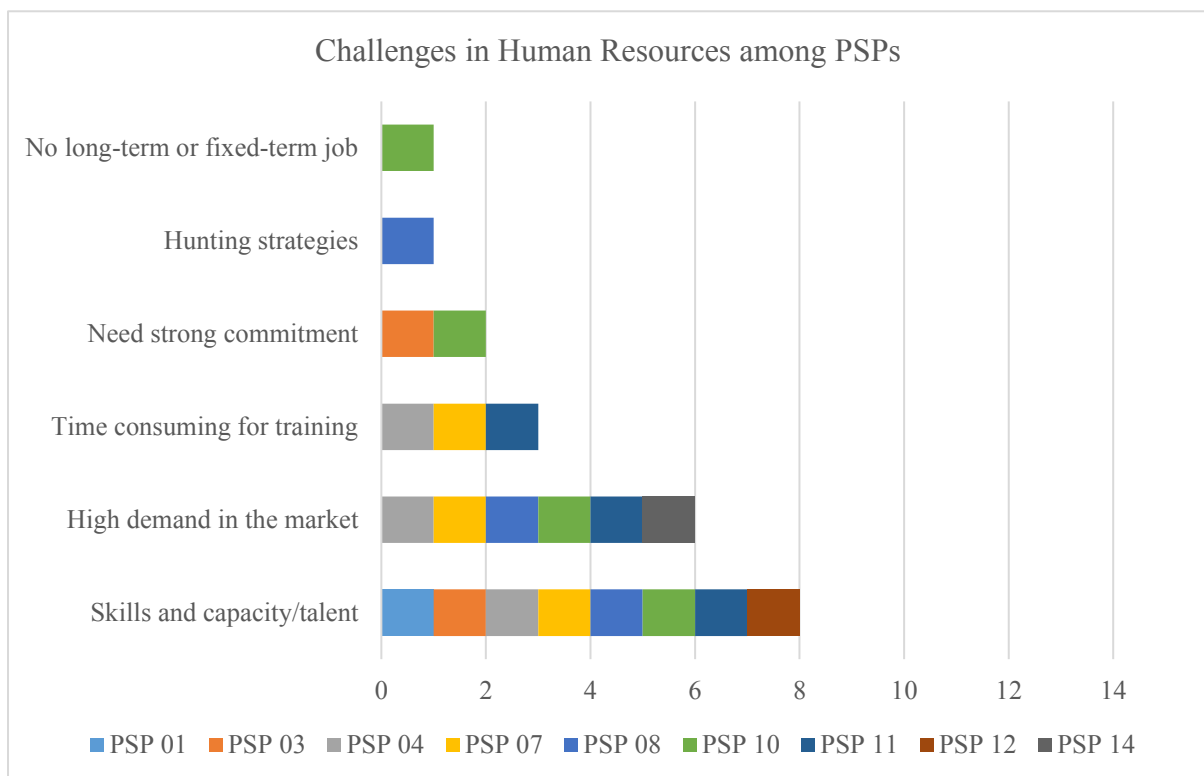


Figure 4.10: *Challenges in Human Resources among PSPs*
Source: Authors (2020)

C. Challenges in terms of Technology

Ten out of these fourteen PSP companies said that they have no challenge in terms of technology operated in their companies, except PSP 03, PSP 05, PSP 10, and PSP 11. The other four PSP companies face four challenges in terms of technology. Those challenges include: 1) the need to outsource technology, 2) lack of infrastructure, 3) feature development, and 4) technology adoption. The need to outsource technology and lack of infrastructure are the two most frequently challenges faced by those companies. Among the four PSP companies, two of them, PSP 03 and PSP 11, stated that due to lack of human resources to build the technology that they want in-house, they need to outsource it. As a result, they need to rely and spend more on other companies to develop technology from abroad. Lack of infrastructure including Cloud, and internet coverage and stability are the challenges makes two of those PSP companies, PSP 03 and PSP 10, to spend more and unable to provide satisfactory services to customers. Besides, another PSP company, that is, PSP 05 stated that although technology in the company is in-house developed, it is quite challenging for them to build more features based on development of business requirement. Among these four PSP companies, one company namely PSP 03 uses a slightly different technology from the others. Consequently, some of customers find it hard to adopt the technology. Figure 4.11 shows challenges in technology among PSP companies.

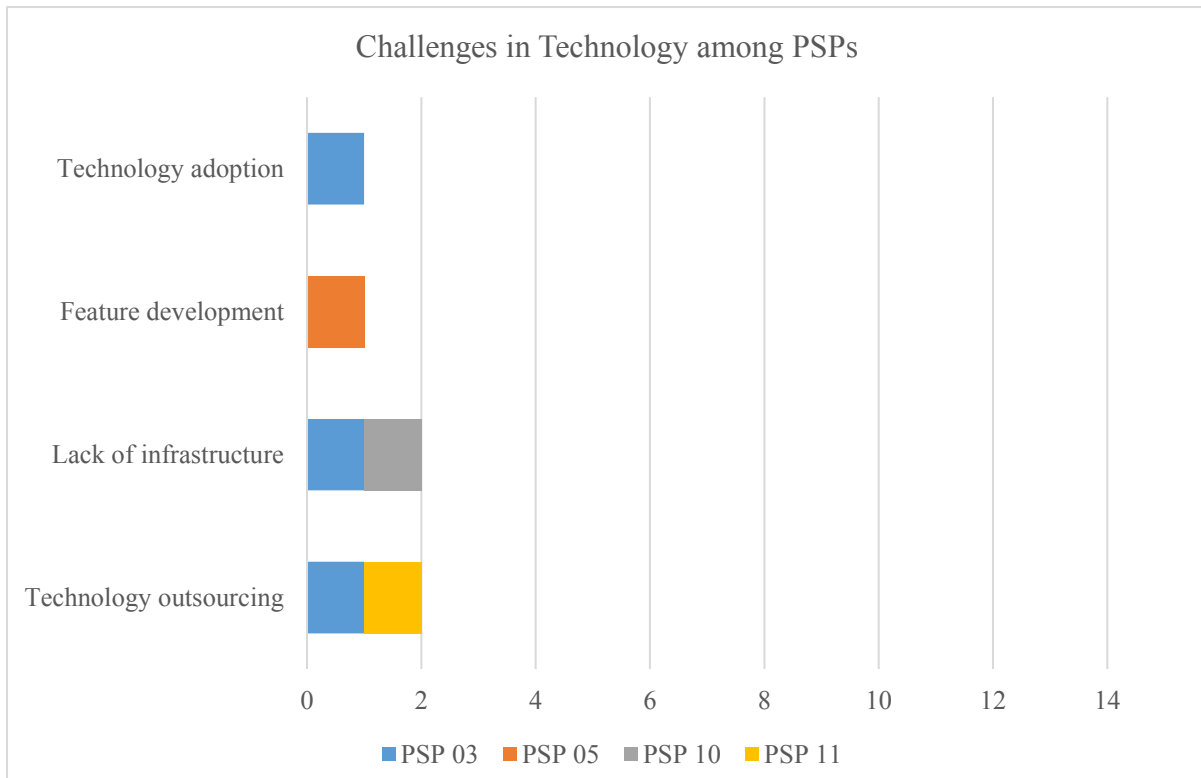


Figure 4.11: *Challenges in Technology among PSPs*
 Source: Authors (2020)

D. Challenges in terms of Registration

Three PSP companies namely PSP 03, PSP 06, and PSP 13 said that they did not have any challenge in terms of business registration. However, the other eleven companies mentioned that faced either one or two challenges related to registration. Those challenges include time-consuming and bureaucracy. Six companies namely PSP 02, PSP 05, PSP 07, PSP 08, PSP 09, and PSP 12 complained that it took long time for business registration. Moreover, there are four PSP companies including PSP 01, PSP 10, PSP 11, and PSP 12 said that bureaucracy is a challenge for business registration. The process to get the license was complex, particularly, the process to get the former license, Third-Party Processor (TPP) license. To get the TPP license, they had to ask a bank to be the guarantor. Figure 4.12 shows challenges in registration among PSP companies.

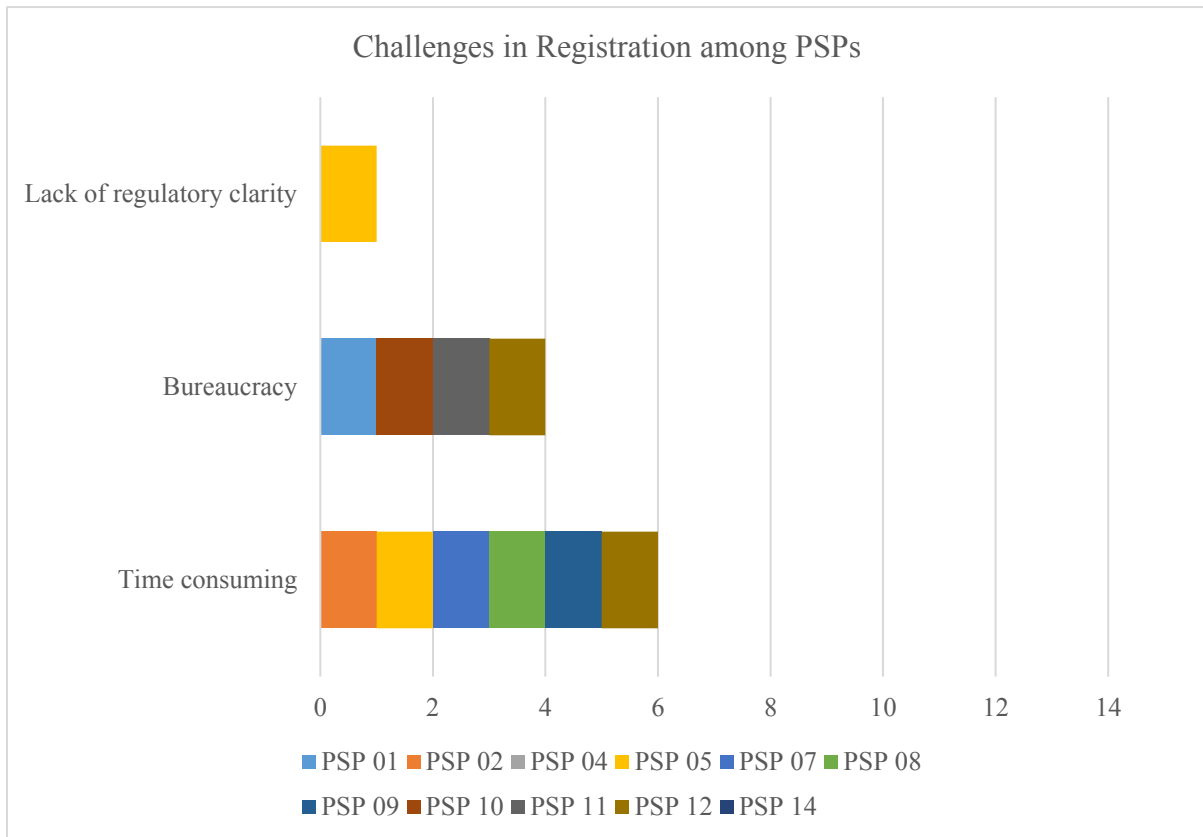


Figure 4.12: *Challenges in Registration among PSPs*
 Source: Authors (2020)

E. Challenges in terms of Competition

Six out of the fourteen PSP companies mentioned that they do not have any challenges, while the rest of the companies namely PSP 02, PSP 03, PSP 05, PSP 07, PSP 08, PSP 10, PSP 11, and PSP 13 said that they face one or two challenges in terms of competition in the market. As shown in Figure 4.13, those challenges include too many players and unfair market competitions. Seven companies, except PSP 07, complained that there are too many players in the market. They explained that the Cambodia market is small and with too many players in such market make it hard for them to get customers and scale up their business. Moreover, four of them complained that there is no fair market competition. Those companies are PSP 05, PSP 07, PSP 11, and PSP 13. Unfair market competition includes some aspects such as no price cap for fee charge on customers, too many similar business models, and the use of the same access code that can confuse customers. One of the four PSP companies stated that some companies are having close connection with regulators, making them be able to get preferential treatment.

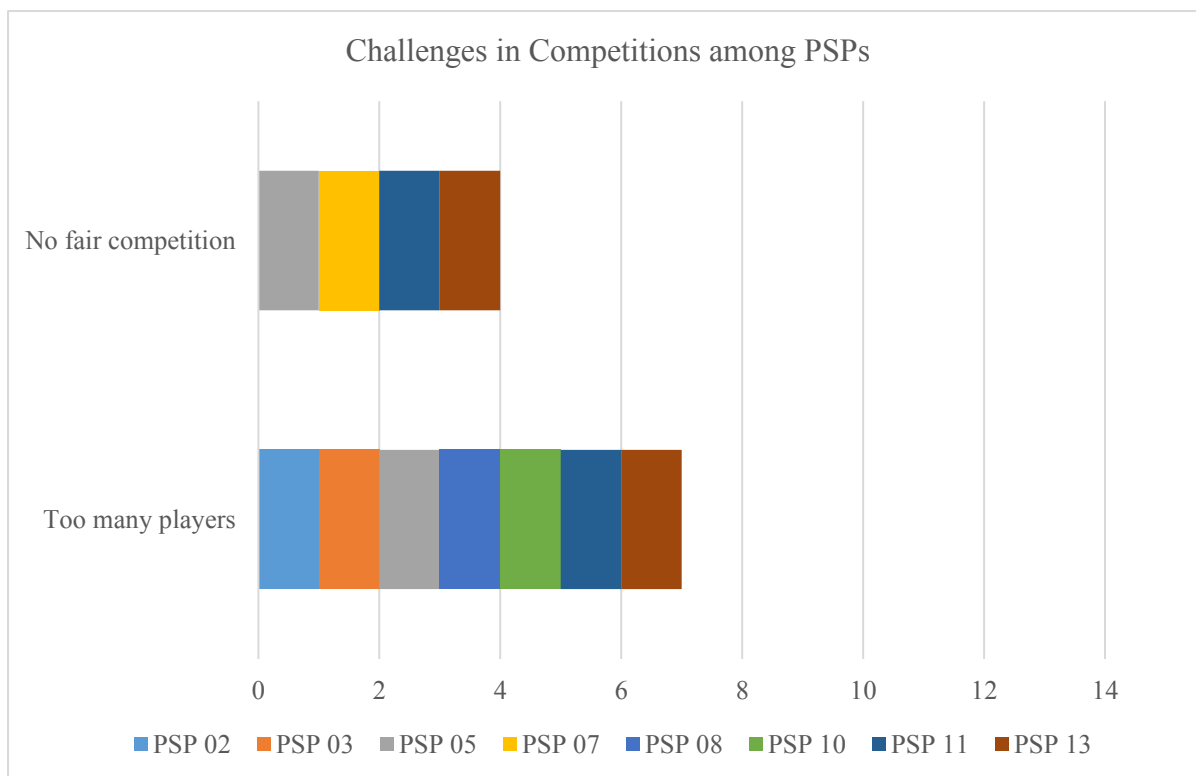


Figure 4.13: *Challenges in Competitions among PSPs*

Source: Authors (2020)

F. Challenges in terms of Support

Among fourteen PSPs, five PSPs got support. Three companies namely PSP 04, PSP 09, and PSP 14 were supported from the government, and other two companies namely PSP 12 and PSP 13 received financial support from international organizations or companies. The support from the government include training on anti-money laundering and countering the financing of terrorism (AML/CFT), two-year tax exemption, and facilitation in terms of regulations. For those who did not get support from the government, they suggested that the government needs to provide more support in terms of tax exemption and should have more commitment to support FinTech development by encouraging the public to use digital payment including small retailers and encouraging more government agencies to accept digital payment from the public.

