

COLLABORATIVE REGULATORY DEVELOPMENT
IN THE MOBILE MONEY SECTOR: A CASE STUDY IN SRI
LANKA

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INSTITUTE FOR ADVANCED STUDIES
UNIVERSITY OF MALAYA
KUALA LUMPUR

2020

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**DISSERTATION SUBMITTED IN FULFILMENT OF
THE REQUIREMENTS FOR THE DEGREE OF MASTER
OF PHILOSOPHY**

**INSTITUTE FOR ADVANCED STUDIES
UNIVERSITY OF MALAYA
KUALA LUMPUR**

2020

UNIVERSITY OF MALAYA
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ABSTRACT

Providing financial services for the unbanked has been challenging, mainly due to relatively high operational costs and the difficulty of reaching remote areas. Mobile money has brought bank-like facilities to the unbanked communities, through its low-cost operations and widespread agent network, thus making them financially included. Regulatory response and support are essential for this advancement, where they necessitate significant changes to the current regulatory practices. This task is difficult for regulators due to their limited technical knowledge and resources in the field of financial technologies. Regulators collaborate with industry to overcome these challenges. However, studies on such collaborations are scarce. This study proposes a model for collaborative regulatory development for the mobile money industry. Actual practices were mapped with the theory of negotiated rulemaking to derive variations and extensions to the original theory. The study employed the case study research method, in particular, the Structured-Pragmatic-Situational (SPS) approach, for data collection and analysis. Regulators have appointed a discussion committee with a broader representation of interests, for more objective decision making. Further, the central bank has maintained close control throughout the negotiation process, where participants are motivated to compromise their interests to achieve joint gains. Findings reveal that the collaboration provided necessary knowledge and information for developing effective regulation, to participants. The central bank composed the executable rule, with the aid of information and knowledge gained through collaboration. Subsequent revisions also play an essential role in regulatory development. These revisions are developed through the involvement of stakeholders in the form of suggestions and comments. Collaborative testing and benchmarking are also similar joint approaches observed in mobile money regulation.

Keywords: Financial Technologies, Mobile Money, Regulation Development, Collaboration.

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ABSTRAK

Penyediaan perkhidmatan kewangan untuk golongan unbanked (yang tidak memiliki kemudahan perbankan) merupakan sesuatu yang mencabar, terutamanya disebabkan oleh kos operasi yang tinggi dan kesukaran untuk menjangkau kawasan pedalaman. Mobile money (Wang mudah alih - pembayaran melalui telefon bimbit) telah menyediakan kemudahan seperti bank, kepada 'unbanked communities' (masyarakat tidak memiliki kemudahan perbankan) melalui kos operasi yang rendah dan rangkaian ejen meluas, menjadikan mereka financially included (golongan yang mempunyai kemudahan pengurusan kewangan). Maklum balas dan sokongan oleh pengawalseliaan adalah diperlukan untuk kemajuan ini dimana kemajuan ini memerlukan perubahan ketara terhadap amalan peraturan semasa. Tugas ini telah didapati menjadi sukar bagi pengawal selia kerana pengetahuan teknikal dan sumber mereka yang terhad dalam bidang teknologi kewangan. Pengawal selia telah bekerjasama dengan industri untuk mengatasi cabaran-cabaran ini. Namun begitu, kajian mengenai kerjasama ini adalah sukar. Kajian ini mencadangkan model pembangunan peraturan kerjasama untuk industri wang mudah alih. Amalan sebenar telah berdasarkan teori rundingan pembuatan keputusan untuk memperoleh variasi dan sambungan kepada teori asal. Kajian mendapati, bahawa kerjasama tersebut mempunyai pengetahuan dan maklumat yang diperlukan untuk membangunkan peraturan yang berkesan. Pengawal selia telah melantik jawatankuasa rundingan dengan perwakilan yang seimbang daripada pihak berkepentingan, untuk keputusan yang lebih objektif. Pihak berkepentingan telah menggabungkan faedah mereka untuk mencapai keuntungan bersama. Walau bagaimanapun, bank pusat telah melantik pasukan rundingan dan merangka executable rule (peraturan pelaksanaan). Semakan kawal selia memainkan peranan penting dalam pembangunan pengawalseliaan. Semakan tersebut menjadi kebiasaan kepada kebanyakan

sesuatu baru muncul seperti peraturan teknologi kewangan. Lebih-lebih lagi, semakin-
semakan ini dibina melalui penglibatan pihak berkepentingan, dalam bentuk cadangan
dan komen. Ujian bersama dan penanda aras juga pendekatan berkumpulan yang sama
dapat diperhatikan dalam peraturan wang mudah alih. Hasil kajian mencadangkan
jawatankuasa kecil khusus dan garis masa akan meningkatkan proses rundingan begitu
juga dengan maklum balas pengawalseliaan.

Kata kunci: teknologi kewangan, rangkuman kewangan, wang mudah alih, peraturan,
kolaborasi/kerjasama

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ACKNOWLEDGEMENTS

Completing a research degree is time-consuming and needs a lot of effort. It could not have been completed without the help and support from many parties. Primarily, I would like to express my deepest appreciation to my supervisors Prof. Shamshul Bahri and Mr. Ali Fauzi, for their continuous support during my study. Their motivation and guidance have been a great strength for overcoming barriers in the research path. They have helped me immensely throughout the entire research and writing of this dissertation.

I would like to also express my gratitude to my family members for bearing my long absences from home. Without my family's constant love, support and care, it would not have been possible for me to achieve my educational goals. Further, I gratefully remind the support of Mr. Sampath Gunathilaka, who helped me in many ways throughout my research process.

I would also like to thank the staff of the University of Moratuwa for granting leave for the study. My sincere gratitude goes towards to staff of Central Bank of Sri Lanka and telecommunication providers who have taken part in the interviews. It would not have been possible to conduct this research without their precious support.

Last but not least, I would like to thank all the staff and lecturers in the Institute for Advanced Studies for their support to complete my study on time

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LIST OF SYMBOLS AND ABBREVIATIONS

CBSL	:	Central Bank of Sri Lanka
AML	:	Anti-Money Laundering
CFT	:	Countering Financing of Terrorism
KYC	:	Know Your Customer
SPS	:	Structured Pragmatic Situational
ICTA	:	Information and Communication Technology Agency
TRC	:	Telecommunication Regulatory Commission
NPC	:	National Payment Council

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CHAPTER 1: INTRODUCTION

Most banks find it economically unattractive to provide banking facilities to low-income communities due to small value transactions and high transaction costs (Alexandre, Mas, & Radcliffe, 2011). On the other hand, these communities are reluctant to approach formal financial services due to complex documentation and high transaction costs (Buckley, Greenacre, & Malady, 2015). Due to these reasons, 2.5 billion of the world's adult population are deprived of formal financial services, making them 'financially excluded' or 'unbanked' (Williams, 2013).

Providing financial services to the unbanked is termed as financial inclusion. Such efforts can bring benefits to lower-income communities (Arun & Kamath, 2015). Studies have shown that financial inclusion protects lower income segments against economic downturns (Bara, 2013). An economic shock can damage the unstable financial position of poorer communities, making them much more difficult to recover from it. Additionally, financial services can assist them in smoothening their consumption, saving and borrowing (Adaba, Ayoung & Abbott, 2019). Consequently, this allows them to invest in value generation activities, such as running business enterprises (Ehrbeck & Tarazi, 2011).

One technology stands-out as a key tool for financial inclusion: mobile money (Bara, 2013; Ehrbeck & Tarazi, 2011). Mobile money is defined as a value storing instrument provided by either bank or nonbank entities (Buckley et al., 2015). Mobile money agents accept physical cash and issue electronic value named "e-float" via a short message (SMS). This e-float is an electronic form of money, which can be transferred via a mobile phone. The recipient gets a similar e-float, which can be used to withdraw money from a network of agents (Williams, 2013). This e-float is used for small payments, local and international money transfers and even can be remitted to bank accounts (Figure 1.1).

For some communities, it has become the only form of banking (Kirui, Okello, & Nyikal, 2012).

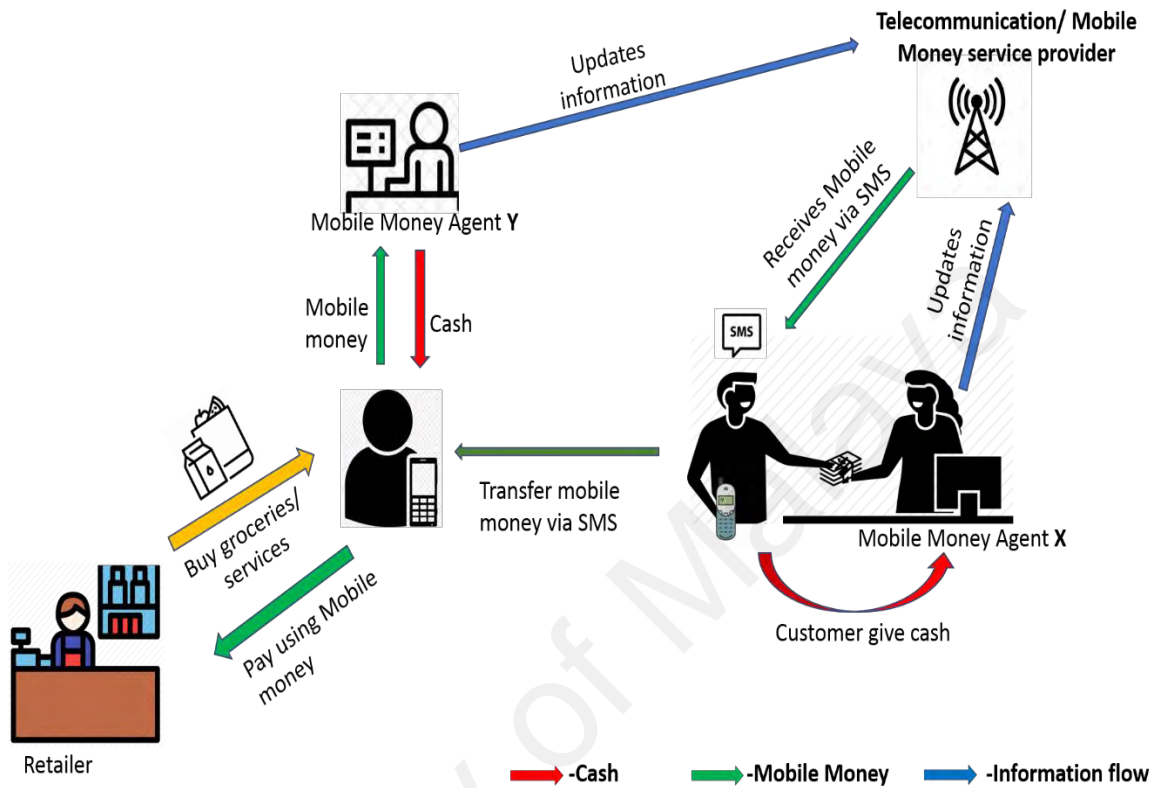


Figure 1.1: Parties involved in mobile money with their interactions

Figure 1.1. Parties involved in mobile money with their interactions. Adapted from “Practice Note for Mobile Money Service Provider,” by Central Bank of Eswatini, 2019, p. 10. Copyright 2019 by Central Bank of Eswatini.

