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Constructing a Holistic Framework for Mobile Wallet Adoption in Emerging Countries

An Empirical Study with Evidence from
Pakistan and Myanmar

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Preface

This master thesis is written for the course TIØ4567 - Strategy and International Business Development Specialization Course in Spring 2017. The authors of this report consist of two students studying 5th year Industrial Economics and Technology Management at NTNU. Furthermore, conclusions drawn in this report are based on relevant academic literature, online sources and interviews. Where necessary information has been found wanting, assumptions have been made and stated. The authors would like to thank the following persons for their great help as interviewees during the master thesis work:

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Trondheim, June 17th, 2017

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Summary

The objective of this master thesis is to develop a framework that can be used to develop an existing market or enter an unknown foreign market to set up a mobile wallet (mWallet) ecosystem and stimulate financial inclusion. To address this, the thesis was divided into three research questions, which incrementally produced and improved the adoption framework:

RQ1: What is a suitable framework for analyzing mobile wallet adoption?

RQ2: How applicable is the framework at examining an existing emerging market with respect to mobile wallet adoption?

RQ3: What are the recommended measures to increase mobile wallet adoption in Myanmar?

Along the way several insights are uncovered which have implications for the mobile network operator (MNO), other practitioners and future research.

Developing a Framework

The study's first part sets out to produce a framework for analyzing mobile wallet adoption based on existing academic research. The framework consists of two models, an internal adoption model and an external ecosystem model.

The internal model, which is based on the technology acceptance model (TAM), is a deep dive into the consumer portraying seven internal customer constructs that spur adoption: *trust, awareness, perceived ease of use, perceived usefulness, economic factors, personal habit* and *perceived mobility*. These all affect the consumer's *intention to use* the service which may lead to *actual usage* and hopefully a sense of *goal accomplishment*. In this first iteration, the intention to use mWallets is presumed to be moderated by the *cultural context* and *demographics* of the target market.

The external model, which is highly influence by (i) contingency theory and (ii) network theory, consists of four stakeholder groups, the *Governmental Actors*, the *Focal firm* (usually the MNO), *Collaborators* and *Competitors*, who are defined by the roles they play, their incentives and how they affect the consumers adoption. Together, the two models create a holistic view of the uptake of mobile wallets.

Revising the Framework

The study's second part attempts to improve on the framework by using a relatively established mWallet market as a benchmark. In this part, a thorough desktop study is performed and, combined with interviews, the framework is used to create an overview of the Pakistani consumer and market, which measures have been planned or implemented and to what degree they were successful. The internal model shows that the most critical constructs in Pakistan are *perceived usefulness, awareness* and *trust*. To have the largest impact on mWallet adoption in Pakistan, measures that affect these three constructs will be the most efficient. Through the framework's correlation matrix, which maps the relation between measures and internal constructs, it therefore becomes clear that certain stakeholders have important roles to play, for example the government who plays a key role in creating trust.

More importantly for this part, the framework is successfully tested and improved. At the recommendation of interviewees, a new iteration of the internal model comes with the inclusion of an additional factor, *perceived enjoyment*, the added correlation of awareness to perceived usefulness and the abstraction of the moderators to affect the entire model rather than just the intention to use construct.

Implementing the Framework

In the third part of the study the framework was used to create a set of recommended measures for mWallet adoption in a more nascent market, Myanmar. Here, a similar approach to Part II was performed, filling in the internal and external models to get an overview of the Burmese market. The internal model showed that the critical constructs for Myanmar were *awareness, trust* and *economic factors*. The correlation matrix and the prioritization matrix, which plots a measure's impact against complexity, concluded that the Quick Win measures were mostly continuations of measures already implemented by the focal firm, including: (i) having a customer centered approach to mWallet development (MF2, see figures 15.2 and 15.3), (ii) completing the digital gamification application to teach about personal finances (MF3) and (iii) ecosystem interoperability (MF8; not a continuation). Furthermore, longer term investments that should be prioritized include the focal firm widening their portfolio (MF10), and strengthening the collaborations with physical merchants in accepting mWallet as a method of payment (MC9). It is important to note that several measures depend on the government first implementing important fundamental regulations which are not included in the matrix.

Implications

Although highly qualitative, the purpose of the framework is to guide the practitioner to make sure to "cover all their bases". By defining the consumer by a set of constructs that affect their adoption, and becoming aware of which constructs resonate the most in the target market, it becomes clearer to see what areas should be stimulated. Likewise, the framework's division of the ecosystem into four segments helps to guide the mapping of the actors and how far they are in their processes to affect the consumer.

Although the thesis is very useful on a more general and holistic level, future research is recommended to strengthen the frameworks' quantitative nature. Improvements include reviewing the causality between constructs and accommodating for dependencies and more precisely weighting the various constructs depending on the moderating effects of cultural context and demographics.

Conclusion

In conclusion, the findings from the master thesis impose several implications for Telenor and other practitioners. By understanding that various cultures respond differently to measures due to their particular emphasis on select adoptive constructs, it becomes clearer how to approach the new or existing market to set up or improve the MFS ecosystem. Likewise, by understanding the stakeholder groups and the actors that constitute them in the market, it becomes clearer who can become a vital ally or an important competitor.

Sammendrag

Formålet med denne masteroppgaven er å utvikle et rammeverk for å sette opp eller videreutvikle et økosystem for mobillommebøker og bidra til finansiell inkludering. For å adressere problemstillingen ble oppgaven inndelt i tre forskningsspørsmål, som inkrementelt skapte og forbedret adaptasjonsrammeverket:

RQ1: Hva er et egnet rammeverk for å analysere adaptasjonen av mobillommebøker?

RQ2: Hvor anvendbart er rammeverket for å undersøke et eksisterende utviklingsland med tanke på adaptasjon av mobillommebøker?

RQ3: Hvilke tiltak er anbefalt for å øke adaptasjon av mobillommebøker i Myanmar?

Gjennom denne prosessen fremkommer en rekke funn som har implikasjoner for mobiloperatøren (MNO), andre tilbydere og fremtidig forskning.

Utvikling av rammeverket

Formålet med studiens første del er å utvikle et rammeverk for å analysere adaptasjon av mobillommebøker basert på akademisk forskning. Rammeverket består av to modeller, en intern adaptasjonsmodell og en ekstern økosystemmodell. Den interne modellen er basert på den anerkjente *technology acceptance modellen* (TAM) og har som mål å beskrive forbrukerens beslutningssituasjon gjennom syv interne konstruksjoner: *tillit, bevissthet, oppfattet brukervennlighet, oppfattet nytte, økonomiske faktorer, personlig vane* og *oppfattet mobilitet*. Samlet påvirker disse forbrukerens *bruksintensjon*, som kan lede til *faktisk bruk* og *måloppnåelse*. I denne første iterasjonen, antas bruksintensjonen å være moderert av *kulturell kontekst* og *demografiske forhold* i det spesifikke markedet.

Den eksterne modellen er basert på (i) beredskapsteori [contingency theory] og (ii) nettverksteori, og består av fire grupper av interessenter: *regjeringsaktører, hovedfirmaet (som regel mobiloperatøren), samarbeidspartnere* og *konkurrenter*. Disse interessentene er definert basert på hvilken rolle de har i økosystemet, deres insentiver og hvordan de påvirker adaptasjonen blant forbrukerne. Samlet utgjør disse to modellene et helhetlig rammeverk for opptak av mobillommebøker.

Revidering av rammeverket

Studiens andre del tilstreber å forbedre rammeverket ved å benytte et relativt velutviklet marked for mobillommebøker som referanse. Gjennom grundig analyse av tilgjengelige rapporter og andre kilder, kombinert med intervjuer, brukes rammeverket til å skape en oversikt over det pakistanske markedet og den pakistanske forbrukeren, hvilke tiltak som er implementert og til hvilken grad de har lyktes. Den interne modellen viser at de mest kritiske konstruksjonene i Pakistan er *opplevd nytte, bevissthet* og *tillit*. Rammeverket impliserer at for å påvirke adaptasjon i Pakistan i størst mulig grad, vil tiltak som påvirker disse tre konstruksjonene være mest effektive. Ved bruk av rammeverkets korrelasjonsmatrise, som kartlegger relasjonen mellom tiltakene og de interne konstruksjonene, fremkommer det at enkelte interessentgrupper påvirker visse konstruksjoner i større grad enn andre. Regjeringen, for eksempel, har en viktig rolle for å skape tillit til tjenesten.

Viktigst for denne delen, er at rammeverket på en vellykket måte testes og forbedres. Anbefalinger fra intervjuene resulterer i en ny iterasjon av rammeverket, hvor et ekstra konstruksjon legges til den interne modellen, *oppfattet fornøyelse*. Det blir også lagt til en korrelasjon mellom bevissthet og oppfattet nytte, og effekten fra moderatorene abstraheres til å gjelde hele modellen i stedet for kun bruksintensjonen.

Implementering av rammeverket

I studiens tredje del brukes rammeverket for å skape et sett med anbefalte tiltak for å øke adaptasjonen av mobillommebøker i et fremvoksende marked, Myanmar. En liknende framgangsmåte som for del II anvendes for å få en oversikt over Myanmars markedslandskap. Fra den interne modellen fremkommer *bevissthet, tillit* og *økonomiske faktorer* som de kritiske konstruksjonene for Myanmar. Korrelasjonsmatrisen akkompagneres av en prioriteringsmatrise som plotter et tiltaks virkning mot dets kompleksitet. Dette resulterer i et sett med "raske gevinster" domineret av tiltak tilhørende hovedfirmaet. Majoriteten av disse er videreføringer av allerede påbegynte prosjekter og inkluderer: (i) å ha en kundesentret tilnærming (MF2, se figurene 15.2 og 15.3), (ii) fullføring av en digital spillapplikasjon for å lære om personlig økonomi (MF3) og (iii) interoperabilitet i økosystemet (MF8; ikke videreføring). Utover dette anbefales det at investeringer som er viktige, men krever lengre implementeringstid også prioriteres. Disse inkluderer utviding av hovedfirmaet sin produktportefølje (MF10) og styrking av akseptpunkter for mobillommebøker hos fysiske forhandlere (MC9).

Implikasjoner

På tross av at rammeverket i høy grad er kvalitativt, er hovedformålet å guide den som anvender det til å få et helhetlig overblikk over det aktuelle markedet. Ved å definere kunden gjennom et sett med konstruksjoner og moderatorer, og ved å bli klar over hvilke tiltak som samsvarer best med målgruppen, blir det tydeligere hvilke områder som krever mest fokus og bør stimuleres. Rammeverkets inndeling av økosystemet i fire segmenter fungerer som en veileder i kartleggingsprosessen av interessentene for å forstå hvordan og i hvilken grad de påvirker forbrukeren.

Rammeverket er antatt å være anvendbart på et generelt og helhetlig nivå, men det anbefales at fremtidig forskning jobber for å styrke dets kvantitative natur. Forbedringer inkluderer en gjennomgang av kausaliteter mellom konstruksjoner, i tillegg til å ta hensyn til avhengigheter, samt vekte de ulike konstruksjonene på en mer presis måte avhengig av den modererende effekten fra konteksten og demografiske faktorer.

Konklusjon

Funnene fra denne masteroppgaven har flere implikasjoner for Telenor, andre tilbydere av mobillommebøker og mobile finansielle tjenester generelt. Ved å få forståelse for at forskjellige kulturer kan respondere ulikt på et tiltak grunnet deres ulike forståelse av de interne adaptasjonskonstruksjonene, blir det tydeligere hvordan man skal gå frem for å enten forbedre et eksisterende marked eller sette opp et nytt økosystem for mobillommebøker. Likedan, ved å forstå de ulike gruppene av interessenter og aktørene innunder dem i markedet, vil det bli enklere å se hvem som kan bli ens allierte og hvem som kan bli viktige konkurrenter.

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Chapter 1

Introduction

1.1 Introduction to Theory

According to a study by the financial access initiative Chaia et al. (2009), 2.5 billion adults, just over half of the world's adult population, do not use formal financial services to save or borrow. Emerging markets are highly represented as 62% of adults living in Asia, Africa, Latin America and the Middle East, nearly 2.2 billion, are unserved (Chaia et al., 2009). It was against this backdrop that mobile money first emerged in 2001, "as providers saw the opportunity to leverage mobile technology to reach millions of financially excluded people" (GSMA, 2016, p. 12).

Since then, both developed and emerging countries have witnessed the launch of a number of mobile financial services (MFS) in their markets over the last years (Gaur & Ondrus, 2012) either as an over the counter (OTC) service through an agent or through personal mobile wallets (mWallets) on the consumer's own handset. According to Brad Jones, CEO of Wave Money in Myanmar, 265 implementations of mobile money are in operation across 89 countries (Jones, 2016a). "As a result, 299 million people have used mobile money in these markets, of whom 103 million hold active accounts", says Jones (2016a). A near ubiquitous mobile phone penetration creates a wirelessly connected society, enabling MFS to become a key tool in the financial inclusion of the more than two billion people that remain unbanked (GSMA, 2016; Yousif, Berthe, Maiyo, & Morawczynscki, 2015). This high-volume, low-margin business model has potential to work for the mass market, giving those at the base of the pyramid access to formal financial services (Lal & Sachdev, 2015), a key prerequisite for lifting the unbanked and underserved out of poverty and spurring economic growth (Telenor Group, 2015).

1.1.1 The Significance of Financial Inclusion

In countries like Myanmar and Pakistan, vast portions of the population are without banking services. This is largely a result of the low cost efficiency of running bank branches out in the isolated rural districts. Likewise, the populace in these suburbs have little income and do not see travelling into the more centralized areas to set up and deposit their funds as realistic. This leads to large portions of their populace being left financially excluded. In addition to banking, governments have problems distributing government to people (G2P) disbursements such as BISP (Pakistan's social services payments) in cash.

The service has notoriously large spillage costs with money disappearing into the pockets of middlemen along the way to the recipients (State Bank of Pakistan, 2016).

According to Lauer and Lyman (2015), “digital financial inclusion” can be defined as digital access to and use of formal financial services by excluded and underserved populations. Such services should be suited to the customers’ needs and delivered responsibly, at a cost both affordable to customers and sustainable for providers" (Lauer & Lyman, 2015). Examples of such branchless initiatives include Internet banking and mobile financial services (MFS) and uptake has been rapid and significant in some markets (Lauer & Lyman, 2015).

Digital financial services allow consumers to transact locally in tiny amounts and better manage their characteristically uneven income and expenses. Without branches and large expenses, the cost of transactions become close to zero, allowing for smaller transactions. In addition to the disappearance of costs associated with cash transactions, moving away from cash reduces the risk of loss, theft, and other financial crimes (State Bank of Pakistan, 2016). An interesting incentive for providers, the data generated by customer usage can enable data monetization and opens up for additional financial service offerings tailored to customer needs (GSMA, 2016; Lauer & Lyman, 2015). Ultimately, it can advance economic growth nationwide by enabling asset accumulation through saving, insurance and loans, and, for women in particular, increase economic participation (Lauer & Lyman, 2015).

There are four potential distributors of such mobile financial services: (i) full fledged brick and mortar banks, (ii) branchless and more niche, pure play internet banks (PPIBs), (iii) mobile network operators (MNOs) and (iv) non-bank, non-MNO mobile money issuers (often clustered as fintech firms) (Lauer & Lyman, 2015). The question is how to introduce a complicated concept of personal finances to emerging markets.

1.1.2 Over the Counter - A Quick Fix?

Often considered a "quick fix" for a lot of the payment problems has been "over the counter" (OTC) or "point of sale" (POS) solutions. In this report, an OTC transaction is defined as “a transaction that the agent conducts on behalf of a customer from either the customer’s or agent’s mobile money account” (McCaffrey, Wright, & Singh, 2016).

For providers trying to build transaction volumes quickly OTC is very attractive due to its relative ease of implementation and practical usefulness to customers (McCaffrey et al., 2016). The ability to quickly build a user base is important both for the network externalities of having someone to transact with - after all there is little use in a phone if there is no one to call - and as a proof of concept with respect to investors. Reaching high volumes of transactions relatively quickly is "especially important for third-party providers who need to design an attractive business model to raise capital from investors" (McCaffrey et al., 2016, p. 8).

However, in the long run, the offerings available by OTC solutions are limited by the very same features that make it so attractive in the first place - the lack of an end user account. McCaffrey et al. (2016) state that "for providers seeking to build an ecosystem of mobile money, the potential limitations of OTC raise questions around its relevance and sustainability, around which the industry has yet to build a clear consensus" (p. 8).

OTC can affect revenue in two opposing ways. On one hand, OTC can *decrease* profits due to agent commissions, while on the other hand, it may help to *increase* volumes of transactions in the short term, and may appeal to a larger market of users who are not

interested in accounts (McCaffrey et al., 2016). By no means exhaustive, three limitations to OTC include i) reduced profitability for the provider, ii) the lack of complete financial inclusion, and iii) the lock inn effect. The latter is more a complication when considering the transition from OTC to a different solution, such as mWallets, than a problem of OTC in itself.

Problem 1: OTC reduces provider profitability

One of the benefits of OTC for the consumers is the compatibility between the different providers. A consumer can use the same agent regardless of provider and will therefore show little consumer loyalty. Likewise, the agent can cut out the providers that are not generating enough revenue or paying attractive commissions. OTC has given agents extraordinary power (McCaffrey et al., 2016) and the high commissions combined with the low price creates slim margins. Likewise, the new OTC channel cannibalizes other high revenue transactions which previously carved out a larger revenue. Providers are therefore locked into a battle where the 'agent is king' (Lucini & Hasnain, 2016).

Problem 2: Incomplete financial inclusion

Although an important step in the right direction, OTC does not imply being fully financially included. OTC has innate problems due to the lack of the end-user having their own registered accounts. Without account verification, more advanced financial services are excluded such as credit, savings and insurance, also known as value added services (VAS). The importance of VAS for the end consumer, government and provider cannot be understated.

Credit allows the borrower to smooth out consumption, it enables larger investments and growth. Likewise, savings allow for added revenue through interest and a safe space to store value until needed. Furthermore, by vesting savings into the financial system, this money can be used elsewhere until it is needed. Finally, via the security net of insurance, larger risk can be taken allowing for greater reward. By introducing VAS governments see increased GDP (Nesse, Risnes, Hallingby, Munch-Ellingsen, & Canright, 2016). The introduction of account verification is also a strong anti-money laundering / counter financing of terrorism (AML/CFT) initiative. The accounts introduce improved transparency which also reduces corruption and spillage along a distribution network. Finally, the provider sees benefits from accounts through increased user stickiness and increased Average Revenue Per User (ARPU).

Problem 3: The OTC Lock-In

The problem occurs when users and agents become accustomed to OTC transactions and they show little interest to change to mobile wallets at a later stage (McCaffrey et al., 2016). Even when all stakeholders around the user wish mWallet to become the predominant solution, the users themselves have not been incentivized and can see it as costly or risky (Nesse & Hallingby, 2016b). They prefer to remain with OTC as it is simply too easy to use even if it may be inferior. As all other users also use the old system it becomes increasingly difficult to convert the consumer effectively locking them into a legacy system.

Even though OTC may slow the transition to mobile accounts, in many markets its deemed a necesary step. Tameer Microfinance Bank's Nadeem Hussain, stated that even in retro-

spect, he would have done it the same way again, a statement other providers that chose OTC to expand their footprint agrees with, (McCaffrey et al., 2016).

In conclusion, to achieve true financial inclusion, it is necessary to incentivize the public to, either starting from nothing or from existing OTC usage, convert to mWallet solutions. To achieve this, companies in the mobile payment business must overcome what they perceive as the greatest barrier to mobile payment adoption, *consumer acceptance* (Mallat, 2007). Consumer adoption behaviour is therefore one of the key issues and it is necessary to understand why users will or will not use the new mobile payments (Mallat, 2007). To tackle financial inclusion, this master thesis will delve into the heart of consumer adoption theory, looking at how to stimulate mWallet adoption despite empirical evidence proving this is extremely difficult.

1.2 Research Scope and Research Questions

To ensure that the master thesis does not encompass an overlarge topic within the time limitations of one semester, the problem has been scoped down. Some details regarding the scope are outlined below:

- The thesis focuses on emerging markets as one primary motivation is the financial inclusion of a nation's citizens, a topic more relevant for emerging markets rather than industrialized ones. In particular the cases will be based in Pakistan, a relatively mature mobile money market, and Myanmar, which is still in its mobile money infancy.
- The thesis approaches the problem from a mobile network operator's (MNO) point of view. It does not look into the strategic implications caused by political risk and other macroeconomic effects. An example could be the sudden and unexpected re-nationalization of infrastructure in Myanmar and its impact on measures taken by the stakeholders.
- The scope of the thesis is not limited to mobile payment solutions, but expands into other mobile financial solutions such as credit, savings and insurance, also known as value added services (VAS). On the other hand, desktop Internet banking and other non-mobile digital financial services are out of scope.

It is important to point out that the main focus for the assignment is to look at the uptake of mobile wallet (mWallet) solutions either from no previous MFS background or from an existing over the counter (OTC) solution. The objective would be to find a systematic method for addressing the issue of mWallet adoption with some certainty of having covered all vital aspects both considering the abstract concept of the consumer and the muddled waters that is a developing MFS ecosystem. Based on this, three research questions have been formulated:

RQ1: What is a suitable framework for analyzing mobile wallet adoption?

RQ2: How applicable is the framework at examining an existing emerging market with respect to mobile wallet adoption?

RQ3: What are the recommended measures to increase mobile wallet adoption in Myanmar?

1.3 Approach to Answering the Research Questions

Apart from this introduction and methodology, which is explained in Chapter 2, this thesis is structured into four main parts, as illustrated in Figure 1.1. The first three parts each respectively answer a research question, while the fourth part concludes and summarizes the paper.

Table 1.1: The proposed thesis structure

	Chapter 2: Methodology
Part I: (RQ1)	Chapter 3: Internal Customer Adoption Chapter 4: External Ecosystem Chapter 5: Using the Framework Chapter 6: Concluding Remarks
Part II: (RQ2)	Chapter 7: Internal Customer Adoption Chapter 8: External Ecosystem Chapter 9: Summary of Pakistan Interviews Chapter 10: Part II Discussion Chapter 11: Concluding Remarks on Part II
Part III: (RQ3)	Chapter 12: Internal Customer Adoption Chapter 13: External Ecosystem Chapter 14: Summary of Myanmar Interviews Chapter 15: Part III Discussion Chapter 16: Concluding Remarks on Part III
Part IV:	Chapter 17: Conclusions Chapter 18: Limitations and Further Research

Chapter 2

Methodology

To ensure the validity of the thesis' findings, it is important to ensure transparency regarding the methodology used to answer the research questions. The thesis has three consecutive research questions and their methodology is described in this chapter. Much of the thesis' research methodology is based on principles and strategies from Yin (2014).

2.1 General Research Design

The thesis has a mixed research design in the sense that it contains both a literature study and two case studies. The literature study is primarily reserved for RQ1 which develops the adoption framework based on existing literature. In contrast, RQ2 and RQ3 are case studies that test and implement the framework, respectively.

2.1.1 Literature Study

It is important to perform a literature study to successfully execute the case study. Yin (2014) points out that case studies can be incredibly difficult to perform and that it requires the ability to ask good questions, be adaptive and have a firm grasp of the issues being studied, not only to navigate the subject but also avoid bias. In this thesis, the literature study has an additional benefit as it directly helps produce the framework used in the rest of the report.

The framework developed in Part I is grounded in academic theory. This paper is based on several academic articles, particularly with regards to customer technology adoption theory. Although not a method of gathering sources *per se*, having already done a large amount of research for the pre-thesis (Arnøy & Fosseidbråten, 2016), many of the sources and insights from this could be reused as it was written with the master thesis in mind. In the pre-thesis the general theme of MFS was explored, however the core of the report was related to how an MNO can operate a Pure Play Internet Bank (PPIB) and thereby build some of the foundations needed for the deployment of an MFS. This implies the pre-thesis research is not a complete subset of the master thesis topic, however it can be considered a pre-cursor step for the topic of mWallet adoption. In Section 2.3, an in depth description of the literature study methodology is undertaken.

2.1.2 Case Study

According to Yin (2014) there are several different research methods that can be used to answer the research questions: experiment, survey, archival analysis, history and case study. It quickly became apparent that this thesis would require the use of the case study method. The topic focuses on contemporary events (unlike history), where there is no required control of behavioural events (unlike experiments). In fact, much of the study is looking at how consumer behavior can be affected and therefore it is fitting the researchers have little to no control on such events. "The essence of a case study, is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what result," (Yin, 2014, p. 15). It is the decision of whether or not to adopt the service that is interesting, and what measures can be undertaken by the external actors to affect that decision. In this setting the case study becomes highly relevant. Finally, the case study method is relevant as the thesis' research questions require an extensive and thorough description of the social phenomenon of adoption. This is something that a more quantitative undertaking cannot achieve to the same degree. As Yin (2014) points out, "the need for case studies arises when there is a desire to study complex social phenomena" (p. 4), and by focusing on a 'case' it allows one to retain a holistic and real-world perspective.

2.2 Case Study Design

Yin (2014) presents case study research design as, "a logical plan for getting from here to there, where *here* may be defined as the initial set of questions to be answered and *there* is some set of conclusions" (p.28). The design lays out some important objectives: (i) the case study questions, (ii) propositions, if any, (iii) a unit of analysis, (iv) the logic linking the data to the propositions, and (v) the criteria for interpreting the findings. The questions have already been defined, the propositions, unit of analysis and logic linking are presented here, while the criteria for interpreting the findings are introduced at the end of the method chapter, under Section 2.5: Limitations of the Methodology.

2.2.1 Propositions

RQ2 and RQ3 are considered by the authors to be what Yin (2014) defines as explanatory case studies as the purpose of the framework is to explain consumer adoption behavior. Explanatory cases require some initial theoretical propositions, because only through stated propositions it will be possible to move in the right direction as they tell you where to look for relevant evidence. The case studies are based on the theoretical propositions defined in Part I, that the behavior of consumers can be defined by the framework that RQ1 developed. This proposition is what guides the case study research and interviews to see if this holds true.

2.2.2 Unit of Analysis

The unit of analysis as Yin (2014) refers to, and "cases" used in the thesis, are the mWallet markets in emerging Asian countries. The thesis limits itself to two emerging markets in particular, Pakistan and Myanmar. In addition to the focal firm that provides the mobile

Figure 2.1: Three major method stages and RQs

financial service, there are three defined actors aside from the consumer that have implications for the success of the service: the government, collaborators and competitors. The consumer market itself is an important aspect of the case. The case assumes that a consumer can be defined by 7 adoption constructs which are in turn moderated by two moderators (demographics and cultural context) to impact the consumers intention to use. The intention to use and actual usage are then alone representative of mWallet adoption. The bounding of the case or defining the boundaries of the case can therefore not be more specifically defined than the mWallet market itself with four external actors and the consumer.

The thesis is inspired by Yin (2014) in the sense that it follows a multiple, holistic case study approach. This implies that *multiple* cases are used for comparison, and that it is *holistic* with a single unit of analysis, the ecosystem itself. The reasoning behind this is twofold. "Most multiple-case study designs are likely to be stronger than single-case study designs. Trying to use even a "two-case" design is therefore a worthy objective, compared to doing a single-case study", (Yin, 2014, p. 26). The case study is considered holistic as it looks at the ecosystem as a whole and the interactions between the consumer and its four external stakeholder groups, instead of being embedded within several layers of each case.

2.2.3 Logic linking

The approach used for developing the framework is similar to that of computer learning, Figure 2.1. Having created a basic framework off of generally acknowledged rules or theory (the academic articles), Stage 1 Develop Custom Adoption Model in Figure 2.1, the framework is in Stage 2 tested on a "known dataset". This dataset is intended to see if the framework functions as desired and if it is considered complete or needs revising. In this thesis the first case study of Pakistan, with Easypaisa as the focal firm, is considered this known dataset. The Pakistani market is more mature and has already tested several measures for improving consumer adoption and most of the results of these measures have been recorded and discussed.

After testing the framework on the initial case, a revised framework is produced based on the experiences gathered. In computer learning, this new and improved framework is thereby introduced to a second data set of unknowns, the intention being that the framework now will in turn correctly identify the data and label it accordingly. In this thesis' case, the framework's function is to correctly analyze a market and propose efficient measures for improving the consumer adoption within the unknown market. In Stage 3 in Figure 2.1, the second case study with Wave Money is considered in the undocumented Burmese market. The Burmese market is very nascent and therefore open

for alternative approaches than that of older, more developed mWallet markets.

2.2.4 Choice of Data Collection Methods

This thesis uses a combination of desktop research and interviews as its sources of evidence, both with varying strengths and weaknesses according to Yin (2014).

The benefits of using documentation are multiple. As a verified text it is considered *stable* allowing it to be reviewed repeatedly and *unobtrusive* as it was not created as a result of the case study. Depending on the type of documentation collected it can be considered *specific*, meaning it can contain the exact names, references, and details of an event and remain *precise* and *quantitative* or *broad*, covering a long span of time, many events, and many settings. However documentation does not come without its weaknesses. Depending on its publishing, it may be difficult to find (retrievability) or access to it may be deliberately withheld. If collection is incomplete the documentation may suffer from biased selectivity or reporting bias, the latter reflecting (unknown) bias of any given document's author.

Interviews on the other hand are much more contemporary as they are performed *during* the data collection phase. One of its strengths is therefore that it is considered to be more targeted than documentation, focusing directly on the case study topics. As a primary source, interviews are insightful as they provide explanations in addition to personal views (e.g perceptions, attitudes, and meanings). However, this invaluable insight from first hand accounts may also bring with its own bias, either due to poorly articulated questions or response bias depending on what the interviewee perceives is the intention behind the interview. In the latter, the interviewee might wish to withhold damaging information or show high degrees of reflexivity where the interviewee gives what the interviewer wants to hear. Regardless of the interviewee's intention, inaccuracies due to poor recall may hamper the validity of interviews.

Documentation/Desktop Research Method

The documentation provided invaluable information both with regards to the academic foundation of the framework developed, but also in the form of the vast quantity of reports that were used to fill inn the details for each case. Without the various news articles, blog posts and reports by NGOs, consultancy firms, governmental agencies etc., much of the information would have to be gathered directly, an unrealistic feat given the time constraint of a master thesis. While the data provided was both specific for our case and broad enough to give useful information of the entire market, it is important to use several sources to minimize reporting bias. More in depth about desktop research for each part of the thesis follows in their respective subsections.

Interview Method

To match the writing process and gather relevant information at the right time, interviews were conducted in two sets: first one for Pakistan for Part II, then Myanmar for Part III. By interviewing sequentially the interview template could be adapted over time depending on what worked and what was still needed, thereby adhering to the collecting and analyzing data concurrently principle by Morse, Barrett, Mayan, Olson, and Spiers (2002). In Pakistan, where the focus was improving the proposed framework, the interviewees were selected to contribute on different areas of the framework. In contrast, the spread of interviewees for Myanmar were

slightly more limited and were all in some way connected to the focal firm. What they had however, was keen insight into the Burmese market which was the most important role they filled as little documentation exists as of yet on the Burmese market. When used as a reference later in the thesis, the interviewee input is referred to by the interviewee's last names.

2.3 Part I: Constructing a Framework for Analysis

Part I of the thesis deals with RQ1, constructing a framework for analysis. It consisted of four stages, the first two being searching for and reading up on relevant reports and articles and conceptualizing an overall framework based on evaluating existing theoretical frameworks. It became clear from academic sources (Zmijewska & Lawrence, 2005) that to cover the interaction between the consumer and the actors who influence them, a two tiered framework was desirable. The internal model would look at the consumer adoption constructs, what makes them tick, and a second, external model that looks at the mWallet ecosystem, and how they stimulate the consumers' triggers. The third stage therefore consisted of selecting the most important adoption factors and constructing the internal model that presented the levers that can affect consumers in a manner that is most relevant for those actors who intend to influence them. Likewise, the fourth stage consisted of setting up the external model - mapping out the actors who would be the ones to pull those levers: their incentives and their methods of motivation. Together the plan was to produce a complete, generalizable framework that optimally served as a tool for assessing and advising on mWallet adoption. To see the end result for reference, see Figure 3.1.

2.3.1 Search for Reports and Articles

With the exception of the groundwork laid in the pre-thesis written the previous year, the authors of this master thesis had close to no background knowledge of the topic. To create a foundation of knowledge and awareness of the current existing theoretical base three methods of acquiring academic articles were used: using research from the pre-thesis (Arnøy & Fosseidbråten, 2016), database searches and snowballing. The distribution of academic sources between the three methods can be seen in Figure 2.2a.

Database Search

Although the pre-thesis contributed with a good portion of ecosystem articles, more were needed with regard to adoption articles. To start the data collection, database searches were used to quickly get a hold of potential articles. This method returned a broad spectrum of articles, not all of which were relevant, but those that were proved important starting nodes for the second backward snowballing strategy.

Note, the database search strategy was used twice, first for searching on internal adoption models and second when searching on the major mWallet stakeholders. In total two search topics were defined: mobile wallet adoption and mobile financial service ecosystems, with search equations (2.1) and (2.2) respectively. These two themes carried on to the snowball method as well. The total number of articles found per method can be seen in Figure 2.2b.

The first process was to determine key search terms to be used. The search terms were aimed at returning as precise a result set as possible. Complementary search terms which included synonyms ("acceptance" and "adoption" or "ecosystem" and "adaption") were developed to include articles that used similar but not exact terms as the original search term as it quickly becomes apparent an inconsistency in terminology. These were often inspired by retrieved articles' own keywords. Based on testing several search terms a search algorithm that returned the most complete set of results for each of the two topics was developed.

```
(acceptance  OR adoption) AND (mWallet* OR mobile wallet*)      (2.1)
```

```
"mobile financial services" AND
(ecosystem OR network  OR "contingency factor*")                (2.2)
```

The brainstormed set of search terms were queried in three large databases: Scopus, Oria and Google Scholar. Although more specific search databases were available, for the purposes of this breadth-first-strategy, the variety of results were a primary focus and therefore these more general databases were selected for their wide breadth of literature. The database search method produced 17 articles that were found to be relevant.

Snowballing

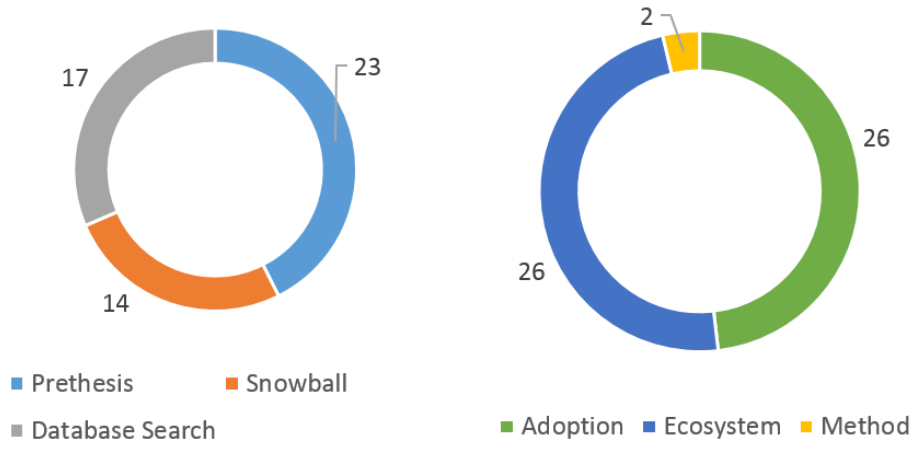
According to Jalali and Wohlin (2012) "it is recommended that snowballing from reference lists of the identified articles should be used in addition to the searches in the databases [Strategy 1], i.e. to identify additional relevant articles" (p. 1). Another advantage of this technique is that it is found to be more understandable, efficient and easy to use compared to database searches (Jalali & Wohlin, 2012). Google scholar and Oria were the main search engines used to retrieve the identified articles from the database searches performed in Strategy 1, Database search.

The starting point of this strategy were the articles found in Strategy 1, database search. The reference lists from those articles were then used to find useful articles until the sample size was met. This is a non-probability sampling technique, thus it is based on the judgment of the authors of this paper. Most of the judgments were done based on themes discussed in the given article and the title of the paper when going backward through the reference list. Some of these papers were excluded after reading their abstract, thus resulting in a step wise judgment.

Articles published before 2010 was only investigated if they were considered to be still relevant usually because their topics were not time critical. Articles resulting from this strategy include publications from GSMA, an organization that brings together various actors in the pursuit of demonstrating the positive social impact of mobile technology. This source is considered trustworthy and of high relevance as it publishes a variety of MFS related topics. 14 articles were found using the snowballing method.

Academic Articles

To create the initial framework, academic articles were used to uncover the current standard for both consumer adoption and ecosystem interaction.The academic articles were



(a) Source Method

(b) Source Theme

Figure 2.2: Overview of methods used to collect RQ1 sources and their themes.

segregated into two themes depending on how they would contribute to the thesis: Adoption Models and Ecosystem. The "Adoption Model"-articles were intended to be used to support the internal adoption model part of the framework, and discuss the current academic precedence on consumer adoption. Likewise, the "Ecosystem"-articles contribute to the external infrastructure part of the framework. These articles illuminate who the key stakeholders are in an mWallet ecosystem, what their incentives are and how they can affect the evolution of the market. At this initial stage, the final number of adoption articles was 25, ecosystem articles were 27 and method articles were 2.

It is important to note that the authors accepted using articles that described adoption criteria that applied to several e-commerce activities (i.e. mPayments and mBanking) as their adoption criteria were the same. An example from Eastin (2002): in an analysis of four e-commerce activities including shopping, banking, investing and online services, it was found that perceived convenience could significantly predict consumers' intention to adopt. Also, in a recent study on factors that influence the intentions to use mobile payment, Kim, Mirusmonov, and Lee (2010) concluded that perceived convenience had a positive and significant influence on perceived usefulness. We therefore propose that the rural unbanked's perceived convenience of the mobile banking services is an antecedent to its perceived usefulness of the services" (Tobbin, 2012, p. 83).

2.3.2 Internal Model: Selecting the Most Important Factors

When selecting the most important factors for the model, what was important to remember was the desired end result of the thesis: to create a framework that could be applied to any market and help the focal firm get insights into the potential target market and which actors could be relevant to cooperate or compete with to build a mWallet business.

The authors find that many of the academic articles are too focused on the minute, formal differences between factors, and on their smaller internal correlations. Although this may be interesting in an academic setting, it matters to a less extent to an external

actor who's tools at their disposal are so coarse they would be affecting several of these factors simultaneously. To exemplify, whether or not awareness relates to product awareness, with regards to what they offer in terms of perks, or awareness of the service whatsoever, both are affected by the focal firm's ability to promote itself. In general, the rule of thumb was that if a motivational measure could be used to affect several of the factors simultaneously, the factors should be clustered together into one construct. Metaphorically speaking, if one hand could pull the combined lever consisting of all the factors, then they belong in the same construct.

This implies a certain degree of leeway for the authors to decide which factors are to be clustered together. However, as the purpose of the model is not to quantitatively measure correlations between factors within the constructs, but rather give a holistic overview of all the constructs that need to be taken into consideration when planning an mWallet service, the issue should not be of great concern to the validity of the model. Rather what is of concern is whether factors were not included altogether or if in some way the cluster consists of factors so different that a different way of affecting them are needed altogether.

2.3.3 External Model: Selecting the Most Important Actors

Where building the internal model was concerned with the creation of the levers that could be pulled to motivate adoption, likewise building the external model was concerned with finding and grouping the actors who were going to pull said levers. It quickly became apparent that a more general grouping was to be used ("stakeholder group") based on the functions the actors had in the ecosystem. An example would be that banks, MNOs and fintechs were all clustered as *competitors* even though they come from widely different industries. Their common incentives and effect on the consumer was more or less the same and therefore grouped together. The exception here is the focal firm who is by all means an MNO, and a competitor to the other firms, but as the framework's perspective is from the focal firm, the extent of control is different. Whereas the competitors are seen as someone who may stimulate passive adoption of the focal firms service by sheer increase in the awareness of MFS in general, they may just as likely cannibalize the market.

2.4 Part II & III: Testing and Assessing the Framework

In contrast to Part I which was a literature study, parts II and III were case studies following the method described above (2.2). As their approaches were the same with the exception of their final analysis and outcome, they are presented here together.

2.4.1 Research Method and Design

Yin (2014) would coin the method used for RQ2 and RQ3 as an explanatory case study as it was needed explain the behaviour seen in Pakistan and Myanmar through the proposed framework. Although Easypaisa and Wave Money are the focal firms, what corresponds most to the unit of analysis defined by Yin (2014) are the entire MFS markets of Pakistan and Myanmar respectively.

2.4.2 Data Collection

For insight into the two case markets, consultancy and other expert reports were a central source of information. Although not considered academic, they give vital insight into current challenges faced, giving business intelligence in an ever changing market. An important second source was data to represent cultural differences. Finally, to supplement the written texts uncovered, direct sources in the form of interviews conducted with both academic and industry players add empirical weight to the report.

Consultancy, NGO and Governmental Reports and Articles

Critical to a contemporary topic such as mWallets, NGO, governmental and consultancy blog posts, reports and articles were used to supply concrete, market relevant examples to the general framework both for RQ2 and RQ3. The total combined set of sources used can be seen in Table 2.1. These articles had highly relevant market data and drew findings that gave a strong indicator of what works and what doesn't for each nation. These were supplemented with governmental regulations or reports from the nations' respective state banks. The final grouping of reports and articles were written by international agencies, whether they were consultancy firms, the GSM Association, news media or international financial actors. Although most articles were found via database searches, some were found by reverse snowballing to source reports, and several articles were provided by the supervisor, Professor Nesse. The distribution of sources between RQ2 and RQ3 can be seen in Figure 2.3.

Table 2.1: Total distribution of sources by type

Type	Number of references
Tech Report /White Paper	28
Web Page	23
News Article	21
Blog	16
Academic Article	11
Press Release	5
Database	3
Law	1
Total	**108**

The Issue of Cultural Dimensions

One important piece of information was the cultural context that defines the various markets. When it was so clear from previous failed attempts to generalize products (e.g. M-PESA in Tanzania) a way of determining cultural impact on the consumer was vital. Considering the limited scope of time for the thesis, it became agreed upon to use Hofstede's cultural dimensions to represent this insight. Certain limitations are associated with this source, which is discussed under Section 2.5 Limitations. What was important was to bring the target markets culture into context with a market that the focal firm recognized. This type of cross-cultural analysis focuses on relative comparisons between

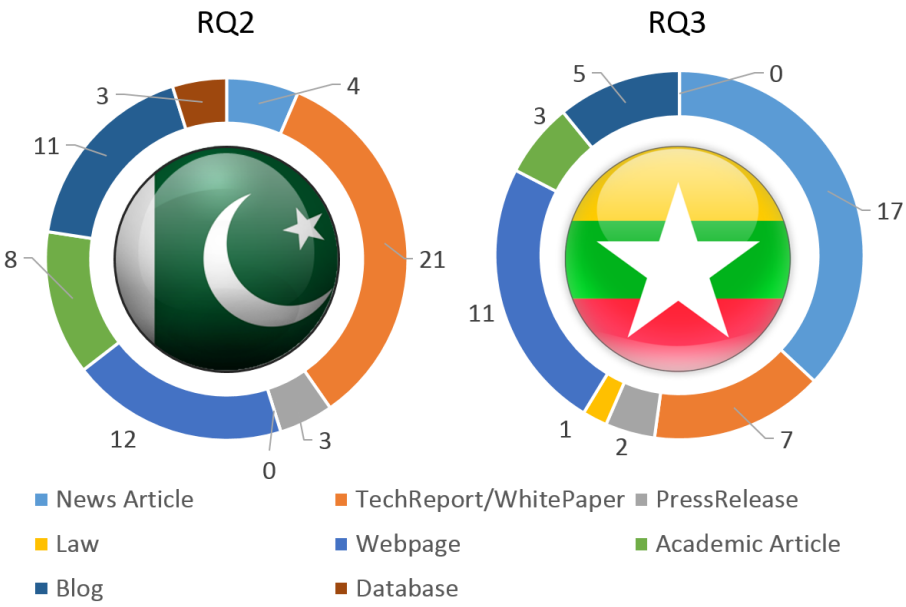


Figure 2.3: Distrubution of sources by type for RQ2 and RQ3

countries under the context that no culture exists in a vacuum: in order to understand a new, unfamiliar culture, one must draw parallels to aspects of other more well-known cultures. The Norwegian market has therefore been used as a reference point in both Part II and III, with the addition of the South Eastern Asian (SEA) markets as a second reference for Myanmar due to its long time in isolation.

Unlike for most other countries in the world, there exists no official data on Myanmar on Hofstede's official web page. Thanks to one of the interviewees, two articles have been found that attempt to fill inn these gaps and were examined for use, Rarick and Nickerson (2006) and Hsu, Hsu, and Yeh (2010).

Rarick and Nickerson (2006)

Although its isolationism precluded Myanmar from inclusion in Hofstede's initial landmark research project, there has been a scholarly attempt at quantifying the essence of the Burmese mindset. In 2006, Professors Charles Rarick and Inge Nickerson measured the Myanmar culture along Hofstede's value dimensions using a sample of mostly upper middle class educated urban Burmese. Their conclusion affirms Myanmar's incredible uniqueness.

Hsu et al. (2010)

Hsu et al. (2010)'s research applied Hofstede's five culture dimensions to examine the cross-cultural consumer differences in acceptance of marketing innovativeness. The participants of this study are consumers from Hong Kong (57), Malaysia (69), Macao (40), Vietnam (25), Indonesia (18), Myanmar (19), and Japan (1). This research was conducted to provide evidence on the relationship between national cultures and consumer's level of acceptance toward innovative marketing through 446 valid questionnaires.

As the values for countries by Hsu et al. (2010) did not match those provided by Hofstede's "official numbers" and considering that Rarick and Nickerson (2006) attempted to emulate Hofstede's methods with the intention to allow for more precise comparisons with the official data, the thesis will therefore go ahead with the latter's results.

Interviews

This thesis is supplemented by a series of interviews conducted online with experts sitting in both Pakistan and Myanmar. The interview process was conducted in four stages:

1. Interview Template Creation and Interviewee Selection
The interview template is attached in the appendix through the Case Study Protocol, Appendix B.The following interviewees were selected for Pakistan and Myanmar, Table 2.2. The interviewees were selected for their various backgrounds. For Pakistan, Professor Arif represents academia for validating the framework, Khan represents NGOs and brought vital insights into the Pakistani market. For Myanmar, Lee and Tørlen both had useful insight into the Burmese consumer, while Jones, as CEO for Wave, could illuminate the companies struggles and motivations.

2. Interview Conduction
Most interviews were conducted via Appear.in as several interviewees were located in Asia. After negotiating the list of interviewees with Professor Nesse, initial contact was made, usually through an opening email by Nesse. An outline of the interview guide was attached in the invitation mail to give an indication of what the team was looking to get out of the interview. The interviews themselves were aimed to be of one hour in length, although some interviews went over time at the interviewee's approval. The interviews were recorded using a combination of software and hardware depending on the session.

3. and 4. Summarizing and Interviewee Approval
Upon completing the interviews they were summarized and approved by the interviewee. All summary sections can be found in their respective parts, Chapter 9 and 14. These summaries have then been used in the final discussion chapters of Part II and Part III, chapters 10 and 15 respectively.

Table 2.2: List of interviewees

Name	Position	Company
Pakistan		
Farrah Arif	Assistant Professor	SDSB, LUMS, Pakistan
Imran Khan	Senior Research Officer	InterMedia, Pakistan
Myanmar		
Gayle Lee	User Experience (UX) Researcher	Telenor Digital, Norway
Therese N. Tørlen	Product Manager, Direct Operator Billing (DOB)	Telenor Digital, Norway
Brad Jones	CEO	Wave Money, Myanmar

2.4.3 Data Analysis

With the internal model having highlighted the the most sensitive constructs in a market, and with the external model having outlined the major stakeholder groups and the measures they either plan to or have already enacted, it was time to combine and assess the effects the measures have on the market. This assessment was performed in both Part II and III through a thorough discussion and the support of correlation matrices, figures 10.3 and 15.2 respectively. By comparing the empirical findings to the theoretical framework, Yin (2014)'s pattern matching technique is used to analyze the data. It is also here where Part II and III diverge the most. Although both parts use the correlation matrix to compare the internal constructs from the internal adoption model with the measures implemented by stakeholder groups in ecosystem model, the use of this analysis is different. Where Part II aims at improving the framework based on the existing data in Pakistan, Part III attempts to create a prioritized list with most effective measures.

Part II: Evaluating the model

In the second part, the framework was mainly assessed by comparing and contrasting the desktop research and the interviews. When the interviewees were presented with the framework they were allowed to comment on each construct in the internal model and stakeholder group in the external model. Here it was especially important to glean if any constructs or actors were missing from the models and how the cultural dimension scores given by Hofstede (nda) were perceived. Based on their comments on what was important in the market and what had big impact on mWallet adoption, these results were compared to the findings made from the correlation matrix.

It is emphasized that the assessment is subjective and highly dependent on the research gathered. It is therefore without purpose to rank the stakeholder groups against one another or perform similar judgments as the group averages can vary depending on the allocation of measures and the number of measures included. With regard to the assessment of each measure, their actual impact on each construct is dependent on research, much of which for Myanmar was lacking. Therefore, in time, more research should be undertaken to strengthen the results. Also, as this thesis' scope is limited, more existing and potential measures than those presented in the matrix may exist. Although the results from analyzing the measures across the correlation matrix constructs were not a central part of the deliverable in this part, it was in Part III, below, and therefore was an important test to see that the model could correctly rate measures that were deemed important in the market.

Part III: Prioritizing most effective measures

In Part III, the framework is assumed to be correct and instead of itself being tested, it is used to find the best measures for the target market. Based on the results from the desktop study and the comments from interviewees, the correlation matrix was filled inn resulting in an overview of the most impacting measures. These measures are then plotted on a prioritization matrix, Figure 15.3, by their resulting impact and assumed complexity measured in time to be fully implemented. Here there is a lot of room for subjective assessment, however the team would like to emphasize the intention of the matrix is to give a good visual indication of which measures are key. Measures are plotted, and grouped either as "Quick Wins", those which are important and have approximately a one year

implementation plan, or "Cluster 1", which are relatively important but require longer termed investments. Some measures fall outside either of the clusters and have a lower prioritization. A final interview was held towards the end of the semester, and its purpose was to verify the proposed measures with the CEO of Wave Money to see if they were plausible. During the hour long interview CEO Brad Jones talked about what was most pressing at the time and with some minor changes from his input responded positively to the measures. The results of his feedback are included in the interview summary, Section 14.3 and in the Part III discussion, Chapter 15.

2.5 Limitations of the Methodology

The research presented in this paper must be seen in light of the methodology's limitations. The limitations related to the study's framework will be covered in Section 18.1, Limitations to the study. The following section will be structured according to the four tests presented by Yin (2014) (p. 46):

1. *Construct validity:* "Identifying correct operational measures for the concepts being studied".
2. *Internal validity:* "Seeking to establish a causal relationship, whereby certain conditions are believed to lead to other conditions, as distinguished from spurious relationships".
3. *External validity:* "Defining the domain to which a study's findings can be generalized".
4. *Reliability:* "Demonstrating that the operations of a study - such as the data collection procedures - can be repeated, with the same results".

2.5.1 Construct Validity

As explained by Yin (2014), construct validity deals with the application of correct operational measures that corresponds to the concepts that are sought to be explored. A critical factor in a semi-structured interview process, is that the interviewee and the interviewer(s) have the same understanding of the concepts being studied. Furthermore, the interviewer(s) must correctly interpret the interviewee's responses. To address these challenges related to construct validity, two measures have been taken:

- The proposed framework is based on terminology and definitions from previous literature. These concepts were explained in the interview guide that was sent to the interviewees before the interview.
- Summaries of the interviews were sent to the interviewees for confirmation to ensure correct interpretation.

It should also be mentioned that several of the interviewees were not native English speakers, further complicating the interpretation issue. Also, as video conferences were used to conduct the majority of the interviews, technical challenges could result in misunderstandings. Additionally, one interview was conducted in Norwegian and had to be translated into English, potentially increasing the risk of misinterpretations. To mitigate

the potential effects of these problems one of the tactics proposed by Yin (2014) to increase construct validity was used: *triangulation* or *multiple sources of evidence*. If more than one source converge into the same finding, confidence in the finding increases accordingly. This study used both *data triangulation* (secondary data and interviews) and *investigator triangulation* (several interview objects) (Yin, 2014, p. 120). However as only one representative from each firm was present, the subjectivity of this person must also be taken into account.

Morse et al. (2002) suggest several measures to increase a study's validity. Among these are *thinking theoretically*, which involves constantly checking and rechecking data, and *theory development*, where one moves between a micro perspective of data and a conceptual understanding on macro level. By first developing a framework and then collecting case study evidence to test and develop it, these principles are considered to be applied. Lastly, by using multiple methodological approaches within the thesis, Morse et al. (2002)'s *methodological coherence* principle, requiring the question to match the method, is assumed to be adhered to.