G. Challenges in terms of Regulation

Only two companies namely PSP 01 and PSP 13 among the fourteen PSPs said that they do not have any challenges in terms of regulation. There are seven challenges raised by the other

twelve PSPs facing challenge in regulation. Those challenges include lack of regulatory clarity, bureaucracy, lack of incentive to support FinTech startups, high capital requirement to get the license, time-consuming, missing regulatory framework for FinTech, and no fair competition in the market. Among these seven challenges, lack of regulatory clarity, bureaucracy, and lack of incentives to support FinTech startups are the most outstanding challenges. There are four companies namely PSP 04, PSP 08, PSP 09, and PSP 10 mentioning that some of regulations are not clear for them to understand. Those unclear regulations include the ones related to tax exemption for SMEs, derived from unclear definitions between SMEs and startups, and regulations for tax compliance in general. In terms of bureaucracy, four companies namely PSP 05, PSP 06, PSP 08, and PSP 10 complaints include different requirements among government institutions, which are hard for them to follow, and very complicated process to follow. One of them even stated that GDT and NBC are the main bottlenecks for FinTech and e-commerce. Moreover, three companies namely PSP 02, PSP 06, and PSP 10 mentioned that lack of incentive to support FinTech startups or general startups is another challenge for them. Lack of incentives mentioned by them include tax exemption or government loan for those startups. Figure 4.14 shows main challenges in regulation among PSPs.

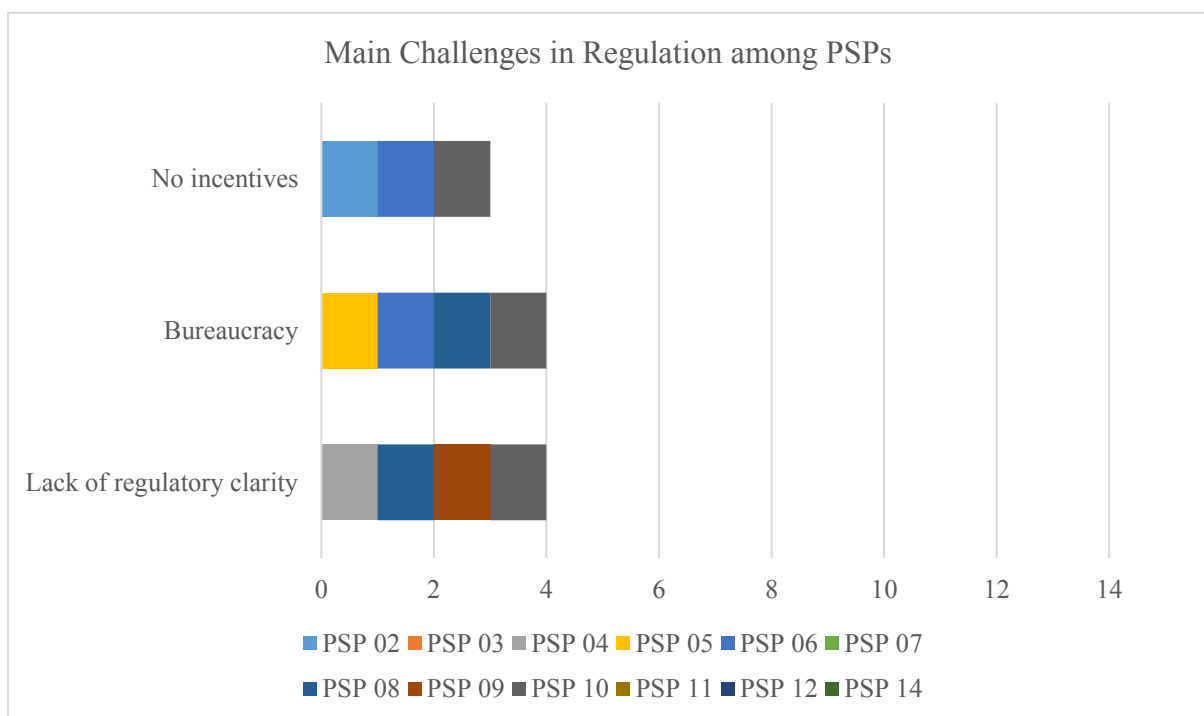


Figure 4.14: *Challenges in Regulation among PSPs*
Source: Authors (2020)

4.2 Strength, Weakness, Opportunity, and Threat (SWOT) Analysis of FinTech Companies in Cambodia

4.2.1 SWOT Analysis of InsurTech Company

A. Strengths

The strength that the InsurTech company perceived as its key success factor is its marketing strategy. This company believes that by using technology to sell the services and products, it can reach out to more customers than traditional insurance companies.

B. Weaknesses

There is only one weakness or aspect to improve in this InsurTech company, that is, creativity. The interviewee said that the company not only needs staff that have technical skills, but also needs those who have high creativity or can think out of the box. The reason is without creativity, the company cannot grow their business well in the market.

C. Opportunities

In terms of opportunities, this InsurTech company mentioned that there is a high market demand in Cambodia. The target clients for this company are the unbanked and those who live just right above the poverty line. Since there is a large proportion of Cambodian population who are unbanked²³ and live just above the poverty line, is an opportunity for this company to do business.

D. Threats

There is only one threat that this InsurTech company concerns with, that is, fraudulent claims from customers. There were a few cases happened already in the past. However, since there are specialists in the company, it can detect those claims. Figure 4.15 shows the summary of SWOT analysis of the InsurTech company.

²³ Unbanked refers to those who have never had access to formal financial products.

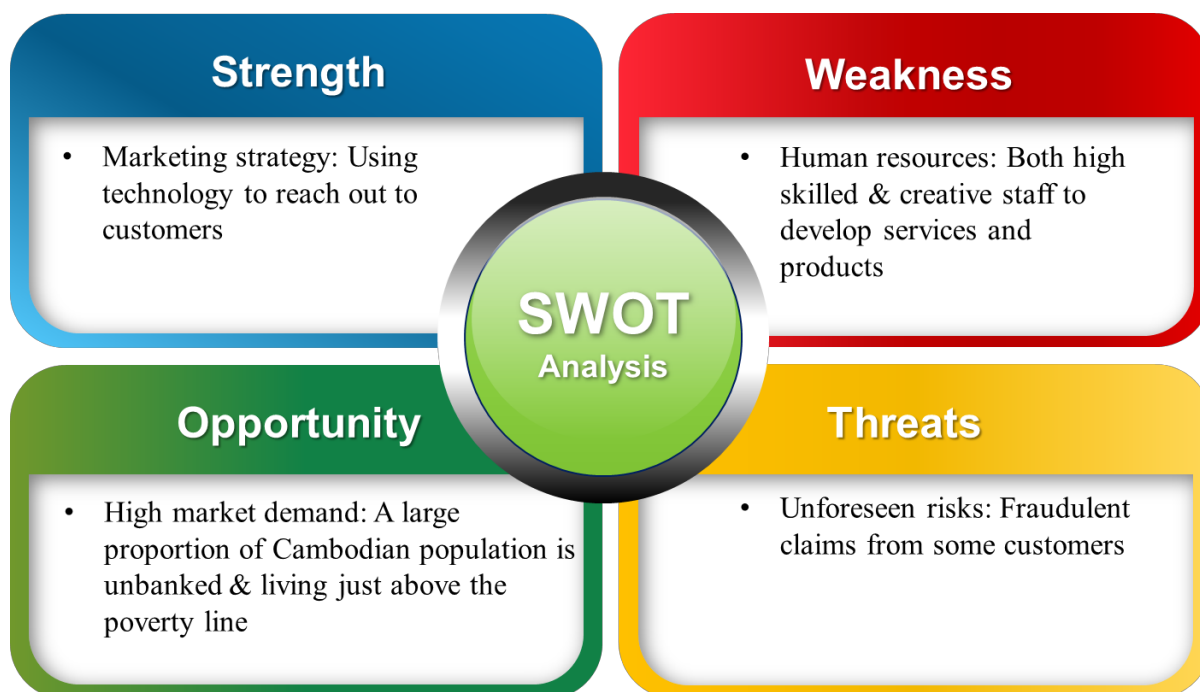


Figure 4.15: *SWOT Analysis of the InsurTech Company*
 Source: Authors (2020)

4.2.2 SWOT Analysis of Lending Service Provider Companies

A. Strengths

Different aspects of marketing strategies are claimed to be key success factors or strengths of the lending service providers. There are four marketing strategies used by those companies. They are customers' trust, customer-centric, advertisement, and "product-market fit" strategy. Customers' trust, the common marketing strategy that both lending service provider companies believe, is their key success factor or strength. Both companies claimed that when their existing customers have trust in their companies, those existing customers will work as a referral to introduce new customers, enabling them to acquire more customers in the market. Customer-centric is another marketing strategy considered as a key success factor or strength by one of these companies. That lending service provider company mentioned that understanding customers is very important to make the business success since the company can design products for the right targets. The target customers of that lending service provider company are those around 20 years old, who do not have any collateral or official documents to get loans from traditional banks or MFIs. However, their value assets are smartphones. Therefore, this

company approves loans based on smartphones of customers by asking them to send pictures of their smartphones. Although both lending service providers use a type of social media, Facebook, for advertisement, one of them said that the business has grown because they have used different media channels rather than one media channel to make their company known to the public. That company has created a financial education website, not only educating people, but also making them know the company. In terms of launching their services and products, both companies did not wait until their services and products including their systems to be perfect to launch. They launch their services and products in the market while keep improving them.

B. Weaknesses

There are three main aspects or weaknesses that need to be improved. Those weaknesses are improvement in systems and quality of their products, improvement in human resources, and improvement in marketing strategies in terms of customer education. Both lending service providers said that they need to further improve their systems and products in order to get more customers. Only one company said that they need to provide more internal training to their staff so that they can understand the system and business model of the company better. Besides, only one company is concerned about customer education. That company said that they will improve their financial education website to increase the level of financial literacy for the public. Doing so will to some extent make the company able to get more customers since they will realize that they do not need to depend on banks or MFIs to borrow money.

C. Opportunities

Market demand, technology adoption, and the trend of using digital money are the three main opportunities raised by those lending service providers. One of the lending service providers claimed that there are many people who have good business plans. However, they just lack collaterals or documents to get loans from banks and MFIs. Therefore, this is a great chance for the company to do business with them while those banks and MFIs ignore this chance. In terms of technology adoption, one of the companies mentioned that the speed of

technology adoption of Cambodian people is faster than some of other Asian countries. Therefore, it is an opportunity to do FinTech business in Cambodia. Besides, the trend of using digital money in the Cambodia market is perceived as an opportunity in the future. One of these companies mentioned that since NBC launched Bakong, the interviewee’s company expects that soon they can expand their business in cryptocurrency in Cambodia.

D. Threats

Lack of regulatory framework for P2P lending and low level of financial literacy in the market are the two key threats raised by those lending service providers. Lack of regulatory framework for P2P lending was raised by both companies. Their concern is that they are now operating under the Pawnshop license instead of P2P lending license. Therefore, they are afraid that one day the government may ban their business. In terms of low level of financial literacy, the concern is that without financial literacy, some people may not know how to invest or use their loan wisely, leading to high default rate. Figure 4.16 illustrates the summary of SWOT analysis of the lending service providers.

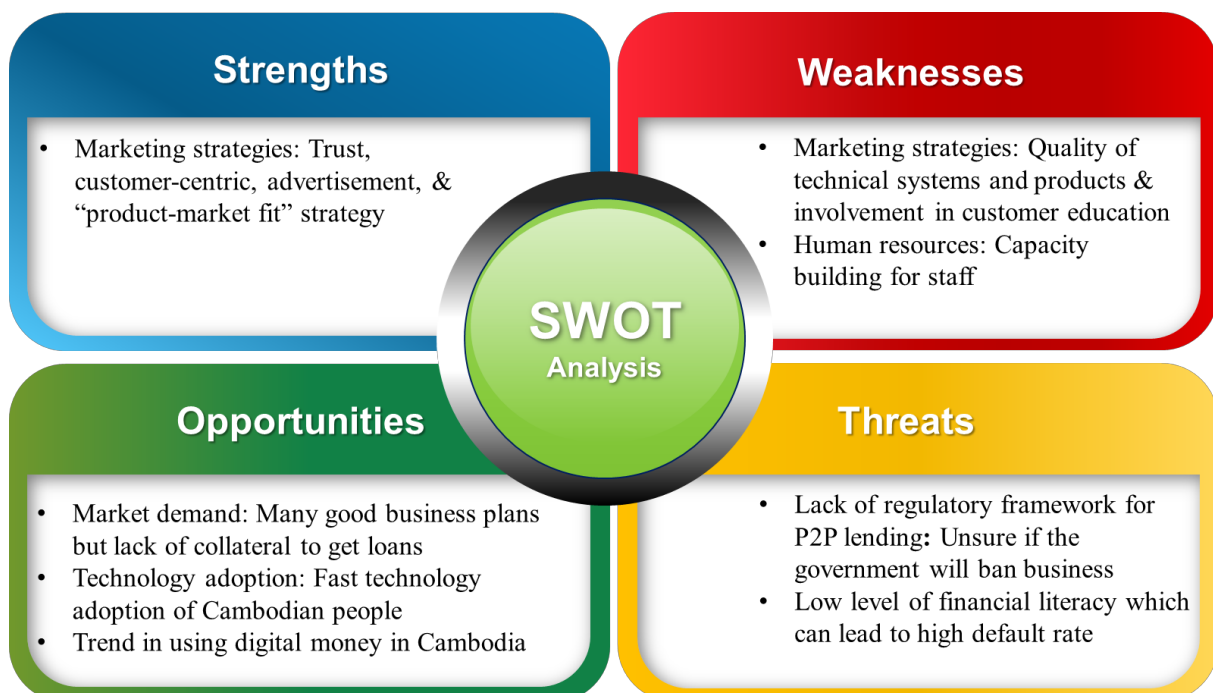


Figure 4.16: *SWOT Analysis of the Lending Service Providers*
Source: Authors (2020)

4.2.3 SWOT Analysis of PSPs

A. Strengths

There are three main key success factors or strengths for the PSPs, which includes marketing strategies and human resources, and leadership. The following paragraphs are the details of each strengths.

Marketing strategies are the most outstanding strengths followed by leadership and human resources. Twelve out of the fourteen PSPs stated that success of business depends on their strong marketing strategies, and two most cited marketing strategies are constantly improving quality of products and services, and building their solid brands. Those companies said that to keep their existing customers and attract new customers, they constantly improve the quality of their products and services by building more functions in their applications (apps)²⁴ or developing their apps to become one-stop service apps and increasing the number of agents or merchants to improve their customers' accessibility. Another success factor or strength that those companies claimed to be a part of their business success either now or in the future is their brands. By building their brands, some companies have created unique services, products, or values that differentiate their companies from the others. e-KYC, flexibility between online and offline for apps, and financial inclusion are what some of those companies mentioned as the way to build their brands in the market.

Six of the companies claimed that their success depends on human resources, which include talents and attitudes. Without exceptionally talented staff, it is hard for those companies to move fast enough to catch up or surpass their competitors in the market. Moreover, self-motivation and commitment to work are the attitudes that those companies mentioned to be critical to foster their business growth.

In terms of leadership, clear vision is the main attribute perceived as a strength by some of the PSPs. Five companies namely PSP 05, PSP 06, PSP 11, PSP 13, and PSP 14 stated that having clear vision is the key success for their companies. The reason is that clear vision makes the top-level managers to support staff's initiatives that align with the companies' visions,

²⁴ Apps here refer to software applications that are made by those PSPs for their customers to install and use.

while it can help staff initiate what can make companies to achieve the visions. This in turn makes both the top-level managers and staff to understand and support one another's course of action.

B. Weaknesses

Human resources, number of agents, and investment are the three main aspects of weaknesses raised by many of the PSPs. In terms of human resources, there are eight companies mentioned that they need to improve human resources in their companies. Not only is it hard for them to hire talent staff or those with high technical skills to work in their companies, but it is also hard for them to retain existing high talent staff in their companies. Therefore, they need to think or redesign their companies' policy to retain them. Moreover, five companies are concerned on their low number of agents in the market. Therefore, they need to increase the number of agents to serve more customers. Lack of investment is another weakness mentioned by three PSPs. They need more investment either to launch their first product in the market or expand their business.