Regulation is critical for the success of the mobile money industry. Countries with a low level of regulation, expose mobile money firms and customers to a higher risk. On the other hand, too restrictive regulation stifles innovation and discourage new firms from entering the market (Arun & Kamath, 2015). According to Varshney (2014), rigid regulation presents a constraint, whereas adoptive and flexible regulation facilitates innovation. He brings the example of the Philippines, where the regulatory framework enables the telecommunication firms to act as remittance agents, without a banking partner, thus lowering the barriers to launch mobile money.

1.1 Problem Statement

Regulators find it challenging to provide adequate regulatory responses to new and emerging technological products. The factors are many and multi-faceted. First, the rate of technological change and product innovation is getting faster by the day (Thaw, 2013). Second, regulators often lack the technical skills and resources to develop rules and regulations that protect both the users and the innovators. Consequently, the regulations that they have developed may be too strict to enable the full benefits of the technology to reach the users, or too loose that it leads to frauds and misuses.

The collaborative regulatory development approach has emerged as an answer to address the above shortcomings. Through this approach, mobile money regulators work together with the industry (i.e., technology firms and telecommunication companies) in coming up with effective regulations (Thaw, 2014). For example, in Sri Lanka, collaborative regulatory development has been resourceful in developing effective regulation for mobile money. This ensures that both the innovators and the unbanked community that use the technology are protected (Lal & Sachdev, 2015).

Despite the benefits assured from collaborative regulatory development, studies that demonstrate the approach's process have been scarce. Mobile money is an emerging field that interconnects the telecommunication and finance industries. Further, it has rapidly grown into a financial service, posing new challenges in regulation. Without a proper understanding of the process, it is difficult for others in the same situation, to emulate and possibly enhance their regulatory development process. Consequently, the regulators continue to lag in coming up with effective regulations that can protect the needs of both the users and the industry.

This study intends to address this shortcoming by investigating how the regulators and the industry work together to develop regulations for the use of mobile money in Sri Lanka. Sri Lanka has been chosen as the context of the study because it is one of the very few countries in Asia, where the use of mobile money has flourished to assist the financially excluded communities (Di Castri, 2013; Lal & Sachdev, 2015). The population of the study consists of two main parties: the regulator represented by the Central Bank of Sri Lanka (CBSL) and the industry represented by the telecommunication companies that provide the mobile money services in the country.

1.2 Research Questions and Objectives

The study presents one, central research question and three research objectives as follows.

(a) *Central research question*

How was the regulation for mobile money, developed collaboratively in Sri Lanka?

(b) *Research objectives*

- 1) To identify the conditions for regulators and technology firms to collaborate.
- 2) To determine the main activities of collaboration between regulators and technology firms.
- 3) To produce a model of collaborative regulatory development.

1.3 Significance of the Study

This study addresses an important but scarce research area of financial technology regulation. Specifically, the study contributes to the knowledge on mobile money

regulation by examining how collaborative rulemaking can address current requirements of regulating mobile money.

The evolution of mobile money, from mere transfers to a range of financial services, requires the regulation to be evolving responsively (Ehrbeck & Tarazi, 2011; Robinson, 2013). Collaborative regulatory practices proposed by the study, address the technological skill gap of the regulators. As a result, this improves the responsiveness of the regulatory system. Also, theory extensions of the study, provide learnings to mobile money regulators from similar domains.

1.4 Organization of the Dissertation

The remainder of the dissertation is organized as follows. The following chapter reviews and summarizes the previous studies on mobile money regulation. It highlights the collaborative practices in regulating similar industries. Further, it identifies the alternative regulatory approaches such as test-and-learn, benchmarking, and sandboxing. Finally, it explains the negotiated rulemaking as the theoretical lens. In chapter three, the research method is explained with the theoretical model. The unit of investigation, unit of observation and sampling technique are explained in detail in chapter three. Also, the Structured-Pragmatic-Situational (SPS) approach is introduced for data collection and analysis. Chapter four presents the findings from the data analysis. Further, in chapter four, some quotations from the respondents, as well as documents, are presented. Chapter five discusses the interpretation drawn from the data findings. Specifically, unique practices that are observed in the mobile money context are discussed. Further, the discussion presents the emerging model of collaborative regulatory development. Finally, the last chapter concludes the dissertation with recommendations to the industry and contributions drawn from the findings.

CHAPTER 2: LITERATURE REVIEW

This chapter presents a range of literature on mobile money regulation. The first section discusses the literature on providing financial services through mobile money. The second section discusses different regulatory approaches for regulating mobile money. These include the “test-and-learn” approach, benchmarking, and regulatory sandboxing. Further, it discusses current regulatory challenges for mobile money-based financial services. It also presents the need for collaboration with industry, to overcome these challenges. Thirdly, negotiated rulemaking is presented as the theoretical lens for the study. Examples from similar domains, where negotiations have been successful, are also discussed. Each stage of the negotiated rulemaking is discussed, with practical cases.

2.1 Financial Services Through Mobile Money.

The term “mobile money” is used for financial values that are exchanged through a mobile phone or any other mobile device (Jenkins, 2008; Kirui, Okello, & Nyikal, 2012). The definition by International Finance Corporation (IFC), also describes mobile money as “money that can be accessed and used via mobile phone” (Porteous, 2006, p.77).

Mobile money systems are divided into two broad types as bank-based mobile money systems and non-bank based mobile money systems (As per Table 2.1). Bank-based mobile money systems link the savings/current accounts to a mobile application, enabling the customer to perform transactions via a mobile phone (Lim, Koh & Lee, 2019). These systems are designed and operated by banks, to provide access to accounts, debit/credit cards (Amoroso & Ackaradejruangsri, 2018). Since bank-based systems add value to the current bank services, they are identified as additive models of mobile money (Etim, 2014; Porteous, 2006).

Bank-based models are popular in countries such as South Korea, Japan, Malaysia and China. The payment application, eWallet is an example from Malaysia, where the mobile application of eWallet, allows the user to link his current/savings accounts, debit/credit cards to a single platform. When the eWallet application is installed, it provides the option of adding different bank accounts to the application, using online banking (Alaeddin, Rana, Zainudin & Kamarudin, 2018; Lu, 2018). After setting up fund sources, the user scans the Quick Response (QR) code provided by the vendor and authenticate the payment, using the Personal Identification Number (PIN). These systems provide better security and control to the customer, compared to debit or credit cards (Alaeddin et al., 2018). Popular systems in China, such as Alipay and WeChat Pay also use the same approach (Lu, 2018). As an example, more than 50% of online purchases in China are facilitated through mobile payment applications, such as Alipay and WeChat Pay (Lu, 2018).

On the contrary, non-bank based mobile money systems allow the unbanked community to access the bank-like facilities through a mobile phone (Kanobe, Alexander & Bwalya, 2017). Non-bank based models exchange physical cash for an electronic form of money via a telecommunication agent. This electronic cash is used for transfers, payments and savings, even without a bank account (Lim, Koh & Lee, 2019). These models collaborate with banks and microfinance institutions to provide banking facilities to the unbanked community (Weber & Darbellay, 2010; Porteous, 2006; Dias & McKee, 2010). The agent network of the telecommunication service provider facilitates deposit and withdrawal operations, on behalf of the banks. Since non-bank based models provide access to financial products and services, they are identified as transformative models. They increase financial inclusion and financial literacy rates in developing economies (Malinga & Maiga, 2019). The study is focused on the transformative models for the

unbanked community, where the telecommunication service provider works as an intermediary for the financial services.

Table 2. 1: Bank-based and non-banked based models of mobile money

Aspect	Bank-based models (Additive)	Non-bank based models (Transformative)
Source of Fund	Funds are obtained from the linked bank account(s).	Money exchanged for an electronic value (e-money) and stored in a sim card/phone, for transactions. This is called a mobile wallet.
Users/ Customers	Users are required to own a bank account, for using mobile banking	Can operate without a linked bank account.
Transaction limit	Higher value transactions, like debit cards	Lower transaction limits. Limited to the wallet size
Application as a saving instrument	Users are savings accounts holders. Function as a transaction tool for the savings account.	Used as a savings tool by the unbanked (Limited to the wallet size). Not an interest-bearing savings account.
Technology	Require advanced technologies such as mobile applications and internet connectivity.	Can access through any mobile phone
Benefit	A complementary facility for existing bank account holders (banked community).	Provide financial services for the unbanked (Financial Inclusion).

Note. Adapted from “Mobile banking and mobile money adoption for financial inclusion,” by A.S. Etim, 2014, *Research in Business and Economics Journal*, 9(1), p. 4. Copyright 2014 by AABRI publishing.

In Sri Lanka, mobile money provides financial services, mainly through facilitating money transfers, payments and savings. First, mobile money allows money

transfers even if both the sender and the recipient are unbanked, through networks of agents. These agents are retail shops in rural areas. (Sivapragasam, Agüero, & de Silva, 2011). Because they operate through retail shops, mobile money transfers are inexpensive and more convenient than conventional money transfers (Kirui et al., 2012; Mas & Morawczynski, 2009; Malinga & Maiga, 2019). Second, mobile money provides a cashless payment facility for the unbanked, which enables them to pay utility bills, insurance payments, or similar installments. Cashless payments also widen the purchasing choice of the unbanked by enabling them to reach far-off sellers (Amoroso & Ackaradejruangsri, 2018; Lennart & Bjorn, 2010). Thirdly, mobile money provides an alternative banking facility. Widespread agent network facilitates the basic banking transactions, such as money transfers, payments, account opening, deposits, and withdrawals (Evans, & Pirchio, 2014). These services allow the lower income segment of the society to save in the short term, thus buffering them from sudden economic shocks.