2.5.2 Internal Validity

As explained by Yin (2014) the internal validity test is applicable for explanatory studies only (not descriptive and exploratory studies), and it is therefore suitable for this thesis. According to Yin (2014) triangulation and interview validation are the main tools used to ensure internal validity. As previously mentioned both of these tools have been used. Triangulation was used for the development of the framework by using several academic sources, while sending summaries to the interviewees for confirmation ensured interview validation. With a methodology heavily reliant on interviews, utilization of these tools was of utter importance. However, these tools cannot ensure that interviewees are not affected by subjectivity. Lastly, not all interviewees were easily addressable. As a result one of the interviews were held much later than initially planned, yielding less time for interview validation.

2.5.3 External Validity

Several sources from the MFS research field have clearly stated that a MFS solution that is successful in one country does not easily transfer to another country (e.g. Dahlberg, Guo, & Ondrus, 2015; Lal & Sachdev, 2015), likely also to be true for mWallets. Furthermore, on a general basis it is often difficult within qualitative research to ensure external validity because the research is often based on a case study or a small sample. To accommodate these shortcomings related to lack of external validity some measures have been taken:

- The proposed framework is theoretically grounded based on several previous contributions that have been repeatedly tested.
- Application of *analytic generalization* (Yin, 2014), meaning that the findings are generalized to theoretical concepts and propositions (the proposed general mWallet adoption framework), and not to specific samples or populations.

2.5.4 Reliability

Yin (2014) says that reliability has to do with doing the *same* case over again, not replicat-

ing the results, aiming to reduce bias and errors. Although it would be almost impossible to recreate the exact same social setting and circumstances of the initial study some measures have been taken to ensure the highest possible reliability:

- Using a case study protocol which includes an interview guide (see Appendix B as proposed by Yin (2014)
- Recording and transcribing interviews (summaries of interviews are found in chapters 9 and 14). Inclusion of entire transcripts were deemed insufficient in agreement with the thesis' supervisor

Limitations related to author subjectivity Another aspect which is inevitably related to the study's reliability is the subjectivity of the researchers. Three specific limitations with respect to subjectivity will be highlighted. First, the choice of adoption constructs was based in previous literature, but the final cut was done by the author's who have limited experience within this field. Second, the desktop research performed on the Burmese and Pakistani mWallet markets was performed through numerous of *ad hoc* searches online, not following a specific procedure. Third, the analysis procedure followed Yin (2014)'s pattern matching technique, but still subjective assessment were required. A special note should be given with regards to the qualitative assessment performed for the evaluation of the most important internal consumer adoption constructs and mapping of external measures against internal adoption constructs for both Pakistan and Myanmar. These assessments are solely based on evidence from the desktop research, interviews and the author's subjective opinion. Additionally, the impact of the most important internal consumer adoption constructs have received a simple double weight than the others. An alternative assessment method could be considered in future research where the weights are more precisely defined. Regardless, it was deemed acceptable as both the correlation matrices and prioritization matrix were used to give an indication of useful measures rather than as a precise measurement. However, it still stands that these limitations reduce the reliability of the study, and make it more challenging for other researchers to replicate it.

2.5.5 Additional Limitations

Limited Amount of Relevant Reports and Articles Within mWallet adoption in specific, very few articles were found. Most articles covered either MFS or general technology adoption. Even though these fields are believed to be closely linked to each other this becomes a limitation of the study. Moreover, when doing desktop research, especially for Myanmar which is just recently opened up to the external world, a limited number of reports were found and some of the existing ones were potentially outdated. To compensate for the lack of available information, less reliable sources of information, such as online news articles were utilized. Adding to this there are huge amounts of dark numbers in Myanmar and to some extent different sources claim different values. This study has found it necessary to rely strongly on numbers from 2014 while simultaneously saying there is rapid changes in demographics. This poses a limitation, making it necessary to do more primary research in future studies. Lastly, as already mentioned, there exist no official Hofstede number for evaluation of the Burmese cultural dimensions and therefore a proxy has been applied.

Partially Homogeneous Distribution of Interviewees Interview candidates included researchers and Telenor employees originating from Norway, Pakistan and Myanmar. Therefore the distribution of interviews spans different markets and various roles within the ecosystem. However, no competitors were included and the consumer side of the framework was only depicted by secondary sources (interviewees who has interviewed end customers). These are limitations of the study and represents an opportunity for further research.

Time and Resource Constraints Performing an in depth mapping of a foreign market is a time consuming endeavour, and with the aim to get an overview of a broad spectrum of environmental factors and adoption constructs in two very different markets, a risk of missing important aspects arises. This master thesis spans a time frame of about five months and includes two researchers. This becomes a limiting factor for the completeness of the study. Additional adoption-specific literature searches were required after the pre-thesis which has a much broader scope. This reduced the time available for data collection from the field. By performing a thorough desktop study for each market the authors sought to compensate for the resulting limited sample of practitioner interviews, however it is clear that the end assessments may vary widely depending on what information is uncovered. Future studies are recommended to conduct more interviews, especially in the Burmese market space to further strengthen the findings.

Part I

Constructing a Framework for Analysis

Introduction to Part I

This first part of the master thesis will answer the first research question:

RQ1: What is a suitable framework for analyzing mobile wallet adoption?

Zmijewska and Lawrence (2005) proposed a multi-perspective adoption framework based on the work of Gao and Damsgaard (2007). This framework is comprised of a *user adoption perspective* (e.g. customer adoption) and an *ecosystem perspective* (e.g. stakeholder collaboration, regulation, business model) to analyze the success of mobile payments. Zmijewska and Lawrence (2005) claimed that both perspectives are equally important and depend strongly on each other, so they should be studied together. This path of thought is followed by the authors of this study and thus a similar approach will be used to develop a framework for adoption of mobile wallets based on existing adoption literature and NGO reports. In an attempt to create a holistic view of the constructs that affect the uptake of mobile wallets, the framework consists of two models: an external set of *four* ecosystem stakeholder groups interacting with the consumer and an internal set of *nine* customer adoption constructs and *two* moderators, Figure 2.4.

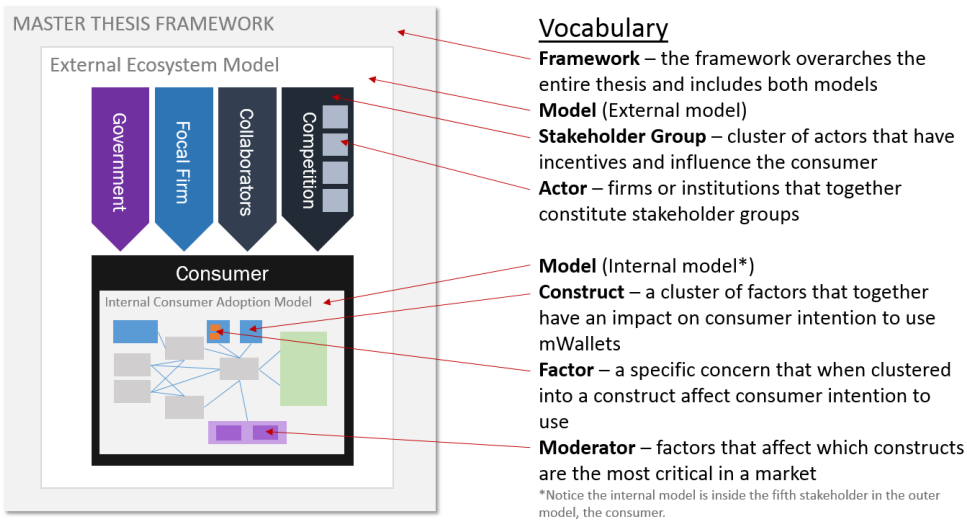


Figure 2.4: The Master Framework explained

The *internal consumer adoption model* in the framework, described in Chapter 3, is based on an extended version of the widely accepted *Technology Acceptance Model*, TAM, de-

veloped by Davis (1989). This part of the framework is at the consumer level, seeking to identify the pain points and facilitators for actual usage of the technological innovation by the customer. The chapter elaborates on the reasoning behind the chosen adoption constructs in this study's context.

The *external ecosystem model* in the framework, described in Chapter 4, is rooted in *Contingency Theory* (e.g. Dahlberg, Mallat, Ondrus, & Zmijewska, 2007) and *Network Theory* (e.g. Håkansson & Snehota, 1989), and seeks to demonstrate the influence of contextual factors on mobile wallet adoption. The chapter presents the most important stakeholder groups within the MFS ecosystem that stimulate the internal adoption constructs. Successful mWallet adoption requires collaboration between all stakeholders involved.

As shown in Table 2.3, Part I is structured as follows: First, Chapter 3 gives a detailed description of the constructs in the internal model of the framework. Chapter 4 presents the external model which consists of the ecosystem that affects the internal model of the framework. Next, Chapter 5 describes how the framework will be applied. Finally, Chapter 6 concludes this first part of the master thesis.

Table 2.3: Part I Overview

Part I:	Chapter 3: Internal Customer Adoption Chapter 4: External Ecosystem Chapter 5: Using the Framework Chapter 6: Concluding Remarks

Chapter 3

Internal Customer Adoption Model

In order to launch a mobile wallet (mWallet) that will be adopted by consumers, it is crucial to understand user adoption factors (Dahlberg et al., 2007), and therefore this chapter will look at the internal customer adoption model of the framework. This is a relatively well explored topic with both quantitative and qualitative studies from a variety of geographic locations (Dahlberg et al., 2015). A thorough review of previous adoption literature within the fields of mobile financial services (MFS) and mobile payments resulted in the TAM being chosen as the starting point for developing the internal adoption model. To compensate for its shortcomings, several constructs have been added, resulting in the following nine constructs: (1) *perceived usefulness*, (2) *perceived ease of use*, (3) *perceived mobility*, (4) *personal habit*, (5) *perceived risk and trust*, (6) *awareness*, (7) *economic factors*, (8) *intention to use*, and a two-fold final element (9) *actual usage* and *goal accomplishment*. The intention to use is further moderated by two moderators (i) market demographics and (ii) cultural context. In the following, the internal model of the framework will be presented, starting with the reasoning behind choosing TAM as the foundation, followed by a description of each construct, its importance and relation to extant literature.

3.1 Developing the Model - An Extended TAM

Among the various models used to describe technology acceptance and usage, the *technology acceptance model* (TAM) originally developed by Davis (1989), and its extensions are the most commonly used models (e.g. Schierz, Schilke, & Wirtz, 2010; Shaikh & Karjaluoto, 2015; Tobbin, 2012). The TAM describes how *perceived ease of use* and *perceived usefulness* are fundamental determinants of adoption and usage of technical systems (Davis, 1989, See next section for definitions).

The literature reviews on mobile payment and mobile banking research provided by Dahlberg et al. (2015) and Shaikh and Karjaluoto (2015), respectively, both reveal these two constructs to be the two most cited antecedents of mobile financial (or payment) services in the literature. Together, they are said to shape the behavioral intention and actual usage behavior of the given technology (Davis, 1989).

Tobbin (2012), who study adoption of mobile banking by rural unbanked in Ghana, uses TAM as the basis for the study. This approach is claimed to be valid as TAM has been extensively applied in empirical research investigating acceptance of Internet and mobile related technologies (e.g. Schierz et al., 2010). Moreover, Bagozzi (2007) honours TAM for its impressive volume and scope as a research stream, confirming its importance and impact. Building on this, the current study, which, similar to Tobbin (2012), focuses on emerging countries and mobile technologies, chooses to apply TAM as a basis for developing a model for adoption and usage of mobile wallets in emerging economies.

Before moving onto describing the constructs in this thesis' model, the authors find it suitable to briefly mention the criticism that has been provided for TAM. Indeed, the TAM's main strength, according to Bagozzi (2007), is claimed to be its parsimony, in which perceived usefulness and perceived ease of use determine intention to use, which in turn influences usage behavior. However, this simplicity has also been criticized to be one of the model's main drawbacks, as "it is unreasonable to expect that one model, and one so simple, would explain decisions and behavior fully across a wide range of technologies, adoption situations, and differences in decision making and decision makers" (Bagozzi, 2007, p. 244).

Among the decent amount of criticism that TAM has received, is the lack of consideration for social, emotional and cultural aspects of technology acceptance (Bagozzi, 2007). Bagozzi (2007) also criticizes TAM to be too deterministic, as it claims that when perceived usefulness and perceived ease of use are present, usage intention will result and eventually continued usage. Adding to this, Noor (2011)'s main criticism of the model is that the fundamental constructs in TAM do not fully reflect the specific influences of technology acceptance that may affect adoption.

Shaikh and Karjaluoto (2015) summarizes shortcomings of the TAM by emphasizing its exclusion of economic and demographic factors and external variables, its omission of any trust-based constructs and the assumption that there are no barriers preventing the user from adopting a technology if the person intends to do it. Thus, it seems to have limited use to describe the actual usage of a mobile service, and supplements to the original model have therefore been found necessary (Shaikh & Karjaluoto, 2015). Examples of such extended models include TAM2 (Venkatesh & Davis, 2000), the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003) and TAM3 (Venkatesh & Bala, 2008). These models have complemented the original TAM by adding external variables such as social influence, job relevance, facilitating conditions and experience to the original version (Yen & Wu, 2016). Yet others have included behavioral beliefs and individual factors into the original TAM to create a more holistic view of the factors that lead to adoption.

Overall, the criticism provided against the TAM, draws the authors to the conclusion that the constructs involved in the TAM are too general to describe the entire adoption process. Yen and Wu (2016) explain that extensions to the TAM exist to describe user acceptance in a more detailed manner than what the original model does. Based on the findings of previous studies, a set of additional factors is therefore added to the "original TAM", hopefully catching a broader spectrum of factors driving consumer acceptance and responding to criticism provided to the TAM. The chosen internal adoption model is described in the next section.

3.2 Presenting the Internal Adoption Model

In accordance with the above mentioned shortcomings and criticism of the TAM, this study chooses to follow the trajectory paved by Yen and Wu (2016) by adding the two constructs *perceived mobility* and *personal habit* to the original TAM. Yen and Wu (2016) investigate the adoption of MFS which is closely related to mobile wallets, which is the technological focus in this study. *Perceived enjoyment*, which is also presented by Yen and Wu (2016), is not included in the model as it was found not to have any significant correlation to the continued usage intention of MFS (Yen & Wu, 2016). To account for the shortcoming related to lack of direct correlation between usage intention and actual usage (Shaikh & Karjaluoto, 2015), an extra construct consisting of *actual usage* and *goal accomplishment* has been added, see the green box in Figure 3.1. This construct is added to fill the gap caused by the proposed linkage between intention, actual usage, and goal accomplishment ("does the product meet the actual customer needs?").

In addition to the aforementioned constructs, this master thesis expands the TAM further by adding three extra constructs by clustering factors from various relevant literature as well as two moderators. These constructs are an attempt to answer the criticisms of the original TAM. Based on other models or extensions of the original TAM (e.g. Barati & Mohammadi, 2009; Medhi, Ratan, & Toyama, 2009; Noor, 2011; Tobbin, 2012) antecedents for perceived usefulness and perceived ease of use have been selected to be *awareness*, *economic factors* and *trust*. Furthermore, in response to the claim that the TAM is too deterministic and that it lacks moderating influence from emotions and culture, the moderators *cultural context* and *demographics* have been added. The cultural context moderator will be of special interest as the master thesis discerns between two countries and examines how technology adoption varies across these different cultures.

Figure 3.1 depicts the model graphically. As mentioned briefly above, each of the added constructs to the original TAM has been supplemented with theory from other literature, collapsing similar factors into the core constructs to enrich their meaning. A dotted line is added between intention to use and actual usage and goal accomplishment. Identifying all relevant factors affecting these consumer decisions are considered to be beyond the scope of this paper. However, because the authors seek to create an awareness of the missing direct linkage between intention to use and actual usage, and to highlight the need for future studies on this specific topic, the two are added as a collapsed construct (green area in Figure 3.1.) The reminder of this section will elaborate on each construct and which sub-factors they are comprised of. Table 3.1 shows a brief summary of each element in the internal adoption model.

3.2.1 Perceived Usefulness

According to Schierz et al. (2010)'s diffusion theory, users are only willing to accept innovations that provide a unique advantage compared to existing solutions. Perceived usefulness is described by Tobbin (2012) to be "the degree to which a person thinks that using a particular system will enhance his or her performance" (p. 77). Tobbin (2012) also includes the affordability of the service as a usefulness factor, however this paper places affordability together with the other economic factors that serve as part of the extension to the core TAM constructs.

During her interviews, Mallat (2007) gathered that mobile payments were considered advantageous and therefore useful because people usually carry their mobile phones,

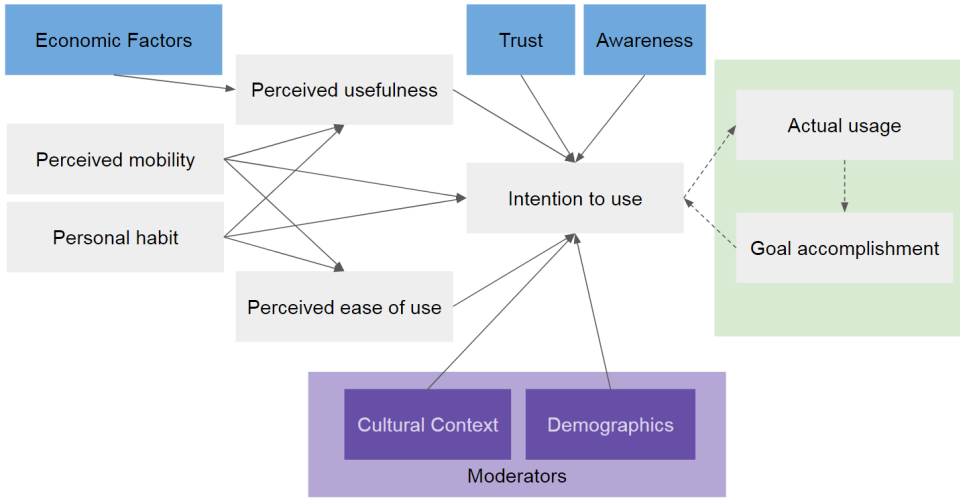


Figure 3.1: The proposed framework for internal adoption constructs based on literature. Arrows show which constructs affect one another.

making MFS conveniently available in most situations. In contrast to cash, it no longer became necessary to carry around small coins for vending machines, public transportation, and small payments in shops and kiosks, where it often was difficult to have the exact amount (Mallat, 2007). Likewise, if a different offering which is already being used has the same functionality, say that it is easier to buy pre-paid call time cards than to top up using the mobile wallet, then the usefulness is absent and adoption will remain low as the old system is "good enough".

The usefulness of the mobile money depends on its ability to function together with merchants, ATMs and vending machines as it is dependent on the portfolio of services it offers. Perceived usefulness increases for instance when the users can pay for transportation tickets or car parking remotely without the need to visit an ATM, a ticketing machine or a parking meter. Mallat (2007) concludes that "the relative advantage of mobile payments compared with traditional payment instruments is thus likely to include time and location independent payment possibilities" (p. 416).

3.2.2 Perceived Ease of Use

As defined by Davis (1989) *perceived ease of use* is the “degree to which a person believes that using a particular system will be free of effort” (Davis, 1989, p. 320). The importance of the construct in technology adoption research cannot be neglected, with its widespread usage in extant literature (e.g. Y.-K. Lee, Park, Chung, & Blakeney, 2012; Schierz et al., 2010; Shaikh & Karjaluoto, 2015; Tobbin, 2012; Yen & Wu, 2016). In this thesis perceived ease of use refers to the extent the users consider mobile wallets to be easy to understand and use.

Aboelmaged and Gebba (2013) and Noor (2011) differentiate themselves from the majority of other studies, as they do not find a positive correlation between perceived ease of use and attitude towards or intention to use mobile banking. However, since, as already mentioned, multiple of the studies within mobile application adoption research

have supported the significant relation, this study chooses to include the construct in the mobile wallet adoption framework. As an example, Schierz et al. (2010) claim perceived ease of use to be an imminent acceptance driver of mobile applications. This is considered to be especially true for mobile payment solutions because they have to create benefits when it comes to use in order to compete with established payment solutions.

Examples of important aspects of perceived ease of use in the mobile payment area include clear symbols and function keys, few and simple payment process steps, graphical display, and help functions (Schierz et al., 2010). Similar factors, especially in the context of illiterate customer segments, are assumed to be relevant in the mobile wallet application. Tobbin (2012) finds that among the rural unbanked population, perceived ease of use is a critical factor affecting their intention to adopt and use mobile banking services. He also highlights that because this population in general has limited experience with mobile phones, ease of use is expected to be more salient and strongly affect their intention to use such services (Tobbin, 2012). Thus, in the specific context of emerging markets, characterized by a high degree of illiterate and non-banked potential users, perceived ease of use is considered to be an important adoption construct.

A related construct that has been used in adoption literature on information systems is that of *complexity* (e.g. Mallat, 2007). Rogers (1995) defines complexity as the "degree to which an innovation is perceived as difficult to understand and use" (p. 16), thus it is highly related to the perceived ease of use construct. Mobile devices are considered to increase customer convenience, but limited features that increase complexity exists, including small keypads, limited transmission speed and memory, and short battery life (Mallat, 2007), calling for an intuitive interaction design that allows the majority to use the product.

Yet another related construct, is one of the core variables in the UTAUT, *effort expectancy*, which is basically the same as perceived ease of use (Im, Hong, & Kang, 2011). Venkatesh et al. (2003) define it as the degree of ease associated with the use of mobile banking. The idea is that when a user is more mobile literate it will find it easier to use (Baptista & Oliveira, 2015). Hence the meaning of perceived ease of use in this study could be directly associated with complexity and effort expectancy in other studies. Continuing, only perceived ease of use will be applied.

3.2.3 Perceived Mobility

Yen and Wu (2016) add *perceived mobility* to the original TAM and find it to be a key antecedent for the adoption of MFS. Referring to previous literature, they define it to include convenience, expediency, and immediacy, allowing the user to access information, communication, and services independent of time and place. The ubiquity of the service yields efficiency and availability, thus creating a lever to adopt it. Therefore, perceived mobility is assumed to be an important construct in an adoption framework for mobile wallets.

The applicability of perceived mobility as a core construct in the case of mWallet adoption in emerging countries is further strengthened by Tobbin (2012)'s study of rural unbanked people in Ghana. Tobbin (2012) found perceived usefulness to be affected by its *convenience* (Tobbin, 2012). Convenience has to do with a time and place dimension, thus it is closely related to the perceived mobility concept, which is the term that will be used in this study. Also to be mentioned is Schierz et al. (2010)'s concept of *individual mobility*, which refers to the mobility of a person and is found to be a key driver

of consumer acceptance of technology (Schierz et al., 2010). The consumer's individual mobility is assumed to affect how s/he perceives the mobility of mobile wallets, and is thus considered to be a part of the perceived mobility construct.

3.2.4 Personal Habit

Yen and Wu (2016) also add *personal habit* to the original TAM, as it is a critical construct influencing users to continuously use MFS from an individual perspective. An underlying argument is that when the use of a specific technology has become a habit, it is less likely that an alternative technological product will be adopted (Yen & Wu, 2016).

Yen and Wu (2016) apply a definition of habit that stems from the psychological field which illustrates habits as goal-directed, learned activities. Verplanken and Aarts (1999) define habit as "learned sequences of acts that have become automatic responses to specific cues and are functional in obtaining certain goals or end states" (p. 104). Yen and Wu (2016)'s belief is that personal habit directly affects the intention to use MFS. The results of their study of MFS users in Taiwan indeed showed that personal habit is a major determinant that influences continued usage intentions of MFS (Yen & Wu, 2016).

Several other studies have also confirmed the significant effect of habitual patterns on adoption of mobile services (e.g. Barati & Mohammadi, 2009; Y.-K. Lee et al., 2012; Mallat, 2007; Medhi et al., 2009; Schierz et al., 2010). Mallat (2007), who studies adoption of mobile payment services, discusses the importance of compatibility with the consumers daily life to facilitate and impact adoption. Schierz et al. (2010) find *perceived compatibility* to be the factor that has the greatest impact on the intention to use mobile payment services. Within this factor lies "the reconcilability of an innovation with existing values, behavioral patterns, and experiences" (Schierz et al., 2010, p. 211). In their model, perceived compatibility affects intention to use, attitude towards use and perceived usefulness directly. Moreover, Barati and Mohammadi (2009) find that a major usage barrier is created when an innovation is not compatible with existing workflows, practices or habits. They claim that this is probably the most common cause for consumer resistance to innovations (Barati & Mohammadi, 2009). The authors of this article find the concept of compatibility to be closely related to that of personal habit, thus compatibility is chosen to be a part of the construct *personal habit* in the mobile wallet adoption framework. This construct adds individual user characteristics to the original TAM theory, which is believed to be important in understanding the actual adoption of mobile wallets in emerging markets.

3.2.5 Intention to Use

Traditionally, in models building on the TAM, *intention to use* has been the main dependent variable (Venkatesh et al., 2003), defined as the likelihood that an individual will use a technology (Schierz et al., 2010). In their adoption model for mobile payment services, Schierz et al. (2010) also include *attitude towards using a technology*, which they define as the degree to which a technology is positively or negatively valued by an individual. Their research supports that attitude towards usage is contributing to determine the intention towards using mobile payment services (Schierz et al., 2010). The authors of this study choose to collapse the two terms, hereby continuing with the term intention to use, but considering this intention to be influenced by the attitude one has towards the technology. The major argument for this choice is founded on the fact that most other

studies rely only on intention to use as their dependent variable (e.g. Chang, Wong, Lee, & Jeong, 2016; Y.-K. Lee et al., 2012; Noor, 2011; Yen & Wu, 2016) while at the same time simplifying the visual model.

3.2.6 Actual Usage and Goal Accomplishment

Bagozzi (2007) state that "the intention-behavior linkage is probably the most uncritically accepted assumption in social science research in general and in [information systems] in particular" (p. 245). The reasoning behind this viewpoint is grounded in two main arguments. First, the intention-behavior linkage in these models (i.e. TAM, TRA, TPB) claims behavior to be a terminal state, thus failing to consider the actual goal attainment, except as an anticipated belief upstream in the model (Bagozzi, 2007). Second, intention formation and action formation is usually separated by intervening steps and may be far apart in a time dimension perspective (Bagozzi, 2007). Therefore, Bagozzi (2007) suggests that technology adoption must be viewed as a process constituted by goal striving. Thus, even though this study will not elaborate on what factors may contribute to overcoming the gap between intention to use and actual usage, and eventually goal accomplishment due to time constraints, these constructs are included in the model to illustrate this issue and potentially detect factors that may affect it. Instead, the authors would recommend future researchers to take a deeper look into this part of the adoption process.

3.2.7 Awareness

There is no point in having a great product if no one is aware of its existence. Although the concept has existed for well over a decade, *mobile banking* is a relatively new concept, and Saleem and Rashid (2011) emphasize that customers do not necessarily understand the technology. They point out that it therefore is crucial to create awareness about the vast usage of mobile devices and familiarize the consumer with its benefits (Saleem & Rashid, 2011). To specify, awareness is not only about knowing about what mobile banking features are on offer, but knowing the fact that the service is available at all (Medhi et al., 2009). Both types of information have a critical impact on the adoption of Internet banking (Noor, 2011) which is closely related to mobile banking. Sathye (1999) notes that low awareness of Internet banking is a critical factor in causing customers not to adopt Internet banking. Tobbin (2012) exemplifies, "the rural unbanked has a wrong perception about the amount of money required to open a bank account" (p. 82). In this thesis, the *awareness* construct will include not only being aware of the existence of the product or its offerings, but also concerned with the the perceived image of the service. Barati and Mohammadi (2009) point out that the image barrier originates from stereotyped thinking, referring to how electronic banking is associated with the negative "hard-to-use" image of computers and mobiles in general, preventing the adoption of banking online or on mobile. Like awareness of the service in general, solving this image barrier is a question of correct branding and marketing.

3.2.8 Economic Factors

As antecedents for perceived usefulness, economic factors such as i) the economic threshold to use the service and ii) the perceived monetary value of the service through its

cost/affordability compared to the value added, have a large impact on consumer adoption. As a minimum deposit requirement often is needed to open a bank account, Tobbin (2012) coined the term *economic factor*, referring to the availability of money to the consumer, stating that the "lack of money is the most significant reason for not opening a bank account" (p. 82). Interestingly, mobile banking might benefit in this case as it seldom involves an initial deposit in contrast to branch-based banking. This makes the economic threshold to use the service lower and an important factor to this thesis' economic factors construct.

Whereas the construct of perceived ease of use or perceived usefulness touch upon the relative advantage of time and place independence, the economic factors of cost is treated as a separate factor as the perceived fee has a significant effect on the perceived value of mobile Internet (Mallat, 2007). The perceived monetary value is how customers feel about the effectiveness and benefit of a product purchase (Y.-K. Lee et al., 2012). This emphasis on the financial perspective leads to questioning whether customers believe the benefits they experience through MFS can offset fees such as a service charge. Here Medhi et al. (2009) points out the importance of pricing vis-à-vis alternate channels referring to their case in Kenya where users switched to a mobile solution called M-PESA as the cost of remittance transactions was half price to the alternative. Although M-PESA proved the better alternative to standard remittance services, it was also pointed out that cheaper still was using friends and family as an intermediate for remittances home. This alternative comes at a different cost however, security and risk.

3.2.9 Trust

One of the most discussed constructs in one format or another concerning adoption of mobile banking is *security, trust, privacy* or *risk*. Despite specific differences in the definition details, for the purpose of this master thesis, these factors have been clustered together into one construct - *trust*. This implies that when discussing the concept of affecting adoption by building trust with the consumer, this is achievable by improving one or more of these factors.

Mallat (2007) finds that customers are afraid of their phones being lost, stolen or hacked. Although loss or theft of the phone itself is not within the scope of this model, trust in the mobile applications on the phone depends on it. Noor (2011) describes *security* as "the protection of information or systems from unauthorized intrusions" (p. 255). The fear of inadequate security, especially in a financial service which interferes with the consumers' money, is one of the major factors that impedes the growth and development of mobile banking adoption and is therefore included in this construct.

Mallat (2007)'s first risk were concerns on privac, and was found to be a reason why some consumers are unwilling to disclose their information to payment service providers. "They were concerned that their payments would be tracked, personal information misused or that they would begin to receive a lot of advertisements if they registered themselves to a new payment system" (Mallat, 2007, p. 425). It has to be clear that the user has the ability to carry out transactions securely and maintain the privacy of personal information. Making consumer privacy a priority is therefore a vital factor for the trust construct.

Perceived risk encompasses financial, product performance, social, psychological, physical, or time risks when consumers make transactions online (Barati & Mohammadi, 2009; Noor, 2011). Trust in the system is central to mobile banking because of the asyn-

cronous, spatial and temporal separation between the lender sending the money and the recipient receiving it (Mallat, 2007). Here Mallat (2007) exemplifies her remaining four sources of risk (i) lack of transaction record and documentation; (ii) errors in payment; (iii) vagueness of transaction (iv) device and mobile network reliability. The fear of an undesired outcome may cause potential adopters to postpone decision or reject adoption. This is especially a burning issue when financial transactions are at the centre of the product.

All of the aforementioned risks are primarily allocated to the insecurity regarding errors in payment transactions. Mallat (2007) reflects that the lack of transaction records or documentation was a cause for concern for the consumer. Consumers suspected that without proper documentation they could easily end up spending more money than they intended, made follow-up on past payments more difficult, and that without a receipt, a payer has no proof of the payment transaction making any claims for a refund difficult. Setting the consumer at ease by giving notifications of successful or unsuccessful transactions are therefore an important part of this construct.

3.2.10 Moderators: Cultural Context and Demographics

As pointed out by Bagozzi (2007), one of the original weaknesses of the TAM was the lack of the moderating effect of cultural context. When exposed to identical product offerings, the adoptive response can vary widely based on the cultural background the consumer is a part of. A quick example would be the prohibition of interest based loans in Muslim countries which would make a product that offers this unattractive to its consumers. In this master thesis the moderator of *cultural context* includes factors such as the *barriers of tradition* and *social influence*. Additional literature by Alafeef et al. (2011) and Yen and Wu (2016) necessitate that an additional moderator is included, *demographics*.

Cultural Context

Innovations can in their nature cause changes in daily routines. If the routine changed is unimportant to the consumer, or felt as an improvement to a menial task, then the innovation is considered favourable. However, if the habit is of value then what Barati and Mohammadi (2009) refer to as the *tradition barrier* to change will most likely be high. Moreover, innovations that incentivizes behavior "that is contrary to a consumer's social and family values and social norms will cause the barrier" (Barati & Mohammadi, 2009, p. 2). In the context of mobile wallets the barrier may arise as electronic modes of performing banking actions are not the way consumers are accustomed to when paying bills. Older consumers may wish to see a person in a bank branch instead of interacting with a de-humanized mobile application.

Products also have an air of *social influence* attached to them. Some products are deemed superior to others, and some cause outright shame to the consumer. Social influence is the extent to which individual consumers believe that friends and family or others in general will respond to them using mobile financial services (Barati & Mohammadi, 2009; Venkatesh et al., 2003).

Demographics

As a response to Shaikh and Karjaluoto (2015)'s claim that the TAM has limited use to describe the actual usage of a mobile service because it excludes demographic factors, this study adds demographics as a moderator. Alafeef et al. (2011) find demographics to be an especially important factor in developing countries, such as in Jordan, where demographics affects the constructs such as trust, economic factors or usefulness, because of high levels of illiteracy, low income levels and different social groupings. Most studies that evaluate demographics focus on gender (e.g. Karjaluoto, Riquelme, & Rios, 2010; Tobbin, 2012; Yen & Wu, 2016), however also education has been considered to be an important factor (Alafeef et al., 2011). Both of these factors have been found relevant in this study's context.

The moderating role of gender in adoption of MFS has been witnessed by several researchers, and it has been claimed that marketing and communication tactics should be in accordance with gender differences (Alafeef et al., 2011; Karjaluoto et al., 2010). Tobbin (2012) observed that younger, male participants among the rural unbanked in Ghana were more confident in finding mobile banking service easy to use. Alafeef et al. (2011), studying mobile banking adoption by Jordanians, found that males, more so than females, have the desirability to try any new technology. Yen and Wu (2016) also found that the connection between the variables in their model was affected by gender. Their findings revealed that there is a stronger link between perceived mobility and usage intention for men than for women, while women are more inclined to let their usage intention be affected by personal habit than men (Yen & Wu, 2016).

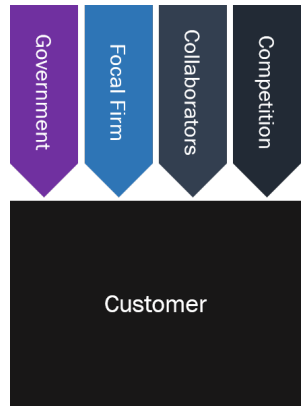
In addition to gender, Alafeef et al. (2011) study the effects of education, income and age on adoption of mobile banking. They find education to be the strongest positive factor that influences the adoption level. Because MFS are advanced technological applications in terms of innovation, level of education is deemed to be relevant, especially in developing economies where there is high levels of illiteracy.

Table 3.1: Brief summary of the constructs in the internal adoption model

Construct	Definition
Original TAM	
Perceived Ease of Use	"The degree to which a person believes that using a particular system will be free of effort" (Davis, 1989, p. 320).
Perceived Usefulness	"The degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320).
Intention to Use	The likelihood that an individual will use a technology (Schierz et al., 2010).
Extended Constructs	
Personal Habit	"Habits are learned sequences of acts that have become automatic responses to specific cues and are functional in obtaining certain goals or end states" (Verplanken & Aarts, 1999, p. 104).
Perceived Mobility	Mobility covers convenience, expediency, and immediacy, and allows the user to access information, communication, and services independent of time and place (Yen & Wu, 2016).
Actual Usage and Goal Accomplishment	A state where the consumer uses the service frequently over time and achieves the initial goal (Bagozzi, 2007).
Awareness	Concerns knowing what mWallets offer, and that the service is available at all (Saleem & Rashid, 2011).
Economic Factors	Refers to the availability of money to the consumer (Tobbin, 2012).
Trust	Enfolds security against theft, privacy of personal data, risk of mistakes. Trust is in regards to the technology itself, the provider, and the agents (Barati & Mohammadi, 2009; Mallat, 2007; Noor, 2011).
Moderators	
Cultural Context	Effect of cultural beliefs on adoption, includes tradition barrier (Barati & Mohammadi, 2009) and social influence (Venkatesh et al., 2003).
Demographics	Influences of demographic factors such as gender, education, income and age (e.g. Alafeef, Singh, & Ahmad, 2011).

Chapter 4

External Ecosystem Model



With the internal circuit board of consumer adoption framework in place, it is time to focus on the major stakeholders that roam the market and influence consumer adoption. Whereas the internal part of the framework looks at the consumer receptors and triggers to mWallet adoption, the external model portrays the key actors that interact with these receptors and can persuade the consumer for or against adopting the solution.

Multiple MFS initiatives have failed to reach viable adoption rates (e.g. de Reuver, Verschuur, Nikayin, Cerpa, & Bouwman, 2014; Gaur & Ondrus, 2012; Nesse & Hallingby, 2016b). Dahlberg et al. (2007) claim that "as long as the roles of key players are unclear, mobile payment services will proceed at a slow pace" (p. 13). Gao and Damsgaard (2007) find that it is not enough to focus on existing, customer-centric acceptance theories to predict diffusion patterns in more complex, networked technology. Other key players and infrastructural features of new technology need to be taken into account to include the roles of other stakeholders in promoting innovation, and the social network around the technology, various business models, the role of institutions such as legislative and regulatory bodies, or effects of network economics (Zmijewska & Lawrence, 2005).

Within organizational research, several streams have focused on environmental interactions and how they influence the individual firm. Examples include the network model (e.g. Håkansson & Snehota, 1989) and the contingency theory (e.g. Dahlberg et al., 2007). Common among these models is that they focus on the contextual relevance of environmental variables and key situational relationships. Network theory and contingency theory will be the starting point for the development of the external part of this study's framework. Therefore, a brief introduction to the two theories will be given before the chosen external model will be presented.

Contingency theory

In contingency theory, the contingency factors are those environmental factors that influence the performance of the unit, but are beyond that unit's influence

and control (Dahlberg et al., 2007). Cultural, social, economic factors, and especially the influence of technology, are important factors in the contingency framework (Dahlberg et al., 2007). According to Dahlberg et al. (2007), in the specific context of MFS, regulatory, jurisdictional and standardization factors should also be included. This is because both the telecommunication and the financial services industries are among the most regulated and is highly affected by standards. In contingency theory it is claimed that the environment influences the management of organizations, and that there is no one best way to manage or organize (Dahlberg et al., 2007), but it is therefore very important to be aware of the ecosystem the firm is potentially entering.

Network Theory

Holmen and Pedersen (2003) build on Håkansson and Snehota (1989)'s perspective that "no business is an island" (p. 187). Both studies take the network approach to strategizing, in which strategy concerns "how a firm initiates and reacts to changes in the network in such a way that the firm keeps on being valuable to the network". This approach contributes to the understanding of a firm as a part of an intertwined network of mutually dependent actors. Moreover, Ritter, Wilkinson, and Johnston (2004), who also study firms in the network context, claim that four types of firms and organizations affect a firm's ability to produce and deliver value to an intermediate or final customer: suppliers, other customers, competitors, and complementors.

Contrary to this study, which puts the customer at the center of the model, the above mentioned models take an organization-environment perspective. Despite this focal difference, the influencing stakeholder groups are considered to be similar, as is supported by Zmijewska and Lawrence (2005). Three main aspects make network and contingency theory useful as a starting point for the external part of this study's adoption model:

1. *Network effects may be critical in the mWallet context* as the value provided to each customer increases as more customers use the system, and more merchants adopt it (Zmijewska & Lawrence, 2005). Thus, it is vital to create an awareness about all relevant network actors.

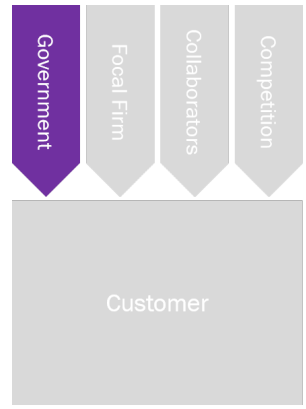
2. *Mobile financial services have proven difficult to replicate from one country to another* (e.g. de Reuver et al., 2014; Gaur & Ondrus, 2012) hence environmental factors seem highly determining for the acceptance of these services. As the contingency approach "emphasizes the importance of situational influences on the management of organizations and questions the existence of a single, best way to manage or organize" (Zeithaml, "Rajan" Varadarajan, & Zeithaml, 1988, p. 37), it is deemed well suited for analyzing strategies and the context in which these are made.

3. *Exposure for competitive market forces is substantially higher when dealing with newer emergent technologies* such as that of mWallets, and application of contingency theory is claimed to be far more important (J. Lee & Miller, 1996).

Selected external forces Identifying external actors that are appropriate for a specific industry can be challenging. However, based on the aforementioned, the master thesis

outlines four major stakeholders: (1) *Governmental actors,* (2) *The focal firm,* (3) *Collaborators* and (4) *Competitors.* The reminder of this chapter will focus on outlining the roles and incentives of each stakeholder. It should also be mentioned that this model shares some similarities with the well known five forces model presented by Porter (1985).

4.1 Governmental Actors



It is in the governments best interest to have its populace financially included. At the same time it is vital that the implementation of the services does not come at the cost of the nation at large. This includes the risk of selling out critical infrastructure to foreign multinationals, following strict international Anti-Money Laundering (AML) and Counter Terrorism Funding (CTF) legislature, and simply protecting the public from scams and incompetent banking (Lauer & Lyman, 2015). The government has several tools at its disposal to impede or support an MFS. Starting with the introduction of MFS it has been up to the regulatory bloc to decide the development of the service over time. Although plenty of research exists discussing the caveats that governments need to be prepared for with the advent of MFS (Lal & Sachdev, 2015; Lauer & Lyman, 2015), this study only looks at the measures that governments can implement that either incentivizes or impedes mWallet adoption by the end user.

Regulating authorities for both banks and MNOs are stakeholders setting the premises for this market evolution (Nesse & Hallingby, 2016a). They are responsible for putting in place the necessary regulative structure surrounding the mobile money ecosystem ensuring the financial safety for all stakeholders as well as the nation's interests. According to Lal and Sachdev (2015), the regulatory structure is key as "it establishes i) the type of entities which can own and operate a mobile money service, ii) the type of entities which can provide various related services, such as cash-in / cash-out, iii) the connection required, if any, to existing banking system, iv) how KYC/AML rules must be implemented, and v) the degree to which there is legal certainty about what mobile money operators can and can't do" (p. 13). These key aspects affect consumer protection, competition, privacy and data protection, network security, taxation, and universal service and accessibility (GSMA, 2016).

The characteristics of a country's regulatory environment significantly influences the outline of the mobile money business model, and suggest that product offerings need to be country-specific. Due to the rapid development of innovative and easy-to-use payment systems by financial institutions and other businesses, consumers may experience that products do not meet expectations, are not delivered or not in accord with consumer rights (Ionescu, Lazaroiu, & Serban, 2013; Lauer & Lyman, 2015). By enforcing regulations in the form of licenses, requirements and inspections, the government facilitates trust in the system, decreasing the chances of fraud and financial collapse. In 2015, 51 of 93 countries have an enabling regulatory framework (GSMA, 2016). Governments play a crucial role in the survival of MFS ecosystems as consumers lack of confidence in the security of online and mobile payments can have a crippling effect to the

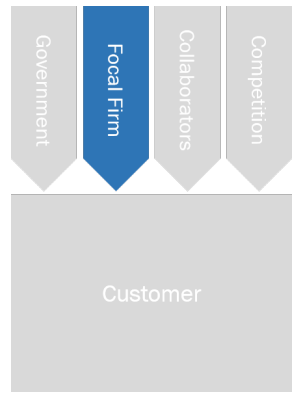
development of e-commerce (Ionescu et al., 2013). By taking into account the rights and needs of consumers in a digital environment into a regulatory framework, this will inspire confidence and trust in the consumption of digital services (GSMA, 2016). Likewise, while the prevailing tax structure on the sectors and services as well as the framework for spectrum management will affect the affordability and deployment of access networks (GSMA, 2016).

Incentive

Mobile money is changing the landscape of financial inclusion and more regulators are recognizing the importance of MFS in creating an open and level playing field for the financial inclusion of its citizens (GSMA, 2016; Ionescu et al., 2013; Nesse & Hallingby, 2016a). According to the GSMA (2016), in 2015, the number of registered customer accounts grew by 31% to reach a total of 411 million registered accounts globally across 37 markets that together had ten times more registered agents than bank branches. Filling the gaps between bank branches fosters economic growth, fights poverty and improves the social conditions for the unbanked and unserved (I. Khan, 2016a; Nesse & Hallingby, 2016a; Nesse et al., 2016).

In the long run the government has a great interest in the balance of power within this crucial infrastructure. Like with other critical services, governments desire a balance between experienced international actors and national owners. The government's incentive to introduce mobile payments, in addition to being a source of tax revenue is that, as more transactions are made through the system, it replaces common cash transactions, thus increasing transparency (Lauer & Lyman, 2015). Furthermore, mobile technology offers an opportunity for emerging countries to narrow the gap with traditional leaders in eGovernment through mGovernment services (Ionescu et al., 2013; Zmijewska & Lawrence, 2005). Internalizing the system into national offerings as long as they are aware of the need to ensure services that are accessible on feature phones, could be a good way to ensure control.

4.2 The Focal Firm



As the setup of an MFS business model crosses the boundaries of several industries, the establishment of an MFS ecosystem requires a wide range of stakeholders to be involved. Mobile Network Operators (MNOs), also known as telcos, and banks, have been considered to be the two main actors in this ecosystem (Madureira, 2017; Nesse et al., 2016). Moreover, country-specific regulations usually determine which type of actor(s) that get(s) to deploy MFS (Lal & Sachdev, 2015). In cases where MNOs are permitted to provide these kinds of services, they usually become the first movers (Lal & Sachdev, 2015). Given that this study is conducted in collaboration with Telenor, the perspective of the MNO is the primary focus. Still, as government regulations often call for a bank-led model, the discussion will evolve around the partnership arrangement that result between the bank and the MNO,

which is the case for both Pakistan (Easypaisa) and Myanmar (Wave Money).

It is important to be aware about the mutual dependencies that exist between the two actors, i.e. with the MNO providing access to the consumers' mobile phones and banks having experience with providing financial services (Lal & Sachdev, 2015). This strengthens the incentives to establish collaborative business models between the two. Within the wide range of business models, three main concepts exist: (i) Bank-led models, (ii) Telco-led models, and (iii) Hybrid-partnership models (Nesse et al., 2016). Unless the MNO develops and deploys a mobile financial application that runs solely on the MNOs existing subscription system thereby not requiring the bank (Telco-led; ii), the MNO is dependent on some sort of collaboration with financial institutions. In the full collaboration model (iii), one actor acquires the other or a joint venture is formed between mobile operators, banks, and other payment providers (Nesse et al., 2016). According to Lal and Sachdev (2015) the choice of business model "is key as it can impact customer adoption and usage growth, the setting of appropriate expectations with the parent company and the market around capital requirements, the types of revenue opportunities pursued, and the alignment created within the ecosystem" (p. 23).

Regardless of firm type, it is up to the focal firm to create the most attractive MFS. This includes not only the application interface and function but also the pricing model and how it competes against alternatives. MNOs bring five unique advantages over conventional banks when developing an mWallet service: (i) a focus on all customers; (ii) secure mobile phone in customer's hands; (iii) existing relationships with unbanked customers; (iv) already established trust and brand; and (v) a large distribution network (BCG, 2011). These major benefits combined with often having the benefit of being physically present (Lal & Sachdev, 2015) is powerful leverage in the MFS ecosystem.

Incentive

According to Dennehy and Sammon (2015), MFS services are an attractive diversification opportunity for MNOs to reap rewards from adjacent business areas. MFS revenue potentially recoups costs and investments made in infrastructure through increased data usage by customers (Dennehy & Sammon, 2015). According to the GSMA (2016), 12 out of the 15 mobile money providers that reported revenues of more than US$ 1 million in June 2015 were MNOs. The migration from OTC to mWallet solutions further increases revenue as the average revenue per user (ARPU) is strengthened through increased consumer stickiness and the introduction of value added services (VAS) such as credit, savings and insurance.

4.3 Collaborators

Zmijewska and Lawrence (2005) claim that cooperation between the main actors is a necessary condition for mobile payment initiatives to succeed. To spur adoption "you need to persuade a huge number of buyers and a huge number of of sellers to adopt the same mechanism" (Zmijewska & Lawrence, 2005, p. 208). Three main groups of collaborators are considered in this study's framework: (1) B2B collaborators, (2) merchants and (3) OTC agents. Despite the obvious need for some sort of inter-firm cooperation in the mWallet business ecosystem, it is also interesting to question how such collaborations could be organized (Dahlberg et al., 2007).

B2B First of all, within the B2B collaborations, in order to configure an MFS, such as mWallets, there is usually a need (depending on the country's regulatory framework) for financial institutions and MNOs to collaborate. Although choice of business model is scoped out of this master thesis, this will affect the resulting business ecosystem.

The GSMA (2016) highlights the digital skill gap among many mobile users in the developing world and the need for digital skills training. For non-Internet-users in the Asia Pacific region, a lack of digital literacy was identified as one of the top barriers (together with lack of awareness and local content and affordability; GSMA, 2016). Several actors, including governments, MNOs and NGOs, all have an influencing role in increasing awareness and digital skills of users. Governments should bring ICT into schools, whereas operators should effectively use their agent and retail networks to introduce new customers to mWallets and the mobile Internet in general (GSMA, 2016). NGOs could work in partnerships with operators to provide more in-depth training.

Entering into agreements with collaborators, often businesses, can also give great surges of uptake. Indeed such agreements could be beneficial for both parties, by reducing some of the collaborator's paint points, and at the same time training their users to take advantage of mWallet providers wider range of mobile account services, including insurance and savings.

Ritter et al. (2004) consider complementors to be one of the four network actors affecting the firm (the others being customers, competitors, and suppliers). Complementors are other types of firms whose product or services increase the value of their own outputs (Ritter et al., 2004), and are included within the collaborator category in this study. These collaborators benefit from among other things joint marketing, joint promotion or distribution agreements (Ritter et al., 2004). Another possible beneficiary from collaborating with suppliers of complimentary products and services, is the opportunity for them to become *innovation partners*. Creative product bundling may spur adoption of both products (Ritter et al., 2004). The GSMA (2016) proposes that collaboration between operators can ensure interoperability and the exploration of new opportunities. Ritter et al. (2004) also include governmental agencies in the complementor category, as these agents are important to keep up to date about legislative developments. In this study's framework, governmental actors will be covered mainly within the governmental part of the framework. However, it is also noteworthy that the government could collaborate with the service provider.

Merchants Although receiving wages and paying bills once a month is an important part of life and a useful service to include in mWallets, to really create a surge in adoption it is important to get the consumer to use the MFS on a daily basis. Here merchants are an invaluable collaborator and important compatibility asset. As highlighted by Ritter et al. (2004), collaboration between market actors can spur adoption.

Dahlberg et al. (2007) claim that "similar to consumers, merchants are adopters of payment solutions. Merchants create the market for financial institutions and other mobile payment service providers by accepting payments with mobile payment instruments

(acquirer role) or even by issuing them (issuer role). Their active participation in promoting a payment service is crucial to consolidate a large number of points of acceptance" (p. 11). By focusing on merchant payment services it is possible to grow the critical merchant acceptance network. Therefore it becomes evident that involvement of merchants in design and development of mobile financial services, and payment services in specific, becomes vital for its success (Dahlberg et al., 2007). This study differentiates between physical merchants (e.g. retail merchants) and online or e-commerce merchants.

Agents Agents are actors that perform OTC services and/or register users to mWallet accounts. They can be but are not exclusively also merchants selling other wares such as groceries, kiosks, handsets or other tech products, etc. Recruiting can for instance occur from small and medium enterprise borrowers, as they are entrepreneurs and already have good marketing skills and are already familiar with buying and selling mobile airtime for others (McCaffrey, 2015). Agents can be an extremely valuable resource to both the customers and the service provider in terms of customer education much due to their insight into the service and built up trust with the customer.

Incentive

What incentive the collaborating party has with regards to mWallets, is likely to be strongly dependent on the specific actors. In the case of a B2B actor, benefits such as automation of payments and removal of cash may be important contributors. A main incentive for governmental collaborators and non-profit organizations, is probably that of financial inclusion. For merchants, cash reduction is an obvious benefit which is likely to reduce fraud. Moreover, if mWallets become highly accepted in the market, the merchant will be dependent on providing the technology in order to retain customers. OTC agents on their side will probably have similar incentives as merchants, as their positions are likely to overlap.

4.4 Competitors

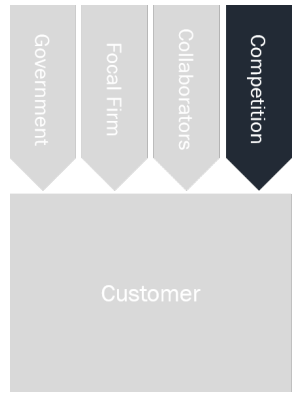
Competitors in the mobile wallet arena include traditional actors, such as banks, other MNOs, and also new incumbents, an example of such being fintech companies, Facebook and Applepay. Existence of well-functioning traditional banking and payment schemes, such as brick and mortar banks, Visa and MasterCard, can affect the uptake of innovative technologies. These services can contribute to increase the trust in the new service, one of the important constructs in the inner part of this study's framework.