C. Opportunities

Interestingly, all the fourteen PSPs mentioned only the aspects related to market demand as the opportunities to do FinTech business in Cambodia. Underserved services and products in payment, the unbanked, and young population are the three main aspects of the market demand mentioned by nine PSPs.

D. Threats

Among many threats mentioned by those PSPs, technology literacy in the market and lack of regulatory framework for FinTech. Five of those PSPs said that the level of technology literacy in the market is still limited so that their identity can be easily stolen, which may affect business operation to some extent. Moreover, four of those PSPs mentioned that in Cambodia there is lack of regulatory framework for FinTech, specifically those related to digital security and digital identity. If there is any problem happens, it is going to disrupt the whole FinTech ecosystem. Figure 4.17 shows the summary of SWOT analysis of the PSP.

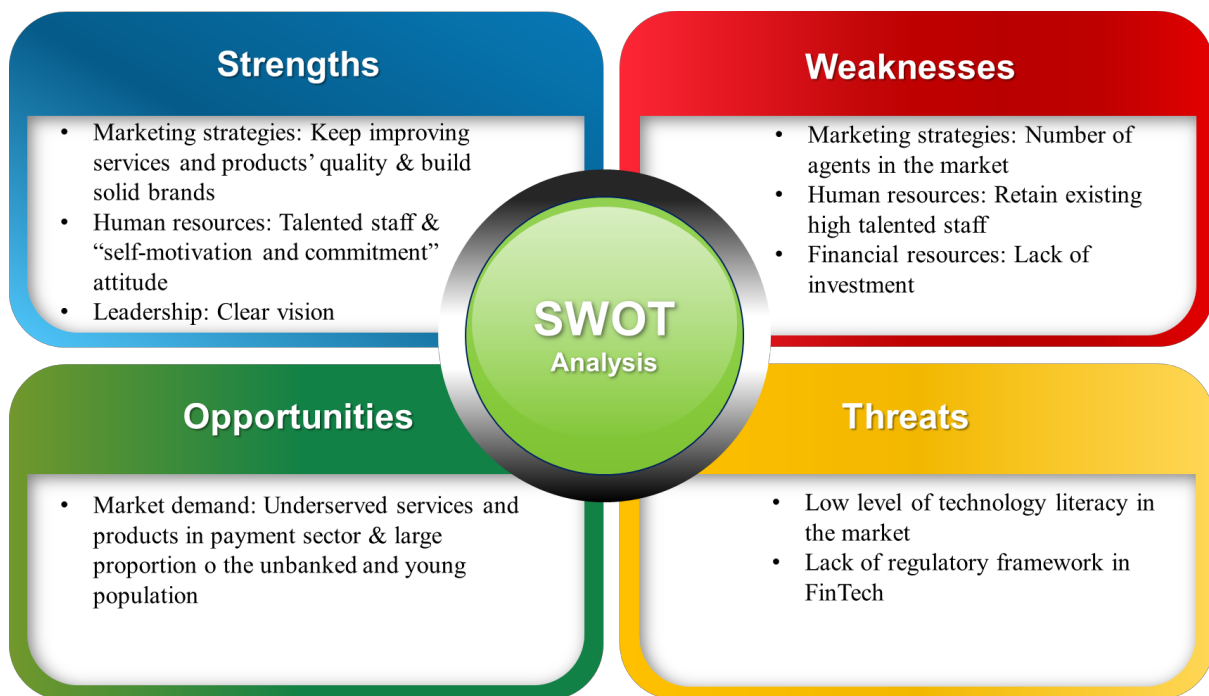


Figure 4.17: *SWOT Analysis of the PSP Companies*
 Source: Authors (2020)

4.3 FinTech Regulatory Framework: Comparison between Cambodia and Emerging FinTech ASEAN Countries

4.3.1 Justification for Selecting Countries

This section aims to answer the third research question, that is, “What FinTech regulatory framework is missing in Cambodia compared to the other emerging FinTech ASEAN countries?” Chapter 2 describes FinTech development and regulatory framework in each emerging FinTech ASEAN country. The emerging FinTech countries include Singapore, Indonesia, Malaysia, Thailand, the Philippines, and Vietnam. However, to answer the third research question, only three emerging FinTech countries namely Singapore, Indonesia, and Thailand are selected to make comparison. There are two main reasons for selecting those three countries. The first reason is related to the context of laws, and the second reason is proactiveness in FinTech innovative regulatory initiatives.

Although Singapore is using the common law and Cambodia is using the civil law, it is still worth to select Singapore to make a comparison. The reason is that Singapore’s FinTech development is widely recognized not only in ASEAN, but also the world. Moreover, Singapore is the first in ASEAN to initiate many innovative regulatory initiatives to develop

FinTech in the country. Therefore, making a comparison with Singapore enables Cambodia to learn many good lessons from it, which could enable Cambodia to leapfrog in FinTech.

Indonesia is selected for comparison. The reason is similar to Cambodia, Indonesia is also using the civil law. Although Indonesia and Malaysia regulatory framework context for FinTech is quite similar, Indonesia has a greater number of startup unicorn companies. Even though those unicorns are not in the FinTech area, but they prove that Indonesia has favorable environment for innovation development and adoption. Exploring more of what Indonesia has done in FinTech would be beneficial for Cambodia.

Aside from the reason that Thailand is using the civil law like Cambodia, Thailand is selected for comparison in this study because of the country's proactive in FinTech development. It has been initiated many regulatory innovations for FinTech. Moreover, among all the emerging FinTech countries, Thailand is the best country to make a comparison giving that Cambodia and Thailand share the same historical roots, manifesting in similar language, culture, and socio-ethnic characteristics.

4.3.2 Existing and Missing Aspects in Cambodia's Regulatory Framework compared with Emerging FinTech Countries

Table 4.1 shows comparison of the regulatory frameworks between Cambodia and the three emerging FinTech ASEAN countries, that is, Singapore, Indonesia, and Thailand. As shown in Table 4.1, there are two similarities between Cambodia's regulatory framework and the other emerging FinTech countries.

Table 4.1: *Comparison of the Regulatory Frameworks between Cambodia and Emerging FinTech ASEAN Countries*

	Singapore	Indonesia	Thailand	Cambodia
Regulators	MAS	OJK, BI, MOCIT & Ministry of Trade	BOT, SEC, & OIC	MEF & NBC
Innovative Regulatory Initiatives	Two innovative offices, one regulatory sandbox, & RegTech	One innovative office & two regulatory sandboxes	Four regulatory sandboxes & RegTech	None
Private Sectors as Enablers	N/A	FAOM	Thai FinTech Association	ABC, CFA, CAFT, NUM, AIB, & Cambodia-Japan Cooperation Center (CJCC)

Source: Adapted from various sources

The first similarity between Cambodia and emerging FinTech countries' regulatory framework is regulators in the financial sector are more involved in FinTech than regulators in other sectors. We can see that across all these countries including Cambodia, generally the government institutions whose mandates are related to the financial sector are much more involved and lead in FinTech than the technology-related regulators despite the fact that technology plays the main role in FinTech. Although in Indonesia, we can see that there is an involvement from MOCIT whose one of the mandates is related to technology, it does not play as many roles as OJK and BI whose mandates are related to the financial sector. This can be inferred from the fact that there is no FinTech regulations or innovative regulatory initiatives related to FinTech by MOCIT. Only OJK and BI have their own regulations and initiative related to FinTech in Indonesia. The second similarity between Cambodia and those three countries is positive attitude of the governments towards FinTech development. We can see that it is similar to those countries in particular Thailand (Thailand 4.0 economic model), the RGC has had positive attitude towards FinTech development. It is evident by the commitment

of the government to transform to the digital economy. The positive attitude of the government is vital to shape public attitudes, leading to more public consciousness resulting more FinTech innovation and widespread of FinTech adoption in the country.

However, there are two key differences in regulatory framework between Cambodia and those three countries. These two differences are considered the missing aspects for FinTech development in Cambodia. The first difference or missing aspect is the lack of specific law or regulations for FinTech in Cambodia. Although the articles related to digital payment is indicated in Chapter 9 of e-commerce law of Cambodia, it is not enough to cover a broad range of FinTech business models in Cambodia since it is only related to payment. Besides, the e-commerce law was just released and effective from May 2020, meaning that it is not sure if that law can be effectively enforced. The second different or missing aspect for Cambodia is that there is no innovative regulatory initiative for FinTech from the regulators or government yet. There is no specific innovative regulatory initiative for the FinTech sector in the country.

5. Discussion



Chapter 5: Discussion

Chapter 5 aims to interpret and justify the findings in the study. Discussion is made according to the research questions of this study.

5.1 Challenges in FinTech Ecosystem in Cambodia

This study found that there are two the main conflicting points of view regarding the challenges among stakeholders in the FinTech ecosystem in Cambodia. Those conflicting points of view include unfair market competition and weak business models. Lack of regulatory clarity and framework for FinTech in Cambodia, and lack of human resources are the challenges that most of every stakeholder in the study agree that they can hinder FinTech development in Cambodia. Although they had no conflicting points of view over these aspects, it is crucial to deeply understand these challenges by finding the root causes.

5.1.1 Unfair Market Competition

The first most outstanding conflicting point of view among stakeholders is market competition. Unfair market competition is one of the main challenges claimed by many PSPs. Some PSPs claimed that it is challenging for those that do not have large financial capital or parent companies to compete in the market since there are too many players. In addition, they even pointed out that a few companies have been trying to capture the market share by waiving fee since there is no price cap set in the market. However, one of the regulators and one of the development partners argued that there should be a fair competition in the market, meaning that the number of players should not be limited as long as they can bring value (new services and products) to the market, and there should not be any price cap.

Many players with price competition in the market can be a healthy challenge. If looking from the perspective of accessibility and affordability for Cambodian people or from the perspective of financial inclusion improvement in Cambodia, the more competitions among FinTech companies in the market, the more Cambodian people, in particular, the underbanked and unbanked people will be able to engage more in economic activities and improve their lives due to low transaction cost. If looking from the perspective of innovation, more competitions

are highly likely to lead to more innovation in the market. To survive and stay competitive in the market, FinTech companies need to innovate their services and products and create new business strategies such as targeting new segments of customers or expanding their services and products to other areas that are underserved. In the era of Industrial Revolution 4.0, competition is everywhere, in particular, in the dynamic evolving sectors like FinTech. Therefore, FinTech companies have only two choices: keeping innovative or being vanished in the market.

Having stated so does not mean that regulators should not have any intervention in the market. Regulators can play a role to ensure that there is a fair competition in the market. Regulators should ensure that they do not have any preferential treatment to any player in the market. Every player gets fair treatment according to rules and regulations, meaning that rules and regulations should be applied consistently to every player in the market.

5.1.2 Weak Business Models

This study found that some investors are hesitant to invest in FinTech because they think that the business models proposed by some of the startups were just copy and paste from the others. There is no uniqueness. In addition, those business models seem not to solve real problems in the context of Cambodia, and it is likely that those business models cannot be executed in the market. However, this idea was argued against by some FinTech startups that some investors fail to understand their business models well. Some FinTech startups in Cambodia have been invested from outside, proving that their business models are strong enough to get investment. Moreover, some FinTech startups also pointed out that generally unicorns in other ASEAN countries also have used “copy and paste” business models from other countries and conceptualized the models successfully by operating the models based on the nature and context of the country that they built the business models. Some FinTech startups also claimed that not all business models in Cambodia imitate from the others. Some of them also have their originality.

In fact, copy pasting, or imitation is a brilliant business strategy that has been successfully used in the market as long as imitators are smart enough to make ideas become theirs. There are

many well-known companies that imitated others' business models at the beginning of their business journey. For example, Google used the copy pasting strategy to build their business model. Google copied the business model from a company called Overture, a paid search specialist company. Facebook has also been accused of copying the idea from another social network site created by the twins namely Cameron and Tyler Winklevoss. IBM is also considered a foremost creative imitator of the world by taking the best lessons learnt from Commodore machines and Apple and creatively create their first commercially viable product. Samsung was also sued by Apple for copying "the look and feel" of iPhone smartphone and iPad tablet (Kaul, 2011). Copy pasting or imitation can be a good business strategy for FinTech startups in Cambodia. The reason is imitation will help to save time and financial resources for the FinTech startups. The FinTech startups do not need to spend a great amount of time and money on research and development since innovators and pioneers have already paving the way for them. What the FinTech startups in Cambodia need to do is to redesign those business models to fit in the market. Imitation or innovation is not a problem as long as the idea works in the market.

5.1.3 Lack of Regulatory Clarity and Framework for FinTech.

Lack of regulatory clarity and framework for FinTech were pointed out by stakeholders across the sectors including the regulators themselves. However, it is still worth discussing why lack of regulatory clarity and framework for FinTech are still such a case when the regulators themselves accepted this. This study explains this matter from two perspectives. The first perspective is from the innovation trilemma that is faced by the regulators in the world to regulate FinTech, and the second perspective is from the current FinTech ecosystem in Cambodia.

To be fair, lack of regulatory clarity and framework for FinTech are not the only challenges for FinTech development in Cambodia. It is a well-known fact that FinTech has created new business areas that lack official oversight. Therefore, the regulators need some time to adapt to emerging innovations and get used to its complexity (The Wharton School, 2019), while they

need to ensure that regulatory framework for FinTech will not disrupt innovation and minimize risks in the market as much as possible. According to Brummer and Yadav (2017), there is a policy dilemma to supervise FinTech among the regulators. The regulators can only achieve, at best, two out of among three goals including: 1) clear rules, 2) market integrity, and 3) innovation. Regulators in the world need to face the tradeoffs between these three goals, which is known as “innovation trilemma”. Therefore, it is understandable that the regulators in Cambodia are highly likely in the trap of innovation trilemma. The regulators in Cambodia may have decided to prioritize market integrity to decrease the risks in the market, which can be considered the best approach for Cambodia where the level of financial literacy remains low at (Morgan & Trinh, 2017) with a low level of digital literacy (UNDP, 2020). Moreover, regulators in Cambodia are also likely to achieve regulatory clarity at the same time with market integrity by trying to improve regulatory framework for FinTech, which can be seen from active movement of NBC by adopting “Test and Learn Approach” in digital payment and MEF’s plan to establish NBA for the non-banking sector to strengthen and ensure effectiveness of management, supervision, and development of the non-banking sector in Cambodia.

Looking from the perspective of the challenges in the FinTech ecosystem, lack of human resources can be one of main attributes to lack of regulatory clarity and framework for FinTech in Cambodia. This is evident when all the regulators mentioned that many of members of their staff have not known or understood what FinTech is. Therefore, it is understandable that it is quite a challenge for the regulators in Cambodia to make regulatory for FinTech clear enough and provide adequate regulatory framework for FinTech companies. It is worth mentioning that although there is traditional regulatory framework for the financial sector, ones need to accept that applying the traditional regulatory framework to new financial sector, that is, FinTech, is conceptually difficult (Brummer & Yadav, 2017). Therefore, without adequate human resources to understand and catch up with FinTech development in the market, it is quite challenging for the regulators to provide clear and sufficient regulatory framework for FinTech. Based on the lesson learnt from Singapore whose FinTech ecosystem is so vibrant with clear

and sufficient regulatory framework for FinTech, lack of human resources for regulators is not a main challenge. Some staff in MAS had even knowledge in Python (Lin, 2019).