To ensure financial technologies such as mobile money can continue to provide the above benefits, especially to the unbanked community in Sri Lanka, an effective regulation needs to be put in place. An effective regulation ensures the welfare of the technology users, i.e., the unbanked community, and support the innovations of the technology providers, i.e., the telecommunication companies. The next section describes the regulatory approaches for financial technologies such as mobile money.

2.2 Regulatory Approaches for Regulating Financial Technologies

Mobile money is currently regulated by the financial service regulator, who is also responsible for regulating commercial banks. In Sri Lanka, this responsibility falls on the Central Bank of Sri Lanka. Nevertheless, mobile money does not involve banks. Instead, it relies heavily on telecommunication firms with their agents, bringing new challenges, and making banking regulations obsolete. Two important concepts have been identified

for developing effective regulation for mobile money. These concepts are the enabling approach and proportionate regulation (Buckley et al., 2015).

As per the meaning, the enabling approach creates a conducive regulatory environment for mobile money to grow (Porteous, 2009). The approach removes restrictive regulations that constraint the development of mobile money, thus extending banking and financial services to the unbanked (Jenkins, 2008). Before the advent of mobile money, cash has been the only recognized instrument of financial exchange. As a result, the people must rely on banks, as they are the only authorized entity to take cash deposits from the public. When mobile money appeared, it is also recognized as an instrument of financial exchange (Di Castri, 2013). Hence, it enables non-bank entities to provide functions equivalent to banks (Ehrbeck & Tarazi, 2011). The enabling approach assists telecommunication companies to experiment with new products and business models, that are based on mobile money (Kanobe, Alexander & Bwalya, 2017; Porteous, 2009).

Meanwhile, the proportionate approach sets the monitoring levels of a product proportionate to its risk. In the mobile money domain, the main risk is financial integrity, which includes Combating the Financing of Terrorism (CFT) and Anti Money Laundering (AML). In order to counter these threats, a requirement called Know Your Customer (KYC) profile is introduced (Kanobe et al., 2017). Unfortunately, the unbanked community finds it difficult to fulfill this requirement since they do not have the necessary documents or information. As a result, they are unable to use mobile money products (Gutierrez & Singh, 2013). To overcome this shortcoming, KYC profiles are set according to the risk level. Consequently, the unbanked community will be able to use mobile money with the basic KYC profile. (Buckley et al., 2015; Kanobe et al., 2017). Unfortunately, most regulators find it challenging to find a proper balance between

financial integrity and inclusion. Similarly, difficulty in keeping up with the rapid technological change is another regulatory challenge faced by many regulators (Bara, 2013).

In order to face these challenges, several approaches are used. Benchmarking, sandboxing, and “test-and-learn” approaches are used for regulating financial technologies. Most importantly, regulator-industry collaboration has addressed most of the challenges of regulating mobile money.

The benchmarking approach is proposed as a suitable approach for regulation since it has been widely adopted in several industries. The Benchmarking approach adopts successful international cases for regulatory development. These established practices and processes reduce the risk to both the regulator and the industry (Lo, 2016). To address the growing gap between technology and regulation, benchmarking has been effectively used (Marchant, Allenby, & Herkert, 2011). Organization for Economic Co-operation and Development (OECD) has introduced regulatory benchmarking as an innovative method for regulating, where regulators can identify and adopt from successful cases (Jenik & Lauer, 2017).

Regulatory sandboxing has been successful in the field of financial technologies (FinTech). Financial technologies have entered the phase of rapid development. Several startups and new business models indicate this proliferation. In response, regulators are supposed to build a robust regulatory framework while allowing innovations (Zetsche, Buckley, Barberis, & Arner, 2017). These parallel regulatory developments bring a fresh challenge for the regulators (Arner, Barberis & Buckley, 2017; Jenik & Lauer, 2017). Regulatory sandboxes are introduced as a solution for this void. They facilitate innovation by providing a “safe space” for experimenting with new products (Jenik & Lauer, 2017;

Zetzsche et al., 2017). Currently, internet-based financial technology products and services are regulated using the sandboxing approach (Allen, 2019).

In the “Test-and-learn” approach, an interim version of the regulation is launched, for gathering knowledge on an unknown situation. Based on the learnings acquired within the trial period, adjustments are introduced to the interim regulation. (Marchant et al., 2011). Both the regulator and the industry will observe the progress of the product for a defined period. Learning acquired within this period will help both the parties, to make necessary changes to the initial set of regulations. The central bank governor of Tanzania states that their approach towards mobile money is the test-and-learn approach (Di Castri & Gidvani, 2014). Jenkins (2008), recommends test-and-learn as the best approach for mobile money, explaining how it is used in Sri Lanka. Even though there are similarities between the sandboxing and test-and-learn approaches, the latter provides an opportunity for closer collaboration between parties. As a result, more flexibility is achieved, and the regulations are tailor-made for the situation (Jenik & Lauer, 2017).

A more promising approach is regulator-industry collaboration (Di Castri, 2013). The approach has been successful in regulating technologies. In one case, the collaboration with technology firms has enabled regulators to overcome their lack of knowledge and develop effective cybersecurity regulation (Thaw, 2013). In another case, regulators-industry collaboration has led to the development of standards for assessing the efficacy and safety of new drugs (Marchant et al., 2011).

In the case of mobile money, industry updates enable regulators to put in place provisions that can predict potential threats and prepare better defenses (Buckley et al., 2015; Porteous, 2009). Additionally, these collaborations increase the regulator’s agility to respond to rapid product development, which is common in this sector (Bara, 2013).

Unfortunately, very few studies describe how regulator-industry collaboration work in developing effective regulation for the financial technology sector. For a better understanding of the process, the study applies the negotiated rulemaking theory as the theoretical lens.

2.3 The Theoretical Lens: Negotiated Rulemaking.

Negotiated rulemaking facilitates the collaboration between stakeholders to derive a common consensus (Harter, 1982; Kobick, 2010). Several regulatory agencies have adopted this approach to collaborate between regulator, industry, and the public (Derco & Hochman, 2016; Coleman 2013; Kobick, 2010). The ride-sharing industry provides an example of how stakeholders and public interests are incorporated to develop policies and regulations (Perez, 2015) collaboratively. Similar collaborations have also occurred in the transportation sector, where negotiations between diverse parties with vested interests have led to more effective regulations (Derco & Hochman, 2016).

These successes are unsurprising. The discussions generated from these negotiations build better relations and understanding between the members. Consequently, competing parties have reduced resistance towards each other (Perez 2015). Because of these compromises, negotiated rules are more prudent and acceptable to the stakeholders (Langbein, 2008). A study by Merritt and Shafer (2012) shows how the collaborative nature of negotiated rulemaking fosters a stronger network of stakeholders. Most importantly, regulatory negotiation is found to enhance the overall knowledge level of both regulators and the industry. Regulators gain knowledge on new trends in the industry and potential threats, while industry enhances the knowledge on regulatory compliance. This knowledge sharing has been mutually beneficial for both parties (Merritt & Shafer, 2012). Comparative study on the conventional and negotiated rulemaking reveals that knowledge gain through the negotiated approach reaches 62

percent, whereas knowledge gain by the conventional approach is only 17 percent (Langbein & Kerwin, 2000). Besides, regulators realize unnecessary restricted areas, where regulatory relaxations are possible, and the areas with potential risks where tightening of the regulation is needed (Merritt & Shafer, 2012). These views provide better methods to regulate without overburdening the industry (Perez, 2015).

2.4 Summary

Mobile money comes under the jurisdiction of the central bank, which is responsible for regulating banks and financial institutes. Mobile money is different from the traditional financial service, which makes the regulatory development challenging for the regulator. The main two concepts in regulating mobile money have been identified as enabling and proportionality. The enabling approach removes restrictions for mobile money, extending its' reach towards the unbanked. This concept promotes financial inclusion. On the other hand, the proportionate approach creates the monitoring levels of a product, proportionate to its' financial integrity risks. The proportionate approach is implemented through KYC profiles, which provides a tool to counter financial integrity risks. Both enabling and proportionate approaches must be used in a balanced way, to promote financial inclusion, while maintaining the integrity of the financial system. Unfortunately, most regulators find it challenging, to find a proper balance between the financial integrity and inclusion. Similarly, difficulty in keeping up with the rapid technological change is another regulatory challenge faced by many regulators (Bara, 2013).

In order to overcome the challenge of regulating emerging technology, several approaches are proposed. The first approach is benchmarking, where the regulators can identify and adopt successful practices from similar domains (Jenik & Lauer, 2017). The second approach is sandboxing, where a set of rules allows the live testing of a new

product, within certain limits specified by the regulator (Bromberg, Godwin, & Ramsay, 2017). The third approach is test-and-learn, where an interim version of the regulation is launched for gathering knowledge on an unknown situation. Based on the learnings acquired within the trial period, adjustments are made to the interim regulation (Marchant et al., 2011).

Compared to the above three approaches, regulator-industry collaboration has been successful in regulating technologies. The collaboration approach updates the regulator about possible threats and appropriate defenses. In the mobile money context, collaboration enhances the agility of the regulator, for a better regulatory response. In order to understand the regulator-industry collaboration, the study applies negotiated rulemaking as the theoretical lens.

CHAPTER 3: RESEARCH METHOD

This chapter discusses the research method used for the study. First, it explains the reasons for using the qualitative research approach. Secondly, it justifies the use of the case study research method for inferring the theoretical extensions. In the third stage, negotiated rulemaking is explained in detail, as the theoretical lens.

In the next stage, the Structured–pragmatic–situational (SPS) approach is introduced as the data collection and analysis method. In order to clarify the eight-step process of SPS, activities carried out in each stage are explained. Further, the unit of analysis and unit of observation of the study are discussed. Finally, the sampling technique is presented along with a summary data sources.

3.1 Research Method.

The qualitative approach is more suitable for this study because of several reasons. First, developing a regulatory framework for an emerging and innovative technology requires careful consideration of multiple factors and their complex interactions (Mertens, 2003; Creswell, 2017; Flick 2008). Mobile money regulation has several perspectives, such as financial integrity, inclusion, consumer protection, and product innovation. The qualitative inquiry identifies these factors, reporting multiple perspectives (Marshall and Rossman, 2006).