Ritter et al. (2004) claim that competitors can create cooperative relationships, for instance, to develop product and technology standards. In fact, lack of collaboration between multiple stakeholders has been identified as one of the common reasons why mobile payment platforms fail (Au & Kauffman, 2008; Ondrus, Lyytinen, & Pigneur, 2009; Ozcan & Santos, 2015). Competition and collaboration is often a double edged sword, as there exist a tension between the need to collaborate to increase value creation, while at the same time fighting for once independent, and often conflicting, interests. Hamel, Doz, and Prahalad (1989) uses the term *competitive collaboration*, claiming that collaboration is competition in a different form. However, such measures are often needed to achieve higher adoption levels. Innovative technological services, such as mWallets, may

need to offer valuable properties that traditional payment services do not have, and at the same time include the most valuable properties of the services replaced (Dahlberg et al., 2007, p. 12). A possible way to overcome this challenge is by engaging in coopetition with either established actors or new incumbents.

Incentive

For any market to evolve there is a need for competitive forces to exist. One obvious reason why competitors would want to cooperate with each other within the mWallet market is therefore their common goal of making the service a part of the everyday life of the consumer. As previously discussed, the consumer value increases with increased uptake among merchants and other consumers, which will be facilitated by the existence of several market actors.



Chapter 5

Using the Framework

In this chapter the function of the framework is discussed. The concept behind the framework is to first understand the consumer and the "levers" or receptors that can fuel consumer adoption. Once the most critical levers have been identified, the framework enables the practitioner to generate a list of most impacting measures to incentivize mWallet adoption. The entire process is done in four stages: (i) calibrate the internal adoption constructs to the target market; (ii) map the major stakeholders that exist in the target market with those defined in the model; (iii) examine potential and already attempted measures and determine their impact on the market; and (iv) perform an analysis of the as is situation by determining quick wins and long term investments, ending up with an implementation plan for a future desired situation.

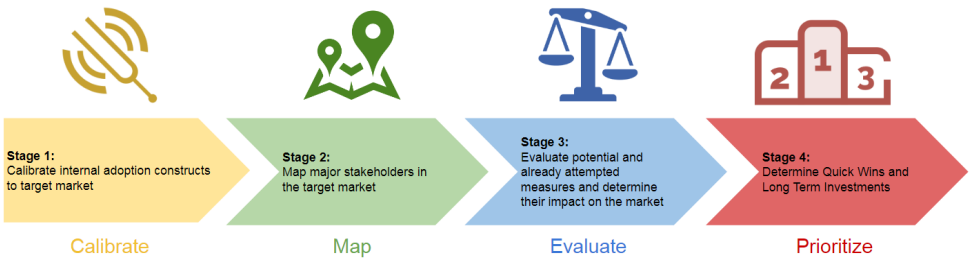


Figure 5.1: The proposed stages for using the framework

Stage 1: Calibrate Internal Adoption Constructs to Target Market

The benefit of the framework's inner model is that it boils the abstract concept of the consumer down to seven constructs (trust, awareness, perceived usefulness, perceived ease of use, perceived mobility, personal habit, economic factors) that lead to an actual usage loop (intention to use, actual usage and goal accomplishment). The intention to use is in turn moderated by two market moderators (cultural context and demographics). With the consumer represented by this internal adoption model it becomes easier to understand what sparks consumer adoption.

The framework is purposefully set up to be general allowing for the practitioner to customize it for their target market. For the internal model, the *way* or *to what extent* the cultural context moderator affects customer adoption varies from culture to culture. By absorbing expert reports written by industrial actors and consultants, and performing interviews with key figures in the ecosystem including the consumers themselves, the internal model can be calibrated. The purpose of this empirical data is to get an overview of the status in market as-is: what type of consumer demographics does the service have to contend with; how large is the market and how is its distribution; and what use cases could be relevant for these consumer groups (remittances, government payments, tax collection, loans or insurance, etc). Based on the cultural context and demographics moderators for simplicity top three critical constructs can be discerned and will be weighted double later.

Stage 2: Map the Major Stakeholders in Target Market

In addition to the consumer and the inner part of the framework, it is important to map the major actors in the target market to their respective stakeholder groups in the external model. The external model of the framework ensures the practitioner covers all their bases and becomes aware of the stakeholders in the target market and how established or new they are in their processes to support an mWallet ecosystem.

The government, for example, consists of differing institutions depending on the country and operate widely differently. This will have great impact on what they are capable of doing and to what extent they wish to cooperate with the MNO. The framework contributes findings from Part II with some generalizable roles the various stakeholder groups may have with regards to which constructs they affect the most, Table 10.2. For example, the government has a natural role in building trust through their regulations, while the collaborators have a big impact on usefulness due to their content provisions. Understanding which stakeholder group to approach first can be useful for the most effective implementation of relevant measures.

Stage 3: Evaluate Potential and Already Attempted Measures and Determine Their Impact on the Market

It is important to get a thorough understanding of what attempts have already been made at converting the users either from being unbanked to mWallet or from OTC to mWallet and to what degree this has been successful. Setting up a list of planned and already executed measures for each stakeholder group can be tricky, however it is assumed the more measures listed that affect adoption the better.

This list of measures is then compared to the seven central adoption constructs through a correlation matrix (See Figure 10.3 as an example) where scores are given depending on the measures influence on that constructs ability to incite adoption. It is important to note that this is a highly qualitative assessment and the scores are given in a general sense. The *intention to use* score is a weighted average of the previous eight constructs, with critical constructs (marked ** in figures 10.3 and 15.2) for that target market weighted double (a score of 4 becomes an 8). A score for the *actual usage loop* is then added and an overall average score for the entire measure is derived based on *intention*

to use and *actual usage*. The precise score is not important *per se*, but helps provide an indication of the effectiveness of the measure in the target market. Notice that adding or removing measures from a stakeholder group, or moving the measures between groups can have large impacts on the groups' total average score. This implies that ranking the groups against one another is inappropriate, however the averages per construct within each group can be used to give an indication of which groups are most effective at influencing certain constructs.

Stage 4: Determine Quick Wins and Long Term Investments

Each measure must then also be assessed with regards to cost and complexity to implement. In this thesis, complexity is represented by an estimated time until fully deployed. Each measure's rating of impact, complexity and cost can then be plotted on a bubble chart as x, y and bubble size respectively. This prioritization matrix illustrates to the practitioner which measures are considered quick wins, high impact with relatively low complexity (approx. a year or less) and which are considered long term investments. Measures with low impact and/or high complexity should be on hold until more urgent or effective measures are implemented. It is important to note that cost and complexity was not a central theme for this thesis which focused on adoption. Instead these variables were added to illustrate the use of the prioritization matrix and were simply given a coarse segmentation based on the authors' assumptions. The authors recommend that these two additional variables be explored further in future research.

Chapter 6

Concluding Remarks on Part I

The first part of the master thesis set out to answer the first research question:

RQ1: What is a suitable framework for analyzing mobile wallet adoption?

Part I developed a framework for adoption of mobile wallets based on existing adoption literature. The framework consists of two models, an external model consisting of five actors (the consumer and four affecting stakeholder groups), and an internal model that is a deep dive into the consumer portraying seven customer adoption constructs and two moderators that affect intention to use. The model also portrays the transition from intention to use to actual usage and goal accomplishment. The main conclusions of RQ1 are as follows:

- The inner model of the framework is supposed to function like a circuit board, simulating consumer receptors and their effect on consumer adoption and is based on an extended version of the widely accepted Technology Acceptance Model (TAM) developed by Davis (1989).
- The outer model of the framework is rooted in Contingency theory (e.g. Dahlberg et al., 2007) and Network theory (e.g. Holmen & Pedersen, 2003), and seeks to demonstrate the influence of contextual factors on mobile wallet adoption. With receptors or levers well defined in the internal model, the external model consists of measures that each stakeholder can undertake to trigger adoption with the consumer. The extent of effect varies with cultural context and must be calibrated with each target market.
- The framework will guide practitioners who are interested in converting the unbanked with no financial experience or more experienced OTC-users to mWallet-users. The process resulted in the model illustrated in Figure 2.4.

The proposed framework is deemed satisfactory to answer RQ1. The next part of the study will test the framework by using the existing use case scenario of Easypaisa in Pakistan. If shortcomings of the framework are uncovered they will be fixed in this section. Once revised, the framework will in turn be used to study the Burmese market and Wave Money which is still in its infancy.

Part II

Testing the Framework

Introduction to Part II

In this second part of the thesis, the first case country is presented and used as a vehicle for testing the applicability of the framework proposed in Part I and answer the second research question:

RQ2: How applicable is the framework at examining an existing emerging market with respect to mobile wallet adoption?

It is important to note here again that the intention of the part is therefore not to end up with a list of measures that Pakistan is supposed to implement to increase adoption. Instead it is to focus on (i) how the framework correctly identifies the critical constructs, (ii) maps the key stakeholders and (iii) *handles the ranking* of measures, not the measures themselves.

Pakistan remains a largely underserved market in terms of digital access and digital payment. With a mobile subscriber penetration of 31%, mobile broadband penetration of 5%, and bank/mobile money account penetration among adults of 13% (Lucini & Hasnain, 2016), Pakistan still has a lot of room for growth. The award of 3G licences and growth of branchless banking services are signs of improvement. To harness the full potential of digital commerce in Pakistan, mobile operators have a crucial role to play across digital commerce, digital access and digital payments (Lucini & Hasnain, 2016).

Telenor Pakistan is well aware that mobile money is the preferred long term solution compared to OTC and will continue to innovate and evolve beyond the current offering. The mWallet (i) provides richer products for the consumer by accomodating value added services (VAS), (ii) benefits the mobile money providers and (iii) is a foundation for a digital payments ecosystem (McCarty & Bjaerum, 2013). However, due to reasons varying from consumer demographics to the "comprehensive KYC requirements and a telecommunications landscape without a dominant MNO, the OTC model was the most agile way to launch and expand mobile money in Pakistan" (McCarty & Bjaerum, 2013, p. 10).

Easypaisa's innovative OTC-model has been significant with five million transactions processed after just 11 months of operations (McCarty & Bjaerum, 2013). With only a portion of the mobile subscription coverage, McCarty and Bjaerum (2013) sources much of Easypaisa's success to the OTC solution's ability to serve all customers in the market including non-Telenor subscribers. Furthermore, the simplicity of having no registration requirements lowers the threshold to start using the service and airtime top up incentives further stimulate OTC usage. Shown in Figure 6.1, the number of transactions have increased to about 110 million accounting for a value of almost 520 billion Rs. The major decline in the number of transactions as seen in Sep'16 OTC transactions is due to delay in bulk G2P payments (State Bank of Pakistan, 2016).

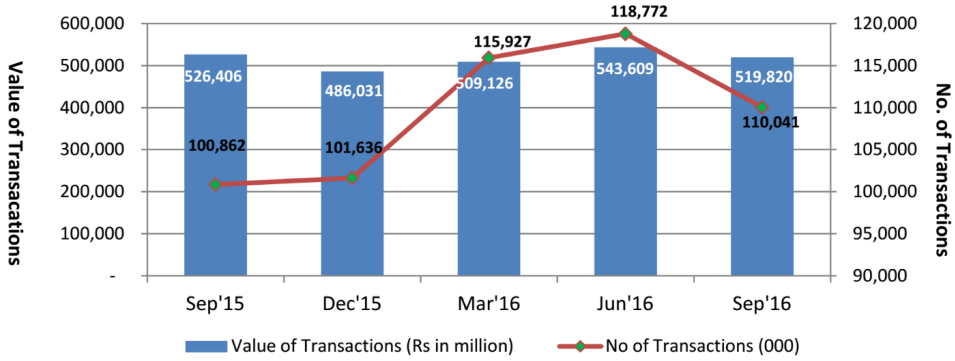


Figure 6.1: Trend in number and value of branchless banking transactions (State Bank of Pakistan, 2016)

Easypaisa must now work to convert OTC customers to adapt a mobile account, a difficult proposition as Easypaisa's first years in operation have shown that natural migration from OTC to mobile account does not occur. One year after launching the service, less than 5% of Easypaisa's core products were conducted through the mWallet (McCarty & Bjaerum, 2013).

More recent figures are encouraging and Figure 6.2 shows the trends in m-wallet and OTC transactions between the period Jul-Sep'15 and Jul-Sep'16. Although there is a jump in the mWallet to OTC ratio for the last quarter 2016, this was attributed to a late BISP (G2P) payment (State Bank of Pakistan, 2016). A more realistic growth should be drawn from the Jul-Sep'15 to Apr-Jun'16 numbers. McCarty and Bjaerum (2013) believe that to increase adoption a more concerted strategy is required to "target customer segments which are most likely to see the benefits of a mobile account, create a robust product offering, and increase the number of registration points" (p.12). An interesting discussion arises regarding financial inclusion as customers who are most inclined to adopt mobile wallets, and thus most likely to be the provider's target segment, might not be those who need it the most. Although not central to RQ2, this claim is something that will be discussed in this part of the thesis.

In this second part of the master thesis, RQ2 will be answered through five chapters. First, Chapter 7 will fill inn the demographics and internal adoption data for Pakistan. Chapter 8 presents the external mobile wallet environment in Pakistan. After having performed several interviews, presented in Chapter 9, the interview results are compared and contrasted with the internal and external data in Chapter 10. Finally, some concluding remarks are given in Chapter 11 to wrap up Part II.

Table 6.1: Part II Overview

Part II:	Chapter 7: Internal Customer Adoption
	Chapter 8: External Ecosystem
	Chapter 9: Summary of Pakistan Interviews
	Chapter 10: Part II Discussion
	Chapter 11: Concluding Remarks on Part II

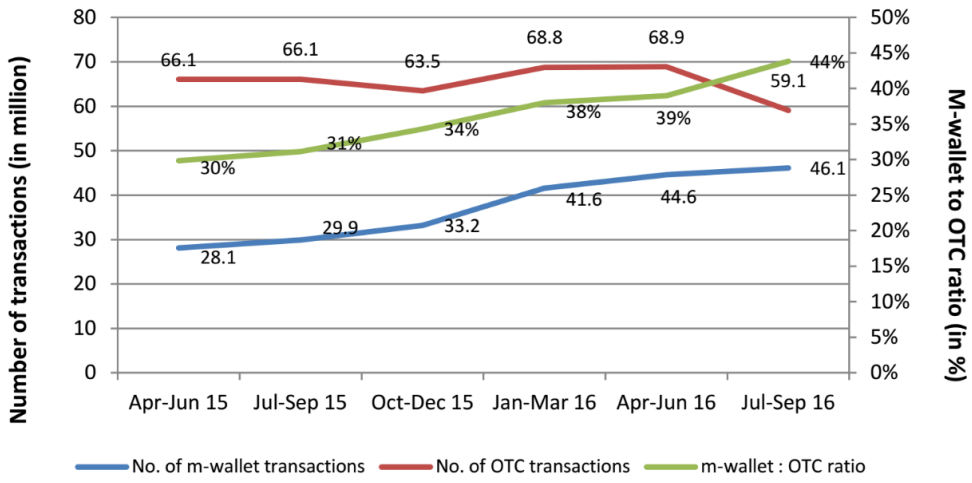


Figure 6.2: Periodic trend of mWallet to OTC transaction ratio (State Bank of Pakistan, 2016)

Chapter 7

Internal Calibration in Pakistan

This chapter focuses on the calibration of the internal model, meaning it intends to determine the critical constructs of the Pakistani market. The chapter looks in particular on Pakistani demographics, the cultural context and respondents' top reasons for not having mWallets. The demographics section delves into general market, education, financial and technical demographics. The cultural context is described with the help of Hofstede's cultural dimensions as well as the general gender perception of mWallets. Finally, the thesis presents end user and OTC-agent answers retrieved from reports written by subject experts. First it is important to take a look at the current state of financial inclusion.

7.1 Current State of Financial Inclusion in Pakistan

World Bank Group (2017a) estimates that out of a population of 185 million, 91% of Pakistani adults are financially excluded from regular banking, with only 9% of the respondents having a bank account. McCarty and Bjaerum (2013) point out that although only a small percentage of Pakistan's adult population is formally banked, informal financial services are extensively being used with estimated 35% of the population using other, non-formal, means to transfer and save money. Moreover, McCarty and Bjaerum (2013) estimated there is an addressable mobile money market of 60 million people and according to BCG (2011) estimates, 71% of those who are currently financially excluded as banks are ill equipped to address them can instead be served by MFS.

Advanced mWallet offerings cover value added services (VAS) such as credit (loans), savings and insurance. As of now in Pakistan, both credit and savings remain largely informal (I. Khan & Rashid, 2015). While half of all adult Pakistanis took loans in 2014, only 5% borrowed from formal financial institutions, the majority coming from family and friends, Figure 7.1a. Likewise, of the 32% that saved in 2014, 3% were saved at a financial institution, the remainder consisting mostly of storing cash deposits at home (51%) or participating in committee ROSCAs (27%), Figure 7.1b. The awareness and penetration of insurance remains low (I. Khan & Rashid, 2015). Only 1% of respondents had insurance, 90% of which had life insurance. Over one third (35%) believed they did not need insurance or did not own anything valuable (7%), and a second third either did not know what it was (22%) or how to get one (9%) (I. Khan & Rashid, 2015), Figure 7.1c. A popular

consumer financial use case, and an important part of P2P payments, is remittances. The majority (93%) deliver the remittance money themselves, while only 4% and 3% deposit via bank or use OTC respectively, Figure 7.1d.

In general, Pakistanis don't use formal financial services due to lack of either awareness or income, the respondents either never thought about it (41%) or had not learned about it (15%), or did not have the regular income (41%) or enough money to open the account (31%) (I. Khan & Rashid, 2015).

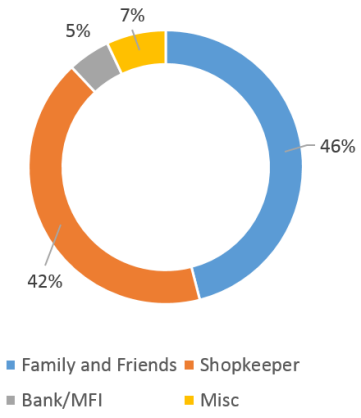
7.2 Pakistani Market Demographics

Branchless banking, and mWallets in particular, provide an opportunity to kick-start financial inclusion. 27.5 million adults cite distance as a barrier to opening a financial account (World Bank Group, 2017a) making it a major deterrent for conventional banking at a branch, Figure 7.2, and one of the primary benefits of branchless banking (World Bank Group, 2017a). Furthermore, the majority of adult Pakistanis (79%) have access to a mobile phone (I. Khan & Rashid, 2015), either through their own mobile (54%) or otherwise (I. Khan, 2015). As each mobile phone functions as a terminal for mobile banking, this makes these devices the most viable channel to enable financial outreach (I. Khan & Rashid, 2015).

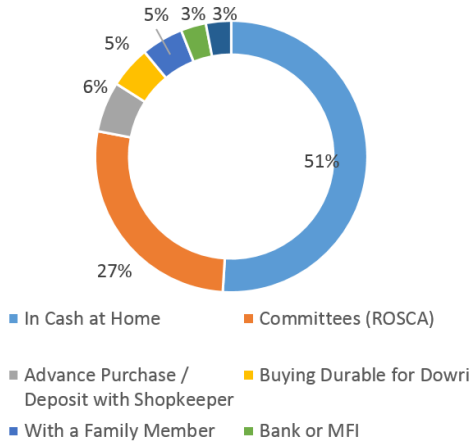
The majority of Pakistani mobile money users lie between 18-30 years old (I. Khan & Rashid, 2015). This does not come as a surprise as the use of smart phones has mainly been among *millenials*, a younger populace worldwide between 18 and 34 (Poushter, 2016). Despite some (32%) having access to mobile technology, elderly Pakistanis (55+) are among the least likely demographic groups to use m-money services (see Figure 7.3, Farrah, 2015). Currently, according to I. Khan and Rashid (2015) urban dwellers are 1.5x more likely to be financially included than rural dwellers. However, geographically, the Pakistani market context is largely rural, with 26.6 million smallholder farmers representing 37% of the country's total workforce and contributing to a total agricultural production value of approximately $34 billion in 2015 (Lucini, Okeleke, & Tricarico, 2016). By monetizing on this market, "mobile operators could generate a share of the estimated 10 million new mobile money accounts by 2020 from digitizing [agricultural] B2P payments, depending on the number of farmers engaged in formal value chains. (Lucini et al., 2016, p. 21).

Pakistani literacy rates are only 55% (Unesco Institute of Statistics, 2015) making any solution custom to those not able to read almost a prerequisite. The benefit of the OTC alternative is that illiterate people can use the agents as interfaces to the solution (McCarty & Bjaerum, 2013). 73.7 % of the Pakistani populace has completed primary education and 41.1% enroll for secondary education (World Bank Group, 2017a). As shown in the bottom graph, Figure 7.3, having a secondary education or more has an immense impact on current mWallet adoption. Of those with secondary education 69% use mobile money services, whereas those with primary education or no formal education have adoption rates of 17% and 14%, respectively (Mirzoyants, 2013).

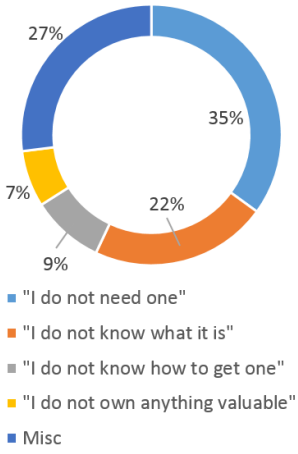
That being said, OTC has a costlier infrastructure, a cost that is transferred to the consumer in the form of distance to agent and commission price. According to I. Khan (2015), the average mWallet transaction size is approximately 25% smaller than that in the OTC transactions. 30 million Pakistanis are considered to be living below the poverty line set at 25,000 Pakistani rupees or $232 per month (Mithe, 2015). Only 2.9% of adults



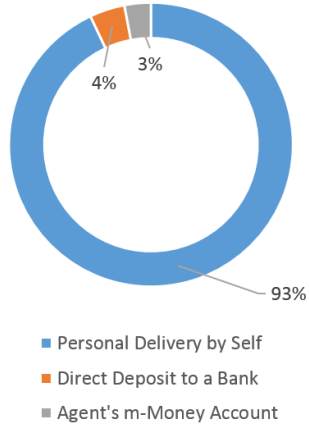
(a) Breakdown of Loans



(b) Breakup of Savings



(c) Insurance Barriers



(d) Remittance Methods

Figure 7.1: Overview of financial inclusion statistics (I. Khan & Rashid, 2015)

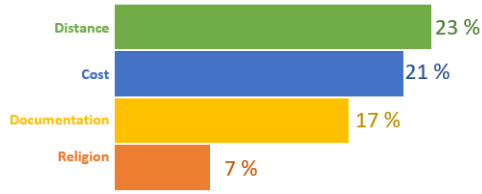


Figure 7.2: Most cited barriers to bank account adoption (World Bank Group, 2017a)

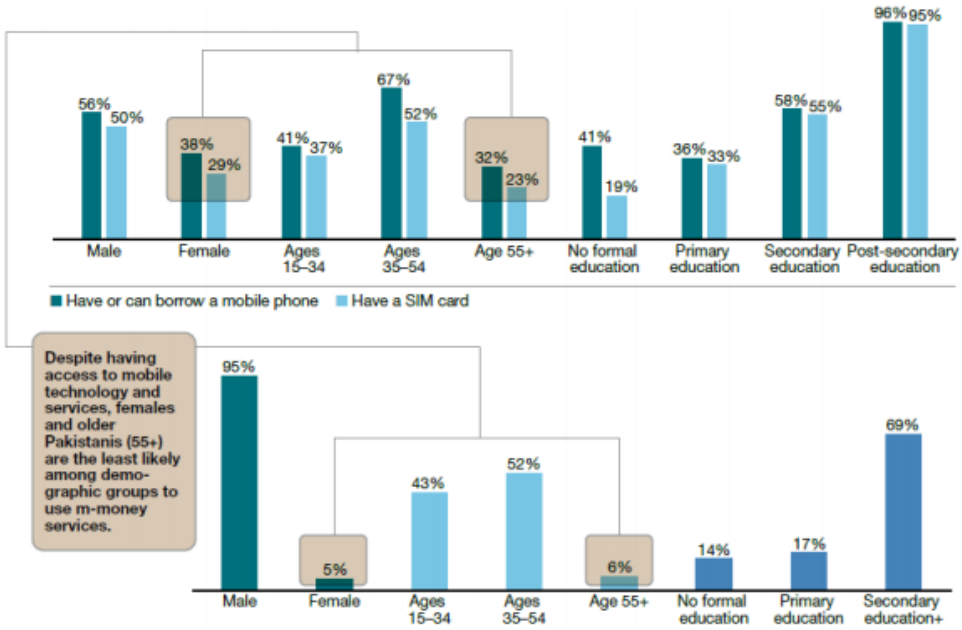


Figure 7.3: Access to mobile technologies (top) and use of mobile money services among selected members of households (bottom), by demographic characteristics (Mirzoyants, 2013)

have a debit card and only 1% use debit cards to make payments(World Bank Group, 2017a). 1.4% and 1.8% of Pakistanis used an account to receive wages and to receive government transfers respectively (World Bank Group, 2017a). By having mWallets, the financial threshold for transactions is reduced, having important implications for initiatives that aim to bring the bottom of the pyramid income earners, who generally send smaller ticket sizes, into the formal banking sector (I. Khan, 2015).

7.3 Pakistani Cultural Context

7.3.1 Hofstede's National Culture Dimensions

This study bases the description of Pakistan's cultural context on Hofstede's Six National Cultural Dimensions: *Power Distance, Individualism, Masculinity, Uncertainty Avoidance, Long Term Orientation* and *Indulgence*. Pakistan's ranking among each of the dimensions can be seen in Figure 7.4. The figure shows the contrast of cultural dimensions between Pakistan, the target market, and Norway, Telenor's home market. Although not a perfect method for defining cultural context (Orr & Hauser, 2008), see limitations in Chapter 10, it has been deemed the best alternative given the thesis' scope.

Power Distance

The first dimension looks at Pakistan's attitude towards the inequalities between individuals in societies. "Power Distance is defined as the extent to which the less

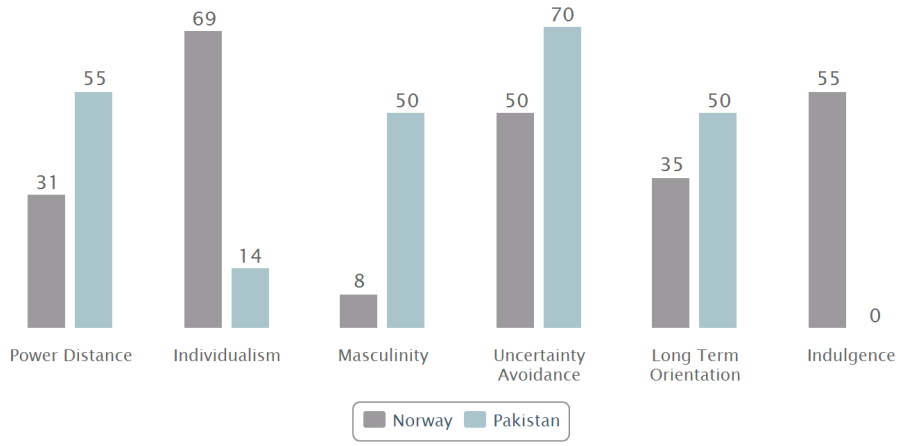


Figure 7.4: Pakistan's cultural dimensions in comparison to Norway, as described by Hofstede's National Cultural Dimensions (Hofstede, nda)

powerful members of institutions and organizations within a country expect and accept that power is distributed unequally" (Hofstede, nda). As Pakistan scores 55 in this dimension, an average score, it is not possible to assume a preference, however it is noteworthy high in comparison to the home market.

Individualism

Individualism centers around the degree of interdependence between a society's members (Hofstede, nda). As a position on the "I"-"We" spectrum, it varies with people's self-image. Whereas individualist societies may look after themselves and their ambitions, collectivist societies are more centered around group loyalty and being part of a larger system. With a "low score" of 14, Pakistan is considered a collectivist society (Hofstede, nda). Close, long-term commitment to the family, extended family or extended relationships is cultivated and loyalty is considered paramount. Pakistani culture fosters strong relationships where everyone takes responsibility for fellow members of their group (Hofstede, nda). This can indicate that consumers are susceptible to word of mouth or recommendation based branding. The fact that a lot of others are also using the product will make it easier to adopt. Looking at Figure 7.6 it becomes clear that friends and family play an important role in raising awareness of mWallet services and stimulating registration (Mirzoyants, 2013).

Masculinity

A masculine society is driven by competition, achievement and success, with success being defined by the winner being the best in field – a value system that starts in school and continues throughout organizational life. Likewise, a feminine society focuses on caring for others and quality of life. Hofstede (nda) points out that the fundamental issue is the motivation: wanting to be the best (Masculine) or liking what you do (Feminine). Here again, Pakistan rates at 50 and it cannot be said if Pakistan has a preference towards masculinity or femininity, but can in compar-

ison to Norway, a highly feminine culture, be considerably more masculine.

Uncertainty Avoidance

Uncertainty Avoidance is concerned with how society deals with future risk. Different cultures have learnt to deal with this in different ways, whether the country proactively tries to control risk or react to events as they occur. "The extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these is reflected in the uncertainty avoidance score" (Hofstede, nda).

On this dimension, Pakistan scores 70 indicating a high preference for avoiding uncertainty. Pakistan will "maintain rigid codes of belief and behaviour and is intolerant of unorthodox behaviour and ideas" (Hofstede, nda). Hofstede (nda) states that Pakistan will show an "emotional need for rules, that time is money, people have an inner urge to be busy and work hard, precision and punctuality are the norm, innovation may be resisted, security is an important element in individual motivation." This could imply that focusing on the trustworthiness of the service is critical. The move from OTC services, where someone else performs the transaction and ensures its success, to having this responsibility themselves may be daunting and outside the users' comfort zone.

Long Term Orientation

According to Hofstede (nda) the Long Term Orientation dimension is concerned with the way a culture relates to its own past while simultaneously dealing with the present and future. Here, societies prioritize these two existential goals differently. Low scores indicate a normative society which prefers to maintain time-honoured traditions and norms and view societal change with suspicion (Hofstede, nda). In contrast, a more pragmatic society with a high score encourages thrift and efforts in modern education as a way to prepare for the future (Hofstede, nda). Again, here Pakistan scores 50 implying little can be said to indicate a preference which is similar to Norway.

Indulgence

In this dimension, cultures can be described as either "Indulgent" or "Restrained" by the extent to which people try to control their desires and impulses. Pakistan scores extremely low (0) on this dimension implying a very restrained society (Hofstede, nda). The market will have a tendency to cynicism and pessimism. Pakistani society will not put much emphasis on leisure time and control the gratification of desires, but rather that social norms consider self-indulgence as somewhat wrong.

7.3.2 Gender

Gender is the strongest predictor of mobile money use at the individual mobile money user level (Mirzoyants, 2013). According to the World Economic Forum's Global Gender Gap Report for 2015, Pakistan has the second worst gender gap in the world in terms of financial inclusion, ranking it 144 out of 145 countries (I. Khan, 2016b). Men are 3x more likely (23% of men) to be financially included than women (7% of women), claims I. Khan and Rashid (2015). This is in stark contrast to the South Asia's average of 37% (World Bank Group, 2017a). Despite 38% of women having access to mobile technology, they are, together with the elderly (55+), the least likely demographic group to use mobile money

services (see Figure 7.3, Mirzoyants, 2013). These numbers are improving however as the quantity of female customers increased from 2.0 million to 3.3 million during the Jul-Sep16 quarter. As a result, the share of female accounts increased to 20% out of the total 16.9 million mobile accounts (State Bank of Pakistan, 2016).

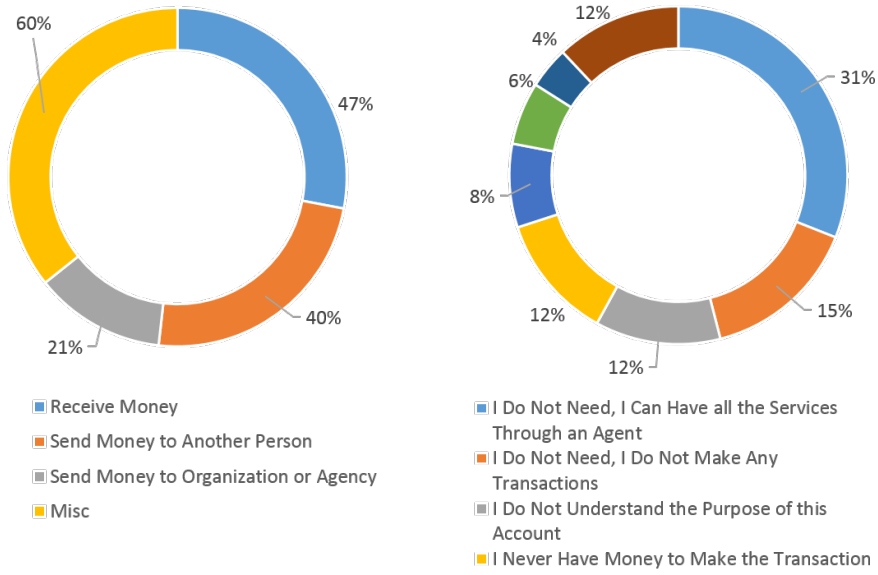
7.4 Main Reasons For and Against Having mWallet in Pakistan

Karandaaz performed a survey to understand the main reasons for and against adopting mWallets in Pakistan (I. Khan & Rashid, 2015). When asking mWallet users what they used the service for it became clear that it was predominantly used for transactions between peers (P2P) or as a method of payment. 47% of the respondents had received money though the service and 40% of the users had used the service to send money to another person (I. Khan & Rashid, 2015). 21% used the service to send money to an organization or agency (I. Khan & Rashid, 2015). Likewise, results were gathered as to why respondents did not wish to start using the mWallet service, Table 7.1. Here the majority blamed the lack of need, either due to their satisfaction with OTC (31%) or their lack of need to transact altogether (15%), or the fact that they did not understand the purpose of such an account (12%; I. Khan & Rashid, 2015). All top three factors relate to the perceived usefulness of the service.

Table 7.1: Main reasons against adopting mWallets in Pakistan. (I. Khan & Rashid, 2015)

Reason	**Impact**	**Construct**
"I can have all the services through an agent, I do not need it."	31%	Perceived usefulness
"I do not need to, I do not make any transactions."	15%	Perceived usefulness
"I do not understand the purpose of this account."	12%	Perceived usefulness / Awareness
"I never have money to make a transaction."	12%	Economic Factors
"Using such an account is difficult."	8%	Perceived ease of use
"There is no POS or agent close by."	6%	Mobility (Perceived ease of use)
"I do not see any additional advantages to registration."	4%	Perceived usefulness
"Misc."	12%	N/A

The Helix Institute (Mehrotra & Khan, 2015) performed a similar study based on a sample of agents to discover the reasons they had not contributed to consumers opening mobile accounts. Out of the agents surveyed, 79% did not open mWallet accounts. These agents ranked a minimum of three reasons (out of a total of seven) and the weighted averages of their first three choices were mapped. The most cited reason was the *lack of awareness of service among the customers*, giving a nod to the findings by Karandaaz (I. Khan & Rashid, 2015). Helix adds that "while specific leading providers have launched registration cam-



(a) Breakdown of Loans

(b) Breakup of Savings

Figure 7.5: Reasons for and against mWallet adoption in Pakistan (I. Khan & Rashid, 2015)

paigns, these are still far from the norm, and would be required to drastically shift the ecosystem to [mWallets]" (Mehrotra & Khan, 2015, p. 14).

The second most rated reason was that the lack of knowledge about the service altogether (Mehrotra & Khan, 2015). Helix attributed much of this to the fact that only 21% of the agents offered account registration services (Mehrotra & Khan, 2015). Helix adds that only 26% of agents see mobile accounts as competition to their OTC business implying that this is a problem of ability to offer mWallets not the lack of intention to do so. This "indicates that there is the potential to promote registration directly through agents" (Mehrotra & Khan, 2015, p. 14).

A third survey, the Financial Inclusion Tracker Surveys Project, based on 4,940 households in Pakistan, was conducted through May–September in 2012 (Farrah, 2015). Among other things, the report brings insight into two areas sourcing of information regarding mobile money and reasons for OTC users to not switch to an mWallet account. Looking at Figure 7.6, apart from almost seven out of 10 (69%) learning about the service through television, 20% first learned about m-money through a recommendation from another person. Thus, other people play a critical role in attracting the users towards mobile money. After lack of perceived benefits (59%), the second most frequently cited reason OTC users did not register for a mobile money account was that nobody among their friends and family was a registered user. This further strengthens the importance of word of mouth advertising and generating advocates of the service among the consumer group (Mirzoyants, 2013).

As Table 7.2 illustrates above, OTC fund transfers and utility bill payments are dominant in terms of both number and value of transactions compared to mWallet. The table illustrates further that 51% of mWallet transactions consisted of mobile top ups but only

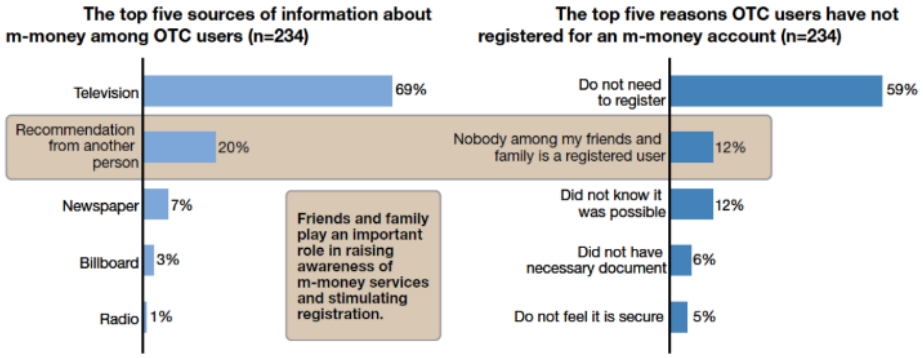


Figure 7.6: Top Sources of Marketing (left) and Top Reasons for Choosing OTC but Not mWallet (right) (Mirzoyants, 2013)

Table 7.2: OTC and mWallet breakdown by transaction volume share and value (State Bank of Pakistan, 2016)

	Share		Value	
Service	**mWallet**	**OTC**	**mWallet**	**OTC**
Fund Transfers	15%	51%	30%	65%
Utility Bill Payments	5%	41%	6%	24%
G2P	6%	4%	9%	7%
Cash Deposits & Withdrawal	5%	-NA-	6%	-NA-%
Mobile Top-Ups	51%	-NA-	2%	-NA-%
Others	18%	4%	47%	4%

2% of value. The 15% volume of mWallet fund transfer contributed the greatest to the value of mWallet transactions (State Bank of Pakistan, 2016). It becomes clear that currently mWallet is competing on the services that OTC also functions well in, namely fund transfers instead of VAS areas that makes mWallets unique.

In summary, three key features stand out: the lack of *awareness* around the service according to Karandaaz (I. Khan & Rashid, 2015) and Helix (Mehrotra & Khan, 2015), the lack of *perceived usefulness* of the service (I. Khan & Rashid, 2015), and, according to Mirzoyants (2013) the importance of family and friends to advocate on the service's behalf. It would seem that many OTC users feel no need to register an mWallet account as they have access to the transaction services which is what they believe is all they need. Mirzoyants (2013) speculates that this is largely due to what would seem like an insufficient understanding of the value added services and that there exists a limited number of mWallet users in the respondents' social networks. She sums up these results in one overarching measure: "Educating OTC users on the practical uses of registered mobile money accounts might stimulate viral adoption of m-money by creating advocates of the services, who are capable of educating and persuading others within their respective social networks to use m-money" (Mirzoyants, 2013).

Chapter 8

External Calibration

This chapter presents the external mWallet ecosystem in Pakistan based on data gathered through a general desktop study. The chapter is structured with respect to the stakeholder groups presented in Part I: the Government, the Focal Firm, Collaborators and Competitors. As discussed in Chapter 4, the influence of these actors is found to be critical in stimulating mWallet adoption. Each section touches upon which actors fulfill the role of each stakeholder group, what measures they have implemented to achieve this, and concludes by highlighting some of the challenges/opportunities they face in facilitating mWallet adoption. The measures presented in this chapter will have labels attached to them (i.e. PG1 for the first government measure) to be used for referencing in the correlation matrix presented in the discussion chapter, Figure 10.3.

8.1 Governmental Actors

In March this year the government of Pakistan received GSMA's *Government Leadership Award* because of their proactive approach towards regulatory modernization of the country (GSMA, 2017). The government has shown consistent support for mobile to become a central part of Pakistanis daily lives and according to the GSMA (2017) "this award recognizes the critical importance of transparency and constructive and open dialogue with industry", potentially increasing the Pakistani government's motivation to continue its efforts within this field.

CGAP (2013) reports that the "government and public actors [in Pakistan] have created the enabling environment and provided seed funding, while private actors are developing the infrastructure, services and a long-term business case" (p. 1). The Pakistani government's dedicated efforts to develop digital financial services can be exemplified by its *Vision 2025*, which includes e-governance, e-commerce and e-services (Lucini & Hasnain, 2016). So far, the government has been focusing on digitization of government to person (G2P) payment schemes, with a surge towards direct payments into bank accounts, replacing original cash payment schemes via Post Office or over-the-counter (OTC) at the National Bank of Pakistan's (NBP) offices (CGAP, 2013). Also, with the growing number of branchless banks and agent-based banking services, digitization of social protection and compensation payments have become a prioritized task for the government of Pakistan. The G2P payment schemes include (percentage of total government

payments is indicated in parenthesis): (i) government salaries (68%), (ii) government pensions (21%) and (iii) social cash transfers (11%).

This section will elaborate on the influence of important governmental actors on the adoption of mWallet in Pakistan. First, the major governmental actors will be presented together with measures they have taken as individual actors, then a set of enabling initiatives that include several actors will follow. Eventually challenges and opportunities with regards to digitization of government flows will be presented.

8.1.1 Overview of Important Government Enablers

State Bank of Pakistan (SBP)

The *State Bank of Pakistan* (SBP) has a key role in the development of the MFS ecosystem. Back in 2008, the SBP imposed branchless banking regulations (PG1, Figure 10.3) that allowed for private sector investment through different business models. By doing this, the SBP became one of the first regulators globally to allow banks to offer services through a network of agents (Bold, 2011). As SBP took a bank centric approach, it became evident to interested MNOs that if they wanted to get into the financial services business in a way that exploited their own agent distribution networks they would need to partner with a bank (Mithe, 2015). A special intention of this regulation was to encourage banks to look at branchless banking as a viable option to the conventional service.

SBP is also the implementing agency for the DFID-funded *Financial Inclusion Program* (FIP) that includes the *Financial Innovation Challenge Fund* (FICF). The FICF was launched in 2011, aiming to "foster innovations, test new markets, lower cost of delivery, enable more efficient systems and procedures, and provide new ways of meeting unmet demand for financial services" (CGAP, 2013, p. 4). In addition to this, the SBP has arranged several branchless banking conferences (PG2), the first ones in 2010 and 2011. The first conference was held to showcase state of industry and catalyze investments and product innovation, whereas the second focused on G2P business and partnership opportunities (CGAP, 2013).

To deal with the issues of financial illiteracy among the Pakistani population, the SBP has launched a *National Financial Literacy Program* (PG3). The aim is to provide knowledge about basic financial concepts including budgeting, savings, investments, debt management, financial products and branchless banking to the general public (CGAP, 2013). Additionally, the SBP has given permission to banks to omit the normal account opening process of the NADRA verification, thus eliminating the standard fee and enabling them to open accounts for BISP beneficiaries, who rely on the social disbursement program (CGAP, 2013).

National Database and Registration Authority (NADRA)

NADRA "is a federal department responsible for issuing identification cards (CNIC; PG4) to all citizens 18 years and older based on a biometric database" (CGAP, 2013, p. 4). CNIC is an important part of the KYC reqirements for opening a bank account and charges a fee per verification. NADRA also launched a chip-based version of the national ID card, making them an important actor in the MFS ecosystem. According to CGAP (2013) NADRA "aims to handle the entire process from verification, registration, issuance of cards to the enablement of the cash withdrawal mechanism" (CGAP, 2013, p. 4).

Pakistan Telecommunication Authority (PTA)

The PTA is the telecom industry regulator in Pakistan, which, rather unusually, has been closely involved in branchless banking regulations. Together with SBP they have a partnership agreement to jointly develop regulations related to interoperability issues in branchless banking (CGAP, 2013). This in turn has created confidence within banks and mobile network operators who continue to invest in the growth of the branchless banking sector.

8.1.2 Enabling Initiatives for mWallet Provided by Governmental Actors

Biometric Verification System (BVS; PG5)

In collaboration with cellular mobile operators, Pakistan Telecommunication Authority (PTA) introduced a *Biometric Verification System* (BVS) regulation in 2015, as a safety measure to curb terrorism in the wake of the Peshawar school attack in 2014 (J. Lee, 2015). This resulted in a huge drop in sales for the telecom sector in FY15 with a reduction from 139.98 million users in FY14 to 114.75 million users at the end of June 2015 (J. Lee, 2015). Despite this decrease in the number of national cellular subscribers, the biometric verification system has allowed for an easier remote registration process for mobile accounts. Mainly due to this drive, the number of registered accounts grew by 39% from December 2014 to September 2015 (GSMA, 2016).

The focus on biometric verification continues, as SBP announced in June 2016 that as of July 2017, all branchless banking providers offering OTC will be required to use biometric ID to send and receive funds (M. Khan & Malik, 2017). Current OTC users only need a copy of their CNIC to send and receive payments. According to M. Khan and Malik (2017) "this regulation will have major implications for DFS [Digital Financial Service] providers in terms of their investments and system developments, as well as the need to educate customers and agents", potentially contributing to further increase mWallet uptake.

National Financial Inclusion Strategy (NFIS; PG6

In May 2015, the government of Pakistan launched its *National Financial Inclusion Strategy* (NFIS) (Pasha, n.d.). As observed in Chapter 7, the Pakistani population still suffer from having a large number people without access to formal and regulated financial services. In 2016, they accounted for 5% of the world's unbanked population, which stood at 2 billion (Pasha, n.d.). NFIS is a road map to help Pakistan achieve its financial inclusion goals. By 2020 the country aims at expanding formal financial access to at least 50% of adults, including women and youth (Lucini & Hasnain, 2016; Pasha, n.d.), focusing on promotion of digital transaction accounts and expansion and diversification of access points(Pasha, n.d.). It should also be mentioned that Pakistan is among the 25 countries the WBG and partners prioritize as a part of their *Universal Financial Access by 2020* program (Pasha, n.d.).

BISP and Digitization of Social Cash Transfers (PG7)

In 2013 CGAP (2013) estimated that within five years, more than 75% of government flows could be digitized. An important part of this is the effort to distribute social cash transfers

electronically, dominated by the *Benazir Income Support Program* (BISP) among other social cash transfer programs. BISP is the largest social cash transfer program in terms of volume of payments and number of beneficiaries. The drive in digitization of government flows is partly built on the aforementioned efforts made by the industry and regulators to grow the branchless banking industry (CGAP, 2013).

BISP started in 2008 and "the short term objectives of the program were to cushion the adverse impacts of the food, fuel and financial crisis on the very poor" (CGAP, 2013, 6). In order to successfully implement the program, BISP considered efficient and transparent payments to be essential. They are now moving away from the original distribution method through Pakistan Post towards more technically sound solutions including mobile banking (BISP, nd). Percentage of mobile payments remain low and this implies that there is still great potential to convert the beneficiaries from riskier transfer methods towards digital payment methods.

Digitization of Government Salaries and Pensions (PG8)

It becomes evident that the government has an important position, both in terms of customer education and to increase trust in digital financial systems. Therefore, there is interest from the banking sector to design suitable products linked to digital government flows (CGAP, 2013). Banks seem to see governmental flows as one of many opportunities to grow their branchless banking business. The banks can benefit from this as it provides additional revenues to their agent network, which in turn improves the branchless banking infrastructure's ability to build itself up. Banks are also inclined to involve themselves in various G2P schemes as a result of the increasing competition within the branchless banking sector (CGAP, 2013).

Although most of the work with digitization of government payments has been done within digitization of social support initiatives, such as BISP, this is only a small fraction of the total government flow (CGAP, 2013). Therefore, going forward, more attention towards digitization of government salaries and pensions are needed.

8.1.3 Challenges and Opportunities

Governmental interventions has inevitably had a boosting effect on mobile financial services in Pakistan, and mobile payments in specific. Still, there are some major hurdles that need to be passed in order to obtain the country's goals of financial inclusion and increase mWallet uptake. Based on the findings in this section some challenges and opportunities are revealed:

Opportunities

1. *Creating an enabling environment* Government stakeholders and international donors have created a "strong enabling environment for the proliferation of financially-inclusive G2P payments" (CGAP, 2013, p. 14).

2. *The banks are 'on board'* Banks have discovered G2P as a key opportunity to grow their branchless banking business. This will eventually benefit the government's ambitions of financially including its citizens.

3. *Providing interest and support to beneficiaries* The government has shown a widespread interest and support to understand beneficiaries' financial lives and needs. With this fundamental interest and understanding it should be easier to facilitate digitization of government disbursements and customize appropriate solutions that can be met by new products and services.

Challenges

1. *Replacement of the current government* The future of any government program is associated with the future of the existing government. Thus there is no certainty that the current direction will be followed in the future.

2. *Most of the bank deposits are taken by the government* Credit it not easily available in Pakistan, and when the government, who is a less risky customer to the banks than the poor, takes most deposits, formal financial behavior among the poor is discouraged (CGAP, 2013).

8.2 The Focal Firm

8.2.1 About Easypaisa

Easypaisa is not only Telenor's flagship MFS solution in Pakistan, but it is the most successful and oldest MFS offered by Telenor globally. As Pakistani regulations call for bank-led business models, Telenor's solution was to acquire the majority of the stakes (51%) in Telenor Microfinance Bank Limited (TMFB; formerly Tameer Microfinance Bank Limited) in 2008, expanding to 100% ownership in 2016 (McCarty & Bjaerum, 2013). The service was launched in 2009 using a branchless banking model (Nesse et al., 2016). Since then, in addition to being ranked as the "Best Mobile Money Service in the World" by the GSMA in 2014, Easypaisa has by itself nearly increased the Pakistani GDP by 3% in 2015 and achieved a total of 20 million active users, including non-Telenor customers (Y. Khan, 2016; Nesse et al., 2016). Easypaisa has provided the Pakistani people with much needed access to financial services, and has also become a real value to the lives of consumers (Fundamo, nd). Key facts about Easypaisa are summarized in Table 8.1.

Partnership Tameer Bank and Telenor Pakistan agreed at an early stage to start collaborating to launch an innovative mobile payment service, resulting in Easypaisa (Mithe, 2015). While Telenor Pakistan was well positioned due to its large telecom subscriber network base featuring as the second largest mobile operator in Pakistan (McCarty & Bjaerum, 2013), it lacked experience in financial services and was not licensed to offer MFS. Likewise, Tameer Bank had already recognized the importance of branchless banking as a means to improve their services and was seeking a partner that could provide national distribution, thus extending the reach of financial services (McCarty & Bjaerum, 2013). Thereby, they shared a common goal, that of financial inclusion, from an early stage. Mithe (2015) highlight "Telenor's willingness to grow in rural areas and Tameer's need for a partner who could bring both the technology and the agent network" as important synergies to build a partnership agreement on.

Key Facts:

Launched	Bank-led model launched in 2009
Ownership	Owned by Telenor Microfinance Bank which in turn is owned 100% by Telenor as of 2016
Number of Customers	20 million customers not limited to Telenor subscribers 8.8 million mWallet accounts 17% active mWallet accounts 30% mWallet to OTC ratio (Pakistan industry avg.)
Number of Agents	National distributor network of ~108,000 agents (27% of whom can open mWallet accounts)

Offerings

- Bill payments
- Mobile airtime purchase
- Remittance & Money Transfers
- Giving donations
- Inter-Bank Funds Transfer
- Salary disbursement*
- Savings account*
- Health and life insurance*
- Cash Withdrawal & Deposits*
- G2P Disbursements*
- Online Payments*

*The product can be used on mWallets only
Sources: (Easypaisa, nda; McCarty & Bjaerum, 2013; Nesse et al., 2016; State Bank of Pakistan, 2016)

Table 8.1: Key facts: Easypaisa

Service Offerings The portfolio of services offered by Easypaisa is the largest in the region (Y. Khan, 2016; Nesse et al., 2016). An overview of the product portfolio is listed in Table 8.1. Initially only OTC services were offered, and new innovative mWallet services has been added gradually since then. The two-fold aim behind this strategy has been to (i) educate the customers to use the service, and (ii) building a solid business case for agents (Mithe, 2015). Recently Easypaisa have added services such as Inter-Bank Funds Transfer, online payments, handset lending and health insurance, which have not before been offered to the masses of Pakistan at a similar scale (Easypaisa, nda). These new innovative services will be elaborated on in Section 8.3, Collaborators. Among the products mentioned, bill payments and P2P transfers remain the most popular ones (Mithe, 2015). Going forward, Easypaisa is looking into the development of new innovative products.