5.1.4 Lack of Human Resources

Lack of human resources is one of the main challenges claimed by the majority of stakeholders involving in this study. Lack of skills or capacity/talent are the most frequently mentioned by the majority of stakeholders. When looking into more detail of what each stakeholder means when they refer to lack of skills, it can be noticed that there are four skills perceived as inadequacy for human resources in the market, and those skills include: 1) Technology, 2) Finance, 3) Entrepreneurship, and 4) talent mix. Technology is one of the main skills that was claimed to lack in the market. Concluding from what those stakeholders said technology in this study refers to an ability to develop software to turn ideas into solutions. Another skill is finance. Financial skill in this study refers to expertise within financial services enabling a person to understand services and product, opportunities, and pain-point in the sector. The third skill, which seems to be less tangible, is entrepreneurship. Entrepreneurship in this study refers to an ability to identify business opportunities and make the best use of the resources to achieve business goals. Entrepreneurship is what some of those stakeholders including the FinTech companies claimed to be a necessary skill that is difficult to find in the market. Last but not least, talent mix is another skill that claimed to be important for FinTech. Concluding from what stakeholders, in particular, the FinTech companies, talent mix in this study is when a person possesses a variety of skills including technology, finance, and entrepreneurship. Some of the FinTech companies claimed that they need both the staff having advanced skills who is specialized either in technology or finance and those having talent mix.

Lack of human resources is not only a challenge for FinTech in Cambodia. The finding of this study related to lack of human resources in terms of technology is consistent with previous studies such as Heng (2019), Markova and Wray (2016), National Employment Agency (2018). Those studies found that there is a clear skills gap in Cambodia within the IT sector, making most businesses find it hard to recruit competent IT staff. One of the possible reasons to explain

the shortage of technology skill can be explained by the weak quality education system related to math and science (Beller et al., 2016). In terms the shortage of financial skill, there is few studies related to it. However, according to the interviews with stakeholders during this study, one explanation for this shortage is there is a high demand from banks and MFIs in the market for this skill in the market. Since some FinTech companies are just local startups, they cannot compete with banks and MFIs to get competent staff in financial skill. In terms the shortage of entrepreneurship in Cambodia, this study's finding is consistent with the 2019 Global Entrepreneurship Index that ranks Cambodia 108 out of 137, which is behind the lower middle-income countries and other countries in ASEAN (Szerb et al., 2020). According to the policy note by World Bank Group (2018), the entrepreneurship ecosystem of Cambodia is underdeveloped, contributing to many factors including a limited role of universities in supporting entrepreneurship, low cultural support for entrepreneurship, and lack of a clear and coordinated strategy for entrepreneurship development. Regarding talent mix, it may not only be in Cambodia that it is quite challenging to find such kind of human resources, but also in other countries as well. There may be people in the market that have talent mix; however, those people may not be in the market in search for job opportunities, but rather they have already established their own businesses. There are few studies mentioning the shortage or importance of talent mix for individuals in the market for FinTech in literature, only the importance of talent mix for the FinTech ecosystem such as (Brett, 2017). It means that talent mix should be contributed from different individuals who has specialization in different skills in the market. In fact, lack of human resources is not only a challenge in Cambodia whose FinTech ecosystem is still in the nascent stage, it is also a challenge in the countries whose FinTech ecosystems are vibrant such as the United Kingdom and Netherland (see more in Kroft et al.(2019) and Wahed (2020). However, the difference is only it is not a main challenge for those since they can attract and retain human resources from other countries.

5.2 SWOT Analysis of FinTech Companies in Cambodia

There are two findings in the second research objective, which is worth discussing. The first of human resources appear to be both a strength and weakness, while it is observed that an opportunity (technology adoption) happens along the threats (low level of financial and digital literacy). This study found that the majority of the FinTech companies that are startups perceived that human resources are their weakness since it is hard for them not only to recruit competent ones, but also to retain them. However, the FinTech companies, in particular, those who have the strong support or parent companies perceive that human resources are their strength since they can easily attract and retain competent staff to work in their companies. This finding indicates that not only there is a high demand for those who are competent in FinTech, but it also indicates that some startups are struggle not only in business competition but also human resource competition in the market.

Moreover, this study found that FinTech companies perceive fast technology adoption rate in Cambodia as an opportunity for them to operate business, while at the same time some of them also acknowledged that the levels of financial and digital literacy remain low among Cambodian people. Although there is an increase in technology adoption by Cambodian people, which is a result of a sharp increase in mobile broadband penetration (UNDP, 2020), the level of financial literacy remains low (Morgan & Trinh, 2017) with a low level of digital literacy (UNDP, 2020). High adoption rate along with low level of financial and digital literacy may somehow pose risks to the market both for the FinTech companies and their customers.

5.3 Lesson Learnt from Emerging FinTech ASEAN Countries

There are two lessons learnt from the emerging FinTech ASEAN countries that are of value for Cambodia to learn from. Those are alignment between commitment and actions, and specific regulators to regulate FinTech and regulators' initiative for FinTech development. Details of the lesson learnt are as follows:

- **Enabling regulatory framework for FinTech development:** It can be inferred that the governments of emerging countries that we are making the comparison including

Singapore, Indonesia, and Thailand have been committed to FinTech development by providing enabling regulatory framework for FinTech development. Take Singapore, for example – her broader policy emphasizes on using technology as a key fact of nation-building or known as “Smart Nation” initiative (Lin, 2019). To do so, Singapore government has regulated the FinTech sector through different institutional and regulatory measures including reforming regulations by introducing a regulatory sandbox, improving integration of regulatory infrastructure, and improving regulatory clarity for FinTech. Another example is Thailand. The Thai government has committed to transforming to digital economy or Thailand 4.0. Its aim is to unlock the country from several challenges by using innovation, technology, and creativity (EY, 2019). To achieve Thailand 4.0, the Thai government has initiated key initiatives under its National e-Payment Master Plan to facilitate its Thailand 4.0 which are PromptPay scheme, debit card usage expansion scheme, eTax system, and social welfare and government e-payment system. Thailand has four key policies to encourage FinTech ecosystem such as Project Inthanon, InsurTech Infrastructure, Digital Park Thailand, and PromptPay to help promote FinTech development. Project Inthanon was launched by BOT in August 2018. It is a collaboration of eight banks in Thailand and technology partner R3, a consortium of international banks developing DLT to financial services, to design and develop a proof-of-concept prototype for wholesale funds transfer by issuing wholesale Central Bank Digital Currency. Digital Park initiated by Digital Economy Promotion Agency (DEPA) to push the country’s digital innovation. InsurTech under the Center of InsurTech Thailand established by the Thai Office of Insurance Commission aiming to conduct research, provide technological exchange, and insurance product development. PromptPay is an electronic interlink bank transfer system that was launched in early 2017 (EY, 2019).

- **Proactiveness of regulators for FinTech development in their respective jurisdictions with collaboration with the others:** According to the FinTech

regulatory framework in each selected emerging FinTech country, we can see that there are at least three innovative regulating initiatives for FinTech development, most of which are from the governments' initiatives (except F13, the sandbox initiated by the Thai Fintech association that is a private sector). Those initiatives indicate proactiveness of regulators in their respective jurisdictions. In Indonesia, BI has initiated the regulatory sandbox that covers all activities utilized technology in services or products that might affect money stability, financial system stability, or payment system efficiency, security or dependability (Batunanggar, 2019). Regarding OJK, since its main responsibilities are to supervise capital market, that is, non-bank financial institutions (NBFI), including pension, insurance, financial companies, venture capital, and guarantee companies, OJK's regulatory sandbox covers only those aspects within their responsibilities. OJK's regulatory sandbox cover digital finance innovations in non-payment activities, including fund raising, investment management, crowdfunding and insurance, etc. (Batunanggar, 2019). However, that does not mean there should not be collaboration between those regulators or stakeholders. There is still collaboration between one regulator to the others. For example, although MAS is the only main financial regulator in Singapore with its FTIG, it does not mean that MAS is working alone to accelerate FinTech. FTIG staff work closely with other government agencies to respond to FinTech companies' enquiry (Lin, 2019). The key point here is that every regulator needs to regulate their own FinTech activities to a large extent but needs collaboration with other stakeholders to develop FinTech effectively.

6. Conclusions



Chapter 6: Conclusions

Chapter 6 aims to summarize the key findings from the study. Each point will be summarized according to the research questions.

6.1 Challenges in FinTech Ecosystem in Cambodia

6.1.1 Regulators

Lack of resources are the main challenge faced by both regulators in the financial sector in Cambodia. Resources that were claimed to be insufficient to regulating FinTech include capacity to understand FinTech in general including its impact and potential risks, financial resources, technical staff in terms of IT, and software to manage data provided by FinTech startups.

6.1.2 Enablers

- **Associations:** All the three associations involving in FinTech stated that there is lack of regulatory framework for FinTech that can help to develop or accelerate FinTech in Cambodia including the regulatory framework related to data privacy and data protection for FinTech users and end-customers, in particular.
- **Developing Partners:** Two main challenges were raised by two developing partners in regulating FinTech in Cambodia. Those challenges are lack of regulatory framework for FinTech and lack of interagency coordination between regulators in the financial sector and related stakeholders to achieve financial stability and inclusion in Cambodia.
- **University and Academic Institutions:** Among one university and two academic institutions that we interviewed, only one of them stated that it had no challenge to offer bachelor's degree in FinTech. However, the other two claimed that they lack specialized lecturers to teach their students in FinTech courses.

6.1.3 Investors

Among five investors, there is only one of them investing in FinTech startups. Lack of appropriate team members in FinTech startups, small market size, weak business model, and mindset of users are the challenges faced by the investors

6.1.4 Crowdfunding

There was only one crowdfunding company that had just received the license for crowdfunding under Collective Investment Scheme in June 2019. However, this crowdfunding company has not invested in any FinTech startups yet, but plan to do so. The barriers preventing this crowdfunding from in FinTech startups include high cost of investment demanded by FinTech startups and small market size that makes it hard to get high return on investment.

6.1.5 Accounting/Banking System Companies

There are five accounting/banking system companies that we interviewed. The challenges faced by those companies are as follows:

- **Challenges in financial resources:** Only one among five accounting/banking system companies face a challenge in finance since it needs to restructure the infrastructure.
- **Challenges in human resources:** Lack of skills and capacity or talent and lack of working commitment in a same place for a long period of time are the first and second most challenging aspects in human resources, respectively.
- **Challenges in technology:** Among the five accounting/banking system companies, only one company said that they have a challenge in technology. The reason is that it needs to redesign its technology infrastructure, demanding a lot of work, money, and time.
- **Challenges in registration:** Only one company among the five companies mentioned that it has a challenge in registration. It is not clear if the company should register with MPTC or not since the company has not had any trademark or IP yet.

- **Challenges in competition:** There are two main challenges in competition. The first challenge is price competition with companies from abroad like India and Vietnam. The second challenge is customers' mindset, which values services or products from abroad more than those in the country despite they have the same functions and quality.
- **Challenges in support:** There are two companies facing challenges in support. Lack of regulatory clarity in terms of tax for startups and SMEs and lack of trust and understanding from GDT were what claimed to be the main challenge.
- **Challenges in regulation:** Lack of regulatory clarity and lack of incentives for tech companies as accounting/banking system companies are the most outstanding challenges raised by the companies facing with challenges in regulation.

6.1.6 InsurTech Company

There is only one InsurTech company operated in Cambodia.

- **Challenges in financial resources:** Although the InsurTech did not mention any challenge in terms of financial resources, the company finds it hard to reach a greater number of customers because the company is quite strict on selecting the agents to sell the products.
- **Challenges in human resources:** The company needs to provide staff a lot of coaching and training both in soft and technical skills before they can perform their jobs well.
- **Challenges in technology:** The company does not have any challenges in technology in their company despite their concern in technology adoption of the public to be able to use FinTech services and products provided in the market.
- **Challenges in registration:** Time-consuming is a challenge in business registration for this InsurTech company since there is no regulation related to InsurTech in Cambodia.

- **Challenges in competition:** There is no challenge in competition in the market for this InsurTech company since it is the only InsurTech company in the Cambodia market.
- **Challenges in support:** The InsurTech company can ask for support from MEF and MLVT. However, the company is not sure if it can ask for support from MoH related to its health insurance products and its customer services including health consultation and prescription are provided via phone.
- **Challenges in regulation:** There are two challenges that the InsurTech company is facing. While the first challenge is that there is a missing regulatory framework for micro-insurance in terms of consent forms, the second challenge is that the InsurTech company is not clear if the customer services (including health consultation and prescription provided via phone) for the health insurance products are aligned with the existing regulations or laws of the provision of health care services in the country.

6.1.7 Lending Service Providers

There are two lending service providers operated in Cambodia.

- **Challenges in financial resources:** Financial resources are not a challenge for one of the lending service providers because it has the support from the parent company, while another lending service provider company faces the financial problems. The reason is this company is just a startup so not many people have known it.
- **Challenges in human resources:** Both lending service providers mentioned that it is hard for them to find qualified staff or staff with multiple skills for operating their business models in Cambodia. One of them mentioned that there is a high turnover rate in the company.
- **Challenges in technology:** Both lending service providers claimed that they have no challenge in technology.

- **Challenges in registration:** Registration is not a challenge for one of the lending service providers. However, another company claimed that it was time-consuming when registering the business.
- **Challenges in competition:** Both lending service providers claimed that they have no challenge in competition since their business models are unique in Cambodia market.
- **Challenges in support:** Both lending service providers said that they do not have any challenge in terms of support.
- **Challenges in regulation:** The lending service providers have faced different challenges. The main challenge faced by those companies is lack of regulatory framework for P2P lending and bureaucracy.

6.1.8 PSPs

There are fourteen PSPs that we interviewed.

- **Challenges in financial resources:** Eight PSPs said that they have no financial constraint, while the other six PSPs said that they face challenges in financial resources. High minimum capital requirement for getting the PSI license and high cost for technology due to lack of infrastructure are the most outstanding challenges raised by those companies.
- **Challenges in human resources:** Five out of the fourteen PSPs said that they have no challenge in terms of human resources, while the other nine companies face different challenges in human resources. Among many challenges faced by those companies, skills and capacity/talent, demand in the market, and time spent on staff training are the three most challenging aspects for human resources.
- **Challenges in technology:** Ten out of these fourteen PSPs said that they have no challenge in terms of technology operated in their companies. There are four challenges in terms of technology faced by the other four PSPs include the need to outsource technology, lack of infrastructure, feature development, and technology

adoption. The need to outsource technology and lack of infrastructure are the two most challenges faced by those companies.

- **Challenges in registration:** Three PSPs said that they did not have any challenges in business registration, while the other eleven companies mentioned that they faced either one or two challenges. Those challenges include time-consuming and bureaucracy.
- **Challenges in competition:** Six out of the fourteen PSPs mentioned that they do not have any challenges in competition in the market, while the rest of the companies claimed that they face some challenges. The most outstanding challenges include too many players and unfair market competitions.
- **Challenges in support:** Among fourteen PSPs, five PSPs got support. Three of them got support from the government while the other two got support from international organizations or companies. The support from the government includes training on AML/CFT, two-year tax exemption, and facilitation in terms of regulations.
- **Challenges in regulation:** Two PSPs among the fourteen PSPs said that they do not have any challenges in terms of regulation, while the other twelve companies said that they face at least one of the seven challenges. Among the seven challenges faced by those companies, lack of regulatory clarity, bureaucracy, and lack of incentives to support FinTech startups are the most outstanding challenges.

6.2 SWOT Analysis of FinTech Business in Cambodia

6.2.1 InsurTech Company

- **Strengths:** The InsurTech company's strength is the marketing strategy. The company uses technology to reach out to customers, which differentiates it from traditional insurance companies.
- **Weaknesses:** It needs not only high skilled staff, but also staff that have creative thinking to develop services or products to sell in the market.

- **Opportunities:** High market demand for the insurance that have low caps and low premiums since there is a large proportion of Cambodian population who are unbanked and live just above the poverty line. Those people can afford to buy the services or products.
- **Threats:** There is only one threat with which this InsurTech company concerns, that is, fraudulent claims from customers.