Second, the qualitative inquiry allows the researcher to infer theoretical aspects from stakeholder interactions (Flick, 2008; McLeod, 2011). The regulatory development process involves interactions among several stakeholders, where an exploratory approach through qualitative design is the most suitable (Mertens, 2003 as cited in Creswell 2017).

Third, the theoretical lens employed by the study: negotiated rulemaking, suits a qualitative approach better than a quantitative one. Qualitative research can effectively explain relationships or mechanisms using theories or models. Flexible and sensitive methods can infer the theoretical aspects, from the links and interactions among people, through the interpretive approach (Flick, 2008; McLeod, 2011).

The case study research method is selected since it enables us to develop an in-depth understanding of the collaborative regulatory development process, through its' descriptive findings (Creswell, 2017; Eisenhardt, 1989; Walsham, 1995, as cited in Tsang, 2014). The method also enables us to extend the theory of negotiated rulemaking, through the case of Sri Lankan mobile money (Siggelkow, 2007; Tsang, 2014; Weick, 2007).

In addition, the method provides a way to validate the findings through the triangulation effect (Bryman, 2015). The case study method also supports multiple case studies. Multiple/collective cases can illustrate a single pattern, deriving interaction strategies, management practices, and relationship patterns (Creswell, 2017).

3.2 Research Context

Collaboration in the Sri Lankan mobile money sector is considered as the main data source for developing the collaborative model. Sri Lankan mobile money sector is selected since effective collaboration has taken place between the regulator and industry firms. The Central Bank of Sri Lanka (CBSL) acts as the sole regulator for mobile money. Specifically, the Payment and Settlements Department of the CBSL works with the industry firms for developing regulations for mobile money.

As the governor of the Central Bank of Sri Lanka explains, "Now with the facility to transfer money and make payments directly from the mobile phone, a vast majority of

our community would be further empowered with the power and efficacy of electronic transactions” (Di Castri, 2013, p.11)

Table 3. 1: Licensed Service Providers of Mobile Payment Systems

Class of Business	Number of Service Providers
Operators of Customer Account based Mobile Payment Systems	11
Operators of Mobile Phone based e-money Systems	4

Note. From “Mobile Phone based Payment Mechanisms,” by Payments and Settlements Department: Central bank of Sri Lanka, 2017, *Payment Bulletin-First Quarter 2017*, 2017(1), p. 18.

Mainly there are five telecommunication service providers currently operating in Sri Lanka, and four of them have facilitated mobile money for their customers. Out of the four service providers, the main two service providers have initiated mobile money by obtaining a license from the central bank. Service providers currently employ legal officers in order to handle regulatory compliance. Even though legal officers are actively engaged in daily operations, their involvement in regulatory development is minimum. Product managers are directly involved in the negotiation process with the central bank.

In addition to the interview data, document data on regulatory development by the Global System for Mobile Communications Association (GSMA) are used. The document data has been specifically composed, focusing on the regulatory aspects of the leading mobile money using countries. Most of the documents have been prepared as case studies, focusing on the enabling regulatory environment, so the regulatory development stages are described. These documents include the statements from service providers as well as regulators. These statements describe the regulator-industry collaboration in developing regulation.

3.3 Research Model

The negotiated rulemaking is considered as the theoretical lens for interpreting the collaboration between the central bank and the industry firms. The negotiated rulemaking process consists of three main stages. These stages are I) Pre-negotiation, II) Negotiation, III) Post-negotiation (Susskind & McMahon, 1985).

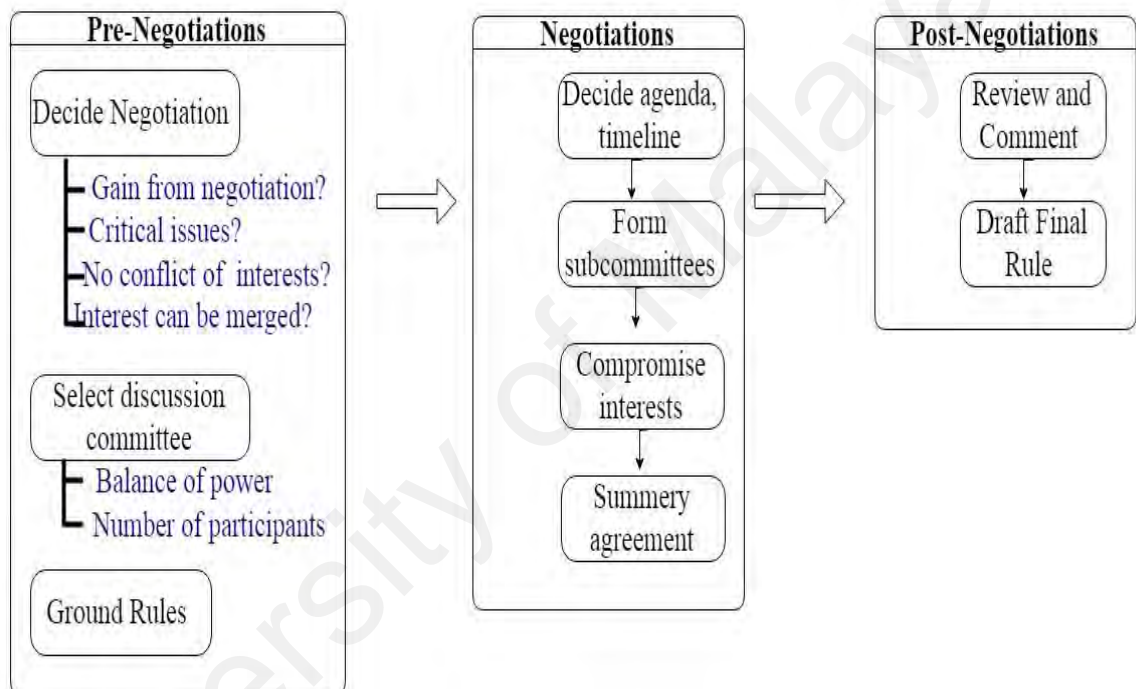


Figure 3.1: Theory of negotiated rulemaking

Figure 3.3. Theory of negotiated rulemaking. Adapted from “Negotiating regulations: A cure for the malaise?” by P.J. Harter, 1982, *Environmental Impact Assessment Review*, 3(1), p.82.

3.3.1 Pre-negotiation Stage.

The pre-negotiation stage sets the background for a successful negotiation through three main steps: i) Deciding to negotiate, ii) Identifying the stakeholders, and iii) Developing guiding rules. First, since not all issues are suitable for negotiations, a decision has to be made whether the negotiation is necessary (Langbein and Kerwin,

2000). Using negotiation for all instances have brought adverse effects (Lubbers, 2014). To simplify the decision to negotiate, Perez (2015) identifies the pre-conditions listed and described in Table 3.2 as necessary for a successful negotiation to take place.

Secondly, stakeholders are identified for the negotiation committee, subjected to two preconditions defined by Harter (1982). They are I) Balance of power between participants and II) Number of participants. Perez (2015) explains the importance of these conditions for establishing a balanced committee.

Table 3. 2: Past literature on pre-conditions

Stage	Pre-condition	Definition	Studies
Deciding to negotiate	Can participants benefit from discussions.?	Participants gain benefits by engaging in discussions, motivating them to engage.	(Kobick, 2010)
	Are issues critical?	Issues should be apparent and need to be addressed. This necessitates participants to negotiate.	(McKinney,1999) (Perritt, 1986)
	Regulations not conflicting with business interests	Regulatory objectives do not challenge the business interests.	(Susskind, 1985)
	Participants' interests can be merged.?	Interests are negotiable. This allows them to compromise their interest in a common agreement.	(Lubbers, 2014)
the Identifying stakeholders	Balance of power between participants	No major power difference between members. This prevents one-sided or influenced decisions	(McKinney,1999)
	Number of participants	Limit the size of the negotiation committee.	(Perez, 2015) (McKinney,1999)

Finally, guiding rules are established to control the negotiation process and define participant responsibilities (Harter, 1982; McKinney, 1999). Perritt (1986) states how the guiding rules are defined in the initial committee meeting. Further, McKinney (1999) proves how the guiding rules have assisted in deriving the final version of the regulations when participants have failed to reach a common agreement.

3.3.2 Negotiation Stage.

The negotiation stage starts with a pre-defined agenda. An agenda keeps the negotiations more focused on a portfolio of issues, enhancing the members' understanding of them. Further, it provides a feasible timeline (Derco & Hochman, 2016; Langbein & Kerwin, 2000; Lubbers, 2014). This step is followed by forming subcommittees.

Forming subcommittees have been beneficial when there are diverse issues to be discussed, and a higher number of stakeholders are involved (Derco & Hochman, 2016). Involving all members in all the decisions might be a waste of time and resources. This will force the committee members to involve in decisions, even without interest or knowledge on the matter. When the issues can be categorized, specialized teams can be deployed to discuss each category (Merritt & Shafer, 2012). Also, more people can get involved and contribute their expertise to the decision-making process (Comizio, 2017).

The next step is the negotiation itself, where participants prioritize and set-off individual interests against others' interests (Perez, 2015; Kobick, 2010). Through confronting differences, stakeholders understand the impacts of an issue on others. This prevents them from taking extreme positions. This stage ends with a summary of the agreement or draft proposal that describes the agreement between the parties. Once a

consensus is reached, the committee transmits a report containing the proposal as a general practice.

3.3.3 Post-negotiation Stage.

In this stage, the negotiated decision is reviewed, and comments are accepted based on the summary agreement. Reviews and comments from both the participants and non-participants make the regulations more legitimate (Lubbers, 2014). Perritt (1986) has explained the importance of communicating the discussion summary, to the parties who were not included in the negotiation. This review and comment procedure prevents the reiteration of the development process and reduces litigation risk by producing more robust regulations (Harter 1982). At the end of this stage, the regulators compose and publish the executable version of the regulations.

3.4 Data Collection and Analysis

Structured–pragmatic–situational (SPS) approach was utilized for data collection and analysis. The SPS approach uses the iterative and inductive eight-step process of data analyzing, where data analysis and data collection are both interlinked (Pan & Tan, 2011; Tim, Pan, Bahri, & Fauzi, 2017).