So far, Easypaisa has succeeded with this step-wise strategy, as they still are the leading mobile money provider in the country. However, the OTC solution is a double-edged sword as OTC customers do not naturally migrate to mobile accounts, a necessity for true financial inclusion (McCarty & Bjaerum, 2013).

Distribution Easypaisa's services are available through two verticals: over-the-counter (OTC) transactions performed by visiting their nearest Easypaisa shop or through mobile wallet accounts (Easypaisa, nda). The entirely new OTC mobile money service was built by Easypaisa and is highly dependent on agents (Mithe, 2015). According to State Bank of Pakistan (2016) Easypaisa continue to dominate the market with the largest agent penetration of 30%, aiming for continued growth and diversification of agent touch points.

8.2.2 Enabling Initiatives for mWallets Provided by Easypaisa

It has become clear that Easypaisa has already established itself as an important actor in the Pakistani MFS arena. Although the company still struggles to achieve a definite shift towards mWallet, many measures have already been taken to facilitate the adoption of mobile accounts. M. Khan and Malik (2017) state that OTC does not prevent product evolution and usage of mWallets, however, it is an enabler for customers to transition into mWallet as it allows customers to build trust in and familiarity with MFS.

OTC has in fact been a successful strategy for promoting the initial uptake of customers in a market where customer registration for mobile accounts is complex. Thus, OTC can be considered a stepping stone towards more advanced product offerings as it has started the unbanked consumer on the path to financial inclusion and given Easypaisa a wide reach, with 60% of its customers not being Telenor Pakistan mobile subscribers (M. Khan & Malik, 2017). To get to the current adoption level for mWallet, some important strategies and measures have been taken by Easypaisa. In the following six of these important measures will be presented:

Pricing (PF1)

M. Khan and Malik (2017) highlight that a pricing incentive could tempt customers to switch from the predominant OTC solution and onto mobile accounts. Although this strategy is not revenue producing, it creates an incentive for people to register for and get used to mobile accounts, potentially increasing the likelihood of them signing up for more wallet-centered products and not only transactions (M. Khan & Malik, 2017).

A Customer Centric Approach (PF2)

Putting the customer at the center of the business model has been a key strategy for Easypaisa. M. Khan and Malik (2017) emphasize that Easypaisa had to understand the financial needs and patterns of the customers, recognizing the diversity within the nation. The financial journey for one segment could be very different from that of another. Therefore, an important measure was that "Easypaisa conducted market research to understand customers' needs, preferences, desires, aspirations, as well as attitudes to financial services" (M. Khan & Malik, 2017). The research resulted in a division into three different market segments and specific product offerings and campaigns for each target segment (M. Khan & Malik, 2017). The goal is that each customer segment should be offered products that meet their specific financial pain points and make them aware of the benefits that a mobile wallet can offer (M. Khan & Malik, 2017).

One example of this customer centric approach is the reasoning behind Easypaisa's P2G initiative, namely time savings for customers (Shulist & Frydrych, 2016). A more specific example of *the customer-pays model* is Easypaisa's traffic fine 'challans' payment solution, which digitizes the way one awards and collects traffic fines (Shulist & Frydrych, 2016). The amount of time it takes for drivers to settle their traffic fines is reduced from three hours to less than an hour (Shulist & Frydrych, 2016).

Marketing Campaigns(PF3)

In Pakistan, an OTC transaction is known as "Easypaisa kara lo", or "Conduct an Easypaisa" in English, confirming Easypaisa's position as the market leader and documenting the success of the OTC marketing campaigns (M. Khan & Malik, 2017). As of 2015, however, the marketing focus shifted towards mWallet and the key strategy was on educating customers, especially the middle-income customers as this segment is considered to be the early adopters (M. Khan & Malik, 2017). In order to start using a mobile account, Easypaisa was convinced that the customer needed to be aware about the additional value that a mobile account could offer over OTC, such as bill and merchant payments (M. Khan & Malik, 2017; Mithe, 2015).

Mithe (2015) differentiates between two phases that have been applied to create customer awareness and usage. The first phase had a 70% focus on awareness and 30% on education and was a massive ATL/BTL marketing campaign with "Changing your life" as its core message. Mithe (2015) exemplifies this with campaign questions such as, "Have you transferred money while cooking food? While sitting at the office?". Obviously, these adverts looked to drive awareness and market buzz. However, results indicated that the initial core message, that the mWallet would be "Changing your life", did not seem to influence the consumer.

Therefore, a second round of ads, focusing on product features and benefits was rolled out (Mithe, 2015). This second phase was more focused on BTL, including door-to-door campaigns and also promoting B2C services, with an overall aim to ensure activation of mobile accounts (Mithe, 2015). As a result, the marketing budget was significant over the first two years. ATL marketing, particularly through TV, was used to reach the general public (M. Khan & Malik, 2017; Mithe, 2015). Later, the budget split between ATL and BTL has moved towards a 50/50 split (Mithe, 2015).

A key marketing challenge for Easypaisa has been the need to make the campaigns specific to the local population (Mithe, 2015). To obtain trust, the key message must be customized towards that target market depending on region (e.g. Punjab, Baluchistan etc.). Furthermore, the local language (Pakistan has many languages) must be adhered to and Easypaisa personnel must be local in order to gain trust (Mithe, 2015).

Another noteworthy action by Easypaisa, was that they also focused their mobile account marketing towards agents (Mithe, 2015). Specific actions involved weekly on-site engagement with agents, town hall committee meetings, meetings at restaurants, and other collegial and casual encounters. The message they wanted to convey was that mWallets would also benefit agents (Mithe, 2015). Given the agents' important role in OTC transactions, such efforts could be vital and has facilitated a rapid growth in their numbers. Also to be mentioned, each Tameer staff member has a mobile account in order to create internal awareness and an organization target for account openings (Mithe, 2015).

SIM Agnostic Accounts (PF4)

The services provided by Easypaisa does not require a specific SIM card. Thus, a customer with a SIM card from any service provider can use Easypaisa's mobile account services. Considering that 60% of Easypaisa's mWallet users are not Telenor subscribers, this seems to be an elegant move (M. Khan & Malik, 2017).

Introduction of the Easypaisa Mobile App (PF5)

Easypaisa is shifting away from providing their mWallet service using only USSD. Now it also includes a more user friendly smart phone application, which is more intuitive, faster and more secure (M. Khan & Malik, 2017). This is linked to the increasing smart phone penetration in Pakistan, however Easypaisa is aware that a large part of their customer base still will be on feature phones in the near future (M. Khan & Malik, 2017).

Interoperability Between Financial Ecosystem (PF6)

An Easypaisa account holder can move funds from any bank to its mobile account and the other way around (M. Khan & Malik, 2017). This is enabled by the 1-Link switch, by which the Inter-Bank Funds Transfer (IBFT) allows account holders to do these transactions regardless of which bank they adhere to. Another aspect of the financial interoperability is that fund transfers between different accounts (e.g. a competitor of Easypaisa) is also possible (M. Khan & Malik, 2017).

8.2.3 Challenges and Opportunities

This section about Easypaisa will conclude by summing up some of the key opportunities and challenges that can be discerned from what is mentioned above.

Opportunities

1. *New innovative services* Easypaisa is exploring new innovative services thus potentially increasing mWallet market penetration, enhancing customer experience and enabling true financial inclusion (Mithe, 2015). See Section 8.3 for details about some of these services.

2. *Widespread agent network* 46% of the total number of agents in Pakistan belong to Easypaisa (Mithe, 2015). By providing an adequate amount of education to these agents there is high potential to utilize them as leverage to move masses from OTC to mobile accounts, thus making it a front rank contributor to achieving financial inclusion.

3. *Product bundling with other actors* Easypaisa collaborates with other actors such as governmental actors (see Section 8.3) or content providers to generate new arenas to spend mWallet capital. This can increase customer perceived usefulness, awareness and trust.

Challenges

1. *Too high trust in the OTC service* With the low literacy levels, and the existing trust in the OTC service, predictions are high that OTC will be around for a while (M. Khan & Malik, 2017). Easypaisa has achieved high reach, but the conversion to mWallet is low. Currently Easypaisa's service is available in 1300 cities across Pakistan, and about 30% of Telenor Pakistan's clients use Easypaisa, which translates into five million unique users and 7.2 million transactions per month (Mithe, 2015). However, only 5% of these transactions are conducted through mWallet. According to Mithe (2015), there are only 1.5 million mobile wallet accounts, out of which 140,000 are used on a monthly basis. Easypaisa is aware about this challenge and is confident that the large untapped market among the 180 million Pakistanis of whom less than 10% are formally banked has high potential for mobile account services (M. Khan & Malik, 2017).

2. *Limited use of mobile accounts* Even though Easypaisa has witnessed a significant increase in the mobile account registration, the number of active accounts remains low (Mithe, 2015). This is a key challenge that is highly linked to customer education.

3. *Customized regional marketing* A key marketing challenge for Easypaisa has been the need to make the campaigns specific to the local population (Mithe, 2015). To obtain trust, the key message must be customized towards that target market depending on region and language (Mithe, 2015).

4. *Increased competition* Intensified competition could be viewed both as a possibility and a challenge (See Section 8.4). The key aspect is that Easypaisa will have to integrate the business model to a greater extent with Tameer's core business (Mithe, 2015). On a country level, the seven other providers that have entered the market create an even further reach with respect to financial inclusion.

8.3 Collaborators

One of the three initiatives proposed by McCarty and Bjaerum (2013) to increase mWallet adoption is to collaborate with industry participants as a means to overcome registration barriers. This section will focus on existing collaborative initiatives that the focal firm has within different sectors. Governmental actors and competitors can also function as collaborators, however, these are covered mostly in their respective sections. Still, some of

the initiatives presented in this section involve efforts by the government and/or competitors. It should also be mentioned that the list of collaborators in this section is not exhaustive, but rather gives an indication of overall market dynamics and opportunities. Some actors are not direct collaborators, but function as facilitators for ecosystem growth. These will be covered briefly in Subsection 8.3.5. After having presented collaborators within different sectors, Subsection 8.3.6 presents the challenges and opportunities that such collaborative agreements give with respect to financial inclusion and mWallet uptake.

8.3.1 Agriculture

Pakistan's economy relies heavily on agriculture, with 25% of the land being cultivated and 23% of GDP coming from this sector (Lucini et al., 2016). Most of the 26.6 million smallholder farmers (37% of the country's total workforce) lack access to formal financial services (Lucini et al., 2016). In 2015, the total value of agriculture production accounted to $34 billion and Lucini et al. (2016) believe that there is a large opportunity for digitization of the 95% of the formal payment transactions that are not yet digitized. Special benefits by using MFS for the agriculture sector include greater safety and security, saving of time and money to farmers, better record-keeping, and digitization of the overall farming business (Bokharey, 2015).

Nestlé Collaboration (PC1)

One specific collaborative initiative that will be highlighted within this sector is Easypaisa's mobile payment collaboration with Nestlé for dairy farmers. As of April 2016, Easypaisa and Nestlé agreed on a partnership agreement in which disbursement of milk collection payments were made swift, easy and transparent (Lucini et al., 2016). Annually, Easypaisa is expected to process payments of more than PKR 1 billion in the initial phase of the collaboration (Lucini et al., 2016). Easypaisa's leading position in the mobile money market, with a widespread agent network in rural areas, gives reason to believe that this will be a successful initiative. With respect to mWallet uptake and financial inclusion, Easypaisa can facilitate the introduction of new habits to the many farmers in the country, potentially increasing mWallet uptake and positive word of mouth.

Nestlé on its side, a multinational food provider, works with about 150,000 dairy farmers around the country. Most of the total yearly payments to dairy farmers of about PKR 22 billion ($208 million) for almost half a billion tons of milk, have traditionally been delivered in cash (Lucini et al., 2016). With high risk of corruption incidents related to cash payments this strengthens the incentives to digitize this market.

Going forward, Easypaisa should look into similar collaborations within other segments of the agricultural value chain. According to Lucini et al. (2016) wheat, grains, sugar cane and cotton are suitable for digitization, because of the production volume, export potential and government procurement within these sectors. Similar benefits as those described for the dairy segment (increased awareness and perceived usefulness) can be expected to apply for these segments as well.

8.3.2 Finance Services (Insurance)

This section will highlight two of the insurance offerings provided by Easypaisa as a result of collaborative agreements. Their car insurance offering in collaboration with Easypaisa Car Insurance (Malik, 2016) will not be further described due to lesser relevance for financial inclusion.

Sehat Sahara Health Insurance (PC2)

As of January 2015, Easypaisa started to offer health insurance through their mobile account solution. The *Sehat Sahara Health Insurance* is offered in collaboration with *MicroEnsure Pakistan* and *Jubilee Life Insurance* (Easypaisa, ndb). Within one year the service had gained more than 100,000 subscribers, providing easy and affordable access to quality health care amongst the masses (Telenor Group, 2016a). Indeed, lack of access to health care is one of the key reasons for the low-life expectancy amongst the nearly 120 million people that live below the poverty line in Pakistan (Telenor Group, 2016a). Cisco (2016) reports that the current Sehat Sahara health insurance subscription numbers are impressive, given that the insurance penetration in the country is one of the lowest in the world estimated at less than 1%.

Easypaisa Sehat Sahara taps into the opportunity provided by low-income people who find it challenging to bind themselves to paying monthly premiums for health insurance. Easypaisa's solution is Pakistan's first mass market health insurance product (Telenor Group, 2016a). Existing insurance providers, counting to more than 50 companies, have only managed to penetrate a small fraction of the market, thus leaving great potential for mobile money in the insurance market. With Easypaisa's convenient and innovative service more customers get the possibility access health insurance at a low cost of only PKR 950 per year (Telenor Group, 2016a).

Besides contributing to bearing the cost of medical care through this collaboration, Easypaisa can attract new mWallet customers whom might not would have considered that option without this incentive. Similar to the Nestlé initiative, this can improve Easypaisa's brand awareness and reputation.

Khushaal Bema Life Insurance (PC3)

Pakistan's life insurance penetration stands at only 0.5%, making it one of the lowest penetration levels in the South Asian region (Riaz, 2014). In October 2014, Easypaisa introduced *Khushaal Bema*, a life insurance product functioning as an add-on to the Easypaisa Khushaal Munafa savings product (Cisco, 2016). Introduced in 2013, Khushaal Munafa was the first savings product in Pakistan that offered interest returns without the use of physical bank branches. According to the 2013 CEO at Telenor, Jon Fredrik Baksaas, the main aim of Easypaisa is financial inclusion, and savings is one of the measures that is needed to make low income families use formal financial services (Telenor Group, 2013). The life insurance attached to these savings, Khushaal Bema, is designed by *Adjamee Life Insurance Co Ltd.*, which is considered a high quality insurance provider. The service is offered to existing and new mWallet users (Mithe, 2015), and is aimed at customers who earn less that PKR 200 (US$2) a day (Cisco, 2016).

By keeping more than PKR 2000 (US$20) in their Khushaal Munafa, the customer can get life and accidental death insurance of up to to PKR 1 million (US $9500) without any subscription charges (Cisco, 2016; Easypaisa, ndc). In their marketing of the product,

Easypaisa focuses on the flexibility and ease that the product brings to the customer. Existing customers can subscribe to the service 24/7 by dialing the Easypaisa helpline. The amount of insurance coverage in case of injuries or death will depend in the amount held in the customers mobile account, however, everyone who keep more than the minimum average monthly balance of PKR 2,000 ($20) will receive the insurance (Easypaisa, ndc). This gives customers' the incentive to keep a higher balance in the account. Cisco (2016) reports that the number of subscribers passed 250,000 in December 2015, and amongst these, 20% kept the minimum deposit in any given month.

8.3.3 Renewable Electricity (Solar Home Solution; PC4)

A 2015 partnership agreement with the two energy companies *Roshan Energy* and *Brighterlite* has led Easypaisa into the electricity sector (Cisco, 2016). Through the collaboration, Easypaisa offers *Solar Home Solution*, a pay-as-you-go service, targeting those living in rural areas without access to electricity (Cisco, 2016). The addressable market size consists of more than 70 million people, which is about 40% of the total population, and the service is the first innovation of its kind in Pakistan (Cisco, 2016). The value added to the rural population is immense, as these people lack access to electricity and currently rely on inefficient fuel-based energy supply methods (Cisco, 2016). In result, yet another segment is directly targeted through a specific collaboration.

8.3.4 Merchants and Agents

E-commerce

E-commerce is one of the fastest growing sectors in Pakistan (Chaudry, 2016). To accommodate this change Easypaisa introduced *Easypay* for e-commerce and mobile commerce (m-commerce) services in 2015 (Cisco, 2016). Easypay enables customers to make online payments through three options: (i) directly to online merchants using an Easypaisa account, (ii) with a MasterCard and visa debit or credit cards at participating Easypaisa merchant partners, or (iii) through one of the 75,000 Easypaisa shops using limited-time tokens that are delivered to the agent (Cisco, 2016). Although the e-commerce industry in Pakistan is still emerging, there are signs (such as increasing Internet usage and mobile data usage, increased 3G coverage and smart phone usage) that the industry will take up like never before (Dilawar, 2015). Many e-commerce merchants have already signed up for Easypay and dozens more are in the integration process (Dilawar, 2015). This rapid uptake is triggered by the low service charges provided, compared to existing direct and indirect payment collection processes, and uncomplicated use case with real-time notifications (Dilawar, 2015). Daraz.pk, homeshopping.pk, jovago.com, pakwheels.com, bookme.pk, onlinebazaar.pk and dealtoday.pk are some of the current e-commerce partners of Easypaisa (Dilawar, 2015). In the following a couple of these partnerships will given closer attention.

Daraz.pk (Online Shopping; PC5)

Since November 2014, Easypaisa partnered with the country's largest e-commerce store, Daraz.pk, for their Black Friday sale (Dilawar, 2015). Daraz.pk allows for traditional payment methods such as Cash-on-Delivery (COD), debit/credit card, and any Easypaisa shop, but they highlight that the preferred payment method is Easypay (Daraz.pk, nd). So far the arrangement has been considered a resounding suc-

cess, and is now available at all times, not only during Black Friday sales (Dilawar, 2015). Daraz.pk also emphasizes the extra value added that the Easypay method gives consumers, for eaxmple as it makes them eligible for further Black Friday discounts (Daraz.pk, nd). Forcing the customer to pay with Easypay creates an incentive for users to adopt the service and if the transaction is successful it is more likely that they will gain trust in the service, which can make them more inclined to start using Easypaisa mWallet on e-commerce in general (Farrah, 2015).

Bookme.pk (Ticket Portal; PC6)

Bookme.pk was launched in 2014 as Pakistan's first online ticket booking portal, supporting major transport services and cinema theatres, soon becoming the country's number one e-ticketing portal (Propakistani, 2015a). The goal behind the online portal was to make the Pakistani e-ticketing system more convenient and efficient, enabling ticket purchase through both the online portal and a user-friendly app allowing customers to browse for upcoming movies, check show times and bus schedules, book movie tickets and bus seats (Propakistani, 2015a). Extra convenience is brought to the customer as the service offers doorstep delivery (Propakistani, 2015a).

Easypaisa signed an agreement with Bookme.pk to further simplify the e-ticketing portal by facilitating payments through Easypay, however, customers can pay through Easypaisa agents as well (Propakistani, 2015a). To stimulate the customers to use Easypay, they are also offered a limited time discount on all movie and bus tickets if they choose this payment option (Propakistani, 2015a).

Expressing the potential and customer-centricity in the partnership, CEO of Bookme.pk, Faizan Aslam has stated "Bookme.pk and Easypay's partnership will bring great convenience as many people do not have credit cards but still want to buy tickets online. We can now reach out to each and every customer across Pakistan who wants a ticket from Bookme.pk. This is just a beginning of a great partnership with much more to come" (Propakistani, 2015a). With time, more transport services and theatres can be added to the service, making owning a mWallet even more valuable to the customers.

Physical Merchants (mPOS; PC7)

Physical merchants are those who offer mWallet as a payment solution in a physical store. Agents can be merchants, but these do not necessarily overlap. GSMA (2016) reports that mobile POS (mPOS) penetration in Pakistan remains low although the total number of available retail outlets exceeds 2 million. Easypaisa is working with third party mPOS provider Wemsol who operates under the brand name Keenu. In 2016, several hundred merchants had signed up to offer mPOS through Keenu (GSMA, 2016).

Agents

Through mobile money services, agents become access points for financial services, similar to the role bank branches and ATMs have had traditionally. Mas and McCaffrey (2015) propose that "agent networks are critical to the customer experience because they represent the first and most tangible service touch points for most customers. They are also probably the most operationally burdensome and costly element of the digital financial

service value chain, which has been shown to cost between 40 - 80% of the revenue generated from the business" (p. 1). Due to the close and trusted relationship between agent and customer they can be critical in creating mWallet awareness, but also a potential threat to the individual service provider in terms of the bargaining power they possess. Since 2011 the number of active agents who provide MFS has grown by almost 800%, and the number of agents per provider has increased by more than 260% (Mas & McCaffrey, 2015), thus saturating the market. Three challenges related to an agent's role in contributing to mWallet adoption will be described below.

First, as mentioned in Section 8.2, only 27% of agent locations across Pakistan give the opportunity to open a mobile account because of operational constraints given by KYC (McCarty & Bjaerum, 2013). Mehrotra and Khan (2015) report that among the agents who can register mobile accounts, about 84% of them are registering customers, but on average each agent reports a median of only seven account openings per month. If instead *every* agent registered customers, this would account to a hypothetical 1.1 million registrations per month (Mehrotra & Khan, 2015). McCarty and Bjaerum (2013) propose that to further drive the adoption rate of mWallets and thereby increase financial inclusion, one of three measures is to increase registration points for mobile accounts (PC8).

Second, referring to Helix' Agent Network Accelerator Survey, Mehrotra and Khan (2015) report that Pakistani agents have low levels of dedication and exclusivity, meaning that they have (i) other sources of income in addition to MFS, and (ii) they work for more than one service provider (agents are shared by a median of three providers). With low daily transaction rates and as 69% of the agents earn less than $100 per month on MFS, it is clear that they need to have alternative revenue streams (Mehrotra & Khan, 2015).

Third, although increased competition among providers means they need to compensate agents well and creates incentives to provide sufficient amounts of educational training, many agents still report being untrained, which could pose a significant barrier to mobile account network evolution (Mehrotra & Khan, 2015). Mehrotra and Khan (2015) report that the overall quality of agent support is high, with actors such as the State Bank of Pakistan (SBP), Karandaaz and Easypaisa working for agent development specifically (PC9). Still, there are areas of improvement. In 2014 62% of agents reported that they had received training, whereas only 21% of these had undergone a refresher training (Mehrotra & Khan, 2015). The lack of refresher training can lead to a lack of understanding of new products, processes, and systems, making it difficult for agents to sell such products (Mehrotra & Khan, 2015).

8.3.5 Facilitating Organizations

Globally there is a great range of non-profit organizations (NGOs) that facilitate the evolution of digital financial services including mobile wallets. GSMA and CGAP, who seek to support mobile operators and financial inclusion worldwide respectively are examples of such. Another important facilitating role for market development is carried by donors, including the World Bank Protection Unit, the DFID, and the Bill and Melinda Gates Foundation's Financial Services for Poor Program (FSP). This subsection will briefly mention some of the facilitating actors and give a few examples of how they support Pakistani mWallet market growth. It should be noted that these organizations collaborate across actors (such as governments, development banks, foundations, nonprofit organizations and private companies) and not only with one specific actor (such as the focal firm, Easypaisa).

First to be mentioned is *The World Bank Group* (WBG), which contributes to strengthen the Pakistani banking system and supports the growth of a digital banking system (Pasha, n.d.). *InterMedia* is another such organization, which is a global non-profit research, evaluation and consulting company that has financial inclusion as one of its key practices (Intermedia, nd). One of their important projects within this field is The Bill & Melinda Gates Foundation *Financial Inclusion Insights* (FII) program (PC10), which focuses on demand-side research, conducting annual surveys in eight African and Asian countries, including Pakistan (Intermedia, nd). *Helix Institute of Digital Finance*, provides training and data collection for digital finance providers across the globe (Helix Institute of Digital Finance, nd). Currently, Helix has a special focus on agent network management, and in Pakistan the Helix Institute performed a Core Agent Network Accelerator Survey in 2014 (PC11), which resulted in a report based on over 2,000 mobile money agent interviews (Helix Institute of Digital Finance, nd). The report provides insights into agent profitability, transaction volumes, liquidity management and other important strategic considerations (Helix Institute of Digital Finance, nd; Mehrotra & Khan, 2015). Last to be mentioned is *Karandaaz Pakistan*, which is a non-profit development finance company. It has made a user experience and user interface toolkit (PC12) available to all providers of mobile money in the Pakistani market in an effort to target those segments who traditionally are not accounted for in development of smartphones, such as low-income, less educated, and female customers (Fiorillo, 2017; Karandaaz, nd). By creating a highly visual interface, the experience becomes more accessible, easy and more appealing to use (Fiorillo, 2017).

8.3.6 Challenges and Opportunities

In this wide network of collaborators some opportunities and challenges unveil. This subsection will highlight a selection of the most prominent ones that has been discerned in this section.

Opportunities

1. *Compelling use cases* Low-cost mass-market insurances and digitization of agriculture and e-commerce payments serve as examples of such compelling use cases. These use cases provide convincing reasons for new segments to subscribe to mWallet solutions as they deliver a mobile wallet service along with other value-added services (Cisco, 2016). Once the initial registration barrier is overcome, people get used to the product gaining trust in it eventually moving people into more advanced mWallet services. Expansion of collaborations in current sectors (e.g. agriculture and e-commerce) and exploration of opportunities in new sectors seem promising as Pakistan continues to develop digitally.

2. *Awareness campaigns through value chain collaborations* Several of the partnership agreements mentioned above, also function as awareness campaigns for previously financially excluded customers. An example is within the agriculture sector, where, in addition to the original payment arrangement with Nestlé, Easypaisa trains the farmers to take full advantage of the Easypaisa mobile account services including attractive savings products and mass market health and life insurance (Malik, 2016).

3. *Minimum balance requirements* By requiring minimum balances for people to take advantage of the collaborators service (e.g. life insurance), Easypaisa manages to trigger people into saving money and actually utilizing their mobile money account.

4. *Contribution to overall societal welfare* By bearing the costs of medical care and creating awareness of the importance of insurance (such as Khushaal Bema), Easypaisa not only gains the opportunity to attract new mWallet customers whom might not have considered the option without these incentives, but also contributes to the overall societal welfare of people, especially those in rural areas of Pakistan (Cisco, 2016).

Challenges

Most collaborative agreements are considered to positively influence mWallet uptake, but some challenges exist:

1. *Lack of agent registration points* As only a fraction of the agent locations give the opportunity to open a mWallet account because of operational constraints given by KYC (Mithe, 2015), very few customers are actually exposed to the opportunity to open an account. However, as only 26% of agents see mobile accounts as competition to their OTC business, there should be a large potential to increase the number of registration locations (Mehrotra & Khan, 2015). However, because agents have other sources of income in addition to MFS (Mehrotra & Khan, 2015), they might not be as dedicated to promoting the mWallet service. Additionally, lack of exclusivity gives a lot of power to the agent, potentially threatening the viability of each service, which again could affect the growth of the ecosystem (Mas & McCaffrey, 2015).

2. *Few compatible merchants* Overall, the network of merchants who accept mWallet payment is still low in Pakistan. E-commerce merchants are taking up the service, but this market is still in its infancy. For usability to increase, more merchants need to accept mWallet payments.

8.4 Competitors

CGAP (2013) has reported that a significant growth is expected in the branchless banking sector. The competitors presented in this section are segmented into either (i) direct MFS competitors owned by wholly branchless banks (PPIBs), conventional banks who have comparative mobile banking offerings and MNOs, or (ii) fintech firms who offer solutions that otherwise cannibalize the MFS market.

8.4.1 Mobile Financial Service Providers

Since its launch in 2009 as first mover, Easypaisa now competes against seven other MFS actors. Of all eight MFS actors, Easypaisa has the broadest product offering, as seen in Figure 8.1. Since 2011, transaction volumes have increased sevenfold, the biggest contributor to this growth being the OTC agent service. The total number of active agents across all MFS services has grown to over 183,000 by the end of March 2015 (I. Khan,

2015), most of whom serve multiple MFS providers (Note: these numbers vary widely between reports).

Besides Telenor, several other mobile network operators (MNOs) have seen the unbanked segment as an untapped market and initiated MFS. Mobilink with Waseela Bank and Zong with Askari Bank introduced their financial service brands as 'Mobicash' and 'Timepey', respectively. Mobilink was merged with Warid Tel in 2016 and the company was re-branded as Jazz, its MFS service JazzCash, in January, 2017 (Attaa, 2017). According to Farrah (2015), banks have quickly followed in the footsteps of the MNOs and introduced MFS on mobile devices.

The United Bank Limited (UBL) was the first conventional Pakistani bank that introduced a bank led mobile financial service called 'Omni' for the unbanked segment. In addition it is expected that more players will jump into this branchless banking category in the next few years (Farrah, 2015). Unlike the other bigger banks that have taken much longer to engage in branchless banking, UBL has already launched a telco-agnostic product (Mithe, 2015).

Due to the market share only these top two MFS players are true contenders to Easypaisa and therefore more thoroughly introduced in this section: JazzCash (previously known as MobiCash) and Omni, Table 8.2.

		mobicash	Omni	Timepey	Upaisa	mobile paisa	HBL Express	Life
Bill Payments	*	*	*	*	*	*	*	*
Airtime Purchase	*	*	*	*	*	*		*
Money Transfer through Agents	*	*	*	*		*	*	
Formal Account	*	*	*	*		*		
Money Transfer to Bank Accounts	*	*	*		*			*
Donations	*	*	*		*			*
Salary Disbursement	*	*		*				
Life Insurance	*	*	*					
ATM Card	*	*	*					
Retail Payments	*		*					
International Remittance Transfer	*							
Ticketing (Airlines, railway etc.)	*							
Savings Account	*							
Health Insurance	*							
Corporate Services other than Salary Disbursement		*						
Internet Banking			*					

Figure 8.1: Pakistani MFS product offerings by competitor (I. Khan, 2015, p. 39)

According to the State Bank of Pakistan's quarterly branchless banking newsletter (State Bank of Pakistan, 2016), Easypaisa is still in the lead with 48% of the market share of mobile accounts, followed by JazzCash's 35% market share, Table 8.2. The last major contender, Omni, has 13% of the total mobile wallet accounts. All remaining actors only share the last 4% of the market. When looking at *active* mobile accounts however, Easypaisa and JazzCash have switched places with 40% and 41% respectively. This may indicate that although Easypaisa manages to register more accounts with the populace, the quality of the registration is better with JazzCash.

When studying the transaction value and volume in Table 8.2, Easypaisa also has the lead, both in volume and value. It is interesting to note that although JazzCash has 36% of the transactions, they only consist of 29% of the transaction value and it could be interesting to find the source of this variation.

Interesting to note is that there is no geographical specialization between the three actors (rural vs urban). In 2013, CGAP (2013) reported that there were more than 1.8 million branchless banking accounts and more than 31,000 agents in almost 90% of Pakistan's districts processing more than 10.4 million transactions at a monthly basis.

Table 8.2: Market share comparison of top players (State Bank of Pakistan, 2016)

Player	Total Mobile Accounts	Active Mobile Accounts	Transaction Volume	Transaction Value	Agents	Active Agents
Easypaisa (Tameer)	48%	40%	48%	49%	30%	49%
JazzCash (Waseela)	35%	41%	36%	29%	18%	24%
Omni (UBL)	13%	15%	11%	15%	12%	10%
Other	4%	4%	5%	7%	40%	17%

JazzCash

In 2016, JazzCash managed more than 100 million financial transactions through its mobile accounts. This translates into an almost four times increase compared to 2015. The product, which provides basic financial services, such as deposits, money transfer, bill payments, mobile top-ups, savings, insurance, ATM cards and payments for a variety of services now has more than 1.5 million monthly active mobile accounts. It has become the leading MFS provider in the mobile accounts category, the company claimed in a celebratory press release earlier this year (Baloch, 2017). Looking back at Table 8.2, it is assumed this refers to active mobile accounts.

Like Easypaisa, JazzCash the MFS arm of Pakistan's largest cellular service provider, Jazz (formerly known as Mobilink), has had a focus on increasing adoption, and one method has been improving the P2G offering. Like Easypaisa, Jazz believes in customer centered approach. Where Easypaisa approached the Karachi Police Department for their *traffic challans* project, JazzCash initiated a collaboration with the Directorate General of Immigration & Passports. According to Shulist and Frydrych (2016), both competitors placed emphasis on time savings for customers. JazzCash's passport application payments via mobile money "reduced the process from one day of travelling and queuing to just minutes" (Shulist & Frydrych, 2016).

Similar to Easypaisa, JazzCash allows users to transfer funds not only to other Mobicash Mobile Accounts, but also other operators' mWallet accounts, other 1-Link/M-NET connected bank accounts or any person's identity card, while also enabling customers to pay for a variety of services (Propakistani, 2015b). This interoperability, which also Easypaisa supports, seems vital to be able to compete in mWallet market without controlling a majority share of the market.

According to M. Khan and Malik (2017), JazzCash is committed to working together with Easypasia to end the OTC commission war that is decreasing both providers' profit margins. The decision to focus instead on mobile accounts is motivated by the understanding that this is where the lion's share of opportunities in MFS lie (M. Khan & Malik,

2017). Finally, JazzCash won "Best Mobile Product, Application or Service for Women in Emerging Markets 2017" indicating that they have taken active steps to address the gender gap with regards to financial inclusion (GSMA, 2017).

Case: Hacking Scandal (PX3) During December, 2016, JazzCash was hacked as a fraudster siphoned off Rs15 *lacs* from 22 merchant mobile accounts. Although the scale of the incident was minuscule – those affected were not even 0.1% of the total retailers - the event could undermine government and private sector efforts towards financial inclusion (Baloch, 2017).

To avoid sowing distrust in the system, Jazz instructed its franchisees *not* to disclose the details of the incident to the public (Baloch, 2017). Due to MFS providers withholding such events, it is difficult to obtain data regarding the number of such cases reported or hackers caught, but industry sources say such incidents, like duplication of SIMs, were not uncommon (Baloch, 2017).

To combat this, the MFS providers conducted internal research on this threat. Likewise, according to Baloch (2017) a very important measures needs to be taken to regain trust in MFS in addition to updating old technology: disclosing the case to agents as well as public. The news article cited ICT experts that demanded that cases are to be made public- This was not in an attempt to discredit mobile banking, but to create awareness in order to strengthen the mechanism to prevent such incidents (Baloch, 2017). Increasing awareness, both of merchants and end users, will by itself reduce the possibility of fraud. Information and Communications Technology experts point out, "these incidents happen, but you need to alert your investors, clients, regulator and other telecom operators about the threat" or else the firm will lose trust with the consumer (Baloch, 2017).

Omni

UBL Omni launched seven months after Easypaisa in April 2010. Omni was, according to Farrah (2015), the first branchless banking deployment to introduce ATM cards and smart phone apps. In terms of account opening locations, Omni has 8,000 UBL branches as well as 9,000 Omni OTC merchants equipped with a PC and Internet connection (Farrah, 2015). UBL Omni account holders are able to deposit and withdraw cash, make utility bill payments, send or receive money, purchase mobile airtime, make postpaid mobile bill payment, and pay *Zakat* (read: islamic donations; Farrah, 2015). People without a UBL Omni bank account can also use an agent, or UBL Omni *Dukaan*, where they can perform all the account interactions. To purchase Omni Term Life Insurance, transfer funds to UBL and other banks' accounts however, it is required to visit a *Dukaan*. Omni is convinced that the agent network was the key to turning OTC clients into account-holders and users (Pasricha & Revsi, 2013). To increase mWallet adoption, Omni has had three major strategies, two of which are each presented in their own cases below: (i) engaging their agents, (ii) improving the agent technologies.

Case: Engaging Agents (PX1) Omni wanted to move towards a model where agents become the primary ambassador for Omni services, especially in customer education and trust-building around mobile accounts. This was achieved by engaging agents with training sessions. In addition, Omni used this opportunity to recognize their

best-performing agents with awards and give encouragement to the overall team (Pasricha & Revsi, 2013).

One issue Omni recognized was agent perception that by opening accounts, this would decrease their earnings as customers would no longer need to enter the shop to transact, and therefore no agent commission would be earned. This perception was combated by designing and communicating new benefits and incentives associated with the new accounts. Although the goal was to further generate interest among agents to promote accounts by offering financial incentives, Omni also emphasized the continuing importance of the agents to the Omni business model – even in an account-dominated market of the future. "Based on the revised incentive structure, Omni was able to successfully disburse a variety of account opening incentives to agents from January 2012-October 2012. In total, about 4,500 agents received commissions related to account opening and related services, and approximately $17,500 was paid through the revised incentives structures (Pasricha & Revsi, 2013).

Case: Improving Agent Technologies (PX2) One of the drawbacks to account opening under the previous systems and account guidelines was the process itself, where paperwork requirements, missing or incomplete information, or delays in various approvals, it could take up to three weeks for accounts to be successfully opened and activated. According to Pasricha and Revsi (2013), in some cases up to 80% of submitted accounts were 'discrepant' or their forms were not received.

New level zero account guidelines provide an opportunity to review the account-opening processes and update technologies optimizing the agent and customer experience around account-opening (Pasricha & Revsi, 2013). Together, this allowed for several important measures by Omni including simplified level zero information requirements for easier registration, improved CNIC image capture technology reducing rejections of applications and hardware improvements ensuring that all devices remain supported. As a result, Omni accounts open much more quickly, in a paperless environment (Pasricha & Revsi, 2013). Accounts are now processed within 48 hours with a success rate of 85%. This improved processing time makes it much easier for an agent to encourage customers to open and use accounts in a short time frame (Pasricha & Revsi, 2013).

Today, Omni is positioned third in both the total number of mobile accounts as well as the total number of active mobile accounts. As the only wholly bank led actor they are a leader in their sector, but still has strong potential for increasing their market share.

8.4.2 Non-bank and MNO Fintechs

According to the founder and CEO of Finja Qasif Shahid, mobile commerce is the next big thing (Ahmed, 2016). He refers to how e-commerce is expected to grow exponentially in Pakistan in the next few years, much due to the underlying foundation of mobile commerce (Ahmed, 2016). Mobile commerce means that all merchants and buyers will have mobile wallets which will be utilized for all buying and selling (Ahmed, 2016).

The following alphabetized list of non-bank or MNO fintech firms is not by any means exhaustive, however it is intended to represent the varying product offerings (in brackets)

which would otherwise enter into the mWallet product offerings. A short reflection of the services' impact on traditional MFS is appended. Although most have a negative impact on a MNOs MFS, unless collaborated with in some fashion. On the positive side however, any mobile phone use increases user confidence in mobile technology and can be seen as a positive influence on perceived ease of use and trust.

Finja (Merchant and E-commerce Payments; PX6)

Finja is a third party payment infrastructure provider. The firm offers several services that developers can integrate into their programs or firms into their value chains. To merchants, the service offers QR payments, single customer payment requests and bulk file requests for multiple customers.

Finja's QR payments allows merchants to receive payments from customers through QRs with negligible setup costs (Finja, nd). The merchant will have the option of using static and dynamic QR codes which the customers scan and make payments in real time (Finja, nd). Additionally, Finja allows merchants to set up request payments for customers to view in their application and pay (Finja, nd). Here, commercial users enter the customer's wallet number, along with the payment details, which are pushed to the customer's wallet for approval. The customer then receives a notification ready for approval. Finally, it is also possible for commercial users to upload a bulk file to request payments from multiple customers, a feature intended for membership / subscription based merchants.

Finja offers developers in-app payment infrastructure allowing users to push payment requests to and from the 3rd party applications (Finja, nd). Furthermore, as a digital content provider, Finja offers a digital marketplace (ex. AppleStore or Google Play) that allows commercial users to setup a digital presence which the customers will be able to access from their mobile application (Finja, nd).

A service such as Finja can have an impact on MFS merchant collaboration. For small, individual firms, an easy plug and play payment solution, whether in a physical merchant setting or in a developer software setting, is a very attractive solution to adopt. Here the question is whether Easypaisa can enter a collaboration and integrate Easypaisa's mWallets into the Finja service offering.

Gallaa (eROSCA Savings; PX7)

Mentioned in Karandaaz's Fintech Disrupt Challenge 2016, Gallaa focuses on organizing smart digital committees (ROSCAs). ROSCAs, although often well functioning, has the usual drawbacks of informal services - potential cheating, scamming or unfair treatment. The service adds transparency and a financial history to this already popular and widely used concept. By running committees through this application all members are able to see who has paid and received money making unfair activities much more difficult. "The virtual ROSCA overcomes a variety of challenges faced by actual ROSCAs such as fraud, theft, geographic challenges, resulting in increased and more efficient savings options for participants" (Razi & Jawed, 2017). Considering ROSCAs are a competitor to formal saving, this service will increase user stickiness to this alternative form of saving where some users would have otherwise moved onto mWallet.

Ricult (B2B and Credit; PX5)

A grant winner of Karandaaz's Fintech Disrupt Challenge 2016, Ricult is a startup that is primarily intended to cater the needs of farmers. The service connects farmers with online buyers to whom they can directly sell their products, skipping the need for the middleman and transferring savings to the farmers (Ricult, nd). Likewise, Ricult has a discount marketplace offering high quality products at below-market rates, delivered to the doorstep for free (Ricult, nd). The service also performs soil testing and agronomy services to suggest the exact input required to run a sustainable farm (Ricult, nd).

It is conceivable that Ricult would pose as a competitor to the traditional mWallet in the agricultural B2B sector where collaboration with farms and the agriculture value chain is a gateway to large user groups, see Nestlé, Section 8.3. A competitive offering in a more direct manner is that Ricult also offers farmers credit. The web page claims they "provide cheap, non-exploitative loans, without the hassle of lengthy processes or any collateral requirements" (Ricult, nd). After an on site verification the farmer is able to take up a loan. Note, Easypaisa and Tameer bank are already both presented as key partners on the startup's webpage, however it is unclear whether they are the credit issuers or not.

8.4.3 Challenges and Opportunities

Amidst the clashing of MNOs, banks and fintechs there are a set of challenges and opportunities that arise. These need to be taken into account when attempting to improve mWallet adoption.

Opportunities

1. *Exploring new distribution channels* Collaborators can as affinity partners play the role of a dedicated ground field force, opening up for new registration solutions outside the resources currently owned by Telenor Pakistan.

2. *General buzz increases awareness* As all competitors attempt to reach out to the general public, the general awareness around mWallets increases to everyone's benefit.

3. *Innovation and copying* As usual in highly competitive markets, the threat level from any innovation from other actors needs to be quickly assessed. If the new offering can potentially steal clients the focal firm needs to determine whether they too need to implement the service. In contrast this also implies that innovations may come from competitors and at a reduced cost for second comers.

Challenges

1. *Increased interoperability reduces stickiness* To be able to access markets that are outside their own telco base, the MNOs will have to allow for interoperability. This comes at the risk of losing the stickiness that the firm has to their own users.

2. *Low overheads from fintechs* With incumbent fintechs outsmarting the heavier MNOs and banks and breaking up the market, the latter are at risk of becoming utilities with the sole function of performing the transactions for other solutions.

8.5 Concluding Remarks

This chapter has given deeper insights into the current state of the external environment surrounding the adoption of mobile financial services and mWallet in specific. Figure 8.2 gives an overview of the actors presented in this chapter. Several of the key actors have already taken dedicated steps towards creating an environment that facilitates the uptake of mWallet, as the key takeaways summarize below:

- The Pakistani government have imposed measures such as a National Financial Inclusion Strategy and digitization of governmental disbursements, especially within social cash transfer programs.
- The focal firm is attempting to overcome the challenge of OTC popularity through new innovative services, widespread agent network and product bundling with other actors.
- Innovative products that result from collaborations with actors from other industries, such as the Khushaal life insurance product further add value and thus perceived usefulness to the consumer. Better training of agents and extension of mWallet registration points is also revealed to be crucial as the Pakistanis are closely related to agents in their daily lives.
- Competitors pose an collaborative opportunity across mobile money providers to together reduce registration barriers and further improve interoperability, making the use case more appealing to customers.

Next, in the discussion chapter the measures provided by each actor will be coupled to the internal customer constructs to verify how the dynamics of the framework function in a specific country.

Figure 8.2: Overview of Pakistani mWallet ecosystem actors

Chapter 9

Summary of Pakistani Interviews

In this chapter, general overviews of the different Pakistan interviews are included. In agreement with the thesis' supervisor, summaries of the transcripts have been considered sufficient and most useful, thus complete transcripts are not included.

9.1 Arif Farrah

Name:	Arif Farrah
Position:	Assistant Professor
Organization:	SDSB, LUMS, Pakistan
Method:	Appear.in interview
Date:	29.03.2017
Duration:	~ 90 minutes

Dr. Farrah Arif is the Assistant Professor of Marketing in the Suleman Dawood School of Business at the Lahore University of Management Sciences (LUMS). As a Commonwealth scholar, she obtained a PhD from the University of Cambridge Judge Business School. She is also a certified Associate Fellow of the Higher Education Academy (AFHEA), UK. Farrah is actively involved in the executive education. She has designed and delivered executive programs for MNCs and local companies including Telenor Pakistan, Packages Limited, Bulleh Shah Packaging Limited and Coffey International Limited.

Intention of interview Farrah was selected for an interview as she represents the academic perspective in the verification of the framework. In this interview, Farrah was introduced to the proposed framework, which formed the basis for an open discussion. The most important findings are presented in the next subsections.

9.1.1 Internal Adoption Constructs

While discussing internal adoption constructs, Farrah touches on the importance of understanding the value of the service, "right now it seems like even the Easypaisa team is not sure about the value they are creating to the lives of the consumers", she says. Farrah points out that to successfully diagnose the adoption criteria, it is important to talk to

those who use the mWallet service, and why they choose it over OTC, rather than looking at the OTC consumers and why they do not wish to pursue mobile accounts. She backs up the argument with the fact that those who prefer OTC tend to only desire the transaction offering of the service. By reaching out to mWallet users "we can find out what value mWallet is adding in the life of the users". By understanding the full utility of the mobile account to facilitate consumer life, a better proposition to adopt the service could be developed.

On Core Constructs

Delving into the model, Farrah agrees that the most important factor is *awareness*. She says that "[most] of the users, even the OTC users, are not much aware of [the mWallet service]. Now, if OTC users are not aware of mWallet there is no point in discussing what else needs to be done". She follows up that the second most important construct is *trust*, considering this is a concern regarding what little savings most potential consumers have. In contrast to mWallets, OTC has a much clearer confirmation process and it includes more than one individual sharing the risk. Considering the fact that OTC agents are just about everywhere, making *perceived mobility* incidental, Farrah says that "the OTC transaction market itself is not the target for mWallet." This leads Farrah to the next construct, *perceived usefulness*. Transaction payments themselves do not have additional value through mWallets because the OTC service is good enough in this respect. It is therefore necessary to expand the portfolio.

Farrah points out that in Pakistan, *habit* would perhaps be relevant for a small segment of educated, tech savvy users, who would have habits that include the use of mWallets. Those who already use their phones to place orders to buy something, or use the mobile for other purposes in general, will be more inclined to adopt MFS. Although not a natural habit from the get go, for the remainder of the potential market Farrah reflects that it therefore is important to "push the rest into using [mWallets] for a while with incentives so that it can become a habit". This *perceived ease of use* materializes also in the fact that the product is currently built on a feature phone platform. Not making the service app-based, to accommodate those without smartphones, makes picking up the habit more difficult.

On Moderators

With regards to moderators such as gender and culture, Farrah bluntly states that "women are a far way off". The focus "should be with men, perhaps young men - let's say 18-35. These men are more comfortable with mobile phones, they use technology for the sake of fun. I think this is very important ... [that] you can capture these young people who use technology as part of fun." Her reference to fun is brought up later in the interview when discussing additional constructs.

When shown the Hofstede-criteria, she agrees with the extreme values to a certain extent. The low *individualism* score implies that "if you want people to convert to mobile accounts, it will be important to people whether or not their friends and family use it because it is a collective society - I want to stand out, but I do not want to stand out to that greater extent". As Pakistanis get influenced by each other due to the collective nature of the society, "we should encourage people to start using mobile wallets in group form, it can help to increase the penetration of mobile wallet."

With an *indulgence* score of zero, implying they are highly practical, this reflects that the majority of the consumers are poor, thus they do not have the room for indulgence when compared to other, more developed countries. Uncertainty avoidance is clear and was discussed earlier, "they will avoid it [mWallet] because of risk".

Her critique of using the Hofstede-criteria is that it applies to Pakistan as a whole - not only is Pakistan highly segmented, meaning the criteria does not apply to all, nor all of Pakistan is a target for mobile wallet. However, given the scope of the thesis, she agrees that the Hofstede-criteria, at least the extremes, could be sufficient indicators "as they are more prevalent in society and in the cultural context. When you develop a strategy for mobile wallet these extreme indicators can help you".

Finally, Farrah wants to add one last moderating construct: *hedonism*. This psychographic factor represents the pleasure or vanity that consumers experience when using the product. She reflects that "people were [experiencing] that they were getting the benefits that leaders... or rich people are having. If we can talk about this psychographic, intrinsic, motivation you will see a key driver, that gets people attracted to this kind of facility".

9.1.2 External Actors

When moving on to the external part of the framework, Farrah confirms that the chosen approach, with the consumer at the center of attention, is the correct approach. She strongly reinforces that the consumer needs to be considered first, and then the external actors should be linked to the consumer margin. Farrah also confirms that the four external actors presented represent a holistic view, and suggest no further actors to be added.

Collaborators is the first group that Farrah highlights. If collaborators can motivate customers to use mobile wallets, this can influence their habits (ref. the internal framework), and therefore this group can be very important. She provides a useful example related to the online portal Daraz.pk and Pakistan's version of Black Friday. Over the two last years Easypaisa has collaborated with Daraz.pk, in such a way that only mobile wallet payments will be accepted. This creates an incentive for users to adopt the service and if the transaction is successful it is more likely that they will gain trust in the service, which again can make them inclined to start using Easypaisa's mWallet on e-commerce. According to Farrah, e-commerce is one of the most important ecosystems in Pakistan right now.

Next, Farrah focuses on the focal company, Easypaisa. In this regard, what occurs to be most important is their strategy towards potential mWallet customers. Two years ago Easypaisa changed their strategy, focusing on attracting a new customer segment and not only conversion from OTC. Farrah emphasizes that the company needs to *engage the customer*. Using measures like free SMS, free minutes and free Internet data, in addition to giving benefits to those keeping *this* much in their wallet, for example free health insurance, Easypaisa have utilized the power to influence customer motivation towards mWallet usage. Other measures the company can use are pricing, portfolio and marketing. The need for interoperability (through SIM-agnostic mWallets) is vital for sustaining a market share with so many contending actors.

Farrah acknowledges the importance of competition as the field is yet to be developed. Increased competition will benefit the industry as it will increase awareness and people's comfort level. An issue that Farrah brings up with regards to competition, is that

Easypaisa, who used to have monopoly, now faces shrinking market shares. Easypaisa has first mover advantage and has become category label, meaning that the customer refers to an OTC-transaction as "Doing an Easypaisa". This increases the bargaining power of retailers, who also provide the competitors' service. However, the good thing is that increased competition implies increased awareness and often bigger uptake, thus the total pie is increasing.

Among third-party mWallet providers, Farrah gives the example of Finja, a Pakistani fintech actor. After talking to them personally, she says that their differentiating factor in the market is to offer *loans*, which is not provided by existing brands in the market. Therefore, new offerings by competitors can contribute on the trajectory towards financial inclusion.

Lastly, Farrah brings up the government, which according to her, can play a very important role. As the government is already using mobile wallets for dissemination of salaries and social welfare funds, they already contribute to increasing people's awareness and trust in the service. If the government services can include other than pure transaction-based services, the likelihood to increase mWallet stickiness will increase. Farrah emphasizes that there is a lot of room for innovation, for example within health insurance.

9.2 Imran Khan

Name:	Imran Khan
Position:	Senior Research Officer
Organization:	InterMedia
Method:	Appear.in interview
Date:	22.04.2017
Duration:	~ 60 min

Imran Khan is based in Pakistan and is InterMedia's country lead for Pakistan under the Financial Inclusion Insights (FII) research program funded by the Bill & Melinda Gates Foundation. Khan supports InterMedia's FII program by leading and participating in local partner training sessions pre-fieldwork, overseeing fieldwork implementation and quality control in Pakistan as well as analysis of the data. Additionally, he has helped the State Bank of Pakistan with drafting official bank documents for public release. Khan received his master's degree in public administration/international development from Harvard University's Kennedy School of Government and a Master of Science degree from Quaid I Azam University in Economics.