6.2.2 Lending Service Providers

- **Strengths:** Four marketing strategies were claimed to be the strengths among the two lending service providers that we interviewed. Those marketing strategies include trust, customer-centric, advertisement, and “product-market fit” strategy.
- **Weaknesses:** There are three weaknesses that they need to improve. The first weakness is the quality of technical system and products. The second weakness is internal human resources; and the third one is to improve the level of financial literacy for customers.
- **Opportunities:** Market demand, technology adoption, and the trend of using digital money are the three main opportunities raised by those lending service providers.
- **Threats:** Two key threats were raised by those lending service providers. Those key threats include lack of regulatory framework for P2P lending and low level of financial literacy.

6.2.3 PSPs

- **Strengths:** There are three main key success factors or strengths for the PSPs. They include marketing strategies and human resources, and leadership.
- **Weaknesses:** Retaining human resources, low number of agents, and lack of investment either to launch the first products or expand their business in the market are the three main aspects of weaknesses raised by many of the PSPs.
- **Opportunities:** Only the aspects related to market demand are perceived as the opportunities to do FinTech business in Cambodia by the PSPs. The aspects of the

market demand include underserved services and products in payment, unbanked population, and young population.

- **Threats:** Technology literacy in the market and lack of regulatory framework for FinTech are the most outstanding key threats among the other threats mentioned by those PSPs.

6.3 FinTech Regulatory Framework Comparison

Among six emerging FinTech countries namely Singapore, Indonesia, Malaysia, Thailand, the Philippines, and Vietnam, only three emerging FinTech countries were selected to make a comparison. Those countries include Singapore, Indonesia, and Thailand. There are two main reasons for selecting those three countries. Those reasons are the context of laws and proactiveness in FinTech innovative regulatory initiatives.

6.3.1 Existing and Missing Aspects in Cambodia's Regulatory Framework compared with Emerging FinTech ASEAN Countries

There are two similarities between Cambodia and other emerging FinTech countries' regulatory framework. The first similarity is involvement of regulators from the financial sector in FinTech. Although technology plays the main role in FinTech, the involvement of technology-related regulators in FinTech is very substantial compared with the financial sector. The second similarity is the positive attitude of the governments towards FinTech development. We can see that it is similar to those countries in particular Thailand (Thailand 4.0 economic model), the RGC has positive attitude towards FinTech development. It is evident by the commitment of the government to transform to the digital economy. The positive attitude of the government is vital to shape public attitude, leading to more public consciousness resulting more FinTech innovation and widespread of FinTech adoption in the country.

Lacking specific law or regulations for FinTech and not having innovative regulatory initiative for FinTech are the two key differences or missing aspects in regulatory framework between Cambodia and those emerging FinTech countries. Although in Chapter 9 of e-commerce law, there are some articles related to digital payment, those articles are only related

to payment, not other sectors in FinTech. Additionally, this law was just released and effective from May 2020; therefore, effectiveness of law enforcement is still in question. Aside from the lack of specific law or regulations for FinTech, there is no innovative regulatory initiative for FinTech yet in Cambodia.

6.3.2 Lesson Learnt from Emerging FinTech ASEAN Countries

Two lessons learnt from the emerging FinTech ASEAN countries that are of value for Cambodia to learn from to develop FinTech. The first lesson learnt for Cambodia is the RGC should establish enabling regulatory framework for FinTech development. The second lesson learnt is each regulator should be proactive by initiating regulatory innovation for FinTech development and collaborating with other stakeholders to develop FinTech effectively.

7. Recommendations



Chapter 7: Recommendations

Based on the key findings from the study, followings are the key recommendations for the RGC as well as regulators to facilitate FinTech development in Cambodia.

7.1 Regulatory Reforms

7.1.1 Regulatory Clarity

Regulators should improve regulatory clarity. Regarding MEF, there should be clear interpretation of law related to tax. Some tax-related laws are interpreted differently from one law firm to another. Moreover, there has not been any clear definition or differentiation between the terms “Startups” and “SMEs”. It was claimed by some of PSPs and accounting/banking system companies that they lost their opportunity to get the tax exemption because there are no clear definitions between these two terms. Therefore, some key terms should be clearly defined and use consistently across the government institutions.

NBC should improve its regulatory clarity for the PSI license. From this study, there are three unclear points related to the PSI license. The first unclear point for PSI license is that this license does not to explain well to the PSPs why some can have more amount of money per transaction per time than the others. During the interview with NBC, the regulator could clearly explain the reason for such issues; however, some PSPs did not understand the reason behind. One of them even stated that NBC has preferential treatments to some PSPs. This indicates that there is lack of regulatory clarity while it also indicates that NBC fails to communicate with some of PSPs. Another unclear point regarding the PSI license is that it is unclear if a PSP can expand their company’s branch outside Phnom Penh besides expanding the agents. The third unclear point related to the PSI license is the minimum amount of capital installment at NBC to get the license. It is unclear why or how NBC needs the PSPs to install two million US dollar to get the license. This amount of money is too much for the PSPs because some of them are just local startups.

7.1.2 Regulatory Framework for FinTech

There is no P2P lending and InsurTech regulatory framework in Cambodia. Based on the upcoming of MEF and SECC's organization structures, that is, the establishment of NBA, NBA should consider starting to establish a framework or any approach to foster the development in these two sectors. One way to do this is to use "Test and Learn" approach first to allow the services and products in both sectors to be developed in the market while learning the potential risks that may pose to the public. Then, MEF can design or tailor the existing regulatory framework or laws to meet the needs in those sectors while protecting the risks in the market. MEF can develop a regulatory sandbox from this "Test and Learn" approach in the future.

Beside the missing regulatory framework for P2P lending and InsurTech, Cambodia still lacks enabling regulatory framework for FinTech ecosystem development. Those missing regulatory frameworks include national digital identity²⁵ and data protection and privacy laws. Besides, the law for cybercrime is still in draft, and it is not sure when this law can be formally expediated. Without such kind of enabling regulatory framework for FinTech ecosystem development, it is very challenging for Cambodia to develop FinTech, let alone to compete with the other countries. Therefore, the government should start to create missing laws or regulations or consider issuing guidelines when there are no laws or regulations yet. Additionally, the government should implement and enforce the existing laws or regulations in a timely manner.

7.2 Incentives from Government

More accessibility to incentive scheme and more incentives from the government are in need to provide the favorable environment for FinTech development in Cambodia. Incentives will help: 1) FinTech companies including new startups to invest more in their business, 2) attract more investment in the FinTech startups, and 3) improve talents or human resources in the FinTech sector.

²⁵ It refers to an identity that allow every resident to establish their legal identity securely when they make online transaction or known as e-KYC.

Although there is a tax-exemption incentive scheme from the RGC for some specific sectors including the technology sector, the conditions for getting tax exemption is too complicated for the FinTech startups to apply for. Only one of PSP in the study was managed to get the tax exemption for two years. Most of the companies including the accounting/banking system companies claim that they feel overwhelmed by the number of documents and procedures to get the tax exemption. Therefore, there should be more simplified conditions for those companies so that it can motivate those companies to try to apply for the tax-exemption. Furthermore, the government should provide tax incentives for investors and businesses that have willing to invest in FinTech or technology. This can be done by offering capital gains tax relief for tech companies in the country or providing tax breaks to investors investing in startups and small business related to FinTech. Last but not least, the government should consider provide incentive visa programs to attract investors and entrepreneurs in technology or startups. Although there is an E-class visa for foreign workers in Cambodia, there should be a special visa program to attract technical talent and foreign investors in FinTech.

7.3 Conductive Institutional Infrastructure

7.3.1 Institutional Arrangement for FinTech in Non-Banking Sector

Lack of FinTech understanding is the one of the most outstanding challenges faced by regulators, while lack of regulatory clarity is one of the most outstanding challenges faced by the majority of FinTech companies including its supporting ecosystem, that is, accounting/banking system companies. To simultaneously deal with both parties' challenges and foster development of FinTech in both the banking and non-banking sectors in Cambodia, the best way is to assess the existing organization structures if they can effectively support FinTech development. If not, the existing organization structures should be modified by establishing a specialized FinTech or innovation units with a more dedicated team under each jurisdiction separately. This approach is not a priority for the countries where FinTech development is in the nascent stage due to demand for technical expertise, familiarity with business model, and intensive financial investment.

However, as MEF and other related government institutions have planned to establish NBA in Cambodia, it may be a great opportunity to establish a specialized department that is responsible for FinTech activities that fall under NBA's jurisdiction. It is worth mentioning that MEFF and SECC have no specific department to deal with FinTech activities fallen under their jurisdictions besides their existing departments. This may be attributed to the reason that FinTech activities under their jurisdictions have not been developed as fast as FinTech activities in the payment sector, fallen under NBA's jurisdiction²⁶.

Establishment a specialized FinTech department can serve four functions: 1) internal engagement, 2) external engagement, 3) policy function, and 4) housing regulatory innovation initiatives for FinTech activities under NBA's jurisdiction. There are four advantages of establishment of a specialized FinTech department in NBA. Those advantages are: 1) reduced costs for FinTech companies and consumers, 2) improved consumer and investor protection, 3) better informed policy making, and 4) increased competition. The first advantage can be achieved by making the specialized FinTech department become a key point of contact between FinTech companies and NBA. Engagement helps FinTech companies quickly and easily understand regulatory frameworks, thereby reducing barriers to entry and innovation and reducing regulatory uncertainty. Mitigating an otherwise costly and time-consuming process produces other significant positive outcomes. Lower costs may translate to lower prices for end consumers and better access to financial services. Moreover, the second advantage can be achieved by making the specialized FinTech department as a tool for NBA to support inclusive financial innovation by ensuring adequate consumer protection. Early engagement on new products, services, and business models allows NBA to advise FinTech companies about consumer protection requirements, promoting compliant innovation. Engaging with the FinTech industry can help NBA understand key trends and potential issues and risks. The specialized FinTech department in NBA can achieve the third advantage by helping identify the risks of innovative financial services and their implications for regulatory policy. Those

²⁶ NBC has had a specific department to deal with FinTech activities in the payment sector, that is, Payment System department.

risks may include regulatory arbitrage, unclear regulations, and gaps in regulatory parameters. Consequently, the specialized FinTech department in NBA can facilitate an improved policy environment that can support regulatory objectives under NBA's jurisdiction. Last, the specialized FinTech department in NBA can help to increase competition by reducing barriers to entry by tackling regulatory uncertainty. This allows FinTech companies to enter, capitalize and grow in financial services markets under NBA's supervision. New entrants, in turn, promote innovation and competition. This typically translates into lower prices for consumers, a greater range of products, and better services.

7.3.2 Inter-Jurisdictional/Cross-Functional Coordination for FinTech

Besides, establishing a specialized FinTech department in NBA, this study also suggests that there should be inter-jurisdictional/cross-functional coordination between the regulators in the banking sector (NBC) and the upcoming non-banking sector (NBA) by establishing a FinTech innovation hub. Since there will be an establishment of the Council for Digital Economy and Society Development soon, it would be wise to take this opportunity to make this council to function as the suggested FinTech innovation hub as well besides its original intention. The reason is FinTech plays a major role in DE development; therefore, it would be wise and practical to include the coordination of FinTech in both sectors in this council. The Council for Digital Economy and Society Development can function as the suggested FinTech innovation hub. Those functions include: 1) being a dedicated government body that is a point of contact for the FinTech companies to raise inquiries with regulators or related government institutions on FinTech-related issues and to seek non-binding guidance on regulatory and supervisory expectations, including licensing requirements, 2) enhancing public-private dialogue between the regulators and the FinTech companies, 3) informing policy or regulation development, and 4) housing other regulatory innovation initiatives in the future such as regulatory sandbox, RegTech, and SupTech.

There are two main advantages if there is cooperation between the banking and non-banking sectors by establishment of a FinTech innovation hub. Those two main advantages are to foster

FinTech development in the country by opening dialogue among the regulators and facilitate FinTech innovation. The first advantage is it can foster FinTech development in the country by closing the gap between FinTech development in the banking sector and the non-banking sector. At the regional level, FinTech development in Cambodia is behind some other countries in the region such as Singapore, Indonesia, Malaysia, and Thailand. In the country level, FinTech in the banking sector has been far well developed than that in the non-banking sector. This can be attributed to the fact that the majority of the FinTech companies focus on digital payment. However, to catch up with FinTech development both in the global and regional scales, FinTech in the bank and non-bank sectors need to develop well together. Therefore, this suggested FinTech hub will allow an open dialogue at an operational level among the regulators in the banking and non-banking sectors. Consequently, the regulator in each sector will understand the roles of another regulator, and they can work together in coordinated manner in a consistent way across different sectors and regulations. The second advantage is FinTech innovation facilitation. FinTech companies will find it more convenient to approach to three regulators at the same time. They do not need to spend too much time bouncing from one regulator to another trying to figure out what responsibility each regulator has for different little parts of their services or products that they are trying to develop. This in turn will lower prices for end consumers.

7.3.3 Regulatory Sandbox

The study found that the majority of the FinTech companies said that they need a regulatory sandbox to test their products. However, to develop a regulatory sandbox, the RGC or regulators need to keep in mind that the regulatory sandbox is more structured, more resource intensive, objective driven, and publicized. Besides, there are five points that need to consider: 1) legal and regulatory framework, 2) stakeholder ecosystem, 3) capacity and available resources, 4) market conditions, and 5) priorities of policy.²⁷ Therefore, this study suggests that

²⁷ See more details in Jenik and Lauer (2017).

there should be a regulatory sandbox in the future, not now, due to the nascent stage of FinTech development in Cambodia and the current economic hardship due to Covid-19 pandemic.

However, if in any cases that the RGC and regulators consider developing a regulatory sandbox, there should be a thorough feasibility assessment first. This assessment will help identify key risks success criteria before launching a regulatory sandbox, while it will inform the RGC and regulators if it is necessary to develop a regulatory sandbox or adopt a different approach.

7.4 Capacity and Skill Building

The study found that lack of human resources is a cross-cutting issue among stakeholders. This study suggests three recommendations for strengthening capacity and skills in FinTech. The first and second recommendations are for the short and medium run to improve quality of human resources for FinTech development. The third recommendation is for the long run to prepare human resources for FinTech development as well as DE development in the future. The first recommendation is an innovative mindset among the regulators should be more promoted to keep up with rapid FinTech development. At the same time, the regulators should connect with knowledge partners such as Asian Development Bank and World Bank for knowledge sharing and having peer learning opportunities.

The second recommendation is the RGC should support and spread digital financial literacy to consumers, both enterprises and end-consumers. This includes basic literacy and ability to use technology and understand financial services. Digital financial literacy is a core skill for using FinTech products and services safely and for achieving financial inclusion.

The third recommendation is to improve the quality of human resources in workforce for the future by focusing on technology and science. For the next generation, this can be done by strengthening and expanding Science, Technology, Engineering, and Mathematics (STEM) education services as much as possible. At the same time, the RGC should scale up the New Generation Schools across the country and closely monitor and evaluate its impact for the best result in the future. STEM education and the New Generation Schools may not be effective if

there is no investment in infrastructure for information and communications technology (ICT). ICT infrastructure will help to improve the quality of human resources and prepare them for the market in the future. It is impossible to produce high quality human resources for the future if the quality of human resources in the education section are poor. Therefore, aside from investment in ICT infrastructure, the quality of human resources in the education sector should also be improved and strengthened. They should constantly have opportunities to learn new skills and knowledge in ICT and able to use innovative teaching methods by integrating ICT. Attention and resources for improving human resources for the next generation and those in the education sector should be more allocated to rural areas than urban areas.

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Appendix



Appendix 1: FinTech Taxonomy

Below are the terms related FinTech used in this study. The definition of each term is taken from the glossary of Cambridge FinTech and Regulatory Innovation course of Judge Business School for Spring 2020, University of Cambridge and other sources including CCAF et al. (2019) and the World Bank Group (2020).

Angel Investor: Also known as a private investor, seed investor or angel funder is a high-net-worth individual who provides financial backing for small startups or entrepreneurs, typically in exchange for ownership equity in their company.

Application Programming Interface (API): A set of programming code that queries data, parses responses, and sends instructions between one software platform and another.