As described in Table 3:3, the first stage was to gain access to the data. Service providers have always been welcoming and helpful in providing the necessary information. On the other hand, the Director, Payment, and Settlements Department of the Central bank have been busy, which made the data collection process difficult. Further, prior permission from the department of communication of the central bank, had to be obtained, in order to record the conversations.

Second, in the stage of conceptualizing the phenomenon, case documents were studied to build an understanding of the mobile money context and regulatory

development. Also, possible negotiation theories were studied as candidate theories for the regulatory development process.

In the third stage, initial interviews were carried out with legal officers and well-experienced product managers, as Pan and Tan (2011) described how this step had guided the data collection process. In addition, it initiated the fourth stage: selecting an appropriate guiding theory, before the collection of further data. To represent a close fit with the collected data, negotiated rulemaking was selected as the guiding theory (Eisenhardt, 1989).

In the fifth stage, the second round of interviews was conducted with the product managers of the mobile money firms. When informants' views are conflicting, additional data has been collected, in order to resolve the conflict. Case documents were also considered at this stage as supportive data (Bryman, 2015). To ensure validity, data was collected from two or more sources for each proposition/theme, emerged from the case study (Klein & Myers, 1999). This process of data triangulation increases the objectivity and validity of data before starting the coding process in the sixth stage (Yin, 2003). The sixth stage has summarized the data collected in the form of narration or a story. With each round of data collection, these narrations were revised to include the new evidence.

In the seventh stage, the emergent model was checked for theory-data-model alignment. Theory-data-model alignment consists of three types of alignment. They are (1) theory-data alignment, (2) data-model alignment, and (3) theory-model alignment. First, theory-data alignment asks the question, "Can the theory explain the case data?". To ensure this, case data was compared continuously with substitute theories, where negotiated rulemaking emerged as the best-suited theory (Eisenhardt & Graebner, 2007). Second, data-model alignment raises the question, "Does the data support the emergent model?". To answer this question, the interview data were continuously compared with

the propositions of the emergent model to make sure no important data is excluded from the emergent model. Third, theory-model alignment inquires, “Whether existing theories support the emergent model?”. Since the case study results are difficult to be generalized, alignment between the emergent model and existing theories in the literature demonstrates replication, which is a means of generality (Yin, 2003). Therefore, each new propositions of the emergent model were explained by existing theories to confirm theory-model alignment.

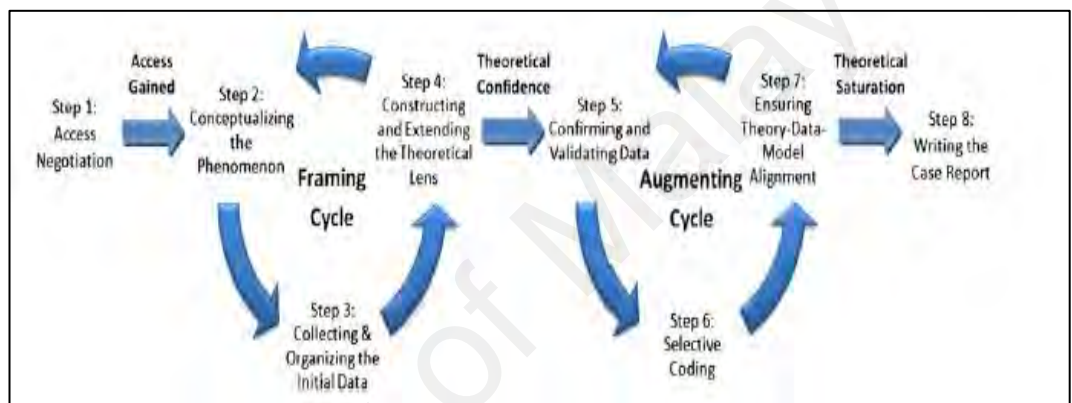


Figure 3.2 Structured-Pragmatic-Situational approach for conducting case studies

Figure 3.2 Structured-Pragmatic-Situational approach for conducting case studies
Adapted from “Demystifying case research: A structured-pragmatic-situational (SPS) approach to conducting case studies,” by S. L Pan and B. Tan, 2011, *Information and Organization*, 21(3), p. 168

When the theory-data-model is aligned, it is decided that the emergent model represents all the case data. This stage is theoretical saturation (Eisenhardt, 1989). At this stage, there are significant similarities in the data collected, making it difficult to extend the emergent model. Further, it indicates that there is enough data for validating the model (As stated in Figure 3.2). The final step of writing the case report is performed after the theoretical saturation is achieved.

Table 3. 3: Applying the eight-step process of SPS.

	Stages	Description
1	Gaining Access	Contacted the Central Bank and mobile money service providers with the study intention
2	Conceptualizing the phenomenon	Studied industry reports and case studies on mobile money in Sri Lankan and other contexts. Scanned for possible theories to find a portfolio of candidate theories
3	Collecting and organizing initial data	Conducted interviews with an experienced product manager and legal officers to validate the phenomenon.
4	Constructing and extending the theoretical lens	Selected “negotiated rulemaking” as the guiding theory, which represents the closest fit to the data. Used the process view of the negotiated rulemaking to determine how the study could extend the theoretical lens.
5	Confirming, validating data	A second round of interviews with product managers for validating and transforming the theory. Case documents were analyzed for data triangulation
6	Selective coding	Scanning the data to find themes and meaningful patterns.
7	Ensuring data Model alignment	Fitting the data with the extended model to identify how it enhances our understanding of collaborative regulatory development.
8	Writing the case report	Weaving data and theory together to build a better understanding of the emerging theory.

Adapted from “Demystifying case research: A structured–pragmatic–situational (SPS) approach to conducting case studies,” by S. L Pan and B. Tan, 2011, *Information and Organization*, 21(3), p. 168

The unit of investigation in this study consists of two stakeholders in the mobile money implementation in Sri Lanka: the regulator represented by the Central Bank of Sri Lanka and the technology provider represented by the telecommunication companies. These two parties were chosen since they collaborated in the mobile money regulation development in the country. Meanwhile, the unit of observation consists of representatives from the Central Bank of Sri Lanka and the telecommunication companies that provide mobile money services. Table 3:4 lists these participants in the study. The selection of an interesting case with a theoretical contribution is important for case-based research (Pan & Tan, 2011). Therefore, purposive sampling has been used for selecting the participants, i.e., they were chosen because of their involvement in the regulatory development process.

Table 3. 4: List of interviewees contacted from the regulatory development process of Sri Lanka

	Interviewee	N	Affiliation	Area
Step1	Legal and compliance officers	4	Mobile money service providers	Current regulatory and compliance.
Step 2	Product managers	4	Mobile money service providers	Regulatory challenges, collaborations.
Step 3	Director, acting director and senior Officials of the payment and settlements department of the central bank (CBSL)	3	Regulator	Regulatory development challenges, collaboration.

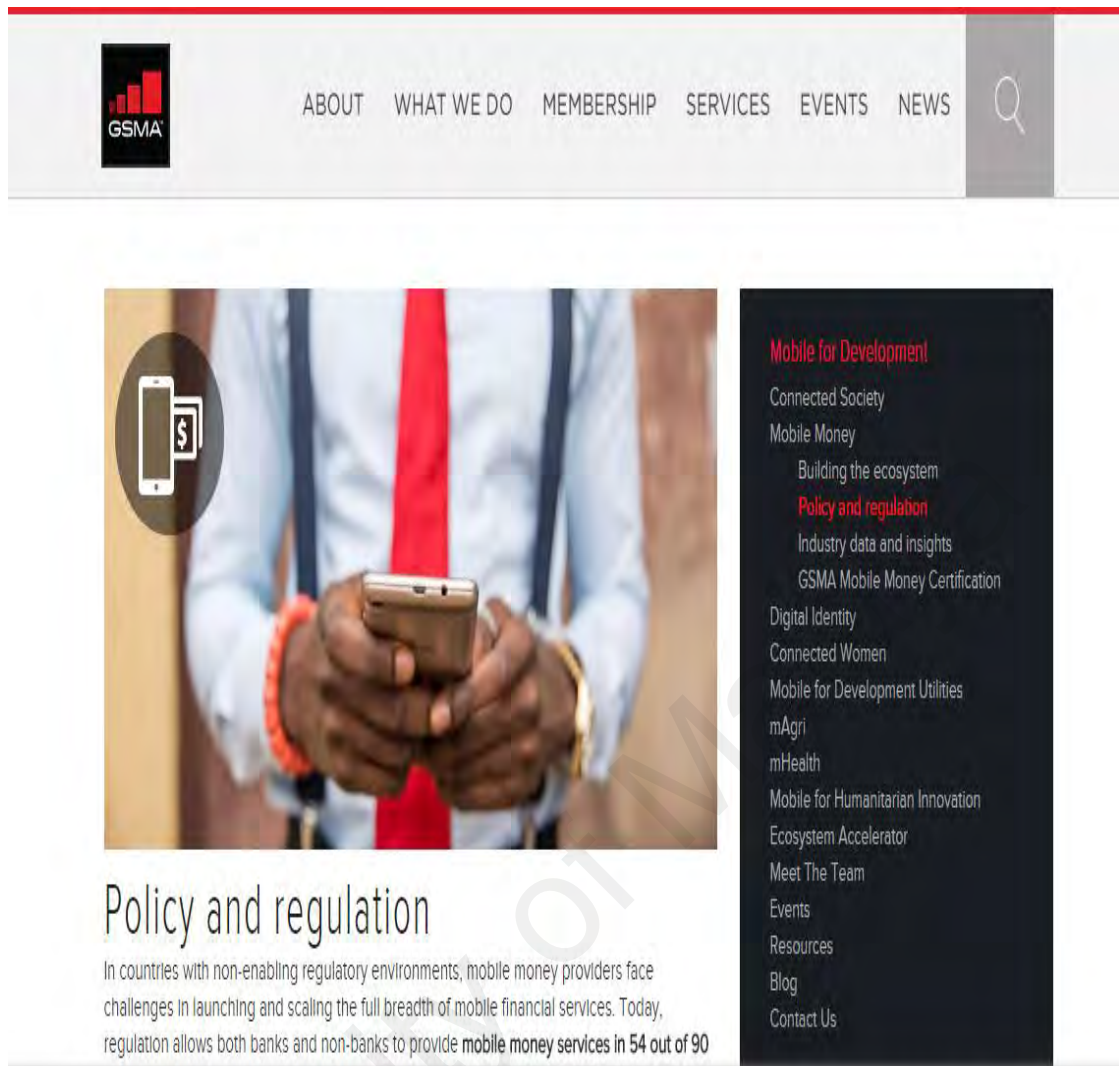
Semi-structured interviews were conducted with open-ended questions. Explanatory responses received, were used for conceptualizing the phenomenon as per step 02 of Table 3.3 (Pan & Tan, 2011). Further, industry case documents on mobile money regulatory development from six countries were used to support interview data.