Intention of interview Khan was selected for an interview as he has practical experience with NGO research. The interview's focus would be more weighted on the external actors and their incentives and measures rather than the internal adoption constructs. In this interview, Khan was introduced to this thesis' proposed framework, which formed the basis for an open discussion. The most important findings are presented in the next subsections.

9.2.1 Internal Adoption Constructs

Khan agrees with the overall structure of the adoption model. He pointed out that it was important to discern between conversion from unbanked to mWallet and from banked (those with bank accounts) to mWallet. The concept of financial inclusion is more relevant when attempting to include the unbanked, rather than those who already use formal financial services.

On Usefulness

Khan came with a strong supply side argument to why not adopting the wallet could be considered a very rational decision with regards to usefulness: "Like the chicken and egg situation... you need to have more POS systems that actually accept your wallet account, but for those POS systems to materialize you actually need to have substantial amount of mWallets out there". This implies that even someone with technical abilities might also rationally not want a wallet, referring both to himself and friends who do not actively use their mWallet accounts. To summarize usefulness, Khan recommends looking into the FII report for 2016 which is to be released this year as the report makes "a strong case that the usefulness is not there - at least the consumer does not understand the usefulness". At the time of publishing the thesis, this report has not yet been made available and therefore not included.

On Ease of Use

While discussing the ease of use, Khan points out the difficulties of introducing the service to large parts of the Pakistani populace. According to Khan technical literacy is an issue for the working class, but additionally one has the regular literacy situation which further complicates the usage situation.

On Trust

On the topic of trust, the interview touches upon the consumer's trust in oneself - the risk involved in making a transfer by oneself - in addition to the trust in the system. Khan points out that an important part of the OTC service is that it provides the consumer with support in performing the transaction, effectively removing risk of an error occurring. Khan exemplifies this by saying that "if you are not technically literate and you have a mWallet account for sending and receiving money, just an extra zero, just one mistake can cost you a lot... In Bangladesh you have a lot of mWallet users who go to the agents and ask them to do the mWallet transaction for them".

The second trust issue regarded the trust in the financial institution offering the service. In InterMedia's FII report in 2013, questions regarding trust were brought up. Khan says that "The question was framed in the way that we wanted to ask for trust level and then we read out the different options, state owned banks, provincial government banks, regular private sector banks, foreign banks and then you had the mobile money providers as well. Of all the options [mobile money providers] had the lowest level of trust."

Khan informs that during focus group discussions with OTC users many were not able to comprehend the concept of an mWallet and would often ask "why would I trust my money with [the] store keeper or the grocery owner?". Khan argues that banks were associated with trustworthiness because of their financial office buildings and formal

staff. This credibility is not as strong when approaching a mobile money agent who is just a kiosk or grocery store owner. There needs to be a "transition to understanding that *behind* this grocery store owner's terminal is Telenor, which is a reputable firm equal to a bank. That does not translate just because there is a store front".

On Cultural Context

Khan recognizes the cultural dimensions by Hofstede as a useful attempt to grasp the cultural differences between markets, but comments that it does not necessarily give complete insight. "Quantifying [culture] in terms of ranking and models is a tad bit difficult", he says. He agrees that its an acceptable attempt to grasp the culture without actively being in Pakistan over time.

9.2.2 External Actors

Moving on to the external part of the framework, Khan confirms that there are a lot of adoption related factors that are related to structure and in that respect are outside the control of the consumer. However, Khan believes that these structural challenges will be overcome in the long term.

On Governmental Actors

With regards to the government, Khan focuses on the topic of credit. As will be mentioned under *On the Focal Firm*, this is an issue that involves both the focal firm issuing the loans and the government who is a major debtor and strain on the credit market. As a relatively secure debtor, with large credit demand, the private sector doesn't have the incentive, as "the poor are too risky an asset". In contrast, the micro-finance sector does very well according to Khan, however their biggest problem is a shortage of commercial funding.

Khan proposes that, in some way, the poor has to be converted into not being a risky proposition, and for that reason the government shouldn't be a customer option. Without the government, the immense credit demand goes away, while the supply remains the same, and therefore the threshold of what is considered risky and not risky is lowered, and eventually it will channelize.

On the Focal Firm

According to Khan, the MNO (Telenor, but also its competitors) lacks incentives to reach out to the poor and those who are not financially included. In the short term, due to structural challenges, the focal firm focuses on reaching out to the educated, middle class smart-phone owner, who is salaried and likely to already be banked. Thus, financial inclusion does not become center of attention as it does not make as good a business case. Khan proposes that the reason why MNOs are not aiming for a wider group of customer segments that includes the poor, unbanked segment, is because experience from the formal banking sector has demonstrated these market groups are not as profitable.

On the topic of the low share of active accounts Khan points out there might be issues with the registration process referring to a Telenor campaign. Khan said that Telenor "really pushed the mobile wallet account [on consumers]" as they would offer a mobile wallet account to anyone who signed up for a telephone connection. The problem was that

if there is no money in the account for six months, they would close it down. Therefore, the rapid increase in uptake of mobile wallet accounts suddenly dropped again because people weren't using them. Khan implies that the registration process is incorrectly organized. It is important to tie the registration up with use otherwise it is just registering an account and counting numbers which is neither productive, nor sustainable.

Khan says that P2P is the main market that the providers are fighting for as it currently makes the best business case. To Khan, however, product development, and especially *credit* (loans) is key. He says that Telenor and one of its biggest competitors aim to offer a credit product this year, but even if the repayment rate is very good, he foresees problems in reaching scale as this requires that there is a commercial interest in the product, which is not very likely at the current state of economic development in Pakistan. It is not a matter of lacking credit history *per se*, as Telenor can use the mobile phone payment history for that, but Khan believes that the reason that the incentive is not there is due to the average consumer being "too risky a proposition" relative to the government. Credit is not readily available in Pakistan, and lending is therefore very selective to the blue chip companies or really safe borrowers like the government. Indeed, one really safe borrower takes most of the bank deposits - the government. When all the available funds are lent to these low risk players, little is left for the unbanked who are considered much riskier. This lack of available credit further discourages formal financial behavior among the poor.

Based on these characteristics and the lack of a credit product, Khan states that he cannot agree with the common claim that "having a mobile money account makes you financially included", at least not for Pakistan. Khan concludes that the incentives for usage of a mobile wallet are absent. When these conditions are met they need to be conveyed to the consumer. Summing up this discussion he says "Credit to me is key. It just incentivizes all the other formal financial behavior."

Collaborators

As mentioned in the *On Usefulness* section above, the lack of POSs can be a determining factor in the low uptake of mWallets. Khan agrees with Farrah that when there are no stores that accept the mWallet as a method of payment, the usefulness of the service declines. Without users however, there is little incentive for the merchants to adopt the service as a method of payment leading to a paradoxical loop. Although Khan does not specify any measures in particular to improve this chicken-and-egg problem he indicates that this is something that needs to be solved for the service to improve.

Among mobile wallet collaborators, Khan focuses on private firms who give their salaries through mobile money accounts. Within this subject he specifically mentions Alfala Bank's wallet solution, Alif, which focuses on salaries. As salary disbursement is upcoming, Easypaisa and JazzCash are also interested in this according to Khan.

On Competition

When Khan briefly talks about the role of competition within the MFS ecosystem, he highlights the importance of *interoperability*, which he believes is key, especially in Pakistan. What the Pakistan Telecommunication Authority (PTA) is pushing for is SIM-agnostic mobile wallet accounts. That is, if you have a Telenor SIM, you can have a JazzCash account, or the other way around. This will make more sense of the service, especially for smaller players.

Chapter 10

Part II Discussion

This chapter provides a thorough discussion of the findings from the desktop study in chapters 7 and 8 and the interviews, summarized in Chapter 9, aiming to evaluate the applicability of the adoption framework. The discussion consists of three sections. First, the viability of using the internal part of the framework to describe the customer decision is explored, supported by the interviews. Second, a discussion of how the external factors influence the internal adoption constructs is presented, based on both the desktop study and interviewee input. Finally, a revised version of the proposed framework is presented based on the feedback and conclusions drawn from the two discussions. Each of the first two sections are summed up with some concluding remarks to make it easier for the reader to follow. Table 10.1 shows an overview of the discussion.

Table 10.1: Part II Discussion overview

Discussion	10.1 Internal Customer Adoption Constructs 10.2 Linkage Between External Variables and Customer Adoption
Result	10.3 Revised Framework

10.1 Internal Customer Adoption Constructs

In this section key insights are taken from the desktop study and compared with the findings from the interviews. The objective is to illuminate key pain points among the consumers that are addressable by the ecosystem. The key question is which constructs are for the Pakistani populace the most sensitive when considering their cultural context and demographics. This will help determine the viability of the internal model to represent customer decisions.

10.1.1 Identifying the Most Prominent Adoption Constructs

The desktop study brought forth the main cultural implications in the Pakistani market and gave pointers to what were the major reasons consumers opted out of mWallets.

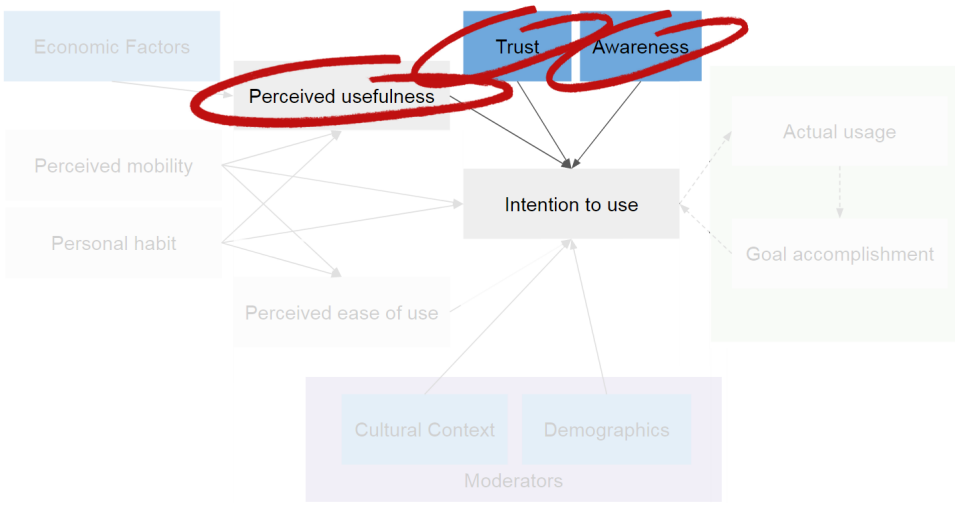


Figure 10.1: Most critical customer adoption constructs in Pakistan

Main Cultural Implications

From Hofstede's cultural dimensions Pakistan scored low on individualism (14), high on uncertainty avoidance (77) and extremely low (0) on indulgence. Although these scores are to be taken with a grain of salt considering differences of culture within the country itself they do give a certain insight into how the Pakistani market responds to the introduction of mWallets.

From the responses collected by the Helix institute (Mehrotra & Khan, 2015), Karandaaz (I. Khan & Rashid, 2015) and the Financial Inclusion Tracker Surveys Project (Farrah, 2015), three major constructs were emphasized as important for the Pakistani people: *perceived usefulness*, *awareness* and *trust*. Note, this does not imply that the other constructs are not relevant, however it could imply that these are the most susceptible constructs to be affected by external ecosystem actors.

Perceived Usefulness Table 7.1 shows that the main reasons against adopting mWallets in Pakistan were a lack of need either due to their satisfaction with OTC (31%) or their lack of need to transact altogether (15%). This indicates that *perceived usefulness* is regarded highly in the Pakistani market, something that resonates well with the Hofstede results that the Pakistani are a pragmatic people. The fact that 12% did not understand the purpose of such an account also indicates that an important antecedent for perceived usefulness is *awareness*. Figure 7.6 shows that 59% felt there were no perceived benefits of switching to mobile account indicating the need for awareness of usefulness of value added services (VAS). Currently the *perceived usefulness* of mWallets is mainly within transactions, a staple of the OTC service. Whereas the transactions market, which is familiar to the user, is highly competitive against OTC, the end users are not as familiar with the value added services (VAS) that are unique to mWallets.

Trust With a score of 77, the Pakistani populace has a tendency to avoid risk. This bridges nicely to the *trust* construct. The trustworthiness of the service is key and is

challenged by the risk mitigating elements of OTC, where the agent alleviates much of the transaction risk. In contrast, using an mWallet, the entire risk of performing a successful transaction rests with the user. This perceived risk is increased by the market's often inadequate level of education and literacy. In addition, having habits based on the use of OTC implies having to break these habits, and such a change in behavioural patterns are often considered uncomfortable and risky.

In Figure 7.6, 69% of the users learned about mWallets from TV followed by 20% by word of mouth from another person. Others play a critical role in pushing the user toward mobile money, but also the passive lack of others using the service can have a negative effect - the second most frequent reason (12%) OTC users did not register themselves was that nobody among their friends and family were registered.

There is high trust in friends and family and to some extent the local agent/store owner. The former could be considered a cultural facet playing on the low individualism score and the latter a result of experience and diversification of risk. The combination of a low general level of technical literacy and financial insight and a culture of uncertainty avoidance leads to increased uncertainty with regards to transactions and other financial services.

Awareness With a tendency towards collectivism, the Pakistani market needs to be approached accordingly. This is especially the case when discussing marketing and must be a focus both for the ATL and BTL campaigns. Mirzoyants (2013)'s results show that "recommendations from another person" have an important positive impact and likewise that "nobody among my friends and family are registered" have a negative impact on mWallet adoption. One way of stimulating word of mouth is by creating use cases that people talk about, and for mWallets that would be the VAS. Currently mWallets are competing within services that OTC function well in, fund transfers and bill payments, instead of value added services (VAS) areas that make mWallets unique. Section 7.4 introduced that awareness and penetration of VAS was low. Both Karandaaz' and Helix' studies show that most cited reason was lack of awareness followed by lack of knowledge about the service altogether (I. Khan & Rashid, 2015; Mehrotra & Khan, 2015). To exemplify through Figure 7.1c, over one third did not believe they needed insurance (35%) and a second third either did not know what it was (22%) or how to get one (9%). This means that *two thirds* of the respondents require an improved awareness of the service and what it can do for them in the long term and this problem is visible in other services such as savings as well, Figure 7.5b. Much can be helped through the agents, but only 27% of the agents offer the registration service (McCarty & Bjaerum, 2013).

10.1.2 Interviewee Evaluation of Internal Adoption Constructs

Farrah points out that in Pakistan, *personal habit* would perhaps be relevant for a small segment of educated, tech savvy users, who would have this as their habit. Those who already use their phones to place orders to buy something, or use the mobile for other purposes in general, will be more inclined to adopt mWallets. Although not a natural habit from the get go, for the remainder of the potential market Farrah reflects that it therefore is important to "push the rest into using [mWallets] for a while with incentives so that it can become a habit". In the end however, to both Farrah and Khan, *personal habit* plays a smaller role than *perceived usefulness*, *trust* and *awareness*.

Perceived Usefulness Farrah believes that asking OTC users why they don't adopt mWallets is inefficient due to their *perceived usefulness* of the service. OTC users mainly use the service to perform transactions. The mWallet service does not add value to transaction payments in comparison to OTC, which is considered good enough. She claims it is therefore necessary to expand the portfolio and a good start is talking to mWallet users and ask them why they prefer mWallets instead.

Trust On the topic of trust, Khan touched upon the consumer's trust in oneself - the risk involved in making a transfer by oneself - in addition to the trust in the system. Khan points out that an important part of the OTC service is that it provides the consumer with support in performing the transaction, effectively removing risk of an error occurring.

The second trust issue regarded the trust in the financial institution offering the service. In InterMedia's FII report in 2013, questions regarding trust were brought up. Out of the different options, state owned banks, provincial government banks, regular private sector banks, foreign banks and mobile money providers, mobile money providers had the lowest level of trust.

Farrah supports that the second most important construct is *trust*, considering this is a concern regarding what little savings most potential consumers have. In contrast to mWallets, OTC has a much clearer confirmation process and it includes more than one individual sharing the risk. Considering the fact that OTC agents are just about everywhere, making *perceived mobility* incidental, Farrah says that "the OTC transaction market itself is not the target for mWallet."

Awareness Delving into the model, Farrah agrees that the most important factor is *awareness*. She says that "[most] of the users, even the OTC users, are not much aware of [the mWallet service]". Khan supplements with that awareness also applies to the added incentives that are there to strengthen uptake. They only contribute to further incentivizing the consumer if the consumer is made aware of them. Farrah concludes that on a consumer's purchase panel the first thing is the awareness. If OTC users are not aware of the existence of mWallets, the discussion regarding adoption stops there. Only when the consumer is aware of the product do factors like trust, usefulness and economic factors come in.

Additional construct: Hedonism (Psychographics) Finally, Farrah wanted to add one last construct: *hedonism*. Acknowledging that Pakistan scored zero on *indulgence* implying they are highly practical, she believed this reflected that the majority of the consumers are poor. They do not have the room for indulgence when compared to other, more developed countries. Regardless, she believed this was an important construct for the framework in general.

The authors have decided to divide Farrah's hedonism in two parts: perceived enjoyment and the goal accomplishment cycle. Interestingly, *perceived enjoyment* had already been mentioned in Part I as a construct from Yen and Wu (2016) which the authors initially decided to opt out of the framework. Farrah mentions that young men are using the technology for the sake of fun. Being able to capture this young market, who use technology as part of fun, and market it as being something fun and cool and something that differentiates the consumer from his/her peers, it can spur adoption. There was an

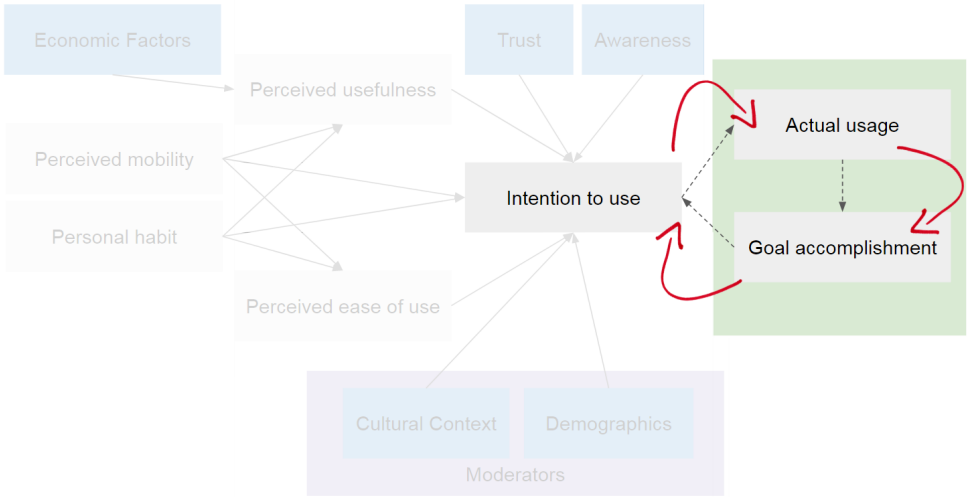


Figure 10.2: Farrah recommends looking closer at the psychographic effect of hedonism

intrinsic reward by using mobile phones in underdeveloped countries. This new, previously luxurious tool is making people feel as if they are receiving the same benefits that leaders or rich people are having and this is exciting.

The second source of hedonism is represented by the goal accomplishment cycle. It can be argued that although not explicitly presented as its own construct, the hedonistic effect can also be sourced to the positive affirmation cycle that originates across *intention to use – actual usage – goal accomplishment*, Figure 10.2. Once the the consumer has actively tried the product after having the intention to do so, and then accomplished the goals they set out to do, this reaffirmation and sense of accomplishment will make the consumer wish to use the service again, reinforcing their intention to use.

10.1.3 Concluding Remarks: Internal Framework Take Aways

After having compared and contrasted the data with the interviews, several key takeaways are made with regards to the function of the internal framework:

- The interviewees confirm that the proposed internal framework captures the dynamics of the customer.
- Adding perceived enjoyment as an additional construct is important even though Pakistan scores a 0 on indulgence. This is because the framework is to be generalizable to other countries where indulgence is a more important factor.
- *Awareness* is not only an antecedent for intention to use directly, but plays an important role in making the consumer fully comprehend the usefulness of adopting the service.
- By applying the proposed internal adoption framework to Pakistan it is highlighted that the most prominent adoption triggers for Pakistan are *perceived usefulness, trust,* and *awareness* a find that is supported by the interviewees. These are the

constructs that the external actors should stimulate to achieve the strongest adoption reaction in the market.

10.2 Linking External Factors to Internal Adoption Constructs

This section aims at discerning how the dynamics between the external and the internal part of the framework function in a specific market (Pakistan). Both Khan and Farrah confirm that the external part of the framework is holistic and suggest no other stakeholder groups to be added. Khan emphasizes that these external factors are outside the control of the consumer, and as such will contribute to shape the mWallet landscape and product offering.

As mentioned in Chapter 5, Using the Framework, in addition to helping define the critical constructs, the framework is used to support the ranking of what measures are best suited for the specific market based on these constructs. This is done through a correlation matrix where external stakeholder groups and their measures are scored against the internal customer adoption constructs they affect. The results are devised by the authors based on the findings from the desktop study and interviewee feedback. To understand the scoring system it is recommended to revisit Chapter 5.

It is important to reiterate that in this part the end result is not about which measures stand out, this is reserved for Part III, instead the discussion is intended to lead to defining key constructs for each stakeholder. Understanding which stakeholder group has the biggest impact on certain constructs helps the practitioner to approach the correct ones depending on target market. These roles will be included in the concluding remarks at the end of this section.

10.2.1 Correlation Matrix for External and Internal Adoption Factors

Figure 10.3 shows the correlation matrix that maps the measures taken by the stakeholder groups in the external part of the framework and links them to the internal adoption constructs. Each measure is given a ranking from no impact (1) to high impact (4) based on findings from the desktop research and the authors' own evaluation. As some constructs impact another constructs this has been attempted to be taken into account when making the assessment. Details on how to use the correlation matrix can be read in Chapter 5, while details on the limitations of the framework are found in Chapter 18.1. Below follows a more thorough discussion of the impact of each stakeholder group based in Figure 10.3 and interviewee input.

Governmental Actors

The governmental actors in Pakistan have shown dedicated efforts to create a strong enabling environment for MFS, and mWallet in specific, exemplified by SBP's Branchless Banking regulation (PG1) and the governments National Financial Inclusion Strategy (PG6). One factor that can explain the high impact of the government is that its position as a central actor at the country level makes it powerful, especially with respect to building trust in a new technological system.

	Subgroup	Code	Measures	Internal Adoption Construct: Trust **	Awareness**	P. Usefulness**	P. Ease of Use	P. Mobility	Personal Habit	Economic Factors	Intention to Use	AU and GA	Average
				3.5	**3.5**	**1.8**	**1.9**	**1.8**	**1.8**	**2.0**	**3.6**	**2.0**	***2.8***
Government	SBP	PG1	Branchless Banking Regulation	4	4	1	3	3	1	3	**4.0**	1	*2.5*
		PG2	Branchless Banking Conferences	4	4	1	1	1	1	1	**3.1**	1	*2.1*
		PG3	National Financial Literacy Program	1	4	1	4	1	1	1	**2.7**	1	*1.9*
	NADRA	PG4	Computerized National ID Card (CNIC)	4	1	1	1	1	1	1	**2.3**	1	*1.6*
	PTA	PG5	Biometric Verification System (BVS)	4	4	1	1	1	1	1	**3.1**	1	*2.1*
	Across Actors	PG6	National Financial Inclusion Strategy (Vision 2024)	3	3	1	3	1	1	1	**2.9**	3	*2.9*
		PG7	BISP and Digitization of Social Cash Transfers	4	4	4	1	3	4	4	**5.1**	4	*4.6*
		PG8	Digitization of Government Salaries and Pensions	4	4	4	1	3	4	4	**5.1**	4	*4.6*
				1.8	**2.3**	**3.2**	**2.3**	**1.5**	**1.7**	**1.8**	**3.1**	**2.7**	***2.9***
Focal Firm	Easypaisa	PF1	Pricing	1	1	1	1	1	1	4	**1.9**	2	*1.9*
		PF2	Customer Centric Approach	2	4	4	4	2	3	1	**4.3**	3	*3.6*
		PF3	Marketing Campaigns	3	4	4	4	1	2	1	**4.3**	1	*2.6*
		PF4	SIM Agnostic Accounts (Use Easypaisa with non-Telenor SIM)	1	2	3	1	3	2	2	**2.9**	3	*2.9*
		PF5	The Easypaisa Mobile App	3	1	3	3	1	1	1	**2.9**	4	*3.4*
		PF6	Ecosystem Interoperability (Payment from Easypaisa to other)	1	2	4	1	1	1	2	**2.7**	3	*2.9*
				1.5	**2.5**	**2.6**	**2.2**	**1.3**	**1.7**	**1.5**	**2.8**	**2.5**	***2.7***
Collaborators (by sector)	Agriculture	PC1	Nestlé Collaboration	3	3	4	3	1	4	3	**4.4**	4	*4.2*
	Insurance	PC2	Sehat Sahara Health Insurance	1	2	4	1	1	2	3	**3.0**	4	*3.5*
		PC3	Khushaal Bema Life Insurance	1	2	4	1	1	2	3	**3.0**	4	*3.5*
	Electricity	PC4	Solar Home Solution	1	2	3	1	1	1	1	**2.3**	4	*3.1*
	Merchants and Agents	PC5	Online Shopping (e.g. Daraz.pk)	1	3	4	3	3	2	1	**3.6**	4	*3.8*
		PC6	Ticket Portal (e.g Bookme.pk)	1	3	4	3	3	2	1	**3.6**	4	*3.8*
		PC7	Physical Merchant mPOS	2	4	2	3	1	2	1	**3.3**	1	*2.1*
		PC8	Increase Share of Existing Agents Who Can Register Accounts	2	2	1	2	1	1	1	**2.1**	1	*1.6*
		PC9	Agent Training	3	4	2	4	1	1	1	**3.6**	1	*2.3*
	Facilitating organizations	PC10	Financial Inclusion Insights Program (FII)	1	1	1	1	1	1	1	**1.4**	1	*1.2*
		PC11	Core Agent Network Accelerator	1	3	1	1	1	1	1	**2.0**	1	*1.5*
		PC12	User Interface Toolkit	1	1	1	3	1	1	1	**1.7**	1	*1.4*
				2.1	**2.6**	**2.1**	**1.3**	**1.0**	**1.9**	**1.4**	**2.8**	**1.0**	***1.9***
Competitors	MNOs	PX1	Engaging Agents	2	2	1	2	1	1	1	**2.1**	1	*1.6*
		PX2	Improving Agent Technology	2	2	1	2	1	1	1	**2.1**	1	*1.6*
		PX3	Scandal Handling	2	4	1	1	1	2	1	**2.7**	1	*1.9*
	Fintechs	PX4	Agriculture Market	2	2	4	1	1	2	1	**3.0**	1	*2.0*
		PX5	Agriculture Credit	3	2	4	1	1	2	3	**3.6**	1	*2.3*
		PX6	Third Party Payment Infrastructure Provider	2	3	2	1	1	2	1	**2.7**	1	*1.9*
		PX7	eROSCAs	2	3	2	1	1	3	2	**3.0**	1	*2.0*
	** Critial Adoption Constructs for Pakistan		Total Averages Per Construct	2.2	2.7	2.4	1.9	1.4	1.7	1.7			

Figure 10.3: Correlation Matrix for External and Internal Adoption Factors in Pakistan

Across all its actors and measures, the most important factors affected by the government seem to be *trust* and *awareness*, seen by the governmental actors' top line average for each measure in Figure 10.3. This resonates well with the governments role in giving such a service its validity. With factors such as the CNIC (PG4) and BVS (PG5) in place trust can be argued to become a "hygiene" factor, meaning that it needs to be present, but it does not determine adoption. With this trust base in place, digitization of government disbursements has become possible, thus creating incentives for the poor to use mobile wallet accounts. This can affect the poor's personal habits, and eventually make them inclined to explore more of the services provided on the mobile wallets. As such, these two measures (PG4 and PG5) can be considered to be somewhat similar to the initiatives provided by Collaborators, thus affecting similar internal constructs as the majority of those measures do, in addition to trust. It is also noteworthy that both of these two measures related to digitization of G2P disbursements scored as the most impacting across all internal constructs with a weighted average score of 4.6.

The high impact of G2P disbursement initiatives (PG4 and PG5) was confirmed by Farrah, who highlighted dissemination of salaries and social welfare as the most important governmental measure in her interview. According to her, this affects both trust and awareness in mWallets, confirming with the findings from the desktop study and the researchers' own judgment. Farrah also stated that there is a lot of room for innovation within digitization of government services, potentially creating even greater opportunities to affect customer awareness and trust, and presumably perceived usefulness.

Summing up, the government's high overall score is determined mostly by its high impact on two of the most critical internal constructs, awareness and trust. Digitization of G2P seems most promising in affecting both intention to use and actual usage. Although clearly important in this ecosystem, Khan remarks on a potential inhibiting function that the government carries: its position as a major debtor. As such, Khan argues that the government becomes an obstacle for formal financial behavior among its citizens as the bank would rather lend money to the government which is a secure actor than to the poor, considering it a way more risky option. Therefore, each stakeholder group's scoring should be seen in light of its potential inhibiting factors.

Focal Firm (Easypaisa)

The constant innovation that Easypaisa has had to go through since it first entered the market eight years ago, is believed to empower customers to address their financial needs easily through the many services offered. As seen in Figure 10.3, Easypaisa has the biggest influence on *perceived usefulness* followed by both *awareness* and *perceived ease of use*. Their customer centric approach (PF2) and marketing campaign initiatives (PF3) seem to be the most impacting.

Easypaisa's customer centric approach (PF2) has, as described by M. Khan and Malik (2017), provided the company with insights into the customers' needs, preferences, desires, aspirations, and attitudes towards financial services. As the dedicated efforts within this field has resulted in specific product offerings and campaigns for each target segment (M. Khan & Malik, 2017), it is expected to affect most of the internal customer adoption constructs to some extent. Farrah enforces that the chosen approach with the customer at the center of the thesis' model is correct and important. The need to engage the customer cannot be missed as it has a high impact on both perceived usefulness and awareness, which are two of the three most critical constructs to the Pakistani consumer.

As a result, this is the most impacting measure by the focal firm on the intention to use.

Easypaisa's screening and segmentation of the market enables them to account for the moderating effect of demographics in their marketing campaigns (PF3) by customizing campaigns towards different segments. This customization is closely related to the last of the three most critical internal customer constructs, trust, because customization based on language and region is required to obtain customers' trust in the service in Pakistan. Therefore Easypaisa has put large amounts of resources into their marketing budget. Also believed to affect the trust-level is the introduction of the Easypaisa mobile app (PF5), which makes the service more secure. Khan says that the marketing has failed to achieve continued usage, and thus goal accomplishment. Supposedly, the marketing campaigns are effective in making people register for accounts, but the low active account ratio implies that very few of these actually use the account. Here, Farrah remarks an important initiative by the focal firm that can encourage active usage is incentivizing to maintain a minimum balance in the account to receive extra services (e.g. as they do with life insurance, see Section 8.3.2).

On the topic of innovating new products to incentivize activity, Farrah and Khan touch upon the power that the focal firm (and its competitors) has to diversify the product portfolio. Recognizing that a credit product does not yet exist for mobile wallet, and confirming the difficulties that an average Pakistani has to obtain credit, they both suggest this to be an interesting opportunity for providers to delve into. This could encourage formal financial behavior (through perceived usefulness), but Khan remarks that the commercial interest is not there yet. Khan argues that to make a larger portion of the population a viable target for lending, the amount of credit directed towards the government must be reduced. Without credit being a part of the portfolio true financial inclusion cannot be achieved.

Collaborators

Similar to the focal firm, the most important internal adoption constructs affected by collaborators are *awareness* and *perceived usefulness*, whereas *trust* is one of the factors that this stakeholder group seems to affect the least. A clear distinction between the facilitating organizations and the agents on one side and the other collaborators can be discerned. The two first mentioned function primarily as facilitators for mWallet ecosystem development, while the others provide specific mWallet services that create compelling customer use cases. Therefore, the measures within facilitating organizations and agent measures are believed to affect people's intention to use mWallets to a low extent. For the other collaborators, most of the resulting services require the customer to interact frequently with the service, and actual usage and goal accomplishment is expected to result.

Some of the measures stand out to be especially important, for example the solar home solution initiative (PC4) which reaches out to the poor who currently rely on inefficient fuel-based energy supply methods, thus contributing to social welfare. Insurance offerings (PC2 and PC3) and the recent Nestlé collaboration (PC1) add to this list, also portraying how specific segments can be targeted directly through collaborations, and showcasing how mWallets can contribute to societal welfare. In sum, the value added for using mWallet becomes large, and it is believed that people's personal habits could change.

Adding to what was previously mentioned, e-commerce (PC5 and PC6) stands out

within merchant collaborations as it is expected to grow substantially in the years to come (Chaudry, 2016). This is supported by Farrah, who says that e-commerce is an especially interesting field. It is growing immensely and a rapid increase in usage is expected. By cooperating with actors in this sector, new payment habits can evolve along with the growth of the sector, however one could anticipate that this would only apply for the more educated part of the population, at least initially. Besides e-commerce, Khan puts attention towards the physical merchants (PC7) when talking about collaborators, recognizing the chicken-and-egg problem, which is also mentioned by Farrah. The problem is that for the service to be attractive to customers there must be high merchant adoption, but at the same time, for merchants to adopt the service (merchants are also adopters), there must be customers who are willing to use it. According to Khan and Farrah this mainly touches upon the perceived usefulness construct.

In total collaborators seem to contribute the most by creating compelling use cases to the consumer, which is believed to have high impact on actual usage and goal accomplishment. Their value added position in the ecosystem is supported by Farrah who considers them a vital group for ecosystem development as they function as motivators for the potential consumers and can influence their habits. This is correlated to Farrah's suggestion to add *hedonism* as an additional factor to the internal part of the framework.

Unlike with the government and the competitors, the focal firm may choose which firms to collaborate with. From the discussion above and the overview of the actors presented in Chapter 7, the authors propose that to optimize the usefulness synergies, the decision about what collaborators to target should be centered around the following questions:

- What type of service is provided? Does it accommodate a specific societal issue?
- Is the potential collaborator a trusted actor in the society?
- Who can use the service? Is it only for mWallet or also OTC?

Competitors

Although an important theme to the master thesis is the financial inclusion of the target markets populace, at the same time the framework is intended to be used by a focal firm. In the light of this the assessment of competitor measures is made under consideration of how they impact the adoption of the focal firm's mWallet service. This ultimately affects the stakeholder group's overall score and thus competitors seem to bring the least to the table in terms of increasing adoption. Competitors contribute the most by generally spreading *awareness* about the concept of mobile wallets, their use and value. Farrah claims that increased competition is important to enhance people's awareness and comfort level, which corresponds to the finding from the desktop study, where awareness is found to be the number one contribution from competitors.

This was loosely followed by *perceived usefulness* as a competitors' innovations would often be copied by all competitors including the focal firm. Mentioning fintech actor Finja, who also provides loans, Farrah suggests how competitors can contribute to widen the product range and thus increase the perceived usefulness (e.g. PX4, PX5, PX7). When Khan mentions competition briefly, his key focus is interoperability, again affecting perceived usefulness and awareness. With minor marginal cost with each new customer,

each added user can be considered almost clean profits. The top line of revenue is therefore sacred and it is important to keep up with all competitors' innovations or risk losing market share.

The trust construct is stimulated, like the focal firm itself, by building a relationship with the consumers. When something goes wrong, such as a hacking scandal, the industry as a whole suffers including for competitors such as Easypaisa. It is therefore important that competitors have effective scandal handling measures that can maintain trust with the consumer (PX3). Among the fintechs, it was deemed that the agricultural credit offered by the likes of Ricult had the most positive impact on adoption, as credit was (i) directly linked to the value added services (VAS) of mWallets, (ii) something Khan pointed out was imperative for financial inclusion, and (iii) an area that according to Ricult's own web pages was a service where Easypaisa already was a partner.

10.2.2 Concluding Remarks: External Model Take Aways

After having compared and contrasted the data with the interviews, several key takeaways are made with regards to the function of the external framework. Table 10.2 shows a summary of how each stakeholder group contributes the most in affecting the customer adoption constructs.

Table 10.2: Overview of most prominent adoption effects by external actors

Actor	Key effect
Government	As a legitimizing actor, the government has highest effect on *trust*. Further digitization of government dissemination provides opportunities to increase adoption. Potential inhibiting factors, such as the government being a major debtor, should be seen in relation to its overall positive impact on adoption. The same holds for the other stakeholder groups.
Focal firm	Through their highly customer centric approach the focal firm affects *awareness*, *perceived usefulness* and *perceived ease of use*. Widening of product portfolio (e.g. credit) and creation of continued usage intention can further increase adoption.
Collaborators	Collaborators can address key customer pain points, affecting the *perceived usefulness* of the service. In the digitized world, change is happening rapidly which creates a need to be proactive. Customer adoption and merchant adoption create a challenging *chicken-and-egg problem* which can inhibit the perception of usefulness.
Competitors	As competitors, the biggest value they bring to the focal firm's mWallet adoption is creating *awareness* of the product and pushing the limits of innovation improving *perceived usefulness*. Where possible the focal firm should look into the possibilities of buying up fintechs who offer services that complement their own MFS portfolio. Competitor failings, which can lead to scandals, may have negative impacts on the *trust* consumers have to the industry as a whole.

10.3 Revised Framework

The discussion above functioned as a proof of concept for the proposed framework and resulted in some interesting findings. First, on a general level the interviewees seem to agree with the proposed framework, highlighting its ability to capture a holistic view of the market of interest. However some minor changes will be made both to the internal adoption model as well as the method of using the framework in the future.

Inclusion of Perceived Enjoyment

Based on the recommendations primarily from Farrah it was decided to introduce *perceived enjoyment* as an additional construct despite Yen and Wu (2016)'s revelation that in their report this construct did not have an affect on intention to use. It is argued here that it is reasonable that ones own perceived delight from using the product or from seeing others efficiently executing their tasks would strengthen the intention to use the service. The thesis hypothesizes that the perceived enjoyment is different than the actual enjoyment gained through the cycle of *intention to use -> actual usage -> goal accomplishment* which feeds back and strengthens intention to use, however this needs be an area of further study in a future report.

Adding a Correlation From Awareness to Perceived Usefulness

According to the desktop research and supporting claims by the interviewees, awareness plays an important role in perceived usefulness. Becoming aware not only of the service itself, but especially of what the service can do for the consumer and its potential impact has an immense effect on the perceived usefulness. Although the framework is not looking at to what degree constructs affect each other, the authors agreed it was important to highlight how measures that affect awareness can also impact perceived usefulness.

Relocating Moderator Influence

Although Barati and Mohammadi (2009) made the cultural context moderator directly affect the intention to use construct, the revised framework will relocate the moderator influence to affect the entire internal model. The argument made for this is that it is relatively clear that the culture of Pakistan has had an affect on constructs such as *trust* and *perceived usefulness* directly. After all, the purpose of using this framework is discovering which constructs are specifically important due to the moderating effects of culture.

Revision to Method

Through the experience gained by performing this first iteration with Pakistan and through discussions with supervisor, Professor Nesse, a revision to the method of using the framework has been made. The framework is intentionally complex and holistic, but also time consuming to map out entirely for a market. It is therefore necessary to more efficiently discover which factors are the most critical to the market. This can presumably be achieved through interviews with experts early on in the calibration process. When certain constructs are hypothesized early on to be critical, these can then receive more attention than those that are presumed less vital. Although not visible in the updated framework, this revised method will be applied on the Burmese market.

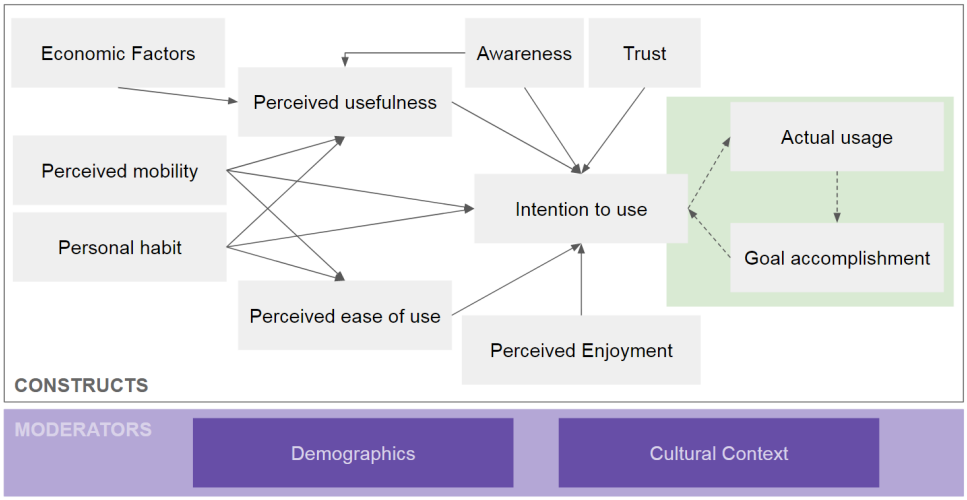


Figure 10.4: Revised Internal Adoption Model

Figure 10.4 shows the new revised framework which will be used in Part III: Assessing the Burmese Market.

Chapter 11

Concluding Remarks on Part II

The aim of this second part of the master thesis has been to calibrate the proposed framework by answering the following research question:

RQ2: How applicable is the framework at examining an existing emerging market with respect to mobile wallet adoption?

The step-wise procedure used to approach the research question was divided into three parts. First, data regarding the Pakistani population and current state of financial inclusion was collected to cover the internal part of the framework. Additionally, data on the Pakistani mWallet environment was collected to set the scene for the external part of the framework. Second, interviews with subject matter experts were conducted to get further insights in and verification of the model. Third, the findings from the desktop study and the interviews were used as a basis for the discussion. The findings from the interviews and the market research were used to discuss (i) what internal receptors are most important in Pakistan, and (ii) how the external environment affects the internal levers. Finally, a revised version of the framework was presented based on input from the interviews and the authors' own experience from applying the framework, see Figure 10.4. The main conclusions are as follows:

1. An extended TAM model works well to get a holistic view of what factors affect the customer in its decision to adopt, or not adopt, mobile accounts in Pakistan. Based on the interviews *perceived enjoyment* was added as an additional factor.

2. The Pakistani market demonstrates that all of the four stakeholder groups outlined in the external model clearly impacts the internal customer constructs, the most important ones being *awareness*, *trust* and *perceived usefulness*. However, it should be clear that which factors are most important may vary between different countries and social settings.

3. Application of the framework to the Pakistani market has revealed that mapping of the constructs and actors in the framework allows one to evaluate which measures work well, and where further efforts are required, such as expansion of the mobile account product portfolio in Pakistan.

To conclude, these three steps have improved the adoption framework thereby allowing it to assess the market successfully according to interviewees, and RQ2 has therefore been answered.

Part III

Assessing the Burmese Market

Introduction to Part III

In this third part of the thesis, the second case country is presented and the revised framework will be applied to answer the third research question:

RQ3: What are the recommended measures to increase mobile wallet adoption in Myanmar?

This part will fill inn the internal and external models of the framework using reports collected through desktop research. Interviews has been used to bring clarity to particular points of interest for Myanmar and a list of recommended preliminary measures to increase mWallet adoption in Myanmar is produced. A final interview was performed with the CEO of Wave Money where the framework was presented and the viability of the potential measures were examined.

Myanmar, previously known as Burma, was until 2011 under the rule of a military junta since 1962. Faith in the financial system tanked after a flurry of demonetization decrees in the 1980s wiped out nearly two thirds of the cash in circulation, triggering bank runs and driving many people to convert any savings into gold (Channel News Asia, 2016). A gradual liberalization process has been underway since then and after the 2015 election, where government leadership changed hands, a major shift in policy is expected. However, due to this long period of heavy isolation, the country has to play catch-up in several areas including financial inclusion.

The national poverty rate is high at 25 percent and the country ranks 149 out of 186 countries on the Human Development Index (Finclusion Lab, nd). Additionally, a global study examining 162 countries ranked Myanmar as having the 9th highest level of informal activity as a ratio of total economic activity (Chamberlain et al., 2014). Additionally, there exists a pervasive use of cash, as nearly all transactions in Myanmar are conducted in cash, by customers and businesses alike and only a small portion are made via domestic inter-bank transfers (Chamberlain et al., 2014). Unlike Pakistan, where OTC is an already established market, and a focus of MNOs is the conversion from OTC to mWallet, in Myanmar the primary focus is converting an unbanked cash based consumer to mWallets. This also includes the financial sector which has a large proportion of its services unregulated with only 30% of the population having using at least one form of formal regulated financial service (Chamberlain et al., 2014). According to Chamberlain et al. (2014), moving away from cash requires the development of electronic retail payments which is so far undermined by inadequate infrastructure, characterized by an unreliable power grid, inconsistent communications networks and low penetration of electronic touch points (such as ATMs and POS). With commercial banks focusing on serving the high-end population (Finclusion Lab, nd), financial inclusion for the under banked and the unbanked is an important task in Myanmar.

Since 2011 Myanmar has embarked on a major political and economic reform, and started taking the first steps towards financial inclusion. With the new government, at least 30 laws have been revised to reform the country's economy (Finclusion Lab, nd). Microfinance is given a top priority among them and the parliament passed a Microfinance Law in November 2011 (Finclusion Lab, nd). The number of ATMs is also increasing rapidly, from the previous 20 to almost 400 (Finclusion Lab, nd). Building up a financial infrastructure has been the main focus in Myanmar so far, now however, the system is becoming ready to "digitally leapfrog" within several traditional technological aspects (Nguyen, 2017).

The majority of financial service providers reported facing serious capital constraints, and only the Myanmar Economic Bank and commercial banks have a realistic opportunity to raise deposits for credit extension. Other credit providers, such as MFIs and co-operatives, will have to rely on wholesale funding and capital injections to fund their credit drive. The ability to extend regulated savings and payment services will require a dramatic extension in the electronic payments network (Chamberlain et al., 2014).

Many of those considered 'un-bankable' by traditional methods due to the physical distribution of bank branch networks (Trautwein, 2016). According to the World Bank Group (2017b) mobile and Internet penetration has increased significantly from less than 20 percent and 10 percent in 2014, to 60 percent and 25 percent respectively in 2017, much due to the recent liberalization of the telecommunications market. Already in 2015, 80% of these users were smartphone users, (Vota, 2015). It is believed that this will be a huge benefit for those unbanked as mobile money, where each mobile phone potentially becomes a transaction terminal, makes financial services available to everyone. All the consumers now need is a mobile phone and an ID (Trautwein, 2016).

In this third part of the master thesis, RQ3 will be answered through five chapters. First, Chapter 12 will fill inn the demographics and internal adoption data for Myanmar. Chapter 13 presents the external mobile wallet environment in Myanmar. After having performed several interviews, presented in Chapter 14, the interview results are compared and contrasted with the internal and external data in Chapter 15, resulting in a set of 18 prioritized measures to increase mWallet adoption. Finally, some concluding remarks are given in Chapter 16 to wrap up Part III.

Table 11.1: Part III Overview

Part III:	Chapter 12: Internal Customer Adoption Chapter 13: External Ecosystem Chapter 14: Summary of Myanmar Interviews Chapter 15: Part III Discussion Chapter 16: Concluding Remarks on Part III

Chapter 12

Internal Landscape

This chapter focuses on the calibration of the internal model, this time for the purpose of finding the most sensitive constructs based on the inputs of demographics and cultural context. The demographics section delves into general market, education, financial and technical demographics. The cultural context is described with the help of Hofstede's cultural dimensions as well as the general gender perception of mWallets. Currently, to the extent of the authors' knowledge no surveys collecting end user and agent answers with regard to adoption and barriers to adoption have been made publicly available so forth. Similar to in the Pakistani case, it is important to take a look at the current state of financial inclusion, but first some market segmentation vocabulary should be introduced.

Market Segmentation Vocabulary Making Access Possible (MAP) Myanmar, which is part of a multi-country initiative to support financial inclusion, identifies five priority target markets, segmented by their main source of income, for the extension of financial services(Chamberlain et al., 2014). Note that in their segmentation, Chamberlain et al. (2014) choose to exclude 11.2 million of Myanmar's 39.8 million adult population. The reasoning behind this is unclear, but must be assumed to be linked to having no income whatsoever and are therefore also excluded from what is considered potential MFS market. The MAP definitions (Chamberlain et al., 2014) of the five segments are as follows and will be used for the rest of this part of the thesis:

- **Farmers (42.5% of potential market)** – are adults that reported to be self-employed (farming their own land or family land) in engagements involving crop cultivation and livestock keeping. Farmers make up the largest category of economic activity.
- **Formal enterprises (9%)**– are enterprises that are considered regulated or licensed to operate. This segment represents adults who are self-employed and own and operate their own enterprises.
- **Informal enterprises (16.5%)** – are enterprises that are not licensed to operate. This segment represents adults who are self-employed and own and operate their own enterprises.
- **Formal consumer market (6%)** – consists of employees who are employed in the formal private sector (private company employees) or in the public sector (government employees).

- **Informal consumer market (26%)** – consists of adults who receive wages from the informal market (piece work or casual labourers), adults who receive a salary from informal market (salaried private individuals) and those who rely on remittance.

With definitions out of the way, it is easier to properly define the current state of financial inclusion in Myanmar.

12.1 Current State of Financial Inclusion in Myanmar

Myanmar was recently reported to be the third-fastest-growing mobile market in the world, after India and China, says Jones (2015), CEO of Wave Money, the local MFS subsidiary of Telenor in Myanmar. "There is a similar opportunity for Myanmar to be celebrated as a global leader in the acceleration of financial inclusion", he claims. According to Hynes (2016), financial inclusion is essential to develop Myanmar economically and a widespread implementation of digital finance systems "could increase the GDPs of all emerging economies by 6%, or a total of $3.7 trillion, by 2025." The *MAP Breakdown of Financial Access in Myanmar* report has some key financial inclusion pointers of the market in general (Chamberlain et al., 2014):

- Although 30% of adults reported to use at least one financial service from a regulated financial service provider only 6% make use of more than one regulated financial product class. In contrast, 21% of adults make use of unregulated services only.
- 34% of adults respond to risk events using credit or savings. With regards to credit, 19% of adults borrow from a regulated institution while 5.9 million adults borrow from unregulated moneylenders. Nationwide there is a total outstanding debt of $3.9 billion. 2% of respondents claim they cannot pay back their debts, possibly due to very high interest rates from money lenders. 70% of adults think it is important to save even when income is low. Whereas 6% of adults save with a regulated financial service provider, most people save at home, in the form of livestock or gold. 26% of adults report saving, but do not save with a regulated or unregulated service provider.
- Only 3% of adults have insurance from a regulated institution.
- Although 10% of adults make payments through a regulated service provider, approximately 1.9 million adults make payments through an unregulated network of payment brokers.
- It takes people one hour and 30 minutes on average to get to the closest bank branch.

Interestingly, the MAP study discovered that rural areas are slightly *better* served with bank services than urban areas. The report argues that this is due to "targeted credit provision to rural areas by state financial institutions coupled with a nascent commercial banking sector" (Chamberlain et al., 2014, p. 1). In general, direct intervention by state institutions, particularly the Myanmar Agricultural Development Bank (MADB), has played a critical role in Myanmar's current state of financial inclusion (Chamberlain et al., 2014).

12.2 Burmese Market Demographics

12.2.1 General Market

Myanmar is considered the poorest country in Southeast Asia. Its population is the 24th largest in the world with a total of 60.9 million people, 39.8 million of them being adults (Chamberlain et al., 2014). Of these, 7 out of 10 adults are rural, their households on average consisting of five family members (Duflos & Luchtenburg, 2014). Although the urban average income is twice that of the rural population, the national average income is $3.50 per day (Chamberlain et al., 2014). People's largest expenses are on education (34%) followed by health and electricity. On the topic of education, the general level of education is very low, with only one third of people going beyond primary and 7% of adults have higher education (Chamberlain et al., 2014).

12.2.2 Segmented Market Demographics

In Figure 12.1 the demographics are represented per segment. Note that the average income in the figure is per month.

Farmers

Farmers constitute the largest target group, 93% of whom live in rural countryside. They have a 16% phone penetration and are the largest users of regulated credit thanks to rural loans disbursed by MADB and microfinance institutions (Chamberlain et al., 2014). In contrast, farmers are the second most excluded segment from payments. Interestingly, the farmer segment is the most covered by insurance, but 42 out of the 50% covered are through friends and family.

Formal Enterprises

Formal enterprises, a vehicle for economic growth and employment creation, reported the lowest uptake of regulated credit among target groups (Chamberlain et al., 2014). This is a highly urban segment (75%) and 63% of the formal enterprise consumers have cellphones and are also the most active within regulated payment services (27%). They are however also the least likely to use insurance, but those that do are either insured formally or through friends and family. Tied with the formal consumers, formal enterprises have the highest amount of regulated saving (17%) but are also the biggest consumers of saving in general due to a large (38%) family and friends saving scheme.

Informal Enterprises

Informal enterprises is one of two discrete target groups that face the highest levels of financial exclusion (Chamberlain et al., 2014). 21% of the segment rely on unregulated credit schemes and although they earn on average $133 per month, only 4% save using regulated methods.