Artificial Intelligence (AI): The simulation of human intelligence in machines that are programmed to think like humans and mimic their actions.

Asset Management: There are three sub-categories: 1) Digital wealth management, 2) Social trading, and 3) Robo-advisors. The first sub-category refers to online platforms to supply and provide asset management services. The second sub-category refers platforms that provide investment advice through a social network. The last sub-category refers to digital platforms that provide automated, algorithm-driven financial planning services with little to no human supervision. A typical robo-advisor collects information from clients about their financial situation and future goals through an online survey and then uses the data to offer advice and automatically invest client assets.

Automatic Teller Machine (ATM): A machine, usually in a wall outside a bank, shop, from which you can take money out of your bank account using a special card.

Big Data: Very large sets of data that are produced by people using the internet, and that can only be stored, understood, and used with the help of special tools and methods.

Bitcoin (BTC): A type of cryptocurrency where balances are kept using public and private keys, which are long strings of numbers and letters linked through the mathematical encryption algorithm that was used to create them.

Blockchain: A record keeping technology which maintains an authoritative record of events or transactions.

Business Model: A description of the different parts of a business or organization showing how they will work together successfully to make money.

Capital Raising/Crowdfunding: Generally, it refers to the use of small amounts of capital from a large number of individuals to finance a new business venture. There are four sub-categories: 1) Equity crowdfunding, 2) Donations crowdfunding, 3) Rewards crowdfunding, and 4) Real estate crowdfunding. The first sub-category refers to platform through which

people finance or invest in private companies. The second sub-category refers to platforms through which donors provide financial resources to individuals, projects, or companies that have philanthropic motivations without expecting a monetary return. The third sub-category refers to platforms under which people contribute financial resources to individuals, projects, or companies in exchange for products or monetary rewards. The last sub-category refers to platform through which people finance or acquire equity in real estate projects.

Cryptocurrency: A digital or virtual currency that uses cryptography for security.

Cybersecurity: Things that are done to protect a person, organization, or country and their computer information against crime or attacks carried out using the internet.

Deep Learning: An artificial intelligence function that imitates the workings of the human brain in processing data and creating patterns for use in decision making.

Digital Payments: There are five sub-categories: 1) Mobile money/wallet/P2P transfer, 2) Remittances/international money transfers, 3) Payment gateways and aggregators, 4) Mobile point of sales (mPOS) and Point of Sales (POS), and 5) Others. The first sub-category refers to mobile solutions to transfer and manage money. The second sub-category refers to online and mobile solutions designed to send money to companies or people abroad. The third sub-category refers to solutions to accept, authorize, and process payments on digital platforms. The fourth sub-category refers to POS terminals for mobile phones and small businesses. The last sub-category refers to other technological solutions regarding digital payments.

Digital Lending: There are five sub-categories: 1) Balance sheet business lending, 2) Balance sheet consumer lending, 3) Peer-to-peer (P2P) business lending, 4) P2P consumer lending, and 5) Factoring and invoice lending. The first sub-category refers to platforms operated by a body that directly provides online credit to businesses. The second sub-category refers to platforms operated by an entity that directly provides online credit to consumers. The third sub-category refers to online platforms through which people/other institutions provide loans to business. The fourth sub-category refers to online platforms through which people/other institutions provide loans to consumers/individuals. The fifth sub-category refers to online platforms through which persons or entities purchase invoices or accounts payable of other business or provide loans backed by them.

Distributed Ledger Technology (DLT): The technological infrastructure and protocols that allows simultaneous access, validation, and record updating in an immutable manner across a network spread across multiple entities or locations.

E-commerce: The business of buying and selling goods and services on the internet.

E-money: A regulated category of electronic money which represents the value of funds which are intended for payment, but which are stored in a different bank account.

Ecosystem: A network of organizations - including suppliers, distributors, customers, competitors, government agencies, and so on - involved in the delivery of a specific product or service through both competition and cooperation.

Enterprise Financial Management: There are six sub-categories: 1) Electronic invoicing, 2) Digital accounting, 3) Financial management and business intelligence, 4) Payment collection,

and 5) Others. The first sub-category refers to online platforms to issue and manage invoices. The second sub-category refers to online platforms for accounting and tax calculation. The third sub-category refers to online platforms for financial administration and business performance analytics generation. The fourth sub-category refers to digital solutions to simplify or manage the recovery of companies' account receivables. The last sub-category refers to other technological management solutions.

Enterprise Tech for Finance: There are six sub-categories: 1) Security and digital identity/Biometrics, 2) Know your customer (KYC) solutions, 3) Fraud prevention and risk management, 4) Core banking software, 5) Regulation technology (RegTech) solutions for regulatory compliance, and 6) Others. The first sub-category refers to personal verification and authentication solutions to access and authorize financial transactions. The second sub-category refers to KYC solutions regarding their financial services suppliers. The third sub-category refers to solutions focused on fraud prevention and operational risk management of financial institutions. The fourth sub-category refers to software solutions for banking infrastructure. The fifth sub-category refers to solutions that make it more efficient and effective to manage with regulatory/compliance requirements. The last sub-category refers to other solutions for financial institutions.

Equity Crowdfunding: See in Capital Raising/Crowdfunding.

Financial Inclusion: The pursuit of making financial services accessible at affordable costs to all individuals and businesses, regardless of net worth and size, respectively.

Financial Technology (FinTech): New technologies that seeks to improve and automate the delivery and use of financial services in new and better ways.

Innovation Office: It focuses on engaging with industry or consumers about innovative products, services and training in a specific area of activity, taking targeted actions to help overcome key challenges in that field.

InsurTech: InsurTech is a combination of the words “insurance” and “technology,” inspired by the term FinTech. There are four sub-categories: 1) Micro-insurance, 2) P2P insurance, 3) Insurance comparison, and 4) Others. The first sub-category refers to solutions that provide micro-insurance and fractional insurance. The second sub-category refers to platform that provides insurance based on other people/institutions investing in them. The third sub-category refers to comparison sites for comparing/selecting best insurance products. The last sub-category refers to other InsurTech solutions.

Know Your Customer (KYC): Procedures for the identification of clients opening accounts or conducting financial transactions.

Machine Learning (ML): The idea that a computer program can adapt to new data independently of human action. ML is a field of AI that keeps a computer's built-in algorithms.

Natural Language Processing (NLP): A field of artificial intelligence that enables computers to analyze and understand human language.

Payment Gateway: The front-end technology that reads payment cards and sends customer information to the merchant acquiring bank for processing.

Peer-to-Peer (P2P) Lending: See in Digital Lending.

Personal Financial Management: There are three sub-categories: 1) Savings, 2) Financial comparison sites, and 3) Others. The first sub-category refers to digital tools for consumers that simplify savings management and expenditure organization. It also covers micro-savings solutions. The second sub-category refers to online and mobile platforms comparing different financial products and their characteristics. The last sub-category refers to other technological solutions for personal financial management.

Platform: A group of technologies that are used as a base upon which other applications, processes or technologies are developed. A platform often forms the infrastructure for an online marketplace.

Predictive Analytics: Describe the use of statistics and modeling to determine future performance based on current and historical data. Predictive analytics look at patterns in data to determine if those patterns are likely to emerge again, which allows businesses and investors to adjust where they use their resources to take advantage of possible future events.

Proof-of-Concept (POC): A demonstration, the purpose of which is to verify that certain concepts or theories have the potential for real-world application. POC is therefore a prototype that is designed to determine feasibility but does not represent deliverables.

Quick Response (QR) codes: A type of barcode which can be read by a digital device and which stores information.

Regulatory Sandbox: A regulatory program which can allow businesses to test FinTech or InsurTech products and services in the real market, under controlled conditions.

Regulatory Technology (RegTech): The management of regulatory processes within the financial industry through technology. The main functions of RegTech include regulatory monitoring, reporting, and compliance.

Robo-Advisors: See in Asset Management.

Robotic Processing Automation (RPA): The software that can be easily programmed to do basic tasks across applications just as human workers do.

Startup: A company that is in the first stage of its operations.

Supervisory Technology (SupTech): The use of innovative technology by supervisory agencies to support supervision. It helps supervisory agencies to digitize reporting and regulatory processes, resulting in more efficient and proactive monitoring of risk and compliance at financial institutions.

Trading Capital Markets: There are three sub-categories: 1) FX solutions, 2) Stock market solution and exchanges, and 3) Others. The first sub-category refers to foreign currency trading solutions for people and companies. The second sub-category refers to stock and debt trade solutions and electronic exchanges. The third sub-category refers to other technological solutions to simplify or execute transactions between other types of assets.

Appendix 2: FinTech Regulatory Landscape of Singapore

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Singapore	MAS	<ul style="list-style-type: none"> ▪ Guidelines on Provision of Digital Advisory Services [CMG-G02] (MAS, 2020) ▪ E-Payments User Protection Guidelines (MAS, 2019) ▪ Technology Risk Management Guidelines (<i>Technology Risk Management Guidelines</i>, 2013) 	<ul style="list-style-type: none"> ▪ The RegTech initiative taken included “KYC” and Supervisory Technology (“SupTech”) ▪ Successfully completed its blockchain inter-bank payments proof-of-concept project ▪ The Application Programming Interface (API) playbook recommends guidelines for developing financial services APIs ▪ Industry-wide projects such as decentralized recordkeeping in trade finance supported by the Financial Sector Technology and Innovation Scheme ▪ Reducing financial requirements for crowdfunding platforms (The United Overseas Bank, 2017) 	<ul style="list-style-type: none"> ▪ Innovation office called FTIG ▪ FinTech regulatory sandbox ▪ RegTech ▪ Innovation office called Global FinTech Hackcelerator by MAS (UNSGSA FinTech Working Group & CCAF, 2019)

Appendix 2: FinTech Regulatory Landscape of Singapore (Con't)

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Singapore	MAS	<ul style="list-style-type: none"> ▪ Payment Systems (Oversight) Act. ▪ Banking Act (Cap.19) ▪ Monetary Authority of Singapore Act (Cap.186) ▪ Personal Data Protection Act ▪ Money-Changing and Remittance Business Act ▪ Business Trust Act ▪ Trust Companies Act ▪ Financial Advisors Act ▪ Securities and Futures Act ▪ Insurance Act ▪ Finance Companies Act (DFDL, 2018) ▪ New payments legislation for cryptocurrency in the country for the first time (Chanjaroen & Ossinger, 2020) 	<ul style="list-style-type: none"> ▪ MAS is working with the Smart National Digital Government Office and the Government Technology Agency to develop the National Digital Identity platform. It will provide Singapore residents with a nationally available to prove their identity and sign documents digitally. 	

Appendix 2: FinTech Regulatory Landscape of Singapore (Con't)

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Singapore	Others		<ul style="list-style-type: none"> ▪ The Singapore FinTech Association ▪ Singapore FinTech Festival, the largest FinTech festival of the world (CCAF et al., 2019) ▪ Tax exemption for startups and the Angel investors Tax Deduction Scheme for virtual capital and private equity funds for up to 10 years by the Inland Revenue Authority of Singapore Tax and loan incentives under the automation support package for firms looking to deploy automation across operations. (MinterEllisonRuddWatts, 2019) ▪ The Intellectual Property Office: Accelerated file-to-grant service for FinTech patent applications (Singapore FinTech Association, 2018) 	

Appendix 3: FinTech Regulatory Landscape of Indonesia

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Indonesia	OJK	<ul style="list-style-type: none"> ▪ Regulation on P2P lending ▪ Regulation on minimum capital requisite for FinTech ▪ OJK Regulation No.77 /POJK.01/2016 on Information Technology-based Lending ▪ OJK Regulation No.37/POJK.04/2018 on Equity Crowdfunding ▪ OJK Regulation No.12/POJK.03/2018 on the Implementation of Digital Services by Commercial Banks ▪ OJK Regulation No.13/POJK.02/2018 on Digital Financial Innovation in the Financial Services Sector (CCAF et al., 2019) ▪ e-KYC service provider to be tested in OJK’s regulatory sandbox 	<ul style="list-style-type: none"> ▪ OJK initiated Indonesia FinTech Festival and Conference (The United Overseas Bank, 2017) 	<ul style="list-style-type: none"> ▪ Innovation office called OJK Infinity (Batunanggar, 2019) ▪ OJK Regulatory sandbox: Govern on digital finance innovations, particularly those in respect of non-payment activities including transaction settlement, fund-raising, investment management, crowdfunding and distribution, insurance, market support and other digital finance support (Tang et al., 2020).

Appendix 3: FinTech Regulatory Landscape of Indonesia (Con't)

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Indonesia	BI	<ul style="list-style-type: none"> ▪ New national payment gateway regulation published ▪ (BI, 2013b) ▪ Bank of Indonesia Regulation No.19/10/PBI/ 2017 on FinTech Companies concerning implementation of AML and PTF for Non-Bank Payment System Service Providers and Non-Bank Money Changing Service Providers. ▪ Bank of Indonesia Regulation No.20/6/PBI/ 2018 on Electronic Money (E-Money) (CCAF et al., 2019) ▪ BI Regulation No.18/40/ PBI/2016 regarding Provision of Payment Transaction Processing ▪ Regulation on the Standardization of Quick Response Codes 	<ul style="list-style-type: none"> ▪ Digital payment roadmap for 2025 	<ul style="list-style-type: none"> ▪ BI Regulatory sandbox: Capture all activities utilized technology in the financial service sector. This leads to the use of new products, services, technology or business models that might have impacts on monetary stability, financial system stability or payment system efficiency, security or dependability (Tang et al., 2020)

Appendix 3: FinTech Regulatory Landscape of Indonesia (Con't)

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Indonesia	BI	<ul style="list-style-type: none"> ▪ Regulation on the Implementation of Financial Technology (the “BIRegulation No.19”) issued by BI in November 2017, to encourage innovations and support the establishment of financial technology ecosystem useful to the economy by observing the principles of consumer protection, risk management, and prudence (BI, 2013a) ▪ BI Board of Governors’ Members Regulation No.19/15/PADG/2017 on Procedures for Registration, Submission of information, and Monitoring of Financial Technology Operators. ▪ Law of Republic of Indonesia No.3 of 2011 regarding Fund Transfer (DFDL, 2018) 		
	MOCIT	<ul style="list-style-type: none"> ▪ Digital Signature or e-signature regulated by the Electronic Transaction Regulation (Nurhayati, 2006). 	<ul style="list-style-type: none"> ▪ MOCIT: Responsible for telecommunications, IT and aspects of FinTech that fall under IT(DFDL, 2018). 	