Document data has been considered as the main method of investigation for qualitative research, rather than a complementary role (Prior 2003). Case documents are considered as unobtrusive data collection method where the observer is removed from studied individuals or interactions (Denzin 1968; Bryman, 2015). So, the evidence from document data has excluded the observer effect (Bryman, 2015). The study used document data for validating the findings through the triangulation effect (Bryman, 2015). Joint studies by Melinda and Gates Foundation, along with the Group Special Mobile Association (GSMA), were used for this purpose. These document data were used for

Table 3. 5: List of the documents included in the analysis

No	Document	Source	Context
1	Enabling Mobile Money Policies in Kenya.	GSMA	Kenya
2	Enabling Mobile Money Policies in Sri Lanka	GSMA	Sri Lanka
3	Enabling Mobile Money Policies in the Democratic Republic of Congo	GSMA	Congo
4	Enabling Mobile Money Policies in Tanzania	GSMA	Tanzania
5	Mobile Money: Enabling regulatory solutions	GSMA	Fiji, Indonesia, Mexico, Pakistan, Philippines, South Africa, and Sri Lanka

6	Regulations and policies of Paraguay	GSMA	Paraguay
7	IFC Mobile Money Study 2011 Nigeria	IFC-World Bank	Nigeria
8	IFC Mobile Money Study 2011 Sri Lanka	IFC-World Bank	Sri Lanka
9	IFC Mobile Money Study 2011 Brazil	IFC-World Bank	Brazil
10	IFC Mobile Money Study 2011 Thailand	IFC-World Bank	Thailand
11	IFC-World Bank 2011 Summary Report	IFC-World Bank	Several Countries with Mobile payment systems were combined for data



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Figure 3.3: Source of document data

Figure 3.3. Mobile for development, policy and regulation, From “GSMA: Mobile for Development,” 2019 (<https://www.gsma.com/mobilefordevelopment/mobile-money/policy-and-regulation/>). Copyright 2020 by GSM Association.

NVivo software was used for coding and summarizing the data gathered. Mainly two cycles of coding were carried out. The first cycle of coding used the concepts, emerging from data for summarizing. In the second cycle of coding, similar codes were combined into broader themes or constructs. The first cycle of coding identified 70 different nodes from the given data, whereas in the second cycle, they were abstracted into sixteen main themes (As per the Table 3:6)

Table 3.6: Themes emerging from the data

#	Themes	Sources	References
1	Agenda and Timeline	12	35
2	Confront differences	13	62
3	Decision to Negotiation	9	26
4	Draft final rule	3	6
5	Initial Summary agreement	4	5
6	Iterative development	16	115
7	Joint gains	14	69
8	Mutual Learning	17	56
9	Prudent regulation	12	59
10	Regulator industry collaboration	14	48
11	Regulator leadership	9	48
12	Representing all views	4	6
13	Review and Comment	9	26
14	Selection of Stakeholders	14	28
15	Subcommittees	9	15
16	Mutual trust to collaborate	10	26

CHAPTER 4: FINDINGS

This chapter discusses the finding of this study. Two main data sources were employed for gathering evidence for the emerging model. Interview data supported the main developments of the model. Further, when presenting the findings, data collected from Sri Lanka using interviews were used. Document data were also used to support the findings further. Findings have been organized considering the negotiated rulemaking process, i.e., pre-negotiation, negotiation and post-negotiation stages.

4.1 Pre-negotiation.

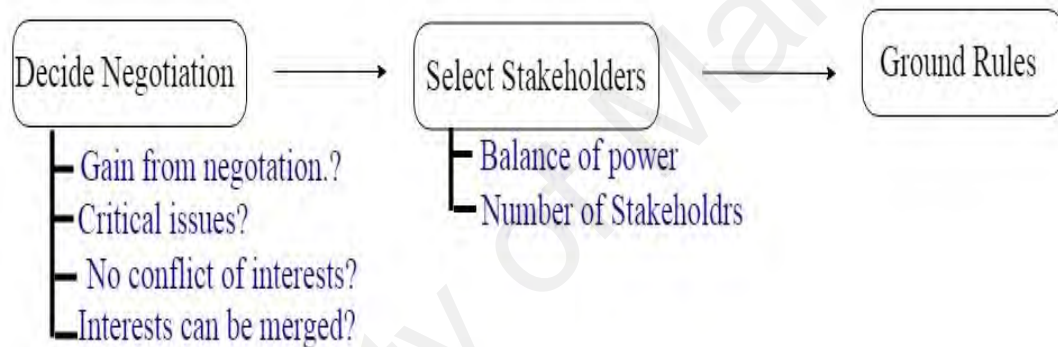


Figure 4.1: Pre-negotiations Stage

Figure 4.1. Pre-negotiations Stage. Adapted from “Negotiating regulations: A cure for the malaise?” by P.J. Harter, 1982, *Environmental Impact Assessment Review*, 3(1), p.82.

The central bank decided to start the negotiation on mobile money, right when the telecommunication companies have launched the product. Both parties agreed to collaborate on the development of mobile money regulations because they believed there are substantial gains from the process. For regulators, they will be able to learn the product features and functionalities before the relevant regulations are drafted. In return, service providers may gain new business opportunities. Telecommunication companies had a similar experience when they leased their payment platform to the banks. In return, the

banks have provided access to their financial facilities. In short, negotiations have allowed all participants to achieve some advantage. According to a central bank official.

“Not always we do meet them, but there are cases that we need to consult them. If it needs a better understanding of the issue, we then go for a discussion. Especially if the industry says that we are just looking for a product launch, then that is one instance that we go for the discussion.” (RE_102, Case_SL)

Meanwhile, a service provider stated,

“Afterwards, banks have realized that this is all about collaboration and a win-win situation. Also, we have linked up with almost six banks to pull money from banks to the wallet. In addition, we have given our platform to the banks to use” (PM_301, Case_SL).

If some parts of the regulations are expected to challenge the business interests of service providers and increase their operational costs, the central bank will minimize the consultation with them. The central bank, as the regulator, will avoid negotiating on those issues because it will face huge resistance from the service providers. According to an officer from the central bank,

“We have instructed mobile money operators to maintain a trust fund. This is a security for the customer funds they collect, and you can say that it is from the CBSL side exclusively. In these cases, we draft the policy framework with minimum involvement of service providers” (RE_101, Case_SL).

The central bank involved all major stakeholders as participants to, as much as possible, eliminate biases in the agreement. Some of the stakeholders have even appealed to the central bank to be involved in the regulation development. There has not been a

maximum limit for the number of participants. Telecommunication service providers, banks, insurance firms, and microfinance institutions have been the usual stakeholders. Additionally, external technical experts were appointed to ensure unbiased decisions in highly technical areas. Most of the time, these experts come from the information technology, finance, and telecommunication sectors. A committee member stated,

“Sometimes, the CBSL invites other parties if required. Information and Communication Technology Agency (ICTA) is such a party that takes part. Also, the Telecommunication Regulatory Commission (TRC) appears in the committee. Most of the time, there are microfinance bankers and lawyers. Also, there are officers from the financial intelligence unit and finance ministry.” (PM_101: Case_SL).

The most important ground rule has been the right of the central bank to word the regulation. In general, committee members have accepted that regulators possess the expertise for wording the regulations. As a result, the committee members did not put forward any criticism on the wording of the regulations by the central bank. A member of the committee said,

“There is nothing wrong with the process, as I have told you they are supportive and responsive. Moreover, CBSL wording the rule. Anyway, we do not have the expertise in drafting regulations.” (PM_101: Case_SL)

4.2 Negotiation.

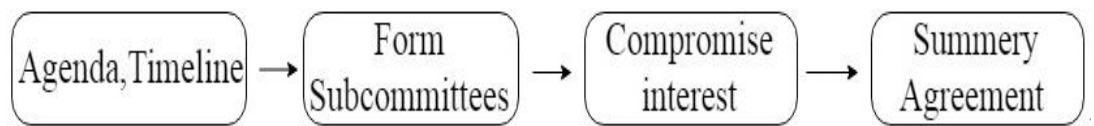


Figure 4.2: Steps of the negotiation stage

*Figure 4.2. Steps of the negotiations stage. Adapted from “Negotiating regulations: A cure for the malaise?” by P.J. Harter, 1982, *Environmental Impact Assessment Review*, 3(1), p.82.*

Agenda of mobile money discussions focused on a single product, product feature, or a product-related issue. As an example, a discussion regarding a new mobile money product has covered transaction limits, KYC profiles, cash-flow needs, and agent management. Implicitly, the agenda has covered all regulatory matters in the operation of a single product. Unfortunately, no timelines were set for mobile money discussions. Consequently, this has led to delays in the collaborative regulatory development process. According to an informant:

“It is like a project discussion that happens when we try to launch a product. because everything oriented to the product.” (PM_201: Case _SL)

Another service provider said,

“Worst case is that they take time to give their go-ahead for the project and it keeps on dragging for years” (PM_101: Case _SL)

The Central Bank has formed a sub-committee called the National Payment Council (NPC), to discuss regulations pertaining to payment systems, including mobile money. Debit/credit cards, clearing of cheques, fund transfers, and interbank settlements have been the other payment methods governed by NPC. Stakeholders representing these

payment services were also appointed to NPC. Since most of the above are bank products, mobile money discussions have become minor. Due to this situation, mobile money discussions have not received proper attention from the subcommittee. Mobile money stakeholders have discussed mobile money regulation in detail before it is presented to the NPC. Mobile money service provider explains,

“But these committees are overpowered by the banks, where though we have a representation, it actually is not enough. Also, the matters if you look at they are mainly the banking products rather than the mobile money products. So, we basically discuss our matters at forums with the CBSL beforehand.” (PM_101: Case_SL)

An informant from the central bank explains further,

“National payments council includes the main stakeholders in the payment system.” (RE_103: Case_SL)

Thus, to ensure that the interests of the parties involved in mobile money are protected, compromises were made with other parties in the NPC. The first step in the compromising stage was learning the objectives of other parties. Through this action, each participant was able to understand the impact of their products or services on others. For example, setting a higher transaction limit benefits mobile money service providers and users. On the other hand, it can have a severe impact on the banking sector. This knowledge helped the regulator to set mobile money transaction limits without affecting the banking industry.