Formal Consumers

1.7 million adults are formally employed (formal consumers) and form the kernel of the emerging consumer class. They live mainly (70%) in urban districts and have a 46% phone penetration. Less than a quarter of them make payments through regulated institutions (Chamberlain et al., 2014), but like formal enterprises which

is also rather urban, these are the two highest percentage segments. This segment is also tied for highest level of formal savings.

Informal Consumers

The other group that faces the highest levels of financial exclusion is the informal consumer (Chamberlain et al., 2014). With the lowest average monthly income of $66, this segment has the highest unregulated credit consumption (27%), and is the most excluded (82%) from any form of payment service and savings (74%) (Chamberlain et al., 2014). Only 2% are in any way insured by regulated firms although almost one third are insured through family and friends (Chamberlain et al., 2014).

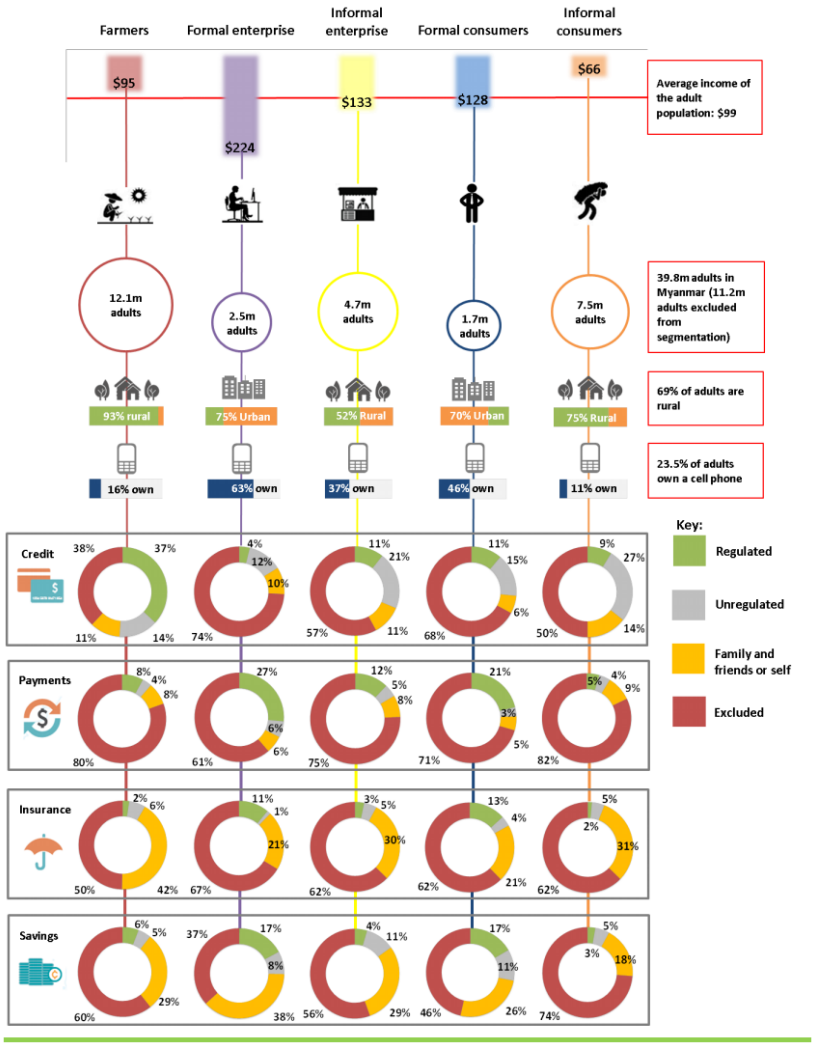


Figure 12.1: Market demographics by segment

Key MAP Take Aways

The MAP study revealed that opportunities exist to improve the quantity and terms of agricultural credit which in turn can increase agricultural productivity. The current requirement for collateral outside the microfinance market has created a massive demand for unsecured credit, which is currently mostly met by unregulated money lenders at high cost (Chamberlain et al., 2014). According to Chamberlain et al. (2014), formalizing this credit will require some regulatory adjustments, notably an increase in microfinance interest rates and loan sizes.

Another major gap is in the retail insurance sector, which is largely undeveloped. Health and funeral insurance are not available in the market, despite these being the most important risks faced by households (Chamberlain et al., 2014). When clients cannot offer collateral, insurance can instead play a critical role to secure credit. However, neither agricultural insurance nor even credit life insurance is currently offered (Chamberlain et al., 2014).

12.3 Burmese Cultural Context

12.3.1 Hofstede's National Cultural Dimensions

Like in Part II, this study bases the description of Myanmar's cultural context on Hofstede's Six National Cultural Dimensions: *Power Distance*, *Individualism*, *Masculinity*, *Uncertainty Avoidance*, *Long Term Orientation* and *Indulgence*. Myanmar's ranking among each of the dimensions can be seen in Figure 12.2. The figure shows the contrast of cultural dimensions between Myanmar, the target market, and Norway, Telenor's home market. Additionally Pakistan's scores were included to create contrast with Part II. Finally, to compare with South East Asian (SEA) markets in general, several additional markets were added, their values retrieved from the official Hofstede web page.

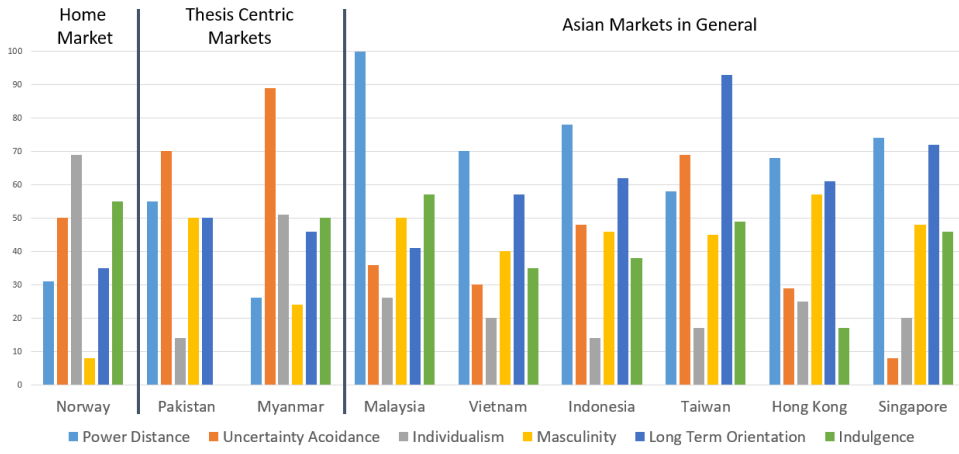


Figure 12.2: Hofstede results for the Norwegian home market, the two focal markets in the thesis, Pakistan and Myanmar, and a selection of Asian Markets.

Although not a perfect method for defining cultural context (Orr & Hauser, 2008), see lim-

itations in Chapter 2, it has been deemed the best alternative given the thesis' scope. This Part has the additional issue that the numbers for Myanmar are not "Hofstede-official" (as they do not exist), but rather a different report's recommended values (Rarick & Nickerson, 2006). Again, this was deemed the best alternative to be able to compare the markets.

Using the Hofstede cross-cultural framework, Rarick and Nickerson (2006) found that the country has "little in common in terms of value orientation with neighboring Southeast Asian countries" (p. 3). To summarize their findings and compare them to some surrounding countries (data retrieved from Hofstede), Burmese culture can be seen in Figure 12.2 as (i) intolerant of inequality among citizens, (ii) highly feminine, (iii) moderately individualistic, especially for Asia, (iv) extremely averse to uncertainty, even on a worldwide basis and (v) having a short-term orientation, especially for Asia. This is in contrast to the typical values portrait of the SEA markets which are often considered high power distant, masculine, collectivist, moderate in uncertainty avoidance, and long-term in orientation (Rarick & Nickerson, 2006). Below follows a description of each Burmese score.

Power Distance

Interestingly, according to Rarick and Nickerson (2006), the *power distance* score of Myanmar (26) indicates a low level of acceptance of inequality among societal members. This score is the lowest among its SEA counterparts and is even lower than that of Norway. In stark contrast to Pakistan which had a small inclination of power distance, Myanmar is positioned as a relatively flat society. According to Rarick and Nickerson (2006) the lower power distance value seems to be consistent with the "Burmese way to socialism," an earlier economic program reflected a desire to maintain economic equality among societal members which developed in Myanmar after gaining independence.

Uncertainty Avoidance

Myanmar's uncertainty avoidance score is very high (approx. 89 although the value is not explicitly given in the report apart from visually in a graph), more so than Pakistan. This implies that much of the market is potentially reluctant to adopt new innovations such as MFS. What spurs such uncertainty avoidance varies however, and is discussed in this part's discussion chapter, Chapter 15. As it is incredibly high in comparison to the rest of the SEA markets, this could hypothetically have something to do with the effects of being under military oppression for a long time.

Individualism

With an *individualism* score of 51, Myanmar is placed at odds with the other SEA markets which share mostly collectivistic values. In contrast such a score is so close to the world average that Myanmar is considered rather indifferent in regard to this dimension. The closest market of the selected markets in Figure 12.2 is the Norwegian market.

Masculinity

Rarick and Nickerson (2006) gives Myanmar a score of 24, indicating that Myanmar is a quite feminine culture. Among the other SEA markets, this is the closest to Thailand (34; not in figure) and is more comparable to Norway than any of the other markets represented. This can indicate that in Myanmar dominant values

in society are caring for others and quality of life (Hofstede, ndb). According to Hofstede (ndb) a feminine society is one where quality of life is the sign of success and standing out from the crowd is not admirable. The fundamental issue which needs to be taken into the discussion is what motivates people, wanting to be the best (Masculine) or liking what you do (Feminine).

Long Term Orientation

Myanmar's *long term orientation* (46) is considered moderate in comparison with the other SEA markets as well as lying between Norway and Pakistan. According to Hofstede (nda) the dimension is concerned with the way a culture relates to its own past while simultaneously dealing with the present and future. Here, societies prioritize these two existential goals differently. Low scores, indicating a normative society, prefer to maintain time-honoured traditions and norms and view societal change with suspicion. In contrast, a more pragmatic society with a high score encourages thrift and efforts in modern education as a way to prepare for the future. Myanmar's score implies little can be said to indicate a preference.

Indulgence

Unfortunately neither article has a score for Indulgence as this criteria was added by Hofstede at a later date. Figure 12.2 has therefore been set to NA or 50 and therefore made inconclusive.

12.3.2 Gender

According to (World Bank Group, 2017b), the latest numbers (2014) showed a gender gap between the national average number of citizens holding account at a financial institution (ages 15+) at 22.6% and that of women with 17.1%. But with smartphone penetration growing rapidly in Myanmar, digital platforms offer a gateway for reaching greater numbers of women and provide them with the means to participate more fully in the economy. In 2016, the GSMA reported that approx. 9.1 million (33%) women own mobile phones in Myanmar, and about 1.4 million use smartphones (Hynes, 2017) making them 29% less likely to own a mobile phone than men (Zainudeen & Galpaya, 2015). However, not only increasing women's access to phones but also educating them on how to use the mWallets will be a challenge that needs to be addressed to financially include them as well.

Survey results from a major GSMA source on the use of mobile phones and gender in Myanmar show "a minor access and usage gap between women and men, and a wider gap in ownership" (Zainudeen & Galpaya, 2015, p. 66). Interestingly the role and position of women in Myanmar is strong especially so in comparison to women in many other South Asian countries. Instead the report claims income, or lack of it, as the primary source of the access and ownership gap, "in part because prices are high compared to income, but more importantly because women's role as the 'chief financial officer' of the family makes them put the needs of others before theirs" (Zainudeen & Galpaya, 2015, p. 66). The second barrier is a clear skills and awareness gap, claiming that when women have access to a phone they exhibit less confidence in using it (Zainudeen & Galpaya, 2015). Their low digital literacy leaves them out of the final decision-making stages about phone purchases, and certainly limits their phone usage. Less sophisticated awareness of privacy issues may also be putting them at risk in various social contexts.

Chapter 13

External Landscape

This chapter presents the external mWallet ecosystem in Myanmar based on data gathered through a general desktop study. The chapter is structured with respect to the stakeholder groups presented in Part I: Governmental Actors, the Focal Firm, Collaborators and Competitors. As discussed in Chapter 4, the influence of these actors is believed to be critical in stimulating mWallet adoption. Each section touches upon which actors fulfill the role of each stakeholder group, their measures for mWallet adoption and the challenges/opportunities they face in facilitating mWallet adoption. Unlike in Part II where the external actors were well established in the Pakistani market, in Myanmar these actors are not as defined, however the mapping has been made to the best extent possible.

13.1 Governmental Actors

In contrast to other countries in the ASEAN region, Myanmar is still highly cash dependent, with most salaries (97%) paid in cash (Tao, 2016). Recent banking regulations are contributing to alleviate new players to enter the financial services market by allowing for non-banking money issuers. Duflos (2013) reports that throughout the last six years Myanmar has actively worked to remove barriers against foreign investments and introduce a more flexible exchange rate, allowing investors, third party payments companies, donors and NGOs to enter this "untouched" market.

As mentioned in the this part's introduction, many of the challenges Myanmar faces today with respect to financially including its populace are closely intertwined with its history. The military nationalized all banks, and became the first of many policies that sunk the nation into poverty. Finally, in 2011 a nominally civilian government took over the country rule, and after the 2015 elections the Opposition National League for Democracy (NLD) formed a government led by former opposition leader Aung San Suu Kyi (Monitoring, 2017). Since the abolition of the military rule a gradual liberalization process has been undertaken, and the new government holds high promises to continue on this trajectory (Monitoring, 2017).

The MAP report presents four prioritized government policy objectives aimed at improving financial access in Myanmar (Chamberlain et al., 2014), focusing on (i) increasing agriculture output, (ii) increasing rural delivery, (iii) development of micro saving and

credit enterprises, and (iv) increasing cooperative outreach. The WBG actively works to support these governmental efforts, for example with their 2016 approval of the Financial Sector Development Project for Myanmar, aiming to increase financial access to the Burmese populace (World Bank Group, 2017b). The accumulated efforts by the WBG and the government should create potential areas for mobile accounts to delve into. As an example, a severely limited infrastructure and the underdeveloped nature of financial services models and products (particularly the absence of a payment system), make rural delivery particularly challenging, and that is where mWallets should come into play.

Similar to Section 8.1 for Pakistan, the remainder of this section will cover different governmental actors that are believed to impact the development of the MFS market in Myanmar and what measures they have taken so far, concluding with the challenges and opportunities.

13.1.1 Overview of Important Government Enablers

Generally speaking, despite rapid expansion of infrastructure by regulated financial services such as bank branches, ATMs and POS and increased banking efficiency after the introduction of financial sector reforms in 2008, Myanmar still lags behind its Southeast Asian neighbours (Chamberlain et al., 2014). Although the financial landscape is still dominated by a large number of unregulated financial service providers (Chamberlain et al., 2014), state-owned actors have monopoly in some areas and a selection of these will be presented below.

Ministry of Communications and Information Technology (MCIT)

Directly regulating the digital communication space in Myanmar is the Ministry of Communications and Information Technology (MCIT). The MCIT is the overseeing ministry for ICT development, thus it is responsible of building an adequate ICT infrastructure (Nam, Cham, & Halili, 2015). Previously, Myanmar Post and Telecommunication (MPT) had monopoly in the telecommunication sector, but in 2014 the government allowed for foreign entry by issuing license to Qatar-based Ooredoo and Norwegian Telenor. By allowing competition, the MCIT has enabled immense growth in the mobile communication coverage. Going further, "the MCIT will be responsible for making ICT sector policy and will be the main line ministry supporting the implementation of eGovernment initiatives" (Nam et al., 2015, p. 5). By setting up a regulatory framework for the sector this can increase investor attractiveness which in turn can help the government achieve its growth and inclusiveness objectives for the economy (Nam et al., 2015). This includes a need to repeal laws governing the sector (in particular telecommunications and Internet development and usage). In addition to MCIT, the Ministry of Finance which regulate the finance sector will also influence the development of the MFS arena. Together these two regulating authorities can provide a critical leapfrog effect for financial inclusion through the provision of mobile money accounts.

Central Bank of Myanmar (CBM)

The Central Bank of Myanmar became legally independent in 2013, under the Central Bank Law, which separated it from the Ministry of Finance and made strides toward self-rule (Duflos, 2013). However, decision-making at the top has often been influenced by

the President's Office. According to Hammond (2016) "creating a truly autonomous Central Bank is a priority for the NLD, which has said it will strive for monetary stability and the development of a financial system that can meet the country's capital requirements".

A key responsibility of the Central Bank is payments and mobile banking, more specifically to develop "an efficient, fast, safe and reliable national payment system" (Central Bank of Myanmar, nd; Duflos, 2013). The current payments infrastructure is still underdeveloped with POS device downtime at 90% (Chamberlain et al., 2014). Although CBM also supports the development of a secure cash payment system, it is the area of non-cash payment system that is interesting with regards to mWallets. Within this area the policies are focused on mitigating risks and improving efficiency of payment systems (Central Bank of Myanmar, nd).

On March 30th 2016, the CBM issued the *Regulation on Mobile Financial Services* in order to create an enabling regulatory environment for efficient and safe mobile financial services in Myanmar (Central Bank of Myanmar, 2016, nd; Janssen, 2016; Trautwein, 2016). By allowing for mobile money certificates, the CBM indicates a continued drive towards a modern society and financial inclusion of the country's citizens. However, very few licenses have yet been given as the Central Bank still shows a cautious approach to the fintech sector (Janssen, 2016). Tao (2016) reports that high capital requirements, strict licence fees and a formalized application process currently allows only higher tier organizations to take advantage of the new regulatory framework. The rules allow for people to deposit money into mobile accounts, to transfer money between them, and perform domestic payments in Myanmar Kyat. The potential service offerings include people-to-people, people-to-government, people-to-business and business-to-business money transfers (Mon, 2016). Currently, the regulations do not allow completion of the domestic side of international remittance transactions (Tao, 2016).

Myanmar Agriculture Development Bank (MADB)

Among the four state-owned banks in Myanmar, *Myanmar Agricultural Development Bank* (MADB) and *Myanmar Economic Bank* (MEB) are the two largest, and according to Duflos (2013) both are engaged in financial inclusion. Commercial banks on the other side, focus only on the upper segment of the market (Duflos, 2013). MEB provides the funding for MADB through loans, however, only MADB will be covered here as it has a big stake within the important agriculture sector in Myanmar.

The agricultural sector in Myanmar is estimated to account for between 35 and 40 % of the country's GDP and approximately 70% of the labor force (of 32.5 million) rely on agriculture activities for their income, either indirectly or directly (De Luna-Martinez & Anantavrasilpa, 2014). MADB is an important government institution supporting the modernization of the agriculture sector. As one of the government's prioritized areas for financial inclusion, agriculture becomes a key sector for both economic and social development of Myanmar.

Currently operating under the Ministry of Agriculture and Irrigation (MAI) it provides loans to a large segment of households in rural areas engaged in agricultural activities, lending at subsidized interest rates (De Luna-Martinez & Anantavrasilpa, 2014). No other financial institution serves more rural customers in Myanmar than the MADB with 1.87 million customers in 2012 across 206 branches or 23% of all bank branches in the country (De Luna-Martinez & Anantavrasilpa, 2014). As a provider of loans to low-income rural household who nurture themselves through agriculture, MADB has gained an important

economic and social role (De Luna-Martinez & Anantavrasilpa, 2014).

Although MADB is the largest credit provider for rural households engaged in agricultural activities, De Luna-Martinez and Anantavrasilpa (2014) argue that a thorough restructuring is needed as the current form of operations is no longer sustainable. Current lending practices discourage private formal lenders to enter the rural credit market because of the MABDs subsidized loans at interest rates of 8% per year (Htwe, 2016). Another important aspect when discussing a potential mWallet market, is the limited payment infrastructure and restricted payment functionality (De Luna-Martinez & Anantavrasilpa, 2014), which currently make bank accounts an unviable option for transactions.

Despite the aforementioned, the MABD is expected to play an important role in the modernization process of the agricultural sector of Myanmar, potentially learning from international experience and becoming a full-fledged bank (De Luna-Martinez & Anantavrasilpa, 2014). By learning from international success stories, such as that of Nestlé in Pakistan, mWallets could also become a part of this modernization process.

Note: A Capital Constrained Regulated Financial Sector When discussing the credit situation in the Burmese agriculture market, a note about the total credit situation in the country is due. Indeed, the regulated financial sector in Myanmar is currently completely dependent on short-term deposits as a source of capital due to scarcity of capital available for on-lending (De Luna-Martinez & Anantavrasilpa, 2014). As of 2014 foreign donor capital was restricted for MFIs, and foreign ownership, foreign direct investment and capital was not yet allowed (De Luna-Martinez & Anantavrasilpa, 2014), however progress is being made in this field. Therefore, policy and regulatory changes are needed to enable the emergence of a capital market in Myanmar. Under the current circumstances commercial banks are not likely to direct capital towards the lower-income segment as they would rather seek more lucrative opportunities in the high-income and corporate markets.

Myanmar Insurance Company (MIC)

Myanmar Insurance Company (MIC) is the country's state owned insurance company. Given that the insurance industry is a sector crucial to economic development, the government has started to speed up the liberalization of Myanmar's struggling insurance industry. These efforts started under the previous government that finally broke MIC's decades-long monopoly in 2012 and opened up to private firms the year after (Gilmore & Wai, 2016). The current government has continued this liberalization process, planning to allow foreign firms to enter the market and remove restrictions on local, private firms that are restrained from offering a large suit of popular products only offered by MIC (Gilmore & Wai, 2016).

The ongoing liberalization of the market is something that the ASEAN and other international players are calling for. Indeed, Myanmar's membership in the ASEAN economic community makes it committed to to liberalize a wide range of sectors including banking, insurance and aviation (Gilmore & Wai, 2016). Considered especially important in the liberalization process, is life and health insurance (Gilmore & Wai, 2016). De Luna-Martinez and Anantavrasilpa (2014) highlight the need to grow the insurance product portfolio, saying that "there is a large opportunity to provide regulated insurance for especially health and life, mostly funeral, risks. This will require regulatory adjustments to

allow both Myanmar Insurance Company and new private insurers to offer such products" (p. 2).

13.1.2 Enabling Initiatives for MFS Provided by Governmental Actors

Very few measures, except the above mentioned MFS regulation introduced by CBM in 2016 and indirectly the deregulation of the telecom sector, are taken to directly affect adoption of mobile money and mWallets in Myanmar. Below, two facilitating measures to increase financial access will be addressed.

Making Access to Finance Possible (MAP)

The *Making Access to Finance Possible (MAP)* already mentioned in Chapter 12, is a comprehensive market assessment of retail financial services that was undertaken at the request of the Burmese government in 2013, supported by the UNCDF (Chamberlain et al., 2014). According to Chamberlain et al. (2014) its purpose "is to assist the government of Myanmar to identify key priorities and opportunities to extend access to financial services" (p. 1). As such, it is not dedicated to MFS (or mWallets) in specific, but MFS should be a natural part of MAP's area of research.

Resulting from a 2014 MAP study on demand-side, supply-side and regulatory analyses, was a prioritized list of seven opportunities for the government to extend financial access (this study has been used extensively in this thesis). The supply-side of the analysis covered payments, savings, credit and insurance, thus giving a comprehensive understanding of the country's microfinance sector. The demand-side component covered topics related to the internal part of this thesis, including an analysis of access, usage, perceptions and attitudes of financial services by target groups. Among the recommended government opportunities were to "dramatically increase the supply and availability of mobile payments", in addition to increasing access to account-based savings options, increasing availability of unsecured credit and a focus on providing regulated insurance offerings (Chamberlain et al., 2014). Through research and development of national financial inclusion road maps, MAP contributes to strengthen the focus on financial inclusion.

The Framework for Economic and Social Reforms (FESR)

In May 2012 current Burmese President, U Thein Sein, developed the *Framework for Economic and Social Reforms* (FESR) in consultation with senior officials of various ministries and departments of the government, closely linked to the President's vision of socially and economically transforming Myanmar. The framework has sought to outline policy priorities for the government for 2015 towards the long-term goals of the *National Comprehensive Development Plan*, "a 20-year, long-term plan, which the government is drawing up in consultation with parliament to enable the country's economy to grow on a par with the dynamic Asian economies" (FESR, 2012, p. 1). Simultaneously the FESR has sought to identify "key parameters of the reform process that will allow Myanmar to become a modern, developed and democratic nation by 2030" (FESR, 2012, p. 1).

Among other focus areas, the FESR has introduced potential "quick wins" that the government will consider implementing, both as a motivation for the population and to create sustainable benefits (FESR, 2012). Monetary and financial sector reforms is listed

as one of these "quick wins", focusing on central bank autonomy, potentially reducing inflation and facilitating growth, and bank lending regulations. Also, the government is working on a long term *financial sector master plan* with the goal to create an efficient, competitive and stable financial sector (FESR, 2012).

Mobile phones and internet is another "quick win" focus area within the FESR, recognizing that these tools can help people "access financial services with the ability to save and send money safely, no matter where they are located" (FESR, 2012, p. 7). The government also recognizes the need for training in education, thus including ICT skills in the school curriculum, in addition to continuous training of the workforce so that they can acquire new and relevant skills.

In many ways, the FESR is a starting point for the government's efforts to modernize Myanmar, and as such it contributes to creating the groundwork for a nation receptive to mobile money and mobile accounts.

13.1.3 Challenges and Opportunities

Since the liberalization process started in 2011 the government of Myanmar has taken steps in the right direction towards achieving financial inclusion of its citizens, including new economic policies, new health and education sector strategies, and stated new priorities such as rural development. Most efforts are focused on building a financial infrastructure, while only the new CBM MFS regulation targets the MFS arena directly, and thus challenges do remain. The main challenges and opportunities identified are summarized below:

Opportunities

1. *Increase transparency and efficiency* "Once mobile money networks are in place, there will be substantial benefits to the people and government of Myanmar, including the ability to pay wages, pensions and conditional cash transfers efficiently and transparently", says Jones (2015).

2. *Digitization of agriculture credit* Current lending practices within agriculture are not acceptable (Htwe, 2016), and with an economy heavily reliant on this sector, improving access to credit for farmers will boost economic growth (Htwe, 2016). Mobile money can ease this process.

3. *Insurance market de-regularization* De Luna-Martinez and Anantavrasilpa (2014) say that there is "a large opportunity to provide regulated insurance for especially health and life, mostly funeral" to meet the risk mitigation needs. For this to happen regulatory adjustments to allow both Myanmar Insurance Company (MIC) and new private insurers to offer such products are needed (De Luna-Martinez & Anantavrasilpa, 2014). If successful it could make insurance available to the masses, similar to what was experienced with SIM cards after implementation of the telecom market deregulations.

4. *Digitization of government disbursements* Based on the positive results drawn from Pakistan, the digitization of salaries, pensions and social transfers could be a great opportunity to both increase social welfare and increase traffic throughout Waves network.

Challenges

1. *Potential scandals* Learning from other countries, such as China, the government must be aware of the risk that fintech, although potentially contributing to enormous economic growth, can cause severe scandals, such as Ponzi schemes and dubious business practices in China (Janssen, 2016).

2. *Change of government policies and enforcement of policies* With a new government in place, current policies can be changed, thus the government can have a highly disruptive risk to the fintech segment (Janssen, 2016). Also, the government is responsible to ensure compliance with its regulatory policies which can be particularly challenging in this market newvly opened up to the public.

3. *Poor Infrastructure* The government has the overall responsibility for the country's infrastructure to develop. If the government fails to develop the infrastructure, uptake is likely to remain low.

4. *No Private Capital Market* Although starting to improve, restrictions on foreign donor capital for MFIs remain, and foreign ownership, foreign direct investment and capital also remain limited (De Luna-Martinez & Anantavrasilpa, 2014). Therefore, policy and regulatory changes are needed to enable the emergence of a private capital market in Myanmar. Under the current circumstances commercial banks are not likely to direct capital towards the lower-income segment as they would rather seek more lucrative opportunities in the high-income and corporate markets.

13.2 The Focal Firm (Wave Money)

In October 2016, Wave Money announced that it was the first company to launch MFS under Myanmar's new MFS regulation (Myint & Sin, 2016). It then became a first mover similar to Easypaisa in Pakistan and demonstrated its compliance with the regulatory in a country still dominated by informal activity. The following will elaborate on the configuration of the focal mobile money provider, what measures the company has taken so far to increase adoption of mWallets, and lastly what challenges and opportunities the focal firm faces with regards to facilitating mWallet adoption in Myanmar. As Wave Money is still in its first year of operation, it naturally follows that the market is in its early stages and less information is available compared to for Easypaisa in Pakistan.

13.2.1 About Wave Money

Wave Money, which is the brand name of the legal entity Digital Money Myanmar, is a joint venture mobile money-transfer service between Telenor Group, First Myanmar Investment (FMI) and Yoma Bank. Established in 2015, the company aims to provide accessible, safe and convenient MFS via an agent network and Wave-accounts (Wave Money, nd) and has currently the highest brand awareness in the MFS market (Haley, 2017). The company wants to increase access to formal financial services in Myanmar (Myint & Sin, 2016), and according to CEO Brad Jones, they "aim to be a market leader in the Asian mobile money market by providing access to financial services to the unbanked

population of Myanmar" (Myint & Sin, 2016). Table 13.1 provides an overview of key facts and characteristics of Wave Money.

Key Facts:

Launched	Non-banking financial institution established in 2015. Received registration certificate from CBM in 2016
Ownership*	Telenor (South East Asia; 51%), FMI (44%) and Yoma Bank (5%)
No. of Customers*	About 320,000 Wave Account users and about 50,000 OTC users
No. of Agents*	Close to 8,000 agents nationwide (60% township coverage)
Offerings*	• Over the Counter Services (OTC): – Money Transfer – Airtime Top Up • Mobile Account Services: – Money Transfer (To account and non-account) – Airtime Purchase – Bill Payment (utilities) – Online payment – Balance Check and Transaction History – Bank-to-wallet and wallet-to-bank

*From interview with Brad Jones June 2017, see Section 14.3
Sources: (Consult Myanmar, 2016; Hynes, 2016; Loughnane, 2017; Telenor Group, 2016b; Wave Money, nd)

Table 13.1: Key facts: Wave Money

Partnership Combining the strengths of global mobile operator, Telenor, and local financial institution, Yoma Bank, it is believed that Wave Money can bring financial services to the previously unbanked in Myanmar. Through the joint venture, Yoma gains access to 3000 outlets in Telenor's 100,000 points of presence to help funnel transactions like deposits to the bank (Loughnane, 2017). On Telenor's side, Yoma provides cash management and liquidity for Wave's operations (Janssen, 2016). The partnership also allows for interoperability between Yoma bank accounts and Wave accounts for both the agent and customer base. As of June 2017, Wave Money has about 370,000 customers, of which about 320,000 are Wave Account holders (see Jones' interview, Section 14.3).

Service Offerings Currently, Wave Money offers mobile money transfer with two simple offerings: (i) Wave Shop Transfer (OTC) and (ii) Wave Account. Everyone can transfer money through a nearby Wave Shop, but only Telenor subscribers (representing 38% of mobile users in Myanmar) can open a Wave Account (Loughnane, 2017). The Wave Account is linked to the person's Telenor phone number, and all transactions are secured by each person's secret PIN (Wave Money, nd). As Wave Money's strategy is to reach out to those underserved by the current financial system, they plan to make its service available to customers of the other telcos in the country by July 2017 (Loughnane, 2017).

To transfer money at a Wave shop or to open an account the user needs a valid legal picture identification (NRC, Passport, driving license etc.) (Wave Money, nd). Although registration limits apply (200,000 Kyats per day for most services), most services are free (sign-up and user to user transfer), except for cash-outs where a small percentage fee applies. Both USSD and Wave Money's Mobile App can be used for transaction services. According to Wave Money CEO, Brad Jones, "users gravitate toward app-based transfers and 75% of Wave Money's activity occurs outside normal banking hours" (Hynes, 2016). A remarkably high mWallet to total number of customers ratio of more than 85% indicates a demand for tech-based financial services in the growing Burmese economy (see Jones' interview, Section 14.3).

Wave Money has also started to offer customer bill payments with electricity and landline payments being the primary use case, and they are starting to trial some online and digital merchant payments (see Jones' interview, Section 14.3). Addding to this Wave Money aims at expanding their product portfolio to include savings and credit products with time, in addition to international remittances (Loughnane, 2017; Telenor Group, 2016b).

Distribution At launch more than 4,000 Wave Shops were available for Wave Money, functioning as service touch points for customers (Telenor Group, 2016b). As of June 2017 the number of agents has almost doubled (see Jones' interview, Section 14.3). Wave shops include tea shops, restaurants, and grocery stores, and existing stores that offer Telenor SIM cards and top up (First Myanmar Investment Co., Ltd., nd). These Wave Shops cover 60% of all Burmese townships and most economic corridors, ultimately seeking to make the service available to "everyone, everywhere" (Telenor Group, 2016b). According to Telenor Group (2016b) "a typical Wave Money customer is often a domestic migrant working in the cities sending money to their home village". Therefore a strong distribution network becomes a key priority to accelerate adoption. Indeed the broad agent coverage is one of Wave's key strengths compared to its competitors and it currently has the number one position in OTC (Haley, 2017). By 2018 Wave Money aims at reaching country wide presence with more than 15,000 Wave Shops (Telenor Group, 2016b), which should be obtainable as Telenor has over 100,000 agents selling airtime scratch cards across the country (Loughnane, 2017).

13.2.2 Measures Taken by Wave Money to Facilitate mWallet Uptake

Wave Money CEO Jones stated that "the success of mobile money services relies on creating awareness and overcoming distrust in formal financial services" (Tao, 2016). After one year, consumer awareness still remains a challenge while initial trust in the technology keeping their money safe is expected to be low (Tao, 2016). Most customers have never used a financial service before and adopting MFS therefore leapfrogs them into

a new financial world (Tao, 2016). For the service to appeal to consumers, distribution needs to exceed that of bank branches today (Tao, 2016). Although still in its early stages, Wave Money has already done some efforts to increase uptake of their MFS service in the nascent Burmese mobile money market. Listed below are the measures that have been identified during the desktop study. Some of these apply to both the OTC solution and the wallet solution.

Human centered design

Exploring the opportunity of high smartphone penetration in Myanmar, Wave Money has been using the principle of human-centered design when building solutions for their customers (Jones, 2016a). Using this approach "requires a deep empathy for the people we are designing for – forcing us to go deep into their communities, workplaces and even homes to understand what they feel, what they think, what they like and what they desire" says Jones (2016a). With the flexibility and power of digital solutions, this enables the end product to become relevant to the consumer and tailored to their needs.

Using digital gamification for enhancing financial literacy

According to Wong, Benjathikul, and Myint (2017), Wave Money will design a financial gaming application that enables people to learn about financial concepts such as savings, insurance and interest rates. This offering is founded on a collaboration with the UNCDF, see Section 13.3. The project, which is expected to last for two years, primarily targets women, as very few women have access to or knowledge about financial services in Myanmar (Wong et al., 2017).

Active usage of Facebook

Facebook is the deepest engagement point Wave Money has with customers, averaging at 20 interactions per customer (Jones, 2016a). This involves a far more personal interface than a call centre where customer problems are addressed in a more intimate environment, hopefully creating more educated customers with enhanced customer loyalty (Jones, 2016a).

Expansion of agent network

As mentioned above, Wave Money already has around 8,000 agents (see Jones' interview, Section 14.3), and aims at reaching 15,000 service touch points by the end of 2017 (Telenor Group, 2016b). This wide reach provides Wave Money "with a distinct competitive advantage in the number and location of shops available to customers" (First Myanmar Investment Co., Ltd., nd).

Marketing Campaigns

At launch Wave Money had a marketing campaign that consisted of ATL marketing including TV, radio and print, supported by a nationwide BTL customer engagement program (Telenor Group, 2016b). Aiming for education and engagement, they developed a *Yellow Wave road show program*, which covered 28 small and large cities during the launch period. According to Telenor Group (2016b) the program has been "a powerful vehicle in which to engage with and sign up customers", in addition to providing them with the opportunity to meet customers and understand their financial needs.

13.2.3 Challenges and Opportunities

This section about Wave Money will conclude by summing up some of the key opportunities and challenges identified with regards to mWallet adoption.

Opportunities

1. *High smartphone penetration* This opportunity enables Wave Money to make user friendly interfaces that can accommodate the needs and skill set of the Burmese people. Also, they can leverage it for education of consumers, as they are planning to do with their financial gaming application (Wong et al., 2017). Other untapped opportunities should also emerge from this astonishingly high smartphone penetration.

2. *Widening product portfolio* As the Burmese economy continues to grow, delving into offerings such as bill payments, savings and credit can contribute to achieving true financial inclusion and increase the usefulness of the mWallet. Where Wave is not able to develop the product themselves, collaborative initiatives should be considered, see Section 13.3. Also, when competition increases product development will be necessary to retain market share.

3. *Actively using the wide agent network* The growing agent network gives Wave Money a competitive advantage and should be exploited, for example by providing agent training.

Challenges

The most prominent challenges that Wave Money faces are related to governmental restrictions and low degree of education among potential consumers who are stuck in a society where cash is *king*.

1. *Lack of education and low awareness* Nguyen (2017) says that "education of the market seems like the biggest barrier at the moment". Few people seem to be aware of the service, and if they were they would not know what to use it for. Most people have never used a financial service before and are asked to leapfrog into the financial world.

2. *Low merchant adoption* Nguyen (2017) states that lack of merchants accepting digital money is another severe challenge related to mWallet adoption in Myanmar (see Section 13.3 for more on this). Without POSs to spend money stored in mWallets there is little incentive for people to store their capital there.

3. *The government holds back* Wave Money has received the registration license (Myint & Sin, 2016), but further support from the government is needed for usage to increase. See Section 13.1 for more on governmental actors.

4. *Lack of SIM agnosticism and interoperability* A Telenor SIM is required to open up a Wave Account (Wave Money, nd) thus giving a limited addressable market. Furthermore, transfers to competitors' services is not possible, however Wave Money has a regulatory obligation to provide interoperability in the future with other MFS providers (see Jones' interview, Section 14.3). With high consumer price elasticity,

loyalty to telco brands is very low, and SIM cards are swapped depending on use case.

13.3 Collaborators

Duflos (2013) claims that "many international donors and investors are supporting financial inclusion in Myanmar". Microfinance projects were financed already in the mid-90's by UNDP, and in more recent times agencies such as DFID and USAID have actively supported growth in this "untouched" market. The WBG supports the development of a regulatory framework and good industry practices (see Section 13.1), while UNCDF is completing a MAP diagnostic (Duflos, 2013), mentioned in Chapter 12 and Section 13.1. Also, CGAP is supportive for projects regarding customer centered design (Jones, 2016b). Therefore, it seems like the financial inclusion of the Burmese and efforts to develop the country is on the agenda of many international investors, donors and NGOs. Most of these, however, target financial inclusion in general and not collaborate with mWallet firms directly. For more details about how such organizations can contribute to the emergence of an mWallet market, the authors refer to Section 8.3.5 from Part II.

During the desktop research, the authors have only discovered one specific Wave Money collaborator, the UNCDF, in addition to some merchant and agent agreements. First, UNCDF relationship will be described, followed by a brief discussion of the current role of agents and merchants. Then the main challenges and opportunities are portrayed, including an overview of potential sectors that could be interesting to include in the Burmese mWallet landscape in the near future. Some of these are already in the Wave Money's loop and are being tested in a pilot phase.

13.3.1 United Nations Capital Development Fund (UNCDF)

UNCDF is a capital investment agency within the UN working to promote economic growth and reduce poverty in the World's 48 least developed countries (Wong et al., 2017). On January 9th 2017, UNCDF, supported by the Australian Government, and Digital Money Myanmar (Wave Money), signed a grant agreement based on Wave Money being one of the winners of the UNCDF SHIFT Challenge Fund with their digital gamification application for enhancing financial literacy (Wong et al., 2017, see also Section 13.2). Through the joint investment agreement, UNCDF's Expanding Financial Access (EFA) Myanmar program will provide the majority of the project's funding. The financial gaming application will enable people to learn about financial concepts such as savings, insurance and interest rates, aiming primarily to increase financial literacy among women who are reluctant to engage with formal financial services (Wong et al., 2017). In turn this will serve as an accelerator for financial inclusion in Myanmar.

The project is expected to run for two years, and after the conclusion of the project, the aim is that 260,000 women shall have achieved financial literacy through the application, and 30,000 women shall actively use mobile money accounts (Hynes, 2017; Wong et al., 2017). Wave Money CEO Brad Jones recognizes the importance of partnering with UNCDF to leverage their expertise on how to best serve women and develop a tool that accelerates financial inclusion (Wong et al., 2017). A UNCDF representative has claimed that "mobile money is Myanmar's best bet at swiftly linking its poor to safer, more regulated financial services". This emphasizes the importance of UNCFD as a collaborator to

facilitate mobile money usage (Channel News Asia, 2016).

13.3.2 Agents and Merchants

Physical bank branches in Myanmar are very limited in numbers, standing at 1,500 in 2016 (Channel News Asia, 2016) and building up an infrastructure to reach the more than 50 million population will take years, say experts (Channel News Asia, 2016). Mobile money services, like Wave Money, use agent locations as "human ATMs" rather than bank branches, which are far more numerous and accessible. Hynes (2016) says that for mobile transactions to succeed on a broad scale, the distribution network needs to be trusted and here agents have a vital role as they are at the front lines of earning consumers' trust and educating them about financial platforms. For this to be achieved, training of and collaborative agreements with agents is necessary. As described under the focal firm in Section 13.2, Wave Money currently has 8,000 agents (see Jones' interview, Section 14.3), however, as of yet, the authors have not uncovered such dedicated agent training initiatives in Myanmar.

On the online merchant side, Wave Money has already started to offer some online and digital payments, such as food delivery and digital content (see Jones' interview, Section 14.3). The connection is made through the Telenor company *Paysbuy* which offers an online merchant platform (also holds for physical goods merchants). According to Riecke (2015) the first domestic e-commerce platform in Myanmar was launched in 2015 offering expanded reach for buyers and sellers and cheaper ways of doing business. Usage remains low, but considering the development in other countries this could be an important arena going forward. Also, with the high smartphone penetration scaling up the online merchants collaborations should be a great opportunity.

Signing up offline merchants however, has shown to be harder, currently standing at about 500 merchants testing the solution with a low activity rate at 10 to 15% across the merchants (see Jones' interview, Section 14.3). This is linked to the absence of a chain store concept in Myanmar, as retail is mostly informal and family based.

13.3.3 Challenges and Opportunities

Collaborative initiatives remain limited within mobile wallets and mobile money in Myanmar. This subsection will focus on interesting avenues for mWallets to delve into inspired by what has been uncovered in the desktop research and experiences from Pakistan.

Opportunities

Several sectors can be attractive for mWallet collaboration as they contribute to adding perceived usefulness to the service as more services accept it as a payment method or as part of its infrastructure:

1. *Insurance* As described in Chapter 12, covering the internal landscape in Myanmar, there is a major gap in the retail insurance sector, which is largely undeveloped (Chamberlain et al., 2014). Health and funeral insurance are absent in the market, although these risks are most prominent to households (Chamberlain et al., 2014). Especially informal consumers remain excluded from having insurance.

2. *Civil Society Organizations* Hynes (2017) says that there are "opportunities for growth through collaborations between civil society organizations and tech companies". Civil society organizations are usually not very tech savvy, but have good insights into what challenges that face Myanmar. Technologists, on the other hand, often needs help understanding what challenges are most prominent (Hynes, 2017). Hynes (2017) says that "continued collaborative efforts between tech hubs like Phandeeyar and civil society groups will facilitate social progress and access to vital services as Myanmar continues to develop".

3. *Agriculture* According to Chamberlain et al. (2014) farmers constitute the largest user group of regulated credit, which is offered by MADB (see Section 13.1) and Microfinance Institutions. Digitization of these flows should be a fruitful opportunity.

4. *Merchants (Offline and Online)* Currently very few merchants (especially offline) accept mobile transactions, limiting its usefulness. Nguyen (2017) says that Myanmar's lack of a network of merchants that accept digital money creates an obvious problem as convincing people to use digital money when it's not accepted anywhere is hard. "This will need to be a key focus area, particularly for the banks and mobile money companies that are vying for market share", says Nguyen (2017).

5. *Transport* Nguyen (2017) says that "2016 saw several moves in the consumer transportation space with the launch of Oway Ride and Hello Cabs". These are still in their infancy, but Uber is looking for a country manager here and it is assumed Grab isn't going to be far behind (Nguyen, 2017). Within bus transportation, there is one actor named Star Tickets, which sells both directly and indirectly and has yielded promising results (Nguyen, 2017).

6. *Bulk and Utility Bill Payments* According to Wave Money (see Jones' interview, Section 14.3) they currently collaborate with with a local payment aggregator (CNP) to provide utility bill payment and plan to connect to a number of different billers (including e.g. solar PAYGO companies and MFIs for loan reimbursement). Limited public information is available about these agreements at this time, but continuing on such a trajectory is considered a smart move to increase usefulness. Wave Money also reports that they work with a number of local and international companies/NGOs to provide bulk payment services. This too should be continued.

7. *Corporate Salary Disbursements* Moving salary disbursements from extensive amounts of cash into mobile accounts could be very valuable. According to Brad Jones (see interview, Section 14.3) Wave Money has already signed a handful of agreements to deliver salary disbursements to corporate entities. Existing collaborations included KFC, Telenor and Yoma Bank.

Challenges

The main challenge when it comes to collaborators it that Myanmar's consumers and infrastructure are not yet ready for advanced services. As an example Nguyen (2017) reports that Myanmar lacks the volume of people who are willing to pay a premium for the convenience provided by e-commerce. Furthermore, infrastructural elements, such as last mile delivery is not in place (Nguyen, 2017).

13.4 Competitors

"Cash is actually our biggest competitor," says Tim Scheffmann at Frontier Technology Partners, developers of MyKyat, to the Myanmar Times when asked about the current state of the mobile payment market (Mullins, 2014). Although a major deterrent to adopting mWallets, cash itself can not be a contender to spend pages discussing, instead focus will be on the firms that introduce their own innovative alternatives to Wave Money. In the "primordial ooze" that is Myanmar's mobile money scene from which Wave Money itself rose out of, competition stirs either in the form of i) direct MFS competitors owned by other MNOs or bank-licensed entrepreneurs, and ii) fintech firms who offer solutions that otherwise potentially cannibalize the MFS market.

13.4.1 MNOs and other Major Competitors

Mapping the competitive landscape there are two licensing regimes: there is a regime to launch through a bank license, and there is a regime to launch through the mobile operator license. Currently, Wave is the only MNO license holder, but two other operators, Ooredo and MPT, are expected to soon launch their competing services. While waiting for market development and regulations they have not been idle, instead developing their platform and are believed to be strong competitors, see Figure 13.1. In the summary from the interview with Brad Jones of Wave, Section 14.3, there are at the moment in total around 13 competitors in the market of which there are only four or five that he considers in anyway relevant. He refers to a number having already previously launched and failed and a number assumed to fail in the future. There are 11 or 12 operating under the bank-led model, but often they are not banks but rather service companies set up by entrepreneurs. Jones believes that many of them perhaps underestimated the investment that was going to be required to go into distribution stating that some of them like 663, MyKyat, Myanmar Mobile Money and MyanPay have basically fallen by the wayside, Figure 13.1 (Haley, 2017). The central competitors are therefore MPT and Ooredo as well as two existing competitors, TrueMoney and OK$. TrueMoney is a bank licensed part of the True corporation out of Thailand, but they are primarily using terminals to do money transfer and airtime top up. OK$, which is owned by One Stop Mart, is operating unlicensed within what Jones refers to as the gray zones of operations allowed in Myanmar. All four will be introduced further below.

Ooredoo

Qatar-based Ooredoo, one of the four telecom providers in Myanmar and also the only other foreign MNO that either offer or intend to offer an mWallet service (Gaung, 2017) represents a tough competitor with a large network threat and strong source of funds (Haley, 2017). The new mobile money service, *M-Pitesan*, allows customers to send money instantly within the country (P2P) and buy airtime for themselves or others. Ooredoo has chosen to work together with Co-operative Bank (CB Bank) as its banking partner, and is now awaiting licence approval from the Central Bank of Myanmar (Gaung, 2017). With a strong strategy for leveraging their third party network of banks, Ooredoo has entered into an partnership with Red Dot (to be mentioned more below) allowing them to use their extensive merchant network for cash withdrawals and payments. Upon launch, Ooredoo boasts a wider portfolio of services compared to Wave Money and in-

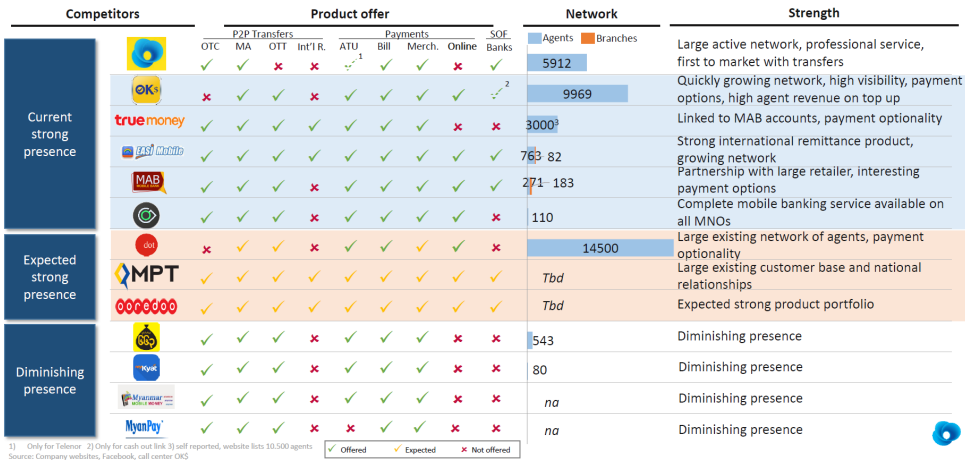


Figure 13.1: The competitive mWallet landscape of Myanmar (Haley, 2017)

teroperability within their payment use cases (Haley, 2017). Many of these products will also have incentives integrated to the MNO (Haley, 2017) and can be speculated to be extra top up time etc. The company hopes to launch in 2017 for its eight million SIM card customers, having already completed testing of the new offering and established internal business processes to manage it (Gaung, 2017).

Innovation-wise, Ooredoo has several services that are a useful supplement to their own MFS by creating more content that mWallets can be spent on. These services are very new and therefore numbers regarding impact and uptake can only be guessed at. Ooredoo already have an app that enables control of the Ooredoo Myanmar Prepaid Account. During this transitional phase it is unclear how many of these services will be merged together with M-Pitesan. In addition to the application, Ooredoo has a few additional services that can be combined with an mWallet payment service and will be brought up in the Part III discussion section, 15.2:

Ooredoo Zone

Ooredoo Zone is a digital distribution service operated and developed by Ooredoo. It serves as a digital media store, offering music, magazines, books, movies, and television programs allowing users to browse and download applications (Ooredoo, 2017). This directly competes with other digital content providers mentioned under fintechs.

Site Pyo

Site Pyo is a smartphone app designed to improve Myanmar farmers' lives by providing valuable information that help improve yields including understanding weather reports, help with weeding, pre-seeding etc. Site Pyo is free to download and there are no Internet charges to use, so farmers can download and use the app for free (Ooredoo, 2017). This is very similar to the "Golden Paddy" app mentioned under fintechs.

Ooredoo KyoThone

If a user account has 200Ks or less of Top Up credit, they can obtain a credit ad-

vance and repay it with a service fee when they Top Up next (Ooredoo, 2017). Consumers can get up to 800Ks added to their balance to use within 30 days. The credited amount and a 55Ks service charge is deducted from the account balance the next time that they Top Up.

MPT

According to Patrick Kershaw, investment director at Leo Tech, whereas Telenor might possess "more experience in the region than anyone else", Myanmar's Posts and Telecommunications (MPT) has the advantage of being the largest carrier (Tao, 2016). MPT has more subscribers than Telenor – almost half of all mobile customers in Myanmar. As a formerly government-owned company, they are strategically positioned to corner the market for government salary payments and government-to-person (G2P) transfers (Haley, 2017). In addition, strong government ties can have other benefits when tackling regulations, as will be presented in the case of OK$ below. At the time of writing this thesis, this service has not yet been launched and therefore there is little else to be gleaned from their web pages other than a job posting for a technical position. A news article by Loughnane (2017), however has described that MPT intends to roll out their service in three stages starting later this year.

In the first round, MPTs mWallet will allow cash-in (deposit), peer-to-peer transfer, self airtime top-up, international remittances, and basic bill payment (Kyaw, 2016) resembling the services currently offered by Wave. The second phase which is planned for late 2017-2018, extensive merchant bills payment and links to mobile shopping are to be introduced (Kyaw, 2016). The article claims that the third phase is scheduled to start in 2019, where MPT will introduce the important value added services: saving products, basic loans and insurance products. Whether this timeline is correct is speculative, however the implementation plan resembles that of other, more developed MFS markets such as Pakistan, and therefore MPT will be a serious contender to Wave (Kyaw, 2016).