Appendix 3: FinTech Regulatory Landscape of Indonesia (Con't)

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Indonesia	Bappebti, Ministry of Trade	<ul style="list-style-type: none"> ▪ Regulation No.2/2019 concerning the implementation of the Commodity Physical Market on the Futures Exchange ▪ Regulation No.3/2019 concerning Commodities that can be subjected to Futures Contracts, Sharia Derivative Contracts and/or Other Derivative Contracts on the Futures Exchange <p><i>(Regulatory Approaches to Cryptoassets: Indonesia, 2019)</i></p> <ul style="list-style-type: none"> ▪ Regulation No.4/2019 concerning Technical Provisions for the Implementation of the Digital Gold Physical Market ▪ Regulation No.5/2019 concerning Technical Provisions for the Implementation of the Physical Market for Crypto Assets on the Futures Exchange <p><i>(Regulatory Approaches to Cryptoassets: Indonesia, 2019)</i></p>	<ul style="list-style-type: none"> ▪ Indonesia's commodity futures trading regulator, Bappebti, issued regulations that provide the legal framework for the trading of cryptoassets as commodities that can be subject to futures trading (<i>Regulatory Approaches to Cryptoassets: Indonesia, 2019</i>). 	
	Others	<ul style="list-style-type: none"> ▪ New e-commerce Regulation enacted 	<ul style="list-style-type: none"> ▪ Indonesian FinTech Association or Indonesian FinTech Lending Association 	

Appendix 4: FinTech Regulatory Landscape of Malaysia

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Malaysia	BNM	<ul style="list-style-type: none"> ▪ Regulation on cryptocurrency under the policy paper “AML/CFT Policy for Digital Currencies (Section 6) (<i>Bank Negara Malaysia Issues Cryptocurrency Regulation, 2019</i>) ▪ e-KYC guideline was released by BNM in November 2017 (<i>Bank Negara Malaysia Releases eKYC Guidelines, 2017</i>). 	<ul style="list-style-type: none"> ▪ Investigating the potential of centralized digital identity, open APIs, etc. (<i>The United Overseas Bank, 2017</i>) ▪ Establishing FTEG is to enhance the regulatory policies to facilitate the adoption of technological innovations in financial industry(<i>FinTech Hub, 2019c</i>) . 	<ul style="list-style-type: none"> ▪ Regulatory sandbox called Financial Technology Regulatory Sandbox: Enable innovation of FinTech to be deployed and tested in a live environment, within specified parameters and timeframes (<i>Central Bank of Malaysia, 2016</i>) ▪ Innovation Office called FTEG, comprising of cross functional groups within BNM: Support innovations that will improve the quality, efficiency and accessibility of financial services in Malaysia by formulating and enhancing regulatory policies to facilitate adoption of technological innovations in the Malaysian Financial services industry (<i>FTEG: Financial Technology Enabler Group, 2017</i>)

Appendix 4: FinTech Regulatory Landscape of Malaysia (Con't)

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Malaysia	SC	<ul style="list-style-type: none"> ▪ Equity Crowdfunding law issued by the Securities Commission (SC) in 2015 ▪ Regulatory Framework on P2P financing was announced by SC in November 2016 ▪ SC introduced the Digital Investment Management Framework, setting out licensing and conduct requirements for the offering of automated discretionary portfolio management services to investor in May 2017 (The United Overseas Bank, 2017). ▪ Guidelines on digital asset in January 2020. Digital token is regulated as Initial Exchange Offerings (Guek & Kwa, 2020). 	<p>Securities commission in Australia and Malaysia have entered into an innovation cooperation agreement to promote innovation in the financial service sector (The United Overseas Bank, 2017).</p> <ul style="list-style-type: none"> ▪ SC launched the “Alliance of FinTech Community”, an initiative to catalyze greater interest towards the development of emerging technology-driven innovations in financial services, whether existing or prospectively developing in Malaysia (<i>Malaysia: Fintech 2019</i>, 2019) 	
	Other		<ul style="list-style-type: none"> ▪ FAOM: Facilitate ecosystem collaboration between stakeholders in FinTech. Its key objectives is to support FinTech community and raise awareness and trust in FinTech startups (CCAF et al., 2019). 	

Appendix 5: FinTech Regulatory Landscape of Thailand

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Thailand	BOT	<ul style="list-style-type: none"> ▪ Regulation on P2P lending by BOT (Chanpanich, 2019). ▪ Guidelines on simplified advice to relax fiduciary duties for independent investment advisors (The United Overseas Bank, 2017). ▪ The Payment Systems Act B.E.2560 (2017) was enacted and has come into effect on 16 April 2018 (DFDL, 2018). ▪ e-KYC ▪ Electronic Signature under the law on Electronic Transaction 	<ul style="list-style-type: none"> ▪ Payment Systems Roadmap (2019-2021) (BOT, 2018) ▪ Standardization of QR codes between card networks ▪ National e-Payment Master Plan (including PromptPay scheme, debit card usage expansion scheme, eTax system, and social welfare and government e-payment system) started in 2017 and has opened door to cashless economy. ▪ Plan to create online authentication system (The United Overseas Bank, 2017). 	<ul style="list-style-type: none"> ▪ Regulatory sandbox: Open to any fresh, never-seen-before innovation or open for participation to financial institutions, FinTech firms, and general tech firms. Provide an opportunity for new players to enter the market through a government sanctioned platform, protect both consumers and business operators from financial damages in the event of a successful business, and introduce new FinTech startups to established players like large financial institutions through the regulatory platform and give them an opportunity to partner with one another (Corbett, 2017). ▪ RegTech: Driven by new compliance regulations that concern digital disruption and data privacy protection (Suchit, 2018)

Appendix 5: FinTech Regulatory Landscape of Thailand (Con't)

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Thailand	SEC	<ul style="list-style-type: none"> ▪ Regulation on equity crowdfunding by SEC ▪ The Royal Decree on Digital Asset Business of 2018 	<ul style="list-style-type: none"> ▪ Initial Coin Offerings (ICOs) Portal (Guek & Kwa, 2020). ▪ Stock Exchange of Thailand plans to launch a new blockchain-based platform for trading in start-up firms ▪ Planning to relax licensing requirements for digital advisory (The United Overseas Bank, 2017). 	<ul style="list-style-type: none"> ▪ SEC regulatory sandbox: Allow applicants to test their KYC technology within one year under the supervision (EY, 2019; The United Overseas Bank, 2017)
	OIC		<ul style="list-style-type: none"> ▪ OIC: Oversee participants in the insurance business (Navigating the Fintech Revolution, 2018) 	<ul style="list-style-type: none"> ▪ OIC sandbox: Allow InsurTech, insurers, and agents to test their innovation (EY, 2019).
	Others	<ul style="list-style-type: none"> ▪ Credit Information Business Act (No.3), B.E. 2551 (2008) (<i>Thailand Financial Institution Business Act 2008</i>, 2013) ▪ Credit Data Accessibility Proposal ▪ Amendment to the Civil and Commercial Code (DFDL, 2018) 	<ul style="list-style-type: none"> ▪ Digital Economy Plan was released by Thai Government to transform Thailand into a Digital Economy (EY, 2019). ▪ Investment promotion for FinTech ▪ Five-year corporate income tax exemption for new start-ups (The United Overseas Bank, 2017) 	<ul style="list-style-type: none"> ▪ F13: Initiated by Thai FinTech Association. It has three functions: 1. Accelerating Thailand's FinTech industry development, 2. Being a lab for FinTech startups to test their services and products, and 3. A sandbox for those startups to test and validate their services and products in the live environment (EY, 2019).

Appendix 6: FinTech Regulatory Landscape of the Philippines

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Philippines	BSP	<ul style="list-style-type: none"> ▪ Regulations on operations and reporting obligations of non-bank entities (remittance, money changing or forex dealings) ▪ Regulations on operations and reporting obligations of virtual currency. (The United Overseas Bank, 2017). ▪ Guideline on the National Retail Payment System (NRPS) Key Principle and Specific Rules Applicable thereto ▪ The BSP Circular No.944, Series of 2017, known as the Guidelines for Virtual Currency (VC) Exchanges. ▪ “A Warning Advisory on Virtual Currencies” was issued by BSP in March 2014 ▪ The BSP issued an “Advisory on the Use of Virtual Currencies” in December 2017 ▪ BSP Circular No.704, Series of 2010 streamlines the licensing requirements of banks and financial institutions that intend to offer electronic payment and financial services (CCAF et al., 2019). 	<ul style="list-style-type: none"> ▪ BSP working with RegTech for Regulators Accelerator to develop cutting -edge digital supervision tools and techniques ▪ BSP considering adopting an automated compliant handling portal for customers and API system for automated reporting for regulated entities (The United Overseas Bank, 2017). 	<ul style="list-style-type: none"> ▪ Regulatory sandbox: Initially known as “Test and Learn” approach used to engage e-money pioneers in the country to pilot their e-money products. The regulatory framework governing the issuance e-money and operation of EMIs was developed from this regulatory sandbox (DFDL, 2018). ▪ RegTech: Offer guidance and technical support, a phase approach to defining problems and finding solutions, a neutral platform encouraging engagement between regulators and RegTech firms (UNSGSA FinTech Working Group & CCAF, 2019).

Appendix 6: FinTech Regulatory Landscape of the Philippines (Con't)

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Philippines	BSP	<ul style="list-style-type: none"> ▪ The BSP issued Circular No.980, Series of 2017, which promulgated the National Retail Payment System Framework in November 2017 (CCAF et al., 2019). ▪ E-Money: in 2009 BSP has issued Circular No.649 which provides the guidelines for the issuance of electronic money (E-money and the operations of EMIs in the Philippines. ▪ Circular 940 (20 January 2017): Allows banks to serve clients through cash agents which can accept and disburse cash on behalf of the bank, using a device through which its customers can perform secure online, real-time deposit and withdraw transactions for his/her own bank account, fund transfers and bills payment. ▪ Circular 949 (15 March 2017): Provides guidelines on social media risk management that advocate responsible use of social media presents vast potential benefits and opportunities for greater economic advancement and financial inclusion (DFDL, 2018). 		

Appendix 6: FinTech Regulatory Landscape of the Philippines (Con't)

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Philippines	BSP	<ul style="list-style-type: none"> ▪ Circular 982 (9 November 2017): Provides guidelines on information security management of BSFIs given the cybersecurity threats amidst the rapidly evolving digital financial landscape and requires BSFIs to ensure that its IT risk management system, governance structure, and processes are commensurate with the attendant IT risks (DFDL, 2018). 		
	SEC	<ul style="list-style-type: none"> ▪ Rules and Regulations governing Equity Crowdfunding issued by SEC in November 2017 ▪ An “Advisory on Initial Coin Offerings” was issued by SEC in January 2018 ▪ SEC issued the Proposed Rules on ICOs, Series of 2018 ▪ Lending Company Regulation Act of 2007 (CCAF et al., 2019). 	<ul style="list-style-type: none"> ▪ SEC formulate policies and regulates the securities market (CCAF et al., 2019). 	

Appendix 6: FinTech Regulatory Landscape of the Philippines (Con't)

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Philippines	IC	<ul style="list-style-type: none"> ▪ CL 2014-47, Series of 2014, Guidelines on Electronic Commerce of Insurance Products was issued by the IC ▪ The IC issued CL 2016-15, Series of 2016, permitting the renewal of electronic policies online ▪ The IC issued CL 2016-60, Series of 2016, allowing a consumer to signify their consent to the contract by clicking the confirmation button to finalize the processing of the application instead of manually inputting a specimen signature ▪ CL 2016-61, series of 2016 was issued by the IC, the IC must recommend the approval of the telemarketing arrangement or agreement before the company or broker may engage in the telemarketing of insurance products ▪ The IC issued CL 2018-07, Series of 2018, providing guidelines for the use and payment of a mobile insurance application (CCAF et al., 2019). 	<ul style="list-style-type: none"> ▪ IC regulates and supervises the insurance industry (CCAF et al., 2019). 	
	Others		<ul style="list-style-type: none"> ▪ QBO Innovation Hub by Department of Trade and Industry and IdeaSpace (The United Overseas Bank, 2017). 	

Appendix 7: FinTech Regulatory Landscape of Vietnam

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Vietnam	SBV	<ul style="list-style-type: none"> ▪ The Prime Minister signed Decision 2545/QD-TTg to ratify the project to develop cashless payment in 2015-2020 ▪ Decree 101/2012/ND-CP and Circular 39/2014/TT-NHNN. The decree details the process of applying for a license and requirements that third-party payment services providers need to meet. ▪ The Decision No. 1255/QD-TTg on the management of virtual assets, digital currencies and virtual money in conformity (CCAF et al., 2019). ▪ Decree 165/2018/ND-CP on e-transaction in financial operations (Ha & Loan, 2018) ▪ Law on Credit Institution (<i>Laws on Credit Institutions and Planning to Be Revised</i>, 2017). 	<ul style="list-style-type: none"> ▪ Full legalization of digital assets and cryptocurrencies ▪ Expect to publish frameworks to aid and accelerate Vietnamese FinTech start-ups ▪ Policy to implement National Payment Network by 2020 (The United Overseas Bank, 2017). 	<ul style="list-style-type: none"> ▪ “Wait and See” approach (Chan, 2019).

Appendix 7: FinTech Regulatory Landscape of Vietnam (Con't)

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Vietnam	SBV	<ul style="list-style-type: none"> ▪ Decree on No-Cash Payments ▪ Circular on Intermediary Payment Services ▪ Circular on Management, Operation and Use of the National Interbank Electronic Payment System ▪ Directive on the Strengthening of Security in Electronic Payment and Card-Based Payments (DFDL, 2018). 		
	SSC		<ul style="list-style-type: none"> ▪ SSC is an organization under the Ministry of Finance, charged with the functions of regulating the securities market (CCAF et al., 2019). 	

Appendix 8: FinTech Regulatory Landscape of Cambodia

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Cambodia	MEF	<ul style="list-style-type: none"> ▪ Prakas on the implementation guidance of the sub-decree on tax incentive for SMEs in priority sector ▪ Law on Trust Fund ▪ Insurance Law ▪ Prakas on the Management of Pawn and Pledge Business by Consignment 	<ul style="list-style-type: none"> ▪ Digital Economy plan ▪ SMEs co-financing Project 	
	SECC	<ul style="list-style-type: none"> ▪ Law on the Issuance and Trading of Non-Government Securities (Law on Securities) ▪ Prakas on Licensing and Management of Collective Investment scheme ▪ SECC plans to develop crowdfunding platform and regulation during 2020 		
	NBC	<ul style="list-style-type: none"> ▪ Prakas on Management of Payment Services Providers ▪ Technology Risk Management Guidelines ▪ Law on AML/CFT ▪ Law on Banking and Financial Institutions ▪ Guideline on Submitting Suspicious Transaction Reports for All Reporting Entities under AML/CFT 	<ul style="list-style-type: none"> ▪ The National Payment Gateway “Bakong” ▪ National Financial Inclusion Strategy 2019-2025 was adopted by the Council of Minister in July 2019 ▪ The National Strategy for AML/CFT for 2019-2023 ▪ Financial Sector Development Strategy 2016-2025 was adopted in October 2016 ▪ Cambodian Post launched e-payment and money transfer app on 15th June 2018 	<ul style="list-style-type: none"> ▪ “Test and Learn” approach by NBC

Appendix 8: FinTech Regulatory Landscape of Cambodia (Con't)

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Cambodia	NBC	<ul style="list-style-type: none"> ▪ Circular on Suspicious Transactions and Know Your Customer (KYC) Policies ▪ Prakas on resolution of consumer complaints 	<ul style="list-style-type: none"> ▪ Press Release on the launch of QR Code Cross-Border Payment between Cambodia and Thailand ▪ The World Bank has been working with NBC for setting up a “Roadmap for National Financial System Development” in Cambodia ▪ NBC collaborates with ADB under Mekong Business Initiative project to develop and promote the FinTech in Cambodia as the following: <ul style="list-style-type: none"> ✓ Develop a “FinTech Roadmap” ✓ Introduce regulatory framework to support FinTech in Payment space ✓ Introduce Sandbox Guidelines ✓ Conduct FinTech forum to enhance public understanding and also provide a platform for FinTech players to exchange ideas and collaborations 	
	Ministry of Commerce	<ul style="list-style-type: none"> ▪ E-commerce Law ▪ Consumer Protection Law ▪ Draft of Competition Law 		

Appendix 8: FinTech Regulatory Landscape of Cambodia (Con't)

Country	Regulators	FinTech regulations/standards	FinTech industry enabler/utilities	Innovative Regulatory Initiative
Cambodia	MPTC	<ul style="list-style-type: none"> ▪ Sub-decree on Digital Signatures ▪ Law on Telecommunications 		
	Others	<ul style="list-style-type: none"> ▪ Investment Law ▪ Draft on Cybercrime Act 	<ul style="list-style-type: none"> ▪ The ABC FinTech Working Group ▪ CFA ▪ CAFT ▪ CJCC ▪ Development Innovations ▪ National University of Management ▪ ACLEDA Institute of Business ▪ National Institute of Posts, Telecoms & ICT 	