“Pressure from the banks also comes to the government. So, the government must satisfy them also. As an example, think that our wallet limit has been increased to 100,000 rupees. There will be a certain impact to the bank, which they will not do. They try to protect the bank as well” (PM_101: Case_SL).

The next step was the circulation of a summary agreement to the committee members. The Central Bank took this task. The summary agreement contained the draft rules worded by the regulator. This document served as an important tool for generating comments and reviews in the post-negotiation section. As explained by a respondent,

“We have a practice of publishing the draft of regulations before finalizing. So, somebody can comment on it. If there are acceptable comments, we will consider.”
(RE_101: Case_SL).

4.3 Post-negotiation.

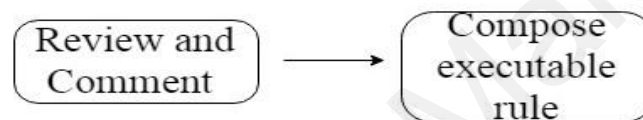


Figure 4.3: Post-negotiations stage

*Figure 4.3. Post-negotiations Stage. Adapted from “Negotiating regulations: A cure for the malaise?” by P.J. Harter, 1982, *Environmental Impact Assessment Review*, 3(1), p.82.*

As stated earlier, members of the subcommittee have used the summary agreement to provide constructive suggestions to the drafted regulations. The Central Bank reviewed all the feedback and comments and gave them full consideration before the regulations were written. At this stage, the Central Bank had full authority on how the regulations are worded before it is published for implementation. As one of the committee members said,

“When we write to them, they don’t point blankly reject it. But they take time.”
(PM_101: Case_SL)

Another committee member stated,

“When we come up with a request to change the existing regulations, they arrange these discussions, and they have been considerate, in some of the instances they have neglected our voices. but have been positive towards discussions.” (PM_201: Case_SL)

Even after the regulation has been composed and executed, the mobile money regulation went through several revisions. The revisions were due to comments from the industry, findings from the test-and-learn stage and benchmarking. An example of comments from industry was when telecommunication firms identified and reported higher risk in merchant-to-merchant fund transfers. The central bank accepted the suggestion and restricted such transfers. A product manager explained,

“We have noticed that merchant to merchant transfers can be used for money laundering, wherein several countries that was used for frauds and cases where internationally money laundering taken place. So, we have suggested and now they have blocked it” (PM_201, Case_SL).

Meanwhile, the test-and-learn stage was introduced to monitor the regulation after it was launched by the collaboration of the Central Bank, telecommunication firms, and a commercial bank. These learnings helped the Central Bank in understanding the ramifications from the regulation’s implementation. The learnings helped the regulators in improving the regulation. According to a product manager:

“Before this, they have done similar implementations from the bank side, through mobile. There have been bank account based mobile money systems with NDB. There have been few customers and have not been much successful. Mobile money was not

available at that time. After that, regulations and guidelines were introduced” (PM_301: Case_SL).

Benchmarking has also enabled the Central Bank to introduce revisions to the existing regulatory framework. Benchmarking was done by identifying best practices from mobile money implementation in other countries. One such instance has been the introduction of the multi-operability of service providers. This feature allowed all mobile money operators to be connected to a common platform, thus enabling customers to transmit funds irrespective of the operator. According to a central bank official,

“So, we have introduced a multi-operability model for the service providers through mobile switches and you can say that it is from the CBSL side exclusively. We scan the international cases, and these are best practices that provide better service and competition.” (RE_101: Case_SL).

CHAPTER 5: DISCUSSION

Although the regulation development effort was supposed to be participatory, one party became the dominant force: The Central Bank. The Central Bank determined the members in the sub-committee that looked after the regulation pertaining to mobile money. As much as possible, the Central Bank has tried to get as many representatives as possible because the multiple viewpoints often lead to better outcomes (Derco & Hochman, 2016). It also identified the issues to be discussed and the conditions in which the negotiations take place (Harter, 1982; Langbein and Kerwin, 2000; Perez, 2015). Although Central Bank sought feedback from the industry in order to refine the regulation, the Central Bank eventually decided which feedback to consider and which to ignore. In addition, the final say on how the regulations are worded, still retained by the Central Bank.

Unfortunately, in its effort to accommodate as many stakeholders as possible, the Central Bank has side-stepped the issue of power (Susskind & McMahon, 1985; Kobick, 2010; Freeman & Langbein, 2000) by inviting representatives from the banking industry into the committee. The inclusion of banking representatives has limited the possibilities offered by mobile money, especially on bypassing the banking industry in delivering financial services to the unbanked and underbanked community. The representatives ensured that the banks still have a share in the burgeoning technology. Furthermore, lumping everything concerning payment technologies, including mobile money, in one sub-committee, has been counter-productive. Not everyone in the sub-committee understands the technology, its usage, and its implication for the community, especially

the unbanked and underbanked. This outcome suggests that there is a need for a specialized subcommittee for mobile money. Dividing subgroups based on specialization, have been a common practice and found to be more effective and productive (Langbein & Kerwin, 2000; Merritt, 2012).

A specialized sub-committee on mobile money may enable the regulator to introduce regulations pertaining to the technology in a timely fashion (Merrit & Shaffer, 2014). Unfortunately, no such timelines were set during the regulatory development process. As a result, there has been a delay in the introduction of mobile money regulation. This delay can have a devastating impact on users and technology providers (Aker & Mbiti, 2010; Lubbers, 2014; Merrit & Shaffer, 2012). Delayed regulatory response to mobile money increased the lead time required for the technology providers to provide solutions to the market (Varshney, 2014).

The study develops a model of collaboration between regulators and technology/telecommunication firms. In the process, the study identifies conditions for regulators and technology firms to collaborate in regulatory development, as the first objective. Second, the main stages and activities of regulators-industry collaboration are identified. The model uses the context of mobile money, which is an emerging technology, where it can provide learnings for similar emerging technologies.

For deciding the conditions for a successful collaboration, negotiated rulemaking was used as a guiding theory. Negotiated rulemaking considered pre-conditions before entering the negotiation path. The validity of some pre-conditions was challenged by several studies (Merritt & Shafer, 2012). Some successful negotiations have taken place, without considering pre-conditions. These cases prove that the pre-conditions are not mandatory (Merritt & Shafer, 2012; Thaw, 2013; Wade, 2014). These variations are not surprising since negotiated rulemaking merely provides general guidance for the

negotiation process (Boyd, 2013; Kobick, 2010). In his initial study also, Harter (1982) encouraged adjustments to the theory, based on the context. Further, Harter has intentionally used flexible language allowing the regulators to innovate and experiment with the rulemaking process (Funk, 1997; Kobick, 2010; Lubbers, 2007; McKinney, 1999).

The theory of negotiated rulemaking suggests four pre-conditions before deciding to negotiate. The first condition is to check the discussion participants can benefit by engaging in the collaboration. The central bank has selected instances where participants can gain from collaboration. Second, pre-condition ensures whether the issues are critical. In mobile money discussions, the central bank has selected only the apparent issues for discussions, so there exists a need for collaboration. Third, as per the theory recommends, the central bank has avoided the negotiations when business interests' conflict with the regulation. The fourth condition checks whether the interests can be merged to arrive at a consensus. In conventional negotiations, the discussion committee arrives at a common consensus by compromising the interest of each party. In mobile money discussions, the main purpose was to acknowledge the central bank about the interests of each party, rather than building a consensus. The central bank has decided the final rule, after assessing the impact on each party. This has been a unique practice in the negotiated rulemaking, where most of the negotiations arrived at a consensus (Lubbers, 2014; Perritt, 1986).

In addition, negotiated rulemaking proposes two more pre-conditions when selecting stakeholders. First, condition checks whether several participants do not exceed a maximum limit. However, in the context of mobile money, the central bank has neglected the participant limit. On the contrary, the central bank appointed all interested parties as well as independent external expertise, in order to make decisions rational and objective.

Similarly, when collaborating with powerful firms such as Uber and Lyft in the ridesharing industry, independent external parties have been appointed to protect customer and worker rights (Perez, 2015). Better representation of interest groups has helped to overcome major disputes in the ridesharing industry. Another committee for aviation regulation, appointed major stakeholders as well as external experts expecting more objective decisions. According to them, when regulating techno-based and dynamic industries, multiple viewpoints can provide better options (Derco & Hochman, 2016).

The second precondition checks the participants' balance of power, as indicated by the complaints about the prominence of banks in the committees. This was not considered when selecting committee members. Susskind and McMahon (1985) explained how politically and financially powerful members influence the committee decisions. Kobick (2010) provided examples of how participants with similar interests organize and demand common objectives with a stronger basis. These powerful groups benefit from information, knowledge, and political advantages (Freeman & Langbein, 2000). Banking, as an established powerful industry, has already shown the capability of influencing mobile money products, which indicates the important balance of power for effective collaboration.

Apart from these conditions, some factors have driven the regulator-industry collaboration even after composing and declaring the regulations. Regulatory revisions have played a significantly important role in mobile money regulation. Revisions are initiated from stakeholder comments, benchmarking efforts, or test-and-learn initiatives. As described in the emergent model (Figure 5.1), revisions have been iterative and require stakeholder participation.

Study shows, collaborations have taken place considering some conditions specified in the negotiated rulemaking. They are the ability to gain from the collaboration, the

apparent nature of issues, and no conflict of interests. Aside from these factors, the need to recognize the interest of participants by the regulator motivated the discussions. Similarly, the central bank has collaborated with industry for acquiring a better understanding of industry trends. This information assists the regulator in developing prudent regulation (Funk, 1997). Lubbers (2014) also suggested that the regulator should consult the industry while keeping control over rulemaking. In this approach, industry collaboration provides necessary learnings and knowledge where regulators compose and declare the regulations. Most importantly, the regulatory revisions necessitate the mobile money stakeholder collaboration to continue. As the above section denotes the driving factors for collaboration in mobile money regulation, the following section identifies the key steps in collaboration in mobile money.

5.1 An emergent model of collaborative rulemaking

The study identified three main stages in the emerging model of the collaborative regulatory development model, as Figure 5.1 illustrates. “Setting the stage” works as the entry point for the collaboration effort, appointing a discussion committee, appointing subcommittees. Secondly, “Getting consensus” is used to inform the regulator about the interests of each involved party; participants recognize the interests of other parties. Further, they understand the impact of their interests on others’ objectives. In the third stage, “Regulation refinement,” it is an ongoing process to accommodate the fast-evolving nature of IT products like mobile money. This stage functions as an “iterative development” to indicate the emerging nature of the regulation, where revisions are introduced continuously as the product evolves. Some revisions are introduced by the central bank exclusively, while some improvements are made collaboratively.

Stakeholders involve in these improvements through comments, benchmarking, or test and learn approaches. As a result, this causes collaboration to repeat, either with the same or different participants.

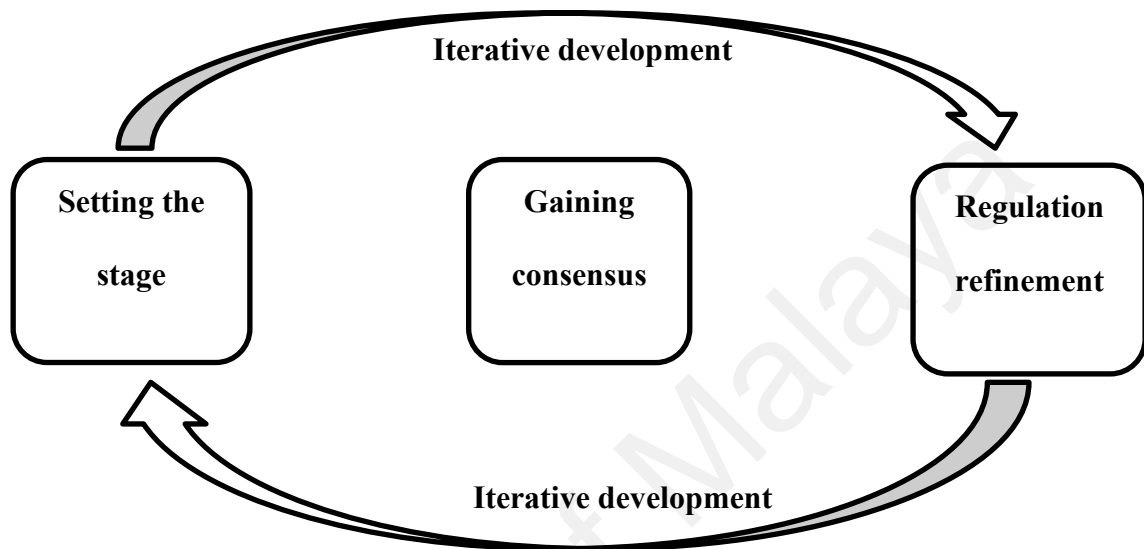


Figure 5.1: The Emergent model of collaborative regulatory development.

5.1.1 Setting the Stage

In this stage, members of the discussion group are identified; the group should involve mobile money platform developers, entrepreneurs, regulators, and financial operators, among others. This group determines the relevant issues in mobile money regulation. This stage is an attempt to establish a “level the playing field” and provide an avenue for impactful discussions.

5.1.2 Gaining Consensus

In conventional negotiations, different parties set-off their interests and reach a consensus (Freeman & Langbein, 2000; McKinney, 1999; Funk, 1997). On the contrary, in this case of regulating mobile money, discussions are used to acknowledge the

regulator of each party's interests. Information and learnings through discussions, enable the regulator to develop regulation (Perez, 2015). These two instances have been unique practices of collaboration, where discussion facilitates the regulation development by providing all vital information (Lubbers 2014).

5.1.3 Regulation Refinement & Iterative Development.

In most instances, the regulatory development process has been linear, and the process has not been repeated. In the context of mobile money, the regulation has been continuously revised and refined as the product evolves. Feedback is welcomed and sought after; communication channels are kept open. This makes the regulatory development process to iterate (Jenkins, 2008). Di Castri (2013) has explained how iterative development has contributed to mobile money regulation in Tanzania. Revisions that are in the iterative development stage are based on comments, tests, and learn products and benchmarking efforts.

Even though the central bank has exercised tight control over composing the rule, they have been responding to stakeholder comments, even after publishing and implementing the regulation. Varshney (2014) has identified the use of this practice in similar financial technologies. Further comments have been useful to increase industry involvement in regulation (Marchant, 2011; Robinson, 2013).

Secondly, some regulatory revisions have been introduced through a test-and-learn approach. This has been a popular practice for regulating emerging technologies (Alexandre et al., 2011; Kobick, 2010). More importantly, stakeholders are also involved in launching the test-and-learn exercise for acquiring knowledge.

Finally, benchmarking efforts by the central bank has also introduced regulatory revisions. Similar practice in the aviation industry has been described by Derco and

Hochman (2016). He explains how benchmarking has updated existing regulations. Further, Loesch (2018) introduced a similar concept named “international harmonization” for regulating financial technologies.

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CHAPTER 6: CONCLUSION

Publications from both mobile money industry and academia, stress the importance of collaborative regulatory development. The emergent model guides the collaboration between mobile money firms and the regulator. The model also provides learnings for regulatory development in mobile money and similar technological contexts.

The central bank has played a leading role during the discussion and declaring the regulation. The appointed committee provided the information and knowledge to the regulator for preparing prudent regulation. Regulator control and influence were not criticized as the industry understood the central bank's responsibility as the regulator. This indicates the trust and understanding between the regulator and the industry.

The regulator has maintained a closer relationship between industry even after declaring the regulation. Through this practice, the regulator gained knowledge of emerging technologies and received alerts on potential threats. Further, the central bank has been receptive to the comments and performed required regulatory revisions. These proactive practices improved the responsiveness of the regulatory system.

Negotiated rulemaking has been commonly used with a well-known issue or a phenomenon. In these instances, the scope of negotiation is defined, and the negotiation process is non-repeating and linear. On the other hand, an emerging product's scope is uncertain and depends on product use. Notably, products linked with evolving technologies such as mobile money, improve several times and used in different ways. Regulations also should be adjusted accordingly. The study applies negotiated rulemaking for product regulation, where regulation should revise as the product evolve.

The emergent model extends the negotiated rulemaking to represent these iterative adjustments. Further, the model uses the benchmarking approach also to facilitate these revisions. These extensions to negotiated rulemaking are validated from actual practices of the techno-based industry. Therefore, the emergent model contributes to the body of knowledge in negotiated rulemaking.

Mobile money regulation used the test-and-learn approach for regulatory development. Especially, some regulatory aspects and security threats related to new products are difficult to be decided beforehand. In these instances, negotiating parties have collaboratively launched new products on the test-and-learn basis, to acquire learnings. The test-and-learn approach has extended the capability of collaborative rulemaking, to clarify the uncertain areas

6.1 Recommendations

In stakeholder selection, the power balance of the committee has not been given much prominence. Banks are relatively powerful and have influenced mobile money products in the recent past. As an example, interest-bearing mobile money accounts were introduced in some countries. Though such products are beneficial to the customer, they will challenge the business interests of the banks, which might increase the resistance from the banks. Therefore, relative power should receive better attention.

Mobile money transactions have been lower in volume when compared with bank-based payments. Therefore, NPC provides a minor representation for mobile money based on the proportion. As a result, mobile money discussions have not received proper attention at the level of NPC. Mobile money is evolving, with a considerable number of stakeholders and specific issues. Therefore, establishing a specialized subcommittee can build a better platform and increase the quality of regulatory response towards mobile money.

Negotiations on some products have continued over long periods, and participants have lost the interests of such discussions. Further, these regulatory delays have affected the performance of firms since it delays the timely launch of products. So, potential improvement can be achieved by establishing tentative timelines.

6.2 Limitations of the Study

The study identified two major limitations resulting from the methodology and the research process. First, document data on regulatory development was used for the triangulation of data. Since these documents are not created specifically for this study, the responsiveness of the data is limited. Second, potential interviewees were limited due to the limited number of mobile money service providers. Out of a total of five service providers, only four telecommunications service providers had mobile money services available.

6.3 Implications for Future Research and Practice

The findings from this study and its extended model can serve as a starting point for researchers who are interested in collaborative regulatory development or development of technology regulation. For those in the former, they can further extend the study's model by investigating collaborative regulatory development for mobile money or similar technologies in other developing countries. These researchers may even perform similar studies in developed economies, to identify where the similarities and differences lie. Meanwhile, for researchers who are interested in the development of technology regulation, this study can shed some light on the nuances involved in the process where more studies can take place. For example, the "superiority" of the central bank can inspire a study on power relations. At the same time, the need for more participation in regulation development can lead to a study using the stakeholders' theory.

Findings from the study present some practical implications as well. First, they demonstrate the advantages and drawbacks of using the collaborative approach in formulating the regulations for mobile money. While it can develop commitments from the participants such as the banks and the telecommunication companies, the finalized regulations can be lopsided due to the power held by the central bank who oversees the process. Therefore, the selection of the entity overseeing the process is vital to ensure that all parties, especially the unbanked communities, will benefit from the regulations. Second, the findings show the need for strict monitoring of the timeline, in delivering the promised regulations for mobile money. Collaborative regulatory development is an iterative process where the regulations are discussed and re-discussed. While this step is important in the regulation development process, lack of effective timeline monitoring can lead to delays in getting the regulations published and implemented.

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LIST OF PUBLICATIONS AND PAPERS PRESENTED

No	Year	Title	Conference/Journal
1	2018	Collaborative Regulatory Development in Sri Lankan Mobile Money Sector for Financial Inclusion.	The 22 nd Pacific Asia Conference on Information Systems (PACIS 2018)
2	2019	Collaborative approach in developing regulation for mobile money in Sri Lanka	The Electronic Journal of Information Systems in Developing Countries Indexed in <ul style="list-style-type: none"> • ACM Guide to Computing Literature (ACM) • Emerging Sources Citation Index (Clarivate Analytics) • IBSS: International Bibliography of the Social Sciences (ProQuest) • INSPEC (IET) • SCOPUS (Elsevier) • Web of Science (Clarivate Analytics)