OK$

OK$ (pronounced "OK Dollar") is a service with a quickly growing network of over 9900 agents largely found through their extensive FMCG base for merchant payments (Haley, 2017). The service leverages their large FMCG distribution network as an arena to push the OK$ digital payment product allowing consumers to pay with the service (Haley, 2017).

OK$'s product offering varies with venue with all types of transactions being possible at their One Stop Marts which are owned by the same group. Though most agents do only top-up and some grocery stores do accept OK$ as a form of payments for One Stop Mart product purchases (Haley, 2017). Customers are attracted by OK$'s promotions and offers for airtime and merchant payment (Haley, 2017).

Consumer awareness of the brand is high much do to their high visibility, especially in Yangon and Mandalay, because of ownership of billboards and FMCG store synergies (Haley, 2017). Integrating the OK$ brand with FMCG product offerings enables payments for products like their Super Coffeemix using the app which has proved to be effective (Haley, 2017). Product awareness, however is very low and customers are not using the service for money transfer as, according to the study, digital payment experience is poor and transactions are low (Haley, 2017).

Case: Lack of enforcement Whereas Wave, as a subsidiary of Telenor, used the local regulations as the foundation for how they operate, competitors, exemplified by OK$, have not applied for any license, and flaunt the regulations completely says Jones. This particular provider operates unlicensed and has according to Jones in their terms and conditions the right to take money off customers if they do not perform transactions within a six month period, completely against the GSMA code of conduct and Central Bank regulations. Currently the Central Bank has not taken any action against this and Jones speculates that this is a typical "only in Myanmar" type of scenario, where relationships with officials in the Central Bank have enabled the situation. The impact of this on the consumer will be brought up in the discussion Chapter.

True Money

According to Jones, the last real contender to Wave at the moment is True Money which offers P2P, bill payments and has a strong presence within international remittance especially from Thailand (which represents 85% of total international mobile money migrants) to and from Eastern Myanmar (Haley, 2017). Through their international remittances program their customers have high awareness of True Money, however they have poor visibility and appearance elsewhere in the market (Haley, 2017). Currently True Money does not offer a customer application, however customers can alternatively sign up for a card (Haley, 2017). According to a Wave report, most people use True Money to pay back installment payments to Aeon, a micro finance company, for their mobile phone purchases (Haley, 2017). Only about half of the agents do money transfers the rest focus only on Aeon service (Haley, 2017).

13.4.2 Fintech

Myanmar can be considered the perfect test case for fintechs. According to Janssen (2016), few countries seem better poised than Myanmar to benefit from fintechs, referring to the shift in focus to the content side of the equation (Nguyen, 2017). Fintech companies are capitalizing on Myanmar's rapid development and increasing smartphone and internet penetration by offering digital financial products (Hynes, 2017).

However, as several fintechs sprout out creating general awareness of mobile payment possibilities there are also worries that fintech might adversely affect Myanmar's nascent banking system, which is just beginning to find its feet (Janssen, 2016). Being very lightweight and efficient at one thing they can out compete the local banks who have to support a million-dollar network of branches and hundreds of people to pay (Janssen, 2016). By stifling bank growth with short sighted fintech projects there may be long term repercussions for Myanmar.

Following is a non-exhaustive list of relevant fintechs currently operating in Myanmar that to some extent have a unique product offering that should be under consideration for emulation or acquisition:

Shwe Thee Nhan ("Golden Paddy"; Agriculture)

Impact Terra's core offering is its Shwe Thee Nhan, or "Golden Paddy" app. Farmers can download the app and input information about where they're located and what types of

crops they grow. The service then customizes app content based on their circumstances, offering information on weather forecasts, crop market prices, best practices, financing opportunities and other valuable data (Impact Terra, nd). It seems that the Golden Paddy application is very similar to Ooredoo's Site Pyo service. According to the developer's website (Impact Terra, nd) the service is planning to include transactions and payments, presumably for selling the goods farmed. This would be a service that is currently being improvised through Facebook's own messenger payment service. Combining these two together into one application could prove to be an important mWallet competitor or collaborator.

Red Dot (Credit Card Terminal)

Red Dot (RDP), an online payment service provider headquartered in Singapore, has spent US$35 million placing 14,000 devices in retail outlets. Customers can now use the machines to top up their mobile phone credit and pay bills to certain vendors. "What we're saying to the banks is that our network is out there and it's the largest network in the country. We sell everybody's top-up and we've got 14,000 devices", John Nagle, founder and CEO of Red Dot Network, said (Janssen, 2016).

In addition to focusing on the end consumer, the company provides online payment gateway systems, payment consulting and merchant acquisition services for businesses that require the processing of online credit card transactions such as Visa, MasterCard, Nets, China UnionPay, TenPay, Alipay and 99bill. Their services include securing online credit card payment transactions, eInvoicing solutions with no online presence, eCommerce websites for online credit card transactions and secure storage of cardholder credit card details. RDP has entered an agreement with Ooredoo to allow the MNO to use their terminals for mWallet payments, vastly increasing Ooredoo's accepting merchant segment. In the future, RDP intends to allow banks and debit card providers like Myanmar Payment Union to use their devices to enable customers to make cash withdrawals or money transfers and is already negotiating with a handful of Burmese banks to use its network (Janssen, 2016).

13.4.3 Challenges and Opportunities

This section about competitors in the Burmese mWallet market will conclude by summing up some of the key opportunities and challenges identified after studying the competitor landscape. Notice that several of the challenges and opportunities identified in the focal firm section are also applicable for the competitors, however they are not included here.

Opportunities

1. *Greenfield consumer market* With the market being so new and greenfield mWallet providers and fintechs have a vast opportunity to acquire large market shares if rolled out correctly. If a firm is able to efficiently roll out their service they may acquire larger portions of the consumers now rather than having to carve out a share from an already established market.

2. *Greenfield merchant market* There is a genuine need for more POSs that accept mWallet payments across Myanmar. If grabbing large shares of consumers is to

be considered the chicken, then achieving large portions of accepting merchants is the egg. Like with consumers, all mWallet based actors are facing a greenfield market with opportunities to scoop up as many merchants and making them as compatible with their payment option as possible. This is assuming the required payment infrastructure is in place. An example of a competitor who has already started this is Ooredoo's collaboration with RedDot ensuring all RedDot merchants now also accept Ooredoo's mWallet service.

3. *Content* Fintech firms are capable of producing useful content that is needed by mWallet services offered by other actors such as Wave. These can either be collaborated with or acquired to benefit from their innovations.

Challenges

1. *KYC challenges* KYC requirements are a grey area for fintechs and banks alike. In comparison to banks, without branches fintechs are arguably less capable of carrying out such activities but also considered less worried about them since the transaction levels are generally small (Janssen, 2016). The Central bank however will need to consider all such threats seriously in what promises to become a more dynamic financial system (Janssen, 2016).

2. *Regulatory flux* As the Burmese government is defining its role as a regulatory actor in the mWallet ecosystem, regulations may change (Goeres, White, Tun, & Syed, 2013). The current environment is risky with particular threats of civil unrest and corruption (Goeres et al., 2013). Clarity with regards to regulation and their enforcement is crucial and companies are keenly aware of Myanmar's regulatory ambiguity (Goeres et al., 2013). Investing too heavily based on certain regulations may not be as rewarding at a later point in time as regulations change.

3. *Lack of infrastructure* One of the biggest challenges in the country is the lack of reliable telecom infrastructure for cellular and data coverage, a key factor for development to pick up. According to Chamberlain et al. (2014) electronic retail payments is undermined by inadequate infrastructure characterized by among other things an unreliable power grid and inconsistent communications networks. Concerns on device and network reliability was defined as one of Mallat (2007)'s five risks closely tied with building trust in the service. Aside from trust, weak connectivity, regardless of who is at fault, deteriorates the user's experience of the service and may incentivize returning to cash out of a practical ease of use sense.

13.5 Concluding Remarks

This chapter has given deeper insights into the current state of the external environment surrounding the adoption of mWallet in Myanmar, the key stakeholders mapped out in Figure 13.2. Some key takeaways going further are:

- Since the 2011 abolition of the military rule, the government has taken steps to liberalize the telecommunication sector and financial services sector, recently allowing for non-bank financial services providers. Continued liberalization is needed. Enforcement of compliance with regulations will also be vital.

- Wave Money's key strength is their broad agent network, however their product offering remains limited. Continued focus on the customer life cycle and education of customers seem promising.
- Collaborative agreements to increase usefulness, such as utility bill payments and value added services are emerging, but are still in their early stages.
- Although Wave is currently alone with the licence to operate among non-bank entities, competitors are preparing to enter the market. Once they do, they will represent a serious competitive threat to the focal firm, which will need to adopt new services and ensure interoperability with the new contenders.

The next chapter will discuss what measures can be most efficient for Wave to implement to stimulate mWallet adoption given the cultural context and demographics of Myanmar.

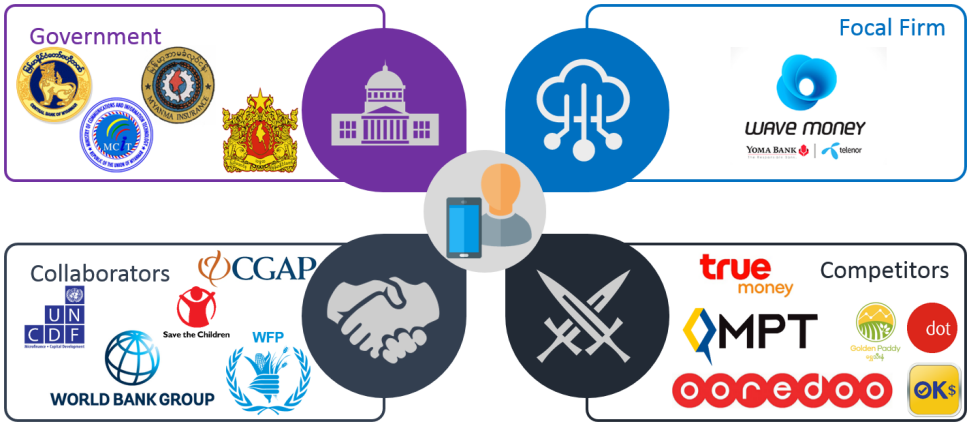


Figure 13.2: Overview of current Burmese mWallet ecosystem actors

Chapter 14

Summary of Burmese Interviews

In this chapter, summaries of the different Burmese interviews are included. In agreement with the thesis' supervisor, summaries of the transcripts have been considered sufficient and most useful, thus complete transcripts are not included.

14.1 Gayle Lee

Name:	Gayle Lee
Position:	User Experience (UX) Researcher
Organization:	Telenor Digital, Norway
Method:	Appear.in interview
Date:	26.04.2017
Duration:	~ 64 minutes

Lee works as a UX (user experience) researcher. She performs qualitative, small sample sized interviews in an attempt to get an understanding of individual users, who they are and what their lives look like. In this sense, UX research is considered more specific than general market research looking at general trends in the market. Lee spends most of her time at the Telenor Trondheim offices or based in Asia visiting different countries where Telenor has a foothold.

Intention of interview Lee's background as a UX researcher gives her useful insight into the consumer needs down to the use case level. In this sense her knowledge was intended to be used mainly for the internal part of the framework to shed light on Burmese market interests.

14.1.1 Internal Adoption Constructs

On Core Constructs

Trust Lee believes that in Myanmar the *trust* barrier to MFS is lower than other countries as it is "only newly exposed to Internet", whereas in Pakistan there might be a higher

level of suspicion against fraud and scams. In Myanmar there is simply not experience and thus they are more trusting to Internet and potentially digital things. "Internet is seen as a good thing - cool with the young people", she says, and more importantly, "Telenor has good positive brand awareness".

Awareness When discussing *awareness* it is important for Lee to clarify the difference between Wave and Yoma Bank versus Telenor Myanmar. The awareness of MFS will be a lot higher in Pakistan where there are existing services such as Easypaisa, JazzCash and Omni. In contrast, awareness of MFS in Myanmar is lower, but this may change very quickly. "*Now* it's lower - they don't have an existing thing to look at - but in six months this might be very different", she points out. Whereas Telenor is very well recognized, Wave Money is a smaller player and is partnered with a smaller, local bank (Yoma), and therefore don't have the same spread as Telenor. There are only three telco players and "everyone knows who they are". Telenor is especially renowned for Internet (not so much regular phone and land lines).

Perceived Usefulness MFS could have a large impact on *perceived usefulness* in Myanmar, if you target the correct groups. Lee explains with two of different market segments, well off entrepreneurs and the poor:

Even for entrepreneurs it is very difficult to pay bills and get credit. Lee bases this on interviews with two female entrepreneurial re-pats. The first begged "give me something to work with" because coming from the US and being back in a very cash heavy society was tiring. She physically needs to go to the bank carrying large stacks of money to pay her suppliers and vendors. Lee's interviewee pressed that "as a business owner trying to run my business, I would love some digital services in this regard". Credit-wise, Myanmar is not a mature market in the sense that simply people haven't built up a financial history that can make them get loans. The other interviewee recollected she wished she had not closed her US credit and bank cards. Trying to expand and grow a food truck business, she only has so much money and wants to get a second truck. Without a credit card and no one in Myanmar being willing to accept her credit applications this is incredibly difficult. "At least from their perspective it's very emergent", Lee says.

On the other hand, Lee also interviewed an entrepreneur who had four employees from the poorer class. The interviewee pays her staff as expected, but also has to teach the employees about what a salary is and the concept of saving vs spending: "They have no sense of a regular salary and that I'll pay them every month. Instead, I'll pay them in cash and they'll spend it all and then ask for more even if it's not the end of the month." She has to teach them not to spend it all at once, but rather save some in case they need to spend it later in the month. There is additionally a demand for non-monetary support making the employer pay them, but also house them and ensure they have enough food and rice, taking care of them like they were family or relatives. Lee points out that there is therefore a wide spectrum on perceived usefulness, even more so than in Pakistan which has been more open to the world.

Perceived Mobility Lee believes *perceived mobility* would be important for the Burmese, but differently than the way the West correlates it with "convenience". For rural people in Myanmar it's about accessibility at all. Not having to travel 1.5 hours to reach a bank, but instead just use a phone would be a huge save.

Economic Factors Although the *economic factors* for re-pats and expats were given, the interview focuses on the locals - the rurals in particular. Lee proposes there would be an economic incentive for mWallet for them as well. Interestingly, precisely the fact that they don't have access to traditional bank services, "banks don't consider them worthy customers from purely financial standpoint", becomes a strong reason for rural people to have mWallets. It's the only way for them to have some sort of system when you don't have access to the "traditional systems". Additionally, Lee says that in a society where cash is everything and the fact that you require a lot of notes to create even a small amount of money there is definitively an economic factor in digitizing it away.

The final economic factor that could affect adoption is the market's understanding that OTC agents take cuts, often unofficial ones, from the transactions. Considering the high price elasticity of the Burmese, if there's something that the user can do to more directly transfer money without an agent taking a cut thus allowing them to keep a bigger portion of their money, that might be very appealing and spur adoption.

On Moderators

Demographics In Asia, family or social networks are very important. In a family there is a head of the family who takes care of these matters for everyone in the family. Its not just each individual using it to accomplish their own goal. Lee believes this will inevitably affect the market size, at least in the beginning, as not everyone would consider using mWallets themselves.

Segmentation of the Burmese market can be done in several ways. Historically, there have been major ethnic groups and minority ethnic groups and this could be considered one division. Additionally there is the segmentation between the locals, re-patriots and ex-patriots. *Locals* are people who never have left Myanmar, and, now that Myanmar opens to the world, are influenced by new external stimulants - things they weren't exposed to before. *Re-pats* are people born and raised in Myanmar and then they either got refugee status or had the money to travel somewhere else or received good opportunities to study abroad, but now they're coming back. This segment thinks a little bit differently than the local Burmese who have never seen the opportunities abroad. Finally, there is a growing group of *expats* who are not Burmese nationals but are foreigners working and living in Myanmar and employing locals and re-pats.

Lee says that its important to note that demographics in Myanmar is rapidly changing. The power and class hierarchies and structures are still remnant from the times of the military Junta. They are well connected, living a much better and well off life. Now there is a rapid change and this is for example reflected in the access to phones and SIM cards. Before only the rich had phones because SIM cards were so expensive, but in the last couple of years the price of SIMcards have plummeted to 1.5 USD. This drastically changes the demographics of people capable of potentially using mWallets. Its important to note however that although people may have used phones for a long time, very few have experience with the Internet. Likewise, on the banking side, most don't have access to financial services and the people that do are limited to specific kinds of services.

Hofstede At the time of the interview, the authors' of this thesis needed to find an alternative to the official Hofstede results, which were nonexistent as Myanmar had not been included in the original paper. When asked if she knew of any alternative findings Lee believed this would be difficult to find since Myanmar had not been open to the external

world for that long. She recommended looking into non-profits or NGOs as they have been in Myanmar for the longest. They would be able to bring insight from an external viewpoint, but the metrics and the data they're interested in might be too specific. A few days after the interview Lee sent over Rarick and Nickerson (2006) which became the founding article used for assessing Burmese Culture in Section 12.3.

14.1.2 External Actors

Lee's area of expertise is user research, however she also has some insights to share about the general market environment in Myanmar. Indeed, she believes that by adopting mWallets, a lot of doors of opportunities, both at personal, family society and country level, could open up in Myanmar. She draws a linkage to how the country leapfrogged the laptop/computer and feature phones and went straight to smartphones. According to Lee the country has a chance to avoid the struggle that a lot of other countries have been through and jump straight to all the great things that could be possible.

On Governmental Actors

Lee says that right now there is no regularity in Myanmar. People think, "I sold this today that's what I made" without interference from the government. Based on the people Lee has encountered so far, P2G or G2P hasn't come up. She believes this could change as the society changes and becomes more open to the rest of the world. When the market evolves to a state where there is a thing called "a job" and "a salary" then Lee believes it'll might become a more common need to pay tax and receive disbursements from the government. One specific recommendation is to look at India, who removed their big value notes in their system, working against corruption and encouraging P2G and G2P.

As Lee previously stated (see the *perceived usefulness* paragraph above) it is extremely hard to get credit in Myanmar, even if you have a formal bank account. She lists two specific reasons that could cause this: (i) the market is not mature as people haven't built up credit worthiness, and (ii) it hasn't been available because of the control that the government has exerted over the country. It will therefore be important that the government takes the necessary steps top ensure for increased credit availability for the people.

One measure the government has implemented, is to require a real ID for SIM-card registration, ensuring that the number is always registered to a real person. To her, that hints to the government seeing some value in knowing national identities of everyone in their country. She believes it would make sense to build on this.

On Focal Firm

In relation to the focal firm, Lee focuses on Telenor's positive brand awareness in Myanmar. As mentioned under the *trust* and *awareness* constructs, Lee says that Telenor is very well recognized, while Wave Money is less so. Wave Money is a smaller player, and in fact she says that it might be wrong to partner with Yoma Bank which is a local bank and not one of the bigger players, giving it less reach. Even people she interviewed with who were well educated and had a high place in the social structure hadn't even heard of Wave Money. It would therefore be important for the focal firm to improve awareness of the service while simultaneously transferring trust that is already present in Telenor over.

Given that some people are identified as *key users*, meaning that they are responsible for often five or six other accounts in addition to their own, Lee comments that these key users should maybe be the target group for Wave Money. These people are likely to have a slightly different demographic profile than everyone else, probably being a bit more tech-savvy and more likely to not just go for the lowest price, but to go for something that would help them manage five accounts at the same time.

On Collaborators

When asked about existing (or potential) collaborators, Lee responds that she will have to think about it and cannot come up with any similar initiatives as those exemplified from Pakistan. When asked about the role of e-commerce in Myanmar she says that she believes it is not very widespread. The people who do use it usually do it with things outside Myanmar, like the Chinese Alibaba, or regional equivalents, not necessarily some domestic service.

An interesting added fact is that there is a lot of *celebrity power*, as compared to somewhere like Norway or some Western countries. If the Burmese endorse something, such as TV-dramas and series, then a lot of people know about it. Also, she comments on the important role of Facebook in Myanmar. For many people that is their Internet, she says. Facebook is where they will search for news and where they will learn about things, not Google. All businesses have a Facebook page and Telenor, for example, has a very powerful position on Facebook in Myanmar which is actively used, more so than for developed countries.

On Competition

Lee has limited information about direct competitors to Wave Money, but she mentions again the other two telco players, Ooredoo and state run MPT, who also have projects in the digital space. She says that generally people like Telenor a lot for Internet, then comes Ooredoo. An aspect she says is especially important is interoperability.

14.2 Therese Nesseth Tørlen

Name:	Therese Nesseth Tørlen
Position:	Product Manager, Direct Operator Billing (DOB)
Organization:	Telenor Digital, Norway
Method:	Face-to-face interview
Date:	10.05.2017
Duration:	~ 59 minutes

Therese Nesseth Tørlen is Product Manager for Direct Operator Billing (DOB) in Telenor Digital AS. As Product Manager, Tørlen is responsible for strategic direction, product development and prioritization for technical work within DOB. She holds a Master of Science from BI Norwegian Business School, with International Strategy as main subject. She began the position as Product Manager late 2016 after working closely with Telenor Group

Executives the previous year. During the last two years Tørlen has been gaining market information from top management meetings and market visits in Myanmar.

Intention of interview As the project manager for Telenor's Direct Operator Billing systems in Myanmar, Tørlen brought useful insight into the Burmese market. Her interview, with focus on consumers, was intended to supplement Lee's statements. Tørlen's interview was performed in Norwegian and the following summary is a translated version of the key take aways.

14.2.1 Internal Adoption Constructs

On Core Constructs

Awareness Tørlen says that there are extreme amounts of branding surrounding the MNOs as there is a lot of competition in it. There are four competitors: Telenor, Ooredoo, MTP and a fourth player who is imminently entering the market (she was unsure of the name, but research hint to it being Mytel). The reason behind the heavy competition is due to the consumers' high price elasticity. The phones used in Myanmar often have dual SIM ports and consumers simply use the SIM that is the cheapest for each task. For example, Telenor offers free use of Facebook, and so consumers use the Telenor SIM for that task. It is possible to purchase top up scratch cards "every 100 meters" saturating the streets with brand awareness. The mobile phone penetration is extremely high in Myanmar says Tørlen, referring to the fact that even monks use smartphones, taking selfies at holy palaces and sharing them with one another. The awareness has increased incredibly fast, "everyone has a smartphone". Additionally, telcos have become some of the "hippest places to work".

Trust Tørlen believes that the most important construct is *trust*, and this has a lot to do with the government. She refers to how the country has newly opened up from a dictatorship where everything was monitored and cracked down upon. This is a theme Tørlen touches inn upon further when discussing the Hofstede dimension *uncertainty avoidance* later.

The second reason trust is so important is that everything is new and opened up making locals feel vulnerable. This is where telcos stand so strong in Myanmar as they have a known brand and become a "trust entity". Incorporating payments through a trusted entity makes it's easier to get users to adopt the product. When telcos take the role of trusted entities that are together with the locals in this opening up process, they have a very strong insider position.

Perceived Ease of Use This construct created an interesting discussion: while the consumers *try* to use the app, they don't necessarily know what they're doing. "They learn quickly and adoption rate is high, but they are starting from pure scratch", Tørlen claims, "they go in, and then they just press on everything". She believes most of this sources from the fact that locals have only been introduced to the mobile phone two years ago. Referring to experiences with Telenor Billing there is a lot of usage, "but they don't know what they are doing". Tørlen does not believe this has to do with reading literacy, as the education level is relatively high in Myanmar, but rather the technical or financial literacy. She exemplifies with an American expat who works with getting micro financing

loans for locals. When he manages to get the funding for a local he has to physically sit next to the recipient and help him/her register their own account as they are incapable of performing the task themselves and this is the only way for the recipient to receive the micro finance loan.

This even includes the technically competent developers referring to attempts by Telenor to create tutorials for developers who can use the Billing service. When Telenor sent two employees to Myanmar for user testing they realized that if the developers felt there was too much introductory text they would skip it and likewise for lengthy tutorial films. This included the important parts of registering to the service and receiving the vital codes that were required for integrating the service into their own products.

Perceived Usefulness As Tørlen does not have a lot of specific insight into Wave Money, she is unsure about the *perceived usefulness* of the service. She assumes that agents existed that could be used to top up the wallet and allow for cash withdrawal. She claims that's what makes Wave popular - Wave has incredible agent reach and it is vital to be able to withdraw in Myanmar.

On the topic of insight into credit, savings and insurance, she believes this perceived usefulness is low due to the fact that everything is so new. Before, the state covered everything and "had your backing". Now everything is new and needs to be learned. Whether this is a matter of awareness or perceived usefulness is left for discussion later. On the topic of the usefulness, Tørlen believes that B2B is nice to have, but rather limited due to the lack of accepting merchants. In contrast, due to the usefulness of money transfers, P2P is definitively a market, both in terms of supporting poor and beggars selling their wares, but also in terms of international remittances.

Perceived Mobility Tørlen believes that the service does contribute to the *perceived mobility*, especially for farmers. She refers to an application that is already a current collaborative project by Telenor where farmers can get the daily price check on rice and will be mentioned again under collaborators below.

Personal Habits With barely one year of MFS, *habits* related to MFS are close to nonexistent. The society is predominantly reliant on cash, including most merchants only accepting cash, and therefore an important challenge is that there is nothing to use the digital payment methods on. There is a process of slowly introducing digital content, but from Telenor's point of view this takes time. Although there are increasing amounts of tourism, which has a positive effect on the demand for more merchants accepting digital payments, locals and taxis etc. rely solely on cash with only 1-2% of the population having credit cards.

On Moderators

Demographics Not much is discussed on demographics that wasn't already covered by the reports. An interesting insight however is the high level of available education. The literacy and writing levels are very good. Tørlen refers to the education system being similar to Norway where there is available primary education. This access is not mandatory however, and although schooling is prioritized in the cities, many children are taken out of school early to earn money for the family in the rural districts.

Hofstede Tørlen makes some short comments on her views of Myanmar's scores on the Hofstede dimensions that were gathered from Rarick and Nickerson (2006).

Power Distance

She agrees that the country has a very flat and open culture in contrast to the surrounding SEA countries.

Uncertainty Avoidance

"Definitively!", she exclaims. The country has been so long under dictator rule and thus the people are very weary of what the government knows about them: "What are you doing with that data?", "What will you be using it for?", "What do you know about me?", "What are you allowed to have?", and "Will you be sharing this with the government?". Unlike Pakistan, the *uncertainty avoidance* score is therefore not so much related to the risk of making unsuccessful transactions, they are very experimental in this, but rather the personal risk with respect to the government. "They have been under surveillance for so long they are afraid that if they open up now what will happen to them", she says.

Masculinity

It is unclear whether Tørlen understands the criteria fully, but explained that Myanmar was a very safe country especially for women.

Individualism

The *individualism* score was right in the middle and this seemed correct.

Indulgence

This criteria was not given a score by Rarick and Nickerson (2006), and so the discussion is instead if she has any opinion upon this criteria from her observations. Tørlen is unsure, but uses *indulgence* as a segway to discuss the strong desire to give or donate and that this brought them strong sense of enjoyment. She claims Myanmar is the country that donated the most to their poor and that this had to do with religion and to some extent culture.

14.2.2 External Actors

On Governmental Actors

Tørlen recognizes the government as a very important actor in the Burmese mobile money arena. The mobile payment market, which she works in, is still in its infancy. The first online payment was made one year ago, she says, and in this stage of market development, the government has a lot of power to develop a transparent payment system that can turn Myanmar into a digital country. She adds that it could be possible to copy a successful solution from another country, such as Singapore, and implement a similar model in Myanmar. More than once she emphasizes that the government has to take the lead in facilitating this digital shift. Currently, Telenor and Wave Money are "put on hold", waiting for the government to make the next step, and according to Tørlen, lack of governmental impetus can slow down the development of the mobile money market.

With regards to *identification*, Tørlen mentions the recent government requirement *ecaf*, which requires electronic verification of the user's ID to receive a SIM card. The registration deadline for all SIM cards to be registered under ecaf was May 1st this year.

Tørlen mentions Telenor's own solution, *Connect ID*, which fulfills most of these ID requirements. Stricter ID requirements can contribute to build trust, a predominant issue as the people of Myanmar has an inherent uncertainty towards formal institutions since they have been monitored for so long. Tørlen does not have insights into the social welfare programs in Myanmar, but she assumes that it exists to some extent.

On Focal Firm

Tørlen works with direct operator billing and not the payment solution provided by Wave Money. Tørlen comments on the difference between Wave, which is a bank, and the service she represents, which is a payment infrastructure, thus categorized as a collaborator to Wave, integrating them to third-party actors.

With these clarifications out of the way, Tørlen moves on by emphasizing the trusted position MNOs have in the Burmese society. Telenor, as one of the three telecom providers (in addition to Oredoo and MTP), has a strong position in the Burmese market, and becomes an enabler for people to trust in Wave Money as well. Indeed, customers show more skepticism towards the government than towards Telenor. Tørlen comments that when the payment solution comes from a trusted provider it is more likely for people wanting to use it.

Focusing on Telenor's role, Tørlen mentions how Telenor has leapfrogged the feature phone in Myanmar, by solely offering smart phones. This has also enabled them to use Facebook as a key marketing channel,which is important given that everyone who has a smartphone uses Facebook.

The most important measure Wave Money should take according to Tørlen is to target customers directly and educate them. She says that, given the high trust in Telenor, people know them and come to them for information. Often, they use a co-branding strategy, where Telenor stands are used help people with top-ups and Wave Money services. This widespread reach contributes to making Wave Money popular. Another field she recommends them to look into is their product offering, especially mentioning P2P as an important service due to the widespread donor culture.

For Wave Money in specific, she emphasizes that still, one year after they received their concession they are struggling to run the business due to bureaucratic constraints. Again, governmental restrictions seem to slow down the market development.

On Collaborators

The major issue with digital money in Myanmar is that there are no POS terminals, says Tørlen. For example, if you have a credit card and there are no merchants accepting this form of payment, the card becomes useless. In Myanmar, all transactions are currently cash based. Development of the merchant side and all content that can be paid by digital cash are therefore vital for the mobile money market to grow. However, she does mention that over the past six months, positive trends with emergence of ATMs and POS have been seen. In addition other collaborators are introducing new use cases for mobile payments.

Digital Content Providers

Tørlen works for Telenor Payment, but not directly linked to Wave Money. Recently they launched their SIM-card based service, partnering with two content

providers: *Coda Payment* and *Easy2Pay*. This partnership allows the consumer to buy digital content through their SIM card. In turn these SIM card accounts can be directly connected to mWallets such as Wave. According to Tørlen these services have experienced "hockey stick" growth, commenting that video and music content is increasingly popular. In addition to these two global content providers, *AMK studio* and *Radioshack* are examples of two local equivalents. In general, by connecting content providers with consumers through the SIM infrastructure, partnerships like these allow users to pay for digital content using payment solutions such as Wave Money.

International Investors

Another issue Tørlen brings up in relation to collaborators, is Myanmar's lack of openness to the public, especially when it comes to international partners. A lot of global partners do not know what Myanmar is and what resources are hidden there. She recognizes the need to educate these global partners, pointing again at the high smart phone penetration which should make an appealing business case to many potential partners.

Building on this, she comments that the Burmese market space is gradually becoming more interesting as it is "greenfield", that is, all industries are opening up and first movers potentially have incredible advantages. Myanmar is fortified with natural resources and according to Tørlen they have a lot of skilled IT-people, although they lag a bit behind on education.

Health and Life Insurance

When bringing up the low health and life insurance penetration in the country, and presenting briefly the initiatives done by Easypaisa, Tørlen is reluctant to say that this can happen in Myanmar in the near future. Her main argument is that Pakistan is several steps ahead of Myanmar, and the number one priority in Myanmar should be to focus on educating customers.

Facebook

Among collaborators, still focusing on Telenor (not Wave Money specifically), Facebook is the most important actor so forth, according to Tørlen. Telenor has an agreement with Facebook globally, but given the position Facebook has to the Burmese, she says "Facebook is the first thing they are introduced to on the Internet", it becomes clear that it is an especially important channel in this market.

On Competitors

Within telecom, Tørlen highlights the three major actors: Telenor, Ooredoo, and MPT. Additionally she mentions a fourth actor who will soon enter the market and is supposed to offer P2P services, which is not yet available in the market. Awareness about telecom operators is very strong, and competition in this market is correspondingly high. Tørlen says that Ooredoo, who also offers direct operator payment, is one of the big telecom providers, but Wave Money is currently best on digital banking.

Among potential new players in the market, Tørlen suggests P2P providers, for example if banks start to offer this product. Also, as Facebook is a really big actor in the consumers lives, where a lot of business is conducted, it can be considered a competitor. However, due to lack of deposit locations, Facebook payments are not currently applied.

Other than that, Tørlen doesn't recall any specific fintech competitors during the interview.

14.3 Brad Jones

Name:	Brad Jones
Position:	CEO
Organization:	Wave Money, Myanmar
Method:	Appear.in interview
Date:	08.06.2017
Duration:	~ 57 minutes

Brad Jones is currently the Chief Executive Officer of Wave Money to provide mobile financial services to the mass market in Myanmar. Jones has worked in executive roles in banking, payments and fintech in Asia Pacific, Middle East and Australia for the last sixteen years. His experience includes establishing start-up businesses in challenging developing markets to operations management and business transformation in multinational banks. He has also advised high profile digital start-ups in the fintech industry. He is an experienced executive who has built multiple businesses from start-up to scale, has managed innovation projects in payments and technology, and has a detailed understanding of operations management and transformation in financial services.

Intention of interview As the final interview, the talk with Brad Jones was intended to be used as a validation of our research and measures. The Burmese market is so new that little information was available and a great deal of uncertainty regarding the findings needed to be clarified. The list of measures which had been assessed by the authors was also discussed with Jones to make sure that they were realistic.

14.3.1 On the Consumer

Jones has valuable information on the consumer which would otherwise have been unavailable through the desktop research alone. He states that from two surveys done from two different firms, awareness ran anywhere from 65 to 90%. This is a ratio in stark contrast to active users. Given around ¾ of people in Myanmar are aware of what mobile money is, those who use mobile money is only about 3-4%. Currently this is not an issue of lack of interest as a little less than a third (28%) have claimed to be definitely interested in using mobile money.

Reasons for not being interested, Jones claims, could be not actually having a network near where they are. Otherwise they might have had an experience or heard of a negative experience, Jones says, referring to a competitor named OK $'s (pronounced "Okay Dollar") recent activities. Out of the group that is extremely interested or interested: interested is about 57%, extremely interested is at 28% leaving only a very small percentage of people who are not interested, about 20%. The biggest reason (59%) why consumers don't use it and convert is that *they don't know how to use it* answering: "I don't know how to subscribe" or "I don't know how it works". "No branches near home" is about 33%, "lack of trust" is one of the lowest ones at about 27%, but the very lowest is

actually fees (8%). Jones thinks this indicates that fees is not really a major driver, "If they know how to use it, and if the shops are close to home, they are more likely to use it."

14.3.2 On the Ecosystem

During the interview, the authors introduced the ecosystem and the actors within each stakeholder group. Jones commented on these, below:

Governmental Actors

Jones recommends not including Myanmar Insurance instead focusing on the Ministry of Communications and Information Technology (MCIT). The foreign telcos are very dependent on this regulatory organ as they sit on vital information to launch the financial service. As a very central regulatory actor for international Telenor and Ooredoo to launch mobile financial services, they definitively have a regulatory stake in the ecosystem.

With respect to Myanmar Insurance, this is less relevant as insurance itself has yet to be liberalized, it is a very controlled market in the country, and Jones does not see it liberalized before 2-3 years at least. Additionally, currently insurance is a minor market with approx. 1% of the population currently using it. With pressures for revenue, he recommends looking elsewhere at the moment. Wrapping up on government, Jones adds that taking a look at the Ministry of Finance may also be useful because they regulate the finance sector which is a sector Wave wishes to collaborate quite heavily with.

Collaborators

Jones divides collaborators into four parts: Donors and NGOs, Billers, Corporate Salary Disbursers and Merchants. He wants Wave to collaborate with the NGO sector in general, introducing the UNCDF, WBG, IFC, the World Food Program and Save the Children in particular. In addition, CGAP is a big collaborator for Wave particularly within projects regarding human centered design. For billing, Jones states they already have a collaboration with Yangon Electricity and 32 other township electricity companies. Finally, salary disbursements is mostly for corporate entities. Existing collaborations included KFC, Telenor and Yoma Bank.

Jones points out that a major income source is NGO donors. "We are doing two programs at the moment, one up at Kachin state with the WFP and one with Save the Children in Yangon", he claims. The business model is based on charging 2-5% of all disbursements put out. "It's a good deal for them as well", he says referring to a report that stated that it previously cost Saving the Children for every dollar donated up to 50 cents to distribute. Jones admits that most of the time the money donated is immediately withdrawn and spent as cash instead of kept in the wallet. Although commissions are gained for distribution and to some extent top ups for Telenor, most importantly it seeds the ecosystem. "Even if 50 people in a particular camp in Kachin, we know that the shop nearby is going to do 50 cash outs and that's great for them because they're making income out of that. It becomes a virtuous circle. The more we have, it puts volume through our network and the more quality the network becomes. Even if only a small segment keeps money in the account per month it's not a great concern because we are creating value in other ways", he says.

Like with the thesis, Wave divides merchants into three segments: physical, online and ticketing. Starting a couple of weeks ago, Wave is currently focusing on signing up online merchants by providing a product for accepting mWallet payment. Physical merchants include food delivery where two of the three largest actors are already on board and the third has shown interest in joining. Currently about 500 physical merchant are piloting the “pay by Wave” product which is a basic P2P and has been deemed too slow. In the pipeline, Wave is therefore building a QR code functionality into the app currently, but are seeing from other markets that physical merchant payments need to be combined with incentives. Considering this market is way off Jones has decided to down prioritize this segment, running a series of experiments around merchant payments in a limited way and then when they are ready to invest, they will be able to look into that investment and double down on incentives and marketing at that time. With regards to ticketing Wave already had a collaboration with the local cinema ticketing system. Still, primary focus is e-commerce and Jones wants to have 25 merchants by the end of August.

Competitors

When it comes to competitors the interview divided them into three categories: MNOs, banks and fintechs. Among the MNOs Jones names Ooredoo and MPT as the major competitors. Although they have not yet received their licences, they are predicted to launch soon and when they do they will be strong contenders with a diverse product portfolio, interoperability and large networks. Jones recommends looking over two documents that has more in depth information on the competitors which will be sent after the interview.

The second type of licence that Myanmar issues is bank-led licences. Jones predicted some of them are potentially going to achieve some scale and recommended taking a look at them. This included True Money who have partnered with AGB bank and Myanmar Apex Bank (MAB) which has already launched a branchless banking solution. "They’re struggling a bit with it now but could potentially have 1000 agents", he claims. The remainder fall short and Jones recommends not looking at them. Jones estimates about half a dozen firms that have failed so far, "there was so much hype around mobile money in Myanmar and a lot of local entrepreneurs thought that if they would build a platform the market would come, but this is all about distribution, and they haven’t had the investment to roll it all out". Only rolling out a couple of hundred agents is too little he claims, "you can’t do anything with that - you need thousands."

As a side note Jones speak of OK$ (pronounced "Okay Dollar") who are currently operating unlicensed. This particular provider has in their terms and conditions the right to take money off customers if they do not perform transactions in a six month period. He points out that this is completely against the GSMA code of conduct and the Central Bank regulations. "They’re well - how do I put this they’re paying off someone in the Central bank", he states bluntly. When asked if he wants the firm censored, he responded "No I’m fine, in fact I don’t shy away from it to be honest because it’s making a mockery of the regulations. We can’t prove this, but what we are being told from people very close to the situation is that the governor of the Central bank himself is being paid off to allow them to operate. Its part of the things you have to deal with around here." When asked about how this could adversely affect Wave beyond stealing customers he replies, "OK$ are not just illegal, but are operating very much outside the best practices for mobile money." He notes that Waves’ brand awareness studies showed that people who were tri-

aling OK$ would then reject the entire category as something that doesn't work. So far very few people have tried, he points out, as actual exposure to mobile money is only about 3% of the population.

When introduced to the author's "fintech" segment he emphasized that these actors were not competitors. He did agree however that they could be looked at as potential collaboration partners referring to the fact that Ooredoo has already partnered up with Red Dot. "The thing with Red Dot is that they are not so much of a competitor, but they do have a very extensive agent network, so what we do is that we compete with them for liquidity at the point of sale", he says. With them partnered with Ooredoo, Ooredoo will be able use Red Dot's extensive agent network. Jones therefore points out that in the future Red Dot and Ooredoo are treated as one competitive entity.

14.3.3 On the Proposed Measures

Jones presented four central measures that he believed would strengthen mWallet adoption:

Acquire customers from multiple channels

Wave is acquiring customers from digital space and have made it very easy for customers to download the app through the Wave Facebook site. Additionally they offer SMS pushes with an offer to download and BTL activity for registrations. Outside of the digital Wave uses their agent channels for registrations as well. By experimenting with several channels and tracking the proportions of each one it can become clear what works. As an example it was discovered that a lot of the ATL marketing done a few months ago were not worth the investment and so they had to change - "we got a bit smarter."

Have a customer life cycle view

During the life cycle view, Wave follows and interacts with the customer across different channels and interactions from posts, acquisition, and registration. This is also relatively new and Jones believes Wave is getting better at it. This process is also experimental, and Wave carries out a certain behavior (such as a push notification or message) on day five, day ten or day thirty after a certain trigger. This could be a call from the Wave call centre, an SMS with an offer etc. The plan is to follow the customer life cycle and make different interventions depending on what part of the cycle the customer is in.

Have a very compelling offer to drive mWallet customer adoption

Due to transaction friction, Jones believes that the Digital payments will not pick up unless there are additional incentives offered to the consumer and to some extent the merchant, at least in the short term. Jones refers to the fact that in Pakistan, Easypaisa is "being smashed in mobile wallets at the moment by their competitors" because they are struggling to offer an incentive that is as good as what their competitors have. Jones has been speaking with Telenor to get an acceptable incentive and for now has been investing in that incentive himself. The incentive, which is 10% cash back for every dollar of air time that consumers buy, means Wave is losing money on every airtime sell, but it is seen as an investment to drive adoption.

Offer multiple use cases

> The final measure involves creating a reason to go back to the app. Without use cases, without the odd checking of balance, there won't be much activity on the application. If it is just money transfer and airtime top-up, people will go to the app at best two or three times a month to top-up, and maybe do one or two money transfers at best. To counter this Wave is currently incorporating directly into the account what Jones labels value added services or VAS. In addition to bringing users back to the app, the key reason is that it is a good revenue stream. Bill payments, like VAS, contribute to drive usage of the app.

It's important to note that Jones' notion of VAS is not the same as the definition used in this thesis, focused on insurance, credit and savings, but instead on digital content. Waves' initial value offer is going to be tied up with a game portal allowing the user to download any game from the portal for a weekly subscription fee, of which Wave receives 30 or 40%. The other will be Myanmar Music allowing users to download music directly to their phone. With VAS, if the user has downloaded the app and has money in their account, they can use that to pay 50 cents to buy a song. It is a revenue option for Wave and it gives the person a reason to come back to the app to see what might be there for them to purchase.

With regards to savings, Jones does not see any revenue in it at the moment, pointing out that Yoma bank already has this function allowing the customer to push money to and from that bank account. Along with savings, credit is also assumed to take some time as lending is somewhat restricted in Myanmar. "We are going to do it, we are going to partner with MFIs to do it, but its probably a 2018 issue", he says. Although anyone working in mobile money is passionate about financial inclusion, Jones says, in the cycle Wave is at the moment, the primary goal is on driving revenue, because the business has yet to reach a sustainable point. "Why am I moving into VAS instead of giving attention to a savings product? Its because I have to drive active rates and revenue so that I can get to a sustainable phase and then move onto these other products further down the track," he concludes.

Chapter 15

Discussion

This chapter provides a thorough discussion of the findings from the desktop study in chapters 12 and 13 and the interviews, summarized in Chapter 14, aiming to propose and evaluate measures to spur mWallet adoption in Myanmar. The discussion consists of two sections. First, setting up the potentially most sensitive internal constructs by combining the desktop research and interviews. Second, in Section 15.2, a discussion of how the external factors influence the internal adoption constructs is presented, also based on both the desktop study and the practitioners' input. This second section generates a set of recommended measures for mWallet adoption in Myanmar that are rated through the same correlation matrix as in Part II, this time with Myanmar's critical constructs. These measures and their impact scores are finally plotted across a prioritization matrix which gives an indication of which measures should be prioritized. Table 15.1 shows an overview of the discussion outline.

Table 15.1: Part III Discussion overview

Discussion	15.1 Internal Customer Adoption Constructs
	15.2 List of Recommended Measures

15.1 Internal Customer Adoption Constructs

In this section key insights are taken from the desktop study and compared with the findings from the interviews. The objective is to illuminate key pain points among the consumers that are addressable by the ecosystem. The key question is which constructs are for the Burmese populace the most sensitive when considering their cultural context and demographics.

15.1.1 Identifying the Most Prominent Adoption Constructs

A difficulty when trying to discern the most prominent adoption constructs in Myanmar is that the market is so new that the lack of studies and reports make the general patterns unclear. This can be exemplified with the conflicting responses among the interview candidates, for instance with regards to awareness.

From the final interview which was held with Brad Jones, valuable insight into the consumer was given in the form of consumer adoption response surveys. Jones stated that from two surveys done by two different firms, awareness ran anywhere from 65 to 90%. Interestingly, this is in contrast to the observations of Lee and Tørlen who believed that the concept of mobile money was almost unheard of. It's important to note that the Telenor Group is a vast global entity and that opinions and observations may vary within the firm and even its subsidiaries. As Jones is sitting at the center of the focal firm and could cite two studies, the authors have decided to use his response as the most correct, however the fact that two respondents from a closely neighbouring subsidiary have a different understanding of this proves that the observations of consumer responses and therefore the end results may vary widely. The fact that the authors are not able to get acquainted with the survey itself meant that it becomes impossible to study the source's content and credibility without any interviewee influence, a topic brought up later in the thesis' limitations.

The desktop study brought forth the main cultural implications in the Burmese market which together with demographic trends and interview opinion give indications to the most prominent adoption constructs which will be discussed below, see Figure 15.1. From Hofstede's cultural dimensions for Myanmar it quickly becomes clear that the country is culturally very different from its surrounding neighbors. The country has one of the highest uncertainty avoidance scores globally (89), but in turn is among the lowest within power distance (26) and masculinity (24). Although these scores are to be taken with a grain of salt considering differences of culture within the country itself they do give a certain insight into how the Burmese market responds to the introduction of mWallets. With regards to demographics, Jones admits in his interview that although they may use Facebook, he would not say people are "app savvy". Likewise there is a high penetration of smartphones in the market (80%), but much of this is because they are the only phones available in the market not so much out of choice. Many, he says, are using their smartphones as if they were feature phones

The success of mobile money services relies on creating *awareness* and *overcoming distrust* in formal financial services. Finally, although the *perceived usefulness* is important, most of this usefulness is bound to its antecedent *economic factors*, which is therefore considered the third critical construct.

Trust

The sensitivity of *trust* is reflected in a globally high score in uncertainty avoidance (Rarick & Nickerson, 2006). It's important to note that this uncertainty was, from interviews, not observed to come from the risk of unsuccessful transactions like in Pakistan, but rather uncertainty against the government. There has historically been little faith in the financial systems organized by the government (Channel News Asia, 2016). In addition, by being used to constant surveillance and oppression by the government, the consumer is increasingly suspicious of registrations and organizational motives, more so than other markets. Due to this, Tørlen claimed that trust was *the* most important construct. Unlike in Pakistan, where users were distrustful of the potential negative impact of MFS either through security breaches or mistakes by themselves, according to Lee the Burmese seemed almost naively accepting of the concept of MFS technology and Tørlen added that although they don't know what they are doing, they were very willing to experiment themselves. In an interview reported by Tao (2016), Jones nuances this slightly claiming

that overcoming distrust in formal financial services is a challenge with approximately a third (27%) of survey respondents opting out of mobile money due to lack of trust.

Referring back to the model, the framework's trust construct consists of four underlying factors: *security, trust, privacy* and *risk*. The trust first discussed in Pakistan is closely associated with the risk factor, where the risk of failing the transaction is central. In contrast, Myanmar seems to be more focused on security, according to Jones in Tao (2016) above, or privacy, according to Tørlen. Tørlen believed that the Burmese are highly suspicious of the data storage and its implication for them vis-á-vis the government, given their long history of surveillance. This resonates closely with Mallat (2007)'s definition of trust in privacy where consumers were "concerned that their payments would be tracked, personal information misused or that they would begin to receive a lot of advertisements if they registered themselves to a new payment system" (Mallat, 2007, p. 425).

This difference becomes crucial when attempting to address the need for appeasing the uncertainty avoidance. Instead of building trust with regards to using the service, it will be more important to build trust with the consumer on the intention of the service and understanding the necessity of the registration process. Here, Wave is dependent on the government's support. According to Tørlen, whereas the telcos are already trusted entities, the government has a lot of history to "make up for".

On the topic of government Jones has a final point with regards to trust - enforcing regulations. Jones talks about the OK$-case where the firm is operating i) without a license, and ii) with terms and conditions that allow them to take money off customers as punishment for not actively using their accounts, breaking government regulations and GSMA rules and fundamentally affecting customer trust in the digital payment ecosystem. Combined, governmental history of surveillance, corruption and lack of regulation enforcement is therefore a market specific effect that impact trust, making it a critical construct for the Burmese market and will be of specific importance for the focal firm to outweigh.

Awareness

According to Tao (2016), the Burmese market is incredibly greenfield with few (6%) knowing what mobile money is, let alone what mWallets have on offer. Both Lee and Tørlen posed the differences between Telenor Myanmar and Wave. They both referred to the well known and trusted Telenor brand, but Lee pointed out that whereas Telenor is very well recognized, Wave Money is a smaller player and is partnered with a smaller, local bank (Yoma), and therefore doesn't have the same spread as Telenor. In contrast, Jones cited two few week old sources where general awareness of mobile wallets has increased more than tenfold to anywhere between 65-90%.

Awareness is assumed to be more important than in other markets such as the surrounding SEA countries. As a nation with large scale de-nationalization of most industries, consumers are being exposed to the opportunity of choice. Whereas insurance, internet, or banking industries were monopolies before, they are now being opened up for competitors. This implies that awareness becomes increasingly important as it is no longer the existence of a product that is important, but which competitor has the best offerings. Spreading the awareness of Wave as the leading mWallet provider is vital to Jones, making a central measure acquiring customers via multiple channels. It therefore becomes apparent that a core construct for Myanmar is that consumers need to be made

aware how the services can contribute.

Economic Factors

Both Lee and Tørlen presented Myanmar as a price sensitive market similar to that of other emerging markets making economic factors a common, central construct. Although Jones presents fees as the lowest (8%) reason not to adopt mWallets, indicating that fees is not really a major driver, this thesis' definition of economic factors includes both the cost barrier of using the service as well as the economic benefits gained from it. Drawing from the cultural dimensions, the relatively feminine Burmese market will emphasize quality of life as a sign of success and economic factors play an important role in that.

In Myanmar, given the awareness of the service' existence, the *economic factors* will be a major contributor to mWallet adoption. If Wave can manage developing a profitable model that fulfills the economic demand from the poor majority they will have access to an untapped portion of the market. Some highlighted demands by customers are:

Price Checking

An example of the economic value of mWallets was introduced by Tørlen in her interview. She pointed out that the farmers were using an agriculture price check application in tandem with Facebook to be able to cite the correct daily price in negotiations with grocers. By combining these price check services with a payment system such as the mWallet will be a major economic factor over paying in cash without an objectively recognized daily price. Lee supports this, emphasizing the price elasticity of the consumers who carry several SIMs which are cheapest depending on use case. She believes that a strong economic factor for adoption of mWallet is as a substitute for OTC. Using mWallets would imply cutting out middlemen (the agent) allowing the consumer to retain a larger portion of their money when transacting.

Payments

Farmers and informal consumers, constituting 42% and 26% of the market respectively (Chamberlain et al., 2014), are segments with high irregularities in their income. This implies that the concept of steady income and expenses is not as imprinted. Starting with existing habits such as remittances and other P2P services might be a good measure to increase the perceived usefulness from an economic perspective. Across all five segments, payments is a function that currently most adult Burmese are excluded from with only the formal enterprises being under 70% exclusion (Chamberlain et al., 2014). Improving transaction functionality will in turn entice savings into the regulated sector (Chamberlain et al., 2014). Currently many bank account holders only use their accounts as "post boxes" where deposits are immediately withdrawn as few POSs accept non-cash transactions. With regards to retention through payments, Jones believes having a very compelling offer as a central measure to drive mWallet customer adoption. Due to transaction friction digital payments will not pick up unless there are additional incentives offered to the consumer and to some extent the merchant, at least in the short term. Jones refers to the fact that in Pakistan, Easypaisa is "being smashed in mobile wallets at the moment by their competitors" because they are struggling to offer an incentive that is as good as what their competitors have.

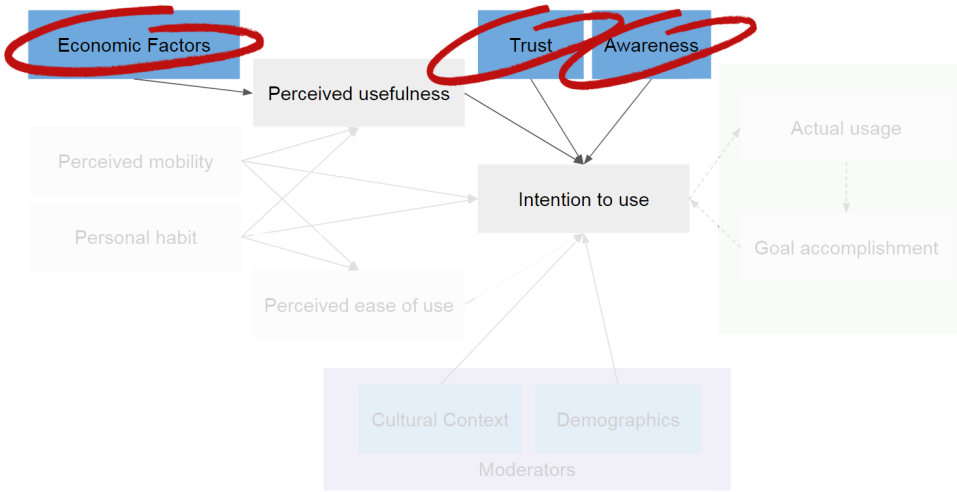


Figure 15.1: Most critical customer adoption constructs in Myanmar

Credit

A final economic factor that was emphasized both in the desktop research and during interviews is credit. The coverage of regulated credit, with the exception of farmers, has been a major difficulty for the majority of the market (Chamberlain et al., 2014). Ironically, formal enterprises is the segment that has the smallest portion of regulated credit and largest portion of excluded members. According to Lee, this has a lot to do with the lack of financial history making it exceedingly difficult for credit lenders to get an understanding of their consumer's risk. Being allowed to access credit through a mWallet will be a major economic incentive to use the service and also a gateway to use other products that are included.

15.1.2 Concluding Remarks

After having compared and contrasted the data with the interviews, several key takeaways are made with regards to the critical constructs, Figure 15.1:

- *Trust* is vital for the service to survive as there exists incredible distrust in sharing personal information and the governments intentions.
- In a society which has only newly been open to the outside world the *awareness* of what exists is low. Having to deal with competitors for the first time, the consumer must become aware that there are differences in product offerings. The basic concepts of stable jobs, salaries and taxes need to be in place for the perceived usefulness of MFS to become apparent.
- There is currently little *economic incentive* as there is no content (both physical POSs and digital content) to spend the money on making no incentive to store capital in MFS without making it an additional step in paying. Therefore it is imperative to focus on the economic factors that make the service useful.

15.2 List of Recommended Measures

This section aims at discerning how the dynamics between the external and the internal part of the framework function in Myanmar in order to come up with a list of recommended measures. First, an introduction to the assessment tools used is given, then each stakeholder group and its existing and proposed measures are discussed. Finally, the concluding remarks are presented.

15.2.1 Assessment Tools

The correlation matrix in Figure 15.2 maps existing and potential measures by the stakeholder groups in the external part of the framework and links them to the internal adoption constructs. Existing measures are marked with an asterisk, unlike potential measures that are not. These "new" measures are based on recommendations from interviews or desktop research and experiences of successful measures from Pakistan. Similar to in Section 10.2 in Part II's discussion, each measure is given a score from no impact (1) to high impact (4) based on the authors' qualitative judgment with regard to the desktop research and input from interviews. Each measure has a label (i.e. MF1) and for those measures inspired by a Pakistani equivalent, a reference to the corresponding measure is given (i.e. PF1). For more detail on the matrix' method and limitations, it is recommended to refer back to Section 2.4, and with regards to its functions and purpose, this can be found in Chapter 5, Using the framework.

Unlike Part II, this section seeks to figure out which measures should be the prioritized to increase mWallet adoption in Myanmar. Therefore the prioritization matrix in Figure 15.3 qualitatively evaluates the measures listed in the correlation matrix (Figure 15.2). The measures are placed across the x-axis of the matrix by their impact on mWallet adoption (the rightmost column in Figure 15.2). They have also been plotted according to the anticipated time required to implement. In this understanding, any measure that has above average impact and take up to a year to implement are considered *Quick Wins* (QW) and should be implemented first. After the Quick Wins, measures are recommended to be introduced in *Cluster 1* (C1), "long term investments" or to receive less focus (not a part of any cluster, labeled *not key priority, NKP*). These last mentioned measures are considered to have a lesser impact on adoption allowing them to be postponed.

Cluster 1 can be initialized simultaneously with the Quick Wins, but are expected to take longer time to be deployed. The measures marked with an asterisk (*) have already been initiated or implemented, but are included because either (i) they require continued revision and innovation or (ii) the implementation process must continue. Given that the idea of these measures already exists, time to implementation becomes shorter, and if the impact is high, they easily fall within the QW cluster. The QW cluster consists of eight measures, mostly from the focal firm, while Cluster 1 has ten measures with representations from all stakeholders. In the following, based on the assessments made in both the correlation matrix and the prioritization matrix, each stakeholder group and their measures are discussed. Some of the measures are grouped in one discussion because of their adjacent nature. What category the measure belongs to is given in parenthesis (QW, C1 or NKP).

	Subgroup	Code	Ref Code	Measures	Internal Adoption Construct: Trust**	Awareness**	P. Usefulness	P. Ease of Use	P. Mobility	Personal Habit	Economic Factors**	Perceived Enjoyment	Intention to Use	AU and GA	Average
Government					**3.0**	**3.0**	**3.0**	**1.0**	**3.0**	**1.7**	**2.3**	**1.3**	**3.3**	**2.7**	**3.0**
	MADB	MG1		Digitization of Loans to Low-Income Rural Households	3	3	3	1	3	1	3	2	3.5	3	*3.3*
	Across actors	MG2	PG7	Digitization of Government Social Cash Transfers	3	3	3	1	3	2	2	1	3.3	3	*3.1*
		MG3	PG8	Digitization of Government Salaries and Pensions	3	3	3	1	3	2	2	1	3.3	2	*2.6*
Focal Firm					**1.8**	**3.0**	**3.0**	**2.2**	**2.2**	**2.4**	**1.9**	**1.8**	**3.1**	**2.4**	**2.8**
		MF1	PF5	Wave App - Human Centered Design*	1	3	3	2	3	2	2	3	3.1	2	*2.6*
		MF2	PF2	Customer Centered Approach*	2	4	4	4	2	3	1	2	3.6	2	*2.8*
		MF3		Digital Gamification Application*	1	4	4	4	1	2	1	4	3.4	3	*3.2*
		MF4		Digital Marketing*	3	4	2	2	2	3	2	2	3.6	2	*2.8*
		MF5		Expansion of Agent Network*	3	3	2	2	3	3	1	1	3.1	2	*2.6*
		MF6		BTL Marketing Campaigns*	2	4	3	3	2	2	2	1	3.4	2	*2.7*
		MF7	PF4	SIM Agnostic Accounts	2	2	3	1	3	2	2	1	2.8	2	*2.4*
		MF8	PF6	Ecosystem Interoperability	2	2	4	1	3	2	2	1	2.9	3	*2.9*
		MF9	PF1	Pricing	1	1	1	1	1	1	4	1	2.1	3	*2.6*
		MF10		Widening Product Portfolio (VAS)	1	3	4	2	2	4	2	2	3.3	3	*3.1*
Collaborators					**2.0**	**2.6**	**3.0**	**2.0**	**1.9**	**2.6**	**1.9**	**1.7**	**3.0**	**2.7**	**2.9**
	UNCDF	MC1		SHIFT Challenge Fund sparking innovation*	1	2	3	3	1	2	2	3	2.8	2	*2.4*
		MC2		Donor/NGO Bulk Disbursements*	1	2	3	1	4	3	3	2	3.1	3	*3.1*
	Agents	MC3	PC9	Agent Training	3	3	2	3	1	2	1	1	2.9	3	*2.9*
	New Sectors	MC4	PC2/3	New Product: Insurance (Health & Life)	4	4	2	3	1	2	1	1	3.4	3	*3.2*
		MC5		Civil Society Organization Collaborations	1	2	4	1	1	2	3	1	2.6	2	*2.3*
		MC6		Utility Bill Payment*	2	2	3	1	3	3	1	2	2.8	3	*2.9*
		MC7		Corporate Salary Disbursement*	2	2	3	1	3	3	1	2	2.8	3	*2.9*
		MC8	PC1	Agriculture Value Chain Collaborations	3	2	3	2	2	3	2	1	3.1	2	*2.6*
		MC9	PC7	Physical Merchant mWallet Acceptance Collaboration*	3	3	4	3	1	4	3	1	3.9	3	*3.4*
		MC10	PC5	eCommerce and Digital Content Provider Acceptance Collaborations*	1	4	3	2	1	2	3	3	3.4	3	*3.2*
		MC11	PC6	Ticketing Collaborations (Travel & Entertainment)*	1	3	3	2	3	3	1	2	2.9	3	*2.9*
Competitors					**1.8**	**3.0**	**2.4**	**1.2**	**1.6**	**2.2**	**1.6**	**2.0**	**2.8**	**2.6**	**2.7**
		MX1.1		Develop Digital Media Store	1	3	2	1	2	3	1	3	2.6	3	*2.8*
		MX1.2		Develop Agricultural App	2	3	3	1	2	2	1	2	2.8	3	*2.9*
		MX1.3		Enable Credit Advance	2	2	2	1	1	1	2	1	2.3	3	*2.6*
		MX1.4		Consumer & Merchant Loyalty Programs	2	3	2	1	1	3	3	3	3.3	2	*2.6*
		MX2		Coopetition Through Common Awareness Campaigns	2	4	3	2	2	2	1	1	3.0	2	*2.5*
				Total Averages Per Construct	2.2	2.9	2.9	1.6	2.2	2.2	1.9	1.7	3.1	2.6	

*Already active, but requires periodic revisi

** Critial Adoption Constructs for Myamar

Figure 15.2: Correlation matrix for external and internal adoption factors in Myanmar

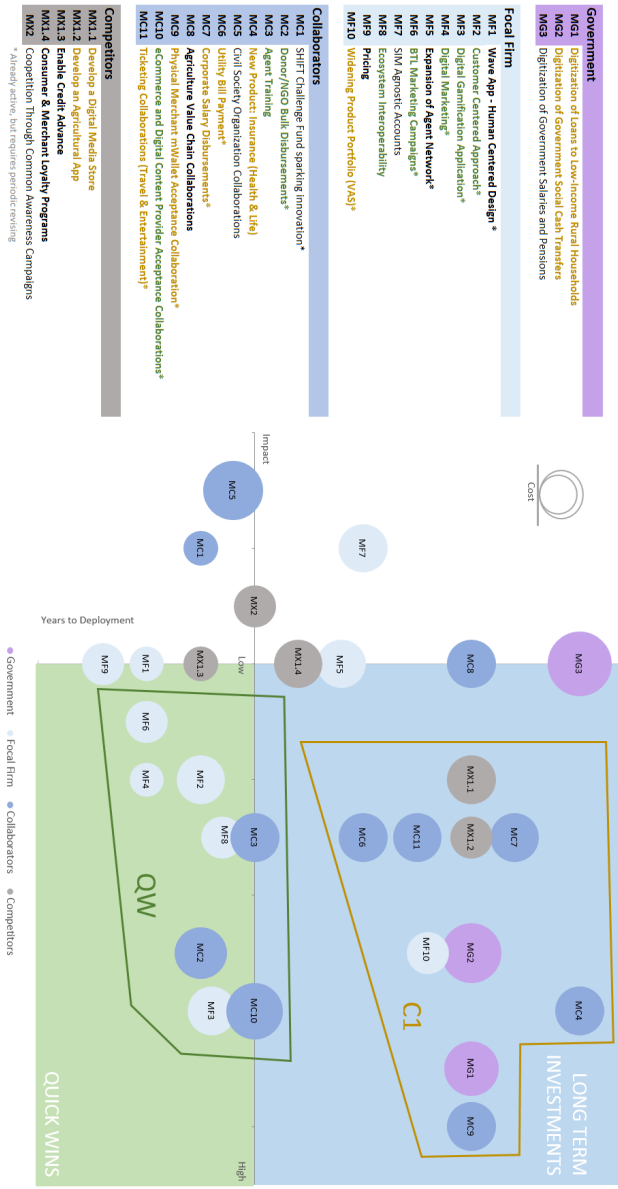


Figure 15.3: Matrix displaying recommended measures by impact and time to deployment. Measure size reflects costs

15.2.2 Governmental Actors

Before delving into specific mWallet measures by governmental actors, the authors want to highlight an important finding from the interviews and the desktop research: there exists a large gap in required fundamental infrastructure between Myanmar's current situation and one where mWallet is omnipresent in the Burmese financial market. Measures related to this do not directly affect mWallet uptake, and are therefore not present in the

correlation matrix. Regardless, due to their inherent roles in the ecosystem, the governmental actors, such as MCIT and the Ministry of Finance, have an important role in the creation of this fundamental infrastructure for financial inclusion and development in Myanmar and needs a mention. As pointed out in Chapter 13, the government should contribute by imposing policy and regulatory changes to enable the emergence of a capital market in Myanmar, opening for foreign credit and encouraging private lending, especially in the rural, agriculture sector where MADB currently has monopoly. Also within insurance, new deregulation of the market to widen insurance portfolio is required. Even though MIC no longer has monopoly in the insurance market other providers are constrained with respect to what products they can offer. Additionally, the government should continue with the MAP and FESR initiatives described in Chapter 13, which identify financial inclusion trends, set goals and put both financial inclusion and digitization on the agenda. In order to attract international investors and create a sustainable ecosystem, the government must work to ensure that all participating firms are compliant with the regulations once they are in place. Without the risk of repercussions, local firms can potentially scare away serious international investors who have internal compliance standards.

Although the governmental actors mostly have measures described above that lay the foundations for mWallets to be a viable service, as seen from Figure 15.2, three mWallet adoption measures are listed for the government, of which none are existing measures. Two of these fall within Cluster 1, whereas the last one is not a key priority. These are not Quick Wins because deployment time is expected to be several years. According to Tørlen, however, the government has a lot of power to develop a transparent payment system that can turn Myanmar into a digital country. Furthermore, recalling what both Lee and Tørlen commented in their interviews, the Burmese government could look abroad to learn from experiences of world leaders like India and Singapore. In India for example, the highest value banknotes were withdrawn in 2016 in an effort to fight corruption. Considering Myanmar's cash dependence and high degree of informal banking activity, a similar move could potentially contribute to compel the Burmese citizens into digital money usage. With an astonishing high smartphone penetration and considering how the country has leapfrogged feature phones, making a sudden move from cash reliance into mobile accounts, thus skipping the debit card, could be a potentially winning strategy.

Across all stakeholder groups, the government seems to be the entity to have the largest impact on *trust* and *economic factors*. This is visible in the top line total average for each internal construct for each actor in Figure 15.2. Both of these are among the three internal adoption constructs identified to be most important in Myanmar. A more thorough description of each of these measures and their placement in the prioritization matrix is given below.

MG1: Digitization of Loans to Low-Income Rural Households (C1, see Figure 15.3)

As listed by Chamberlain et al. (2014), increasing agricultural output and rural delivery are two of the government's prioritized objectives to improve financial access in Myanmar. Limited infrastructure and lack of financial products are among the main challenges (Chamberlain et al., 2014). Furthermore, the state-owned MADB is the only credit provider to rural households. Due to subsidized interest rates private banks are not able to compete with the MADB in this market segment. For the capital market to evolve and

to increase financial access the government needs to implement policy and regulatory changes in addition to encourage digitization of credit flows to this segment. Regulatory changes like these usually involve inertia of change and large costs, causing this measure to place itself in the long term investment quadrant of Figure 15.3 and be grouped in Cluster 1. Considering the large rural population in Myanmar and the economy's dependence on agriculture, the importance of this measure should be obvious.

MG2: Digitization of Government Social Cash Transfers (C1) *and* MG3: Digitization of Government Salaries and Pensions (NKP)

These two measures are inspired by the well-functioning G2P disbursement initiatives in Pakistan (PG7 and PG8 respectively) whose impact scores are very high. Compared to Pakistan however, the impact is expected to be somewhat lower due to the remaining high degree of informal consumers (only 6% belong to the formal consumer market (Chamberlain et al., 2014)) and apparent lack of such governmental functions. Both Lee and Tørlen recognizes digitization of G2P as a good arena for mWallets when the system is ready for it, and according to Jones capturing G2P is already in Wave Money's pipeline (Haley, 2017). However, Lee and Tørlen confirm that at current standings, the populace is not responsive to this due to lack of education and payment regularity. Therefore the government must take the lead by initiating this process which would probably take some years to deploy. Looking at Figure 15.3, MG2 places itself in Cluster 1 as it is considered to impact mWallet adoption to a higher degree than MG3, and also within a shorter time frame. MG3 (salaries and pensions) is believed to require more momentum from the government and also its overall impact is somewhat lower, placing it in the Long term investment quadrant in Figure 15.3, but not within Cluster 1.

In time, the digitization of G2P could be very important for both mWallets and the general development of Myanmar, and all of the suggested G2P measures are believed to encourage usage intention and stimulate continued usage of mWallets. These measures will increase transparency, reduce spillage and influence corruption along the entire disbursement value chain. It should be noted that government-owned mWallet provider MPT is deemed to be strategically positioned to corner the market for government salary payments and G2P transfers (Haley, 2017).

15.2.3 Focal Firm (Wave Money)

Across all its measures, the focal firm's highest impact seems to be on awareness and perceived usefulness according to its top line average scores in the correlation matrix. As both awareness and perceived usefulness fall within the top three internal adoption constructs detected for Myanmar, Wave Money should hold a critical role in affecting intention to use and adoption of mWallets in Myanmar. Indeed, Wave Money captures five of the eight measures included in the Quick Win cluster: MF2, MF3, MF4, MF6 and MF8. Four of these (all except MF8) are already deployed or initiated, but need periodic review. MF10 falls within Cluster 1, while the remaining measures fall out of the prioritized list of mWallet adoption measures. Below each measure and its score is described more closely.

MF1: Wave App - Human Centered Design* (NKP) *and* MF2: Customer Centered Approach* (C1)

The human centered app design (MF1) could be considered a part of the more general customer centered approach (MF2), but it has been kept separate because the authors want to make a clear distinction between solely focusing on design versus a having a holistic customer centered focus. So far, from the authors' understanding, Wave's key focus has been on MF1. According to the prioritization matrix, MF2, which places itself in the Quick Win cluster, has an overall higher impact than MF1 and should be the key focus going forward. This is inspired by Easypaisa's customer centric approach (PF2), which is ranked as the most important focal firm measure in that market (see Figure 10.3).

According to Tørlen, directly targeting and educating customers is key to increase adoption further, which is supported by the low general education level detected in the desktop study (Chamberlain et al., 2014). Lee says that key market segment could be chosen more easily with such an approach. Furthermore, Jones confirms the need for this customer centric approach, highlighting their emerging focus on having a customer life cycle view around the different interventions. Jones says that this could involve a call from their call centre or an SMS with an offer which suits the specific stage of the customer journey, thus going beyond only offering a human centered app design (MF1). Due to the high app usage however (75% of agent and customer transactions are through the app according to Jones), Jones emphasizes that the business model becomes very different compared to what is happening with Easypaisa where the app is a secondary channel. This indicates that the app design must not be forgotten even though other aspects might be more pressing at the current stage to increase mWallet adoption.

MF3: Digital Gamification Application* (QW)

As described in sections 13.2 and 13.3, the digital gamification application which will contribute to educate consumers, especially women, about financial terms and behavior, is already in its early stages of development (Wong et al., 2017). As such, this could contribute to reduce the identified gender gap in mobile money usage (see Chapter 12. The application is expected to have considerable impact, especially to enhance awareness, perceived usefulness, perceived ease of use and the new construct, perceived enjoyment. Clear symbols and function keys and a graphical display are described by Schierz et al. (2010) to be important aspects to increase perceived ease of use- Although a high impact measure, the authors expect that it will still take about a year before the project is deployed. It is still remains in the Quick Win quadrant of Figure 15.3 and should be a continued area of focus.

MF4: Digital Marketing* (QW)

According to both Lee and Tørlen, Facebook is very popular in Myanmar, indeed it is to many synonymous with the Internet. Jones also mentions the popularity of the messaging service Viber. Therefore digital marketing should go well with most people's personal habits, especially considering the high smartphone penetration in Myanmar. Both Telenor and Wave Money are well established on digital platforms, and as the measure scores high on impact and takes little time and money to implement and update, this should be a continued area of focus for Wave Money. Jones recognizes the importance of

being present in these channels, but also emphasizes the need to combine digital marketing with presence on other channels, such as physical BTL marketing (see measure MF6).

Awareness (in addition to habit) is believed to be the internal construct most affected by this measure. It should be noted however that those who do not already have access to Facebook, of whom are most likely to be farmers and informal consumers due to their low phone penetration (Chamberlain et al., 2014), will not be touched by this measure. The exemption is when their friends and family use it and spread the word. This word of mouth effect is in fact very important in Myanmar, as highlighted by Lee.

MF5: Expansion of Agent Network* (NKP)

This measure is rather self explanatory. Given that Wave Money currently has almost 8,000 agents in their network covering about 60% of all Burmese townships and most economic corridors (Telenor Group, 2016b), there should be a potential to increasing the agent outreach. The agents are a normal part of the Burmese daily life, and is thus expected to work well with their habits, increasing mobility and creating awareness and trust. If Wave Money reaches their goal of reaching nationwide presence by 2018 with more than 15,000 Wave Shops (Telenor Group, 2016b), adoption rate should increase, however, as they already have a fairly good position with respect to agents this is not considered to be a key adoption measure going further. That being said, Jones commented that perhaps a reason for some consumers not being interested in the service was due to them not having a network nearby.

MF6: BTL Marketing Campaigns* (QW)

Jones says that the "Yellow Road Shows" that were held during Wave Money's launch period aiming at educating and engaging customers around the country had limited success. Therefore, a shift was made into a focus on BTL marketing and according to Jones this works more effectively to acquire customers especially combined with other channels, such as incorporating BTL into the digital channels mentioned in MF4.

Looking at Figure 15.3, MF6 is a quick win as its average impact is relatively high combined with a very low time to implementation. Across the internal constructs the highest impact of this measure is on awareness, closely followed by perceived usefulness and perceived ease of use. This has to do with the opportunity to reduce the very low financial and technical literacy in Myanmar (Chamberlain et al., 2014) by focusing the customer interaction around being an instructional facility that can build trust with the consumer and educate them into becoming more efficient users, which is the biggest reason why people don't use mWallet according to Jones.

MF7: SIM Agnostic Accounts (NKP) *and* MF8: Ecosystem Interoperability (QW)

Both of these measures are inspired by similar measures in Pakistan (PF4 and PF6 respectively), which enables a customer to use the service regardless of which SIM card one has and to interact with other providers' services (e.g. transact money to a person with a competitor's mobile account). On average the two score relatively similar, but SIM agnostic accounts (MF7) are believed affect actual usage to a lesser extent, thus it doesn't become a key priority measure. Failure of other mobile money solutions have been associated with the lack of interoperability with other providers and therefore interoperability

becomes important, which is supported by both Lee and Jones. Jones says that lack of interoperability becomes an issue on both customer and merchant side. Therefore Wave Money needs to collaborate with its competitors to be able to make a service that is useful for its customers. In Pakistan, this is enabled through the Inter-Bank Funds Transfer (IBFT) which allows account holders to do transactions regardless of which bank they adhere to (M. Khan & Malik, 2017). This will be important for the mobile money market in Myanmar to evolve and falls within the quick win cluster.

MF9: Pricing (NKP)

Category: Not Key Priority
Although scoring low in the Pakistani case (PF1), pricing is added as a measure in the correlation matrix because the Burmese are identified to be very price sensitive. The high consumer price elasticity in Myanmar makes telco loyalty very low, and SIM cards are swapped depending on use case. Although economic factors are found to be more important to the Burmese than the Pakistani, it is believed that other measures are needed to create customer stickiness. As an external motivator, pricing might invite people to use the service initially, but will not make them use it on a long term basis, thus it does not become a key prioritized measure.

MF10: Widening Product Portfolio (VAS; C1)

One of the key measures Jones portrayed during his interview was having multiple use cases to increase activity on the Wave app. Currently this includes moving VAS directly into the app, mentioning recent implemented pilots such as music, tickets and a game portal. Adding to the VAS mentioned by Jones, Tørlen suggests looking into international P2P transactions. More advanced products like credit, savings and insurance, are according to Jones still rather far off and not the key focus at the current stage where Wave Money is attempting to create a sustainable business. Although not a current focus, Telenor Group (2016b) and Jones himself say that Wave Money aims at expanding their product portfolio to include savings and credit products in time. This will be critical to obtain true financial inclusion as the levels of formal savings and credits remain very low (see Chapter 12).

The increased usefulness that VAS will bring to the service is easily discerned from Figure 15.2. Combined with MF2 (customer centered approach) it should be able to confirm with people's habits and thus create great incentives for both intention to use and actual usage. Although it might take a few years to widen the portfolio the pay off on mWallet adoption may be large and it is therefore placed in Cluster 1. For some of these VAS a collaborator is required and this will be portrayed in the next subsection.

15.2.4 Collaborators

Collaborators primarily provide content that can either be included directly into the mWallet product portfolio, incorporate mWallets into their own value chains or act as a capital sink giving consumers external content to spend their currency on. Looking at the correlation matrix, their largest contributions seem to be on perceived usefulness, awareness and personal habit. Collaborators play a key role in producing content and POS to make the perceived usefulness of mWallets increase. Most of the measures, both

new and existing, involve developing new content together with the focal firm such as utility bill payment or agriculture value chain collaborations. Alternatively, the collaborators themselves are venues to spend mWallet capital: physical merchants, e-commerce or ticketing services. Collaborations that involve making Wave an accepted method of payment directly affect the perceived usefulness of the mWallet. Increasingly, by enabling access to content that adds value to daily use, consumers will get incentives to change their habits to start using mWallets. Without places to use the mWallet, either for goods or services, then the leverage to actually use mWallet disappear and they end up as simple post boxes for withdrawing salaries or other disbursements.

Three of the collaborator measures fall within the Quick Win cluster, while six of them are in Cluster 1 and the reminding two do not become prioritized measures. Seven of the 11 measures listed are already initiated, however most of these are in their early stages. Below follows a more thorough discussion of each measure.

MC1: SHIFT Challenge Fund Sparking Innovation* (NKP)

Measures such as the SHIFT Challenge Fund is intended to support financial service providers to develop prototypes and bring to scale viable business models that serve low-income individuals, micro-entrepreneurs, and small and medium businesses. The SHIFT program in particular has especially a focus on women within these ASEAN frontier economies. By providing grants it creates an economic incentive for firms like Wave to focus on the financial inclusion of less attractive segments. Although it has brooded success stories, such as the digital gamification application in MF3, there are no guarantees that such an innovation fund will spark adoption, thus it is not a key priority going further.

MC2: Donor/NGO Bulk Disbursements* (QW)

Jones highlights Wave Money's increasing focus on donor or NGO bulk disbursements, mentioning their World Food Programme (WFP) collaboration in Kachin and Save Children in Yangon, in which Wave charges 2-5% of the disbursements put out, making it a win-win as these organizations traditionally pay up to a 50% disbursement fee. As Jones points out, by putting volume through the network, the better quality the network becomes. This is believed to conform with the target people's habits, increase their mobility and obviously economic factors and perceived usefulness. Therefore actual usage is expected to result and impact becomes high, making it one of the most important Quick Wins given that it has already been implemented to some extent.

MC3: Agent Training (QW)

According to Hynes (2016) broad scale success of mobile money requires a trusted distribution network, which is naturally led by agents in Myanmar. While expanding agent cash-in and cash-out points, aspiring mobile money providers must simultaneously build trust in formal and digital financial services, which is no easy task (Yaworsky, 2017) and there is still much work to be done in training and equipping agents. The measure, inspired by the identical measure in Pakistan (PC12), puts more efforts into training, ensuring better service increasing trust, awareness and perceived usefulness, among others. Despite the enormous popularity of online apps such as Facebook, customer education

beyond basic social media usage is needed to familiarize the consumer with e-commerce and digital financial transactions, especially the unbanked (Yaworsky, 2017). The biggest reason (59%) why consumers don't use mWallets was according to Jones that *they don't know how to use it* answering: "I don't know how to subscribe" or "I don't know how it works". Being a part of Wave's front line, with daily interaction with customers, the agents are a vital source for this education and trust building. In Pakistan, actors such as the SBP, WBG and Karandaaz contribute to educate agents and similar initiatives should be deployed in Myanmar. Considering the above, the impact of agent training becomes high and it is considered realistic to implement it within one year, leaving it in the Quick Win cluster.

MC4: New Product: Insurance (Health & Life; C1)

It has been mentioned in the demographics of Section 12.2 and by Chamberlain et al. (2014) that improper usage of financial products have been used by the market - instead of buying insurance beforehand, consumers were taking up unsustainable loans to cover the damage after the fact. This is closely related to the current lack of available insurance. This measure seeks to remedy this and takes inspiration from Pakistan's mWallet and insurance bundling, Khushaal Bema, a life insurance product functioning as an add-on to the Easypaisa Khushaal Munafa savings product (Cisco, 2016), PC2 and PC3 respectively. A vital aspect for true financial inclusion, life insurance can be attached to the savings product introduced as a VAS in MF10 or be a stand alone collaboration. This measure will also relieve pressure from the already overloaded credit market, diverting necessary loans to more relevant use cases. Jones point put that his measure will take quite some time to implement (at least two to three years), but as it can have a good impact on mWallet adoption it is placed in Cluster 1.

MC5: Civil Society Organization Collaborations (NKP)

Hynes (2017) says that there are "opportunities for growth through collaborations between civil society organizations and tech companies". Civil Society Organizations know where the major pain points are and the focal firm will have the technical insight to solve the problem. Hynes (2017) says that "continued collaborative efforts between tech hubs like Phandeeyar and civil society groups will facilitate social progress and access to vital services as Myanmar continues to develop". Depending on the type of problems that are solved the measure fluctuates in both complexity and impact on mWallet adoption. Similar to MC1, this is not considered a secure source to increase mWallet adoption, thus its impact becomes low and it is not considered a key priority.

MC6: Utility Bill Payment* (C1)

With low valued currencies, paying bills in cash can be a huge, physical hassle. By collaborating with utility firms, digitizing bill payments and incorporating them into the mWallet service, Wave will increase the perceived usefulness of eliminating cash. As Myanmar develops and more payments occur at regular intervals, this product will according to Lee only increase in relevance. Depending on the infrastructure of the utility firm, the ability to accept the payment method may vary, affecting the time to implement this measure. Likewise, considering the current market, it is not a majority that have fixed bills to pay.

Still, it is believed to affect several internal constructs such as perceived usefulness, mobility and actual usage, and it falls in Cluster 1. According to Jones some payment scheme agreements have already been signed up, mentioning Yangon Electricity among 32 other township electricity companies.

MC7: Corporate Salary Disbursement* (C1)

Digitizing salary disbursements and incorporating them into the mWallet will not only be a positive impact on consumers but on the businesses as well. The logistics of disbursing cash is removed and the paper trail is automated. An important feature is the huge practical implication this will have on consumers and their perceived usefulness. If they need to have the mWallet to receive wages, they are highly likely to use the mWallet as a method of payment if there are enough places to spend it. Like with MC6, this measure requires the employers' infrastructure to be in place to disburse salaries through mWallets. According to Jones, Wave has already signed a few collaborative agreements for corporate salary disbursements such as Telenor, Yoma Bank and KFC. Jones also says that this will be a continued area of focus, but it is assumed that it will take some time for this to reach scale thus placing it in Cluster 1. A factor that can limit the scale of this initiative, however, is the high degree of informal consumers as reported by Chamberlain et al. (2014).

MC8: Agriculture Value Chain Collaborations (NKP)

As seven out of 10 Burmese live in rural districts and 42% of the market's main income is farming related (Chamberlain et al., 2014) the importance of agriculture for Myanmar cannot be overstated. Much of the agricultural value chain is currently funded by cash and is an optimal arena to implement mWallets. Taking inspiration from Pakistan's Nestlé collaboration, PC1, a similar approach can be taken in Myanmar. Depending on the distribution of farms and grocers it is recommended to start with the larger networks to quickly gain mass while simultaneously having a presumably more well structured collaborator. Although having been assessed to potentially have a relatively large impact on adoption, this would be a longer process to implement, both considering the integration with the collaborator and the training of farmers in the new infrastructure. It is therefore not a prioritized measure, but should be kept in mind as a opportunity further down the line.

MC9: Physical Merchant mWallet Acceptance Collaboration* (C1)

There is little use for an mWallet if it cannot be used anywhere as an accepted payment method. Increasing the merchant networks that accept mWallets such as Wave is vital for continued growth in mWallet adoption and is a measure retrieved from a similar Pakistani measure, PC7. Commonly used merchants such as kiosks, grocery stores and other food vendors should be prioritized to maximize personal habit in addition to perceived usefulness. This is a process that takes time and is therefore not a quick win, but due to its high potential impact it should be started right away.

A current challenge with regards to moving away from cash payments in stores is the transaction speed. Jones mentions the friction that comes with digital payments which currently is less efficient than cash as this technology is still under development. Jones

mentions that MVPs have been developed for both offline and online merchants, including P2P merchant payment, in shop QR code payments, instant online or in-app payment (called Paysbuy). Until this technology catches up with cash, there needs to be an incentive, such as free airtime or a percentage off the merchant's goods making digital payments more attractive than using cash. Also, fraud reduction could be used as an incentive, but Jones anticipate that there will be a need for heavy investment in both sides of the transactions for digitization of merchant payment to occur. Combined all together, this places MC9 in Cluster 1.

MC10: eCommerce and Digital Content Provider Acceptance Collaborations* (QW)

Like physical merchants representing a physical content provider (in goods and services), e-commerce sites and other digital content providers also provide important POSs to spend mWallet capital. This measure is inspired from Pakistan's equivalent measure, PC5. Given the tendencies described by all interviewees towards increasing interest towards such platforms, factors such as perceived usefulness, awareness and perceived enjoyment should be affected. During his interview, Jones said that signing up online merchants is a current focus, and they are currently rolling out a "Pay with Wave" button for online players. He stated that they have already gone live with two services within food delivery and digital content and that they are close to going live with a third online merchant within cinema ticketing. By August Jones wishes to have about 25 content/VAS merchants that can be reached online using a Wave Account. Given its high impact score and already initiated implementation, this measure falls within the Quick Win category and should be a continued area of focus. Additionally is should make good business sense as volumes can be high and there is room for margins.

MC11: Ticketing Collaborations* (Transport & Entertainment; C1)

The most specific of the three last content collaborators, including ticketing into the mWallet service, can be a very smart move in terms of a clear perceived usefulness and a perhaps highly profiled collaborator. Inspired by Pakistani measure PC6, the measure can potentially make the target market quite large depending on which collaborators are included. As it does not have as large a market as MC9 and MC10 while containing the same degree of complexity, it is therefore recommended to be rolled out in Cluster 1.

15.2.5 Competitors

Similar to Pakistan, according to the correlation matrix, competitors mainly contribute by creating a general awareness of and raising consumer ability to use mWallets through instructional campaigns and spurring innovations which force the focal firm to also expand their own product portfolio or infrastructure. Among the MNOs Jones named Ooredoo and MPT as the major competitors. Although they did not yet have their licences, they were predicted to launch soon and when they did would be strong contenders with a diverse product portfolio, interoperability and large networks. From the documentation it becomes clear that once these two competitors roll out, "Wave is currently not in place to compete" (Haley, 2017, p. 8).

To combat the incumbents Wave needs to extend their relatively limited product offer. As marginal cost for added users is near zero its important to keep up with compe-

tition's product portfolio to maintain market share. These innovations are grouped together under MX1. Some measures such as the G2P disbursements are potentially more relevant for state owned competitors than the international, private focal firm. Regardless, expanding on product portfolio by copying others' successful innovations is recommended where possible to maintain market share.

Considering that many of the measures that the competitors have started also are under development by Wave and therefore under the Focal Firm subsection, only a few measures are below. Additionally, a measure is included regarding coopetition with competitors building the awareness of mWallets together. Of the measures presented none made the Quick Win requirements, however MX1.1 and MX1.2, that both involve developing more use cases, are recommended as part of Cluster 1.

MX1: Adopt Competitors Services

These measures are adaptations from what competitors are currently doing.

- **MX1.1: Develop A digital Media Store (C1)**
  Ooredoo's Zone is a digital distribution service that serves as a digital media store, offering music, magazines, books, movies, and television programs allowing users to browse and download applications (Ooredoo, 2017). Unlike the current Wave initiative for ringtones and other VAS within the Wave application, this measure is focused on creating an independent platform that distributes digital content such as movies, games and music. The business model can accept either mWallet payments per purchase or subscriptions. The measure is effective in generating awareness around the use of mWallets and over time can affect the consumers personal habit towards regular use of mWallets. As with other content creating measures this is intended to stimulate perceived enjoyment and thereby actual usage and goal accomplishment. In total this sets the overall impact relatively high, however considering the implementation costs, it is deemed a more long term investment and placed in Cluster 1.

- **MX1.2: Develop Agricultural App (C1)**
  Ooredoo is running a service called Site Pyo which helps farmers improve the output on the farm as well as run price checks on the currently price of their goods. This is also a service offered by the fintech firm ImpactTerra in their Golden Paddy app. Wave is recommended to implement a similar service, perhaps through collaboration with an app developer such as ImpactTerra and incorporate the Wave mWallet giving the farmer the ability to transact through the application using the mWallet. As a more practical application, this measure also affects awareness but instead of enjoyment focuses on usefulness. Both in turn stimulate actual usage as it gives incentives to use the mWallet.

- **MX1.3: Enable Credit Advance (NKP)**
  Ooredoo is currently offering a credit advance on their top up service. The credit is prepaid upon the next top up. Wave can implement similar services for their top up and combine it with their mWallet account. Currently Jones has already mentioned a loyalty program for stimulating physical merchant payments, and there could be synergies found with this measure. Additionally, this helps provide credit history

for future larger mWallet credit offerings. Finally, it also starts creating the habit among the consumers to use the mWallet as a channel for credit.

- **MX1.4: Consumer & Merchant Loyalty Programs (NKP)**
  With high consumer price elasticity, loyalty to telco brands is very low, and SIM cards are swapped depending on use case. Incorporating loyalty programs where buyers are rewarded by using the mWallet during purchases through convenience or possibly gifts like cold drinks is a potential approach to increase consumer stickiness. Loyalty programs are closely linked to marketing campaigns and creating awareness. In addition, claiming rewards serve as economic factor incentives as well as a perceived enjoyment factor. This measure is relatively straightforward to implement but depends of course on the cooperation of the collaborator. This measures is believed to be important to create intention to use, but, as it is not believed to create long-term usage, it does not become a key prioritized measure.

MX2: Coopetition Through Common Marketing Campaign (NKP)

Considering the low level of awareness around the product there is a great need for increased marketing and spreading the concept of mWallet services. It may be useful to combine forces with competitors, once they come online, to together emphasize the usefulness of mWallets in general. To keep branding out of the concept, focus should be on education around financial literacy and the benefits of mWallets in general.

Jones' response to this measure was positive however he believed it would might not be necessary nor were the competitors ready yet for such coopetition. With about 3⁄4 of people in Myanmar being aware of what mobile money is and those who use mobile money is only about 3-4%, he felt the focus was more on incentivizing adoption and getting people to send money rather than spreading awareness. As for working together with firms such as Ooredoo on projects, this is something Wave has considered and even had some high level discussions with Ooredoo about. They concluded however that Ooredoo's primary focus at the moment is getting their service set up and launched. Because of this the current impact is deemed rather low although the complexity of such a task can be considered minor.

15.2.6 Concluding Remarks

This section has presented the correlation matrix for the Burmese mWallet market in addition to a prioritization matrix resulting in a list of recommended measures within two clusters. The Quick Win cluster has eight measures with five and three of these belonging to the focal firm and collaborators respectively. Cluster 1 has ten measures dominated by collaborator measures. This cluster includes important measures that require a longer time horizon such as digitization of G2P payment schemes and widening of the focal firm's product portfolio to increase usefulness, which is a very important factor to spur mWallet adoption according to Jones. Three specific aspects should be kept in mind based on the mapping and evaluation in this section:

- Before mWallet really can take off, some fundamental regulations and infrastructure must be put in place, including market liberalization and development of regularities in payments. The government has a key role in making this happen.

- Once the government starts creating momentum, the focal firm and collaborators are believed to have a high overall impact on adoption, targeting key internal adoption constructs (trust, awareness and economic factors).
- Unlike in Pakistan, Myanmar' key mWallet challenge seems to be related to moving unbanked people into an app-based mWallet solution, rather than being stuck in a OTC-dominated market. The leapfrogging of the feature phones has created new opportunities enabling this shift compared to Pakistan, but challenges related to perceived usefulness and customer education remain.

Chapter 16

Concluding Remarks on Part III

The aim of this third part of the master thesis has been to use the revised adoption framework on the nascent Burmese market, answering the third research question:

RQ3: What are the recommended measures to increase mobile wallet adoption in Myanmar?

The step-wise procedure used to approach the research question was divided into three parts. First, data regarding the Burmese population and current state of financial inclusion was collected to cover the internal part of the framework. Additionally, data on the Burmese mWallet environment was collected to set the scene for the external part of the framework. Second, interviews with subject matter experts were conducted to get further insights in and verification of the model. Third, the findings from the desktop study and the interviews were used as a basis for the discussion. The findings from the interviews and the market research were used to discuss (i) what internal constructs are most important in Myanmar, and (ii) how the external environment affects the internal levers resulting in two clusters of recommended measures based on input from the interviews and the authors' own analysis work from applying the framework, Figure 15.2 and Figure 15.3. The main conclusions were as follows:

1. Main constructs of Myanmar: *Awareness, Trust and Economic factors.* To have the largest impact on mWallet adoption, measures that affect these three constructs will be the most efficient.

2. Quick Wins are mostly allocated to focal firm measures. They include having a customer centered approach to MFS development, completing the digital gamification application to teach about personal finances, ensuring ecosystem interoperability so users can transact across services, and generating awareness about the service through among other things a strong Facebook presence.

3. After Quick Wins start with measures in Cluster 1. Cluster 1 measures are as important as Quick Wins but take longer to implement. The remaining measures are not prioritized as they either have relatively low impact, take too long, or are not necessarily something to focus on at the moment.

Table 16.1: Prioritized measures

Quick Wins (QW)	
MF2	Customer Centered Approach*
MF3	Digital Gamification Application*
MF4	Digital Marketing*
MF6	BTL Marketing Campaigns*
MF8	Ecosystem Interoperability
MC2	Donor/NGO Disbursements*
MC3	Agent Training
MC10	eCommerce and Digital Content Provider Acceptance Collaborations*
Long term investments (C1)	
MF10	Widening Product Portfolio (VAS)*
MC4	New Product: Insurance (Health & Life)
MC6	Utility Bill Payment*
MC7	Corporate Salary Disbursements*
MC9	Physical Merchant mWallet Acceptance Collaboration*
MC11	Ticketing Collaborations (Travel & Entertainment)*
MX1.1	Develop a Digital Media Store
MX1.2	Develop an Agricultural App

*Already active, but requires periodic revising

The framework has been successful in pinpointing the most sensitive constructs in the Burmese market and produce the most important measures believed to strengthen adoption, these can be seen in Table 16.1. To conclude, these three steps have enabled the development of recommended preliminary steps for mWallet adoption in Myanmar, and RQ3 has therefore been answered.

Part IV

Conclusions

Introduction to Part IV

The objective of this master thesis has been to develop a framework that could be used by an MFS actor who intends to enter an unknown foreign market to set up an mWallet ecosystem. To address this, the thesis was divided into three research questions, which incrementally produced the adoption framework. Along the way several insights were uncovered which will be discussed in the following sections along with implications for Telenor, other practitioners, and researchers. It is important to also emphasize the limitations to this study related to the framework itself and factors such as constraints on time and available resources. These limitations are found in Section 18.1 and contribute to inspiring research opportunities for future articles or master theses, Section 18.2.

Table 16.2: Part IV Overview

	Chapter 17: Conclusions Chapter 18: Limitations and Further Research

Chapter 17

Conclusions

17.1 Main Findings

The thesis has been structured into three major parts, each one summing up into some main findings. The study's first part addressed RQ1: *What is a suitable framework for analyzing mobile wallet adoption?* The framework consists of two models, an external model consisting of the consumer and four affecting stakeholder groups: Governmental actors, The focal firm, Collaborators and Competitors, and an internal model, which makes a deep dive into the consumer portraying the internal customer constructs that are believed to affect the consumer's adoption decision. Together, the two models that constitute the framework create a holistic view of the uptake of mobile wallets.

In the study's second part RQ2 was addressed: *How applicable is the framework at examining an existing emerging market with respect to mobile wallet adoption?* In this part, a thorough desktop study was performed and, combined with interviews, the framework was used to create an overview of the Pakistani market: which measures were implemented and to what degree were they successful. At the recommendation of interviewees, a new iteration of the internal model came with the inclusion of an additional construct, *perceived enjoyment*, as well as the the abstraction of the moderators, market demographics and cultural context, up to affect the entire model rather than just the intention to use construct.

In the third and final part of the study RQ3 was addressed: *What are the recommended measures to increase mobile wallet adoption in Myanmar?* A similar approach to Part II was performed, filling inn the internal and external models to get an overview of the Burmese market. The internal model showed that the critical constructs for Myanmar were *awareness, trust and economic factors.* According to the framework, to have the largest impact on mWallet adoption, measures that affect these three constructs are believed to be most efficient. The correlation matrix and prioritization matrix concluded that the Quick Win measures were mostly allocated to the focal firm as they have shorter implementation durations. They include having a customer centered approach to MFS development (MF2, see figures 15.2 and 15.3), completing the digital gamification application to teach about personal finances (MF3) and generating awareness about the service through among other things a strong Facebook presence (MF4). With the advent of direct MNO competitors into the Burmese market, ecosystem interoperability (MF8) is

considered a critical measure to implement easing the transition into a multi-firm market. After Quick Wins, the focal firm was encouraged to start with measures in Cluster 1, long term investments, which are potentially as important as Quick Wins, but take longer to implement. These are dominated by Collaborator measures and focus on increasing the number of use cases, such as widening the focal firm's product portfolio (MF10) and physical merchant mWallet acceptance collaboration (MC9). In general, using the framework in Part III seemed to successfully generate a set of prioritized measures for mWallet adoption in Myanmar, as was the goal.

17.2 Implications for Telenor and Other Practitioners

The findings from the master thesis impose several implications for Telenor and other practitioners. However, as public access to this thesis will be restricted to Telenor for five years, as it may contain sensitive information about their operations and subsidiaries, the implications will primarily be relevant to them. Though it is true that the framework itself will endure, in five years the recommended measures for Myanmar are likely to be outdated in the ever-changing digital environment.

As previously mentioned, Telenor benefits from increased mWallet adoption through improved ARPU and consumer stickiness. The latter is especially important in price elastic countries such as Myanmar, where the brand loyalty has proved to be extremely low. On a general level the implications of this thesis for practitioners who wish to increase mWallet adoption are believed to be centered around three verticals, depicted graphically in Figure 17.1 and described below:

Geographical location

In this thesis, the geographical focus has been on emerging Asian countries. However, with its general design and the authors' continued focus to make the framework applicable on a general market, it is believed that the framework can be applied to any geography (not only in Asia). This should include not only emerging countries, but also more industrialized economies. In this thesis, the framework was applied to both an existing MFS market (Pakistan) and a new one (Myanmar). In markets where Telenor is already present, the model contributes to making informed decisions about which measures will be most effective to increase adoption further. In new markets, the model is especially helpful in the understanding the effects of cultural dimensions on mWallet adoption. By understanding that various cultures respond differently to incentives due to their different emphasis on their adoptive constructs, it becomes clearer how to approach the new market to set up the MFS ecosystem. Likewise, by understanding the stakeholder groups and the actors that constitute them in the new market, it becomes clearer who can become a vital ally or an important competitor.

Products

Although the intention when developing the framework was to apply it on an MFS market with a specific focus on mWallets, the theoretical foundation emerged from general technology adoption literature. Therefore, the framework is believed to be applicable not only for mWallet adoption, but to the adoption of any mobile technology. This is exemplified also in the correlation matrices used, where products like mPOS are also evaluated with respect to mWallet adoption. The framework

could for example be used solely for the adoption of mPOS as a separate entity from mWallets. To the extreme, if Telenor were to expand into an entirely new line of products, such as Apple's conceptual electrical cars, the framework could potentially be used here as well.

Customer segment

The opportunity for mWallets to contribute to financial inclusion has been highlighted throughout this thesis. However, it has become clear that the primary goal of the focal firm (Wave Money or Easypaisa) in its initial phases is to create a sustainable business model, not necessarily targeting the most critical segments for financial inclusion. The framework's impact scale has therefore been aligned with impact on the focal firm's mWallet adoption, but this is not always the same as what has the biggest impact on financial inclusion. Although not as good a business case, with the sufficient amount of funding and incentives to do so, the framework is believed to also be useful when targeting the financially excluded segment by changing the parameters that define high impact.

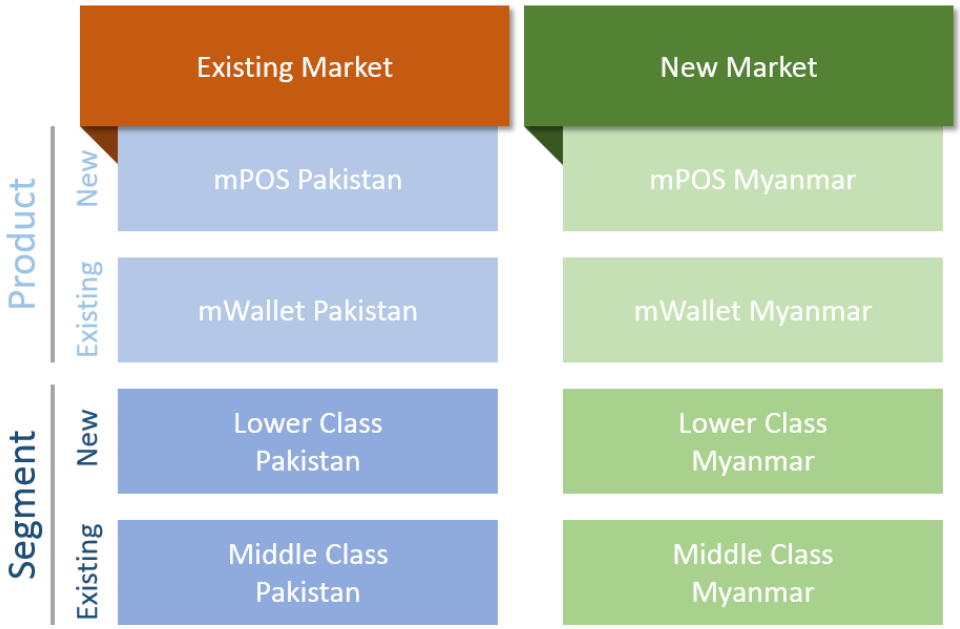


Figure 17.1: The potential use cases for practitioners

An additional note should be made about which stakeholder's lenses the framework is seen through. In this thesis the MNO's (Telenor's) position has been the starting point. Using the framework from another stakeholder's perspective, such as the government, is also considered viable. Likely to be most affected by this change is the focal stakeholder's ability to enforce the suggested measures and also the key segment. The government, for example, would likely be more inclined to focus on rural and unbanked segments, while simultaneously having more impetus to enforce governmental measures. Furthermore, the framework is considered stable enough to handle changes in the ecosystem, an

example of this would be if Telenor or the collaborating bank (Yoma or Tameer) would withdraw from the focal firm entity and instead be treated as a collaborator. This would likely change the power distribution in the ecosystem and require revision of measures, but the applicability of the framework should remain.

17.3 Implications for Researchers

Building on Gao and Damsgaard (2007)'s work, which states that it is not sufficient to focus on existing, customer-centric acceptance theories to predict diffusion patterns in more complex, networked technology, an external ecosystem model was added to the internal, extended TAM. As Zmijewska and Lawrence (2005) points out, both perspectives are equally important and depend strongly on each other, implying that they should be studied together. This also implies that the implication of this master thesis to researchers is twofold, one for internal and external models respectively.

The first implication, bound to the literature review performed in Part I, has to do with the continued development of a holistic internal model for technology acceptance. Already after the second iteration, the resulting model is successful at concretizing the diffuse concept of consumer behaviour into a tangible set of constructs that, moderated by the the market demographics and cultural context, can give strong indications of consumer intention to use and actual usage of mWallets.

To be elaborated on later, the current internal model serves as an academic stepping-stone for further refinements such as specifying the underlying factors for each construct and reviewing the causality between constructs. A method for weighting the