Appendix 9: List of Interviews

Institution		Type of entity	Interviewee	Position	Language spoken	Means of communication	Duration	Date
Morakot Technology		Accounting/Banking system	Khuon Sophort	CEO and Co-Founder	Khmer	Face to face	01:34:38	2019-10-08
Banhji		Accounting/Banking system	Sim Chankirirot	CEO and Founder	Khmer	Face to face	01:40:03	2019-10-09
Ministry of Economy and Finance	General Department of Policy	Regulator	Chheang Vanarith	Director, Macro Economic and Fiscal Policy Department	Khmer	Face to face	00:49:14	2019-10-11
	Department of Real Estate Business and Pawnshop		Damra Chhoun	Head of Pawnbroker Supervisor Division	Khmer	Face to face	00:59:08	2019-12-20
	Department of Insurance and Pension		1. In Meatra 2. Mote 3. Var Vichea	1. Head of Department of Insurance and Pension 2. Head of Market Development Division 3. Official of Legal and Mediation Division	Khmer	Face to face	00:44:57	
	Rural Development Bank		H.E. Keo Thatch	CEO	Khmer	Face to face	00:30:46	2019-12-19
Small World Venture		Investor	Thul Rithy	CEO and Co-Founder	English	Telephone interview	01:35:15	2019-10-15
OCTANE		Investor	Tapas Kuila	General Partner	English	Face to face	01:01:04	2019-10-16
Bongloy Payments PLC		PSP	Pen Chenda	CEO/Co-Founder	English	Face to face	01:33:01	
Cambodia Association of Finance and Technology (CAFT)		Enabler	Pen Chenda	Chairman of CAFT	English	Face to face	00:20:05	
Cambodia-Japan Cooperation Center (CJCC)		Enabler	Khim Leang	Director of CJCC	Khmer	Face to face	00:50:14	2019-10-18
DaraPay		PSP	Phok Ratha	General Manager	Khmer	Face to face	“*”	
PayGo SEA (Cambodia) PLC		PSP	Andrey Krivoshein	CEO	English	Face to face	01:09:26	2019-10-21
Speed Pay PLC		PSP	Lee Kok Yang	Head of Business Development	English	Face to face	01:01:23	2019-10-22
True Money (Cambodia) PLC		PSP	1. Kong Senmono 2. Chhon Sakol 3. Kol Chanleakhena	1. Head of IT Development 2. Head of Marketing 3. Finance Manager	Khmer	Face to face	01:24:37	2019-10-24
Geekho Cambodia (Getloy)		PSP	Jeff Laflamme	Co-Founder and CEO	English	Face to face	01:42:57	

Appendix 9: List of Interviews (Con't)

Kiu (Cambodia) Co., Ltd	Accounting/Banking system	Dara Ouk	CEO	English	Face to face	01:10:15	2019-10-25
Ly Hour Pay Pro PLC	PSP	Moeurng Rotha and others	Assistant to President and others	Khmer	Face to face	01:28:36	2019-10-28
Asia Wei Luy	PSP	Tieng Sophea	Acting Chief Executive Officer	Khmer	Face to face	01:21:21	2019-10-30
Cambodia Investor Club	Crowdfunding	Lem Chansamrach	Managing Director	Khmer	Face to face	01:22:45	2019-11-01
iPay88	PSP	1.Remi Pell 2.Bora Say	1.Managing Director 2.Head of Operations	English	Face to face	“*”	2019-11-05
KOSIGN (Cambodia) Investment Co., Ltd	Accounting/Banking system	Heang Vanny	CCO	Khmer	Face to face	01:33:23	2019-11-15
PiPay PLC	PSP	1.Tomas Pokomy 2.Nhean Chenda	1. CEO 2. Head of IT	English	Face to face	01:59:22	2019-11-18
Smart Axiata Co.,Ltd	Investor	Anthony Perkins	Chief Digital Service Officer	English	Face to face	02:08:08	2019-11-19
Smart Axiata Co.,Ltd (SmartLuy)	PSP						
Belt Road Capital Management (Cambodia) Co.,Ltd	Investor	Tang Lim Chhoung	Investment Manager	English	Face to face	00:17:28	
Sonatra Group (Sonatra Easy Money)	Lending service provider	Tetsuji NAGATA	CEO	English	Face to face	00:50:00	2019-11-20
Clik Payment (Cambodia) Co., Ltd	PSP	1.Metthew Tippetts 2.Darren Jensen	1.CEO &Co-Founder 2.CTO &Co-Founder	English	Face to face	01:38:48	
National University of Management	Enabler	1.Ly Sok Heng 2.Sou Phally	1.Vice Rector 2. Dean, Faculty of Management	Khmer	Face to face	01:30:10	
Cambodia Security Exchange (CSX)	Regulator	1.Hong Sok Hour 2.Yim Sakal 3.Nuth Sophea 4. Try Taihy	1. CEO 2. IT Department Director 3. Assistant to CEO 4. Securities Clearing and Settlement Manager	Khmer	Face to face	01:15:44	2019-11-21

Appendix 9: List of Interviews (Con't)

Securities and Exchange Commission of Cambodia	Regulator	1.Sou Socheat 2.Vin Pheakdey 3.Mok Rady 4.Khy Pochchhy	1.Director General 2.Director in Securities Intermediaries Supervision Department 3.Deputy Director of Department 4. Head of Research and Securities Market Development Division	Khmer	Face to face	01:15:16	2019-11-21
Asian Development Bank	Enabler	1.Benita Ainabe 2.Doung Poullang	1.Financial Sector Specialist 2.Senior Economics Officer	English	Skype and face to face	01:01:25	2019-11-22
Development Innovations Project	Enabler	Kate Heuisler	Chief of Party	English	Face to face	01:07:40	2019-11-25
National Bank of Cambodia (NBC)	Regulator	1.Ouk Sarath 2.Sovann Rithy	1.Director of Payment System Department 2. Head of Oversight Division Payment System Department	Khmer	Face to face	“*”	2019-11-26
Mekong Strategic Partners	Investor	Kem Bora	Partner	Khmer	Face to face	01:02:55	
BIMA	InsurTech	Kim T.Am	CEO	English	Face to face	01:13:16	2019-11-28
Spean Luy Co.,Ltd	Lending service provider	Yuta Nagano	Founder and CEO	English	Face to face	00:42:01	2019-11-28
Wing (Cambodia) Limited Specialized Bank	PSP (Specialized Bank)	1.Manu Rajan 2.Doeuk Daravuth	1.CEO 2.Risk & Compliance Director	English	Face to face	01:28:48	2019-12-02
Advanced Bank of Asia Bank (PayWay& ABA Pay)	PSP (Bank)	Zokhir Rasulov	CDO	English	Face to face	00:58:48	2019-12-05
National Institution of Posts, Telecoms and ICT	Enabler	Be Chantra	Public Relation Director	Khmer	Face to face	01:18:31	2019-12-19
ACLEDA Institute of Business	Enabler	1.Ly Thay 2. Dr. Phon Narin	1.EVP & Group Chief Administration Officer 2.Managing Director of ACLEDA Institute of Business	Khmer	Face to face	00:58:20	
Credit Bureau Cambodia	Accounting/Banking system	Oeur Sothearoath	CEO	Khmer	Face to face	01:25:23	2019-12-20
World Bank	Enabler	1.Ratchada Anantavasilpa 2.Marco Nicoli	1. Senior Financial Sector Specialist 2.Senior Financial Sector Specialist	English	Skype	01:11:30	2020-01-06

Appendix 9: List of Interviews (Con't)

The Association of Banks in Cambodia	Enabler	Dr. In Channy	Director of Association of Banks in Cambodia	Khmer	Face to face	01:32:50	2020-01-21
Cambodia FinTech Association	Enabler	Eddie Lee	Vice President of Cambodia FinTech Association	English	Face to face	00:58:06	2020-02-03

Note: “*” Recoding was not allowed due to confidentiality.

Appendix 10: Questionnaire for Government and Donor Agencies

I. Background

1.1 What is your definition of FinTech?

1.2 What are the roles of your ministry/agency in FinTech development?

1.3 Does your ministry/agency work with any other ministries/agency to support Fintech?

a. If yes, which ministry or agency?

b. In which area of supports?

1.4 Are there the existing policy and regulations governed FinTech startups in Cambodia? If yes, what are they?

1.5 Do you think there should be additional policy and regulations related to FinTech startup in Cambodia? Why or why not?

1.6 Could you share any data on the existing number of FinTech startups in Cambodia if you have?

1.7 Do you have any department that is the focal point for FinTech? If yes, could you recommend the person in charge?

II. Challenges and Opportunities

2.1 What are the challenges in managing/regulating those FinTech startups?

2.2 Do you have any idea of where Cambodia FinTech stands vis-à-vis our ASEAN neighbors?

2.3 Do you see that FinTech would be the new opportunity to enhance the financial inclusion for Cambodian people? Why or why not?

2.4 Would Fintech be the catalyst of the country's economic development in the near future? Why or why not?

III. Future Plan

3.1 What would be the coming policy and regulations? How will it support FinTech startups?

3.2 Is there any plan in the coming year for your ministry/agency to support/regulate FinTech startups?

IV. Perception

4.1 What do you think about the recent development of Fintech in Cambodia?

4.2 What are the positive and negative aspects of the recent development of Fintech?

4.3 During the interim stage where those startups could not comply with any acts or law, what should they do? How the government handles such case?

4.4 With the limited knowledge on FinTech, what do you think should be the right way to create awareness and promote FinTech in Cambodia?

4.5 What do you see the future of Fintech in Cambodia?

Appendix 11: Questionnaire for FinTech Funders/Investors

I. Background

1.1 How long have you started to invest in startups?

1.2 Do you invest anywhere else besides in Cambodia?

1.3 How many startups have you invested in and how many of them are FinTech startup?

1.4 What would be your definition of FinTech?

1.5 What is the total investment on startups up to now?

1.6 What is the average investment per each FinTech startup?

1.7 What are the pre-conditions of your interest in investing?

1.8 What attracts you to invest in FinTech startups?

1.9 Is your investment done in terms of finance only or any other type of supporting services? If yes, what types of supporting services?

1.10 Do you usually invest one time or are there cases that you also add more investments at the expansion stage?

1.11 What would be the return on your investment (ROI)? Usually, how long would be your ROI?

1.12 What is the percentage of the FinTech startups successful under your investment?

1.13 Compare between non-Fintech startups and Fintech startups, which one has more successful cases under your investment? Why?

1.14 How to prevent the risk of losing your investment?

II. Perception

2.1 Would FinTech be a big thing for financial inclusion policy in Cambodia?

2.2 What prevent investors to invest in FinTech startups in Cambodia?

2.3 What are your challenges in investing in FinTech startups in Cambodia?

2.4 As an investor, what do you think are the threats and opportunities of FinTech startups in Cambodia?

2.5 What should the government do to support FinTech in Cambodia to catch up with FinTech in other ASEAN countries?

2.6 How do you see the future of FinTech in Cambodia?

2.7 What are your plans for the upcoming year and the next 5 years for FinTech investment in Cambodia?

Appendix 12: Questionnaire for FinTech Incubator

I. Background and Operation

1.1 Can you briefly describe your institution?

1.2 What kind of services do you provide to FinTech startups?

1.3 What requirements does a FinTech startup need to meet to get your support?

1.4 How long could you support Fintech startups?

1.5 What do you get in return when a FinTech startup becomes successful?

1.6 What do you lose/face when a FinTech startup cannot be successful?

II. Financial Sources and Partnership

2.1 What are the sources of your funding?

2.2 Besides the partners who are the sources of your funding, do you have other partners? If yes, who are they?

2.3 How do you find your partners?

III. Success Factors

3.1 How many FinTech startups have you supported so far?

3.2 How many of them have been successful running until now under your support?

3.3 What factors made those FinTech startups successful?

3.4 What factors made some of the FinTech startups unsuccessful?

IV. Challenges and Threats

4.1 What are your challenges in supporting those FinTech startups?

4.2 What are the benefits of FinTech for Cambodia?

4.3 What are the threats of FinTech to the traditional financial sector in Cambodia?

4.4 What do you think are the main challenges for FinTech startup in Cambodia?

4.5 How to overcome the main challenges for FinTech startup in Cambodia?

a. Role of the government

b. Role of FinTech incubator

c. Role of FinTech startup

V. Plan

5.1 How will you sustain yourself when the funding comes to the end?

5.2 What is your plan in supporting Fintech startup for the upcoming years?

VI. Perception

6.1 To what extent do you think the government support FinTech startups in Cambodia?

- a. Registration
- b. Taxation
- c. Policy or regulation (if any)

6.2 In case there is no policy or regulation framework suitable to FinTech startups, what should the government do?

6.3 What do you see the future of FinTech in Cambodia?

6.4 What would be the right way to promote FinTech startup in Cambodia?

6.5 What aspect(s) are still missing to accelerate the development of FinTech startups in Cambodia to catch up with those in other ASEAN countries?

6.6 How will you sustain yourself when the funding comes to the end?

Appendix 13: Questionnaire for Universities/Academic Institutions

I. Background

1.1 What is your definition of FinTech?

1.2 What do you think about the recent development of FinTech in Cambodia?

1.3 Why does your university choose to offer FinTech program?

1.4 What do you expect from this program in terms of meeting the market demand and FinTech development in Cambodia in the future? How many students have been registered so far?

1.5 Does your university work with any other ministries/agency to support FinTech education in Cambodia?

a. If yes, which ministry or agency?

b. In which area of supports?

II. Challenges and Opportunities

2.1 What are the challenges to be the first university in Cambodia to offer the program in FinTech?

2.2 Do you see that FinTech would be the new opportunity to enhance the financial inclusion for Cambodian people? Why or why not?

2.3 Would Fintech be the catalyst of the country's economic development in the near future? Why or why not?

III. Perception

- 3.1 What do you think are the major roles of university in FinTech development in Cambodia?

- 3.2 Do you have any idea of where Cambodia FinTech stands vis-à-vis our ASEAN neighbors?

- 3.3 With the limited knowledge on FinTech, what do you think should be the right way to create awareness and promote FinTech in Cambodia?

- 3.4 What do you see the future of Fintech in Cambodia?

- 3.5 Generally, there is still a gap between what were taught at school and market demand. How can we reduce such gap?

Appendix 14: Questionnaire for Existing FinTech Companies

I. Background

1.1 Can you briefly describe your business?

1.2 Why did you decide to start such business?

1.3 How long have you started your business?

1.4 What and where were the sources of your funding at the start?

1.5 How did you manage to get the funding?

1.6 How many team members do you have? How did you select or find the members?

1.7 Did you find it challenging to select or find the members to join in your team?

II. Operation

2.1 What was the business model at the beginning, and did it change overtime? Why or Why not?

2.2 What government ministries did you register your business with?

2.3 Was there any challenge when you registered your business? If yes, what were those challenges?

2.4 What kind of licenses and from which government ministries, do your business have to comply?

2.5 Did you get any supports from any organizations or government agencies?

a. If yes, which organization or government agencies support your companies?

b. What kinds of support did you get and for how long?

c. How did you think about those support?

III. Challenges and Threats

3.1 What were the challenges facing at the start and what are they now?

a. Finance

b. Human Resources

c. Regulations

d. Supports

e. Technology

f. Competitors

3.2 What are the most challenging aspects in operating FinTech company?

3.3 Is there a moment where you wanted to give up? Why? What has kept you motivated?

IV. Opportunities and Plan

4.1 What is the main opportunity as a FinTech startup?

4.2 What do you think would be the key success factors of your business?

4.3 What aspect(s) in your company do you think you should improve?

4.4 What is your plan for the coming year and the next 5 years for your business?

V. Perception

5.1 Do you think Cambodian people are aware of what FinTech is?

5.2 What would be the right way to promote FinTech in Cambodia?

5.3 As an entrepreneur and innovator, sometimes the business innovation is created more advance to be complied to any policy and regulation in Cambodia. What do you think the government should do?

5.4 What aspect(s) are still missing to accelerate the development of FinTech to catch up with FinTech in other ASEAN countries?

5.5 What do you think would be the major risks of FinTech?



CONTACT US

Hotline: +855 81 922 329

Email: info@techostartup.center

Website: www.techostartup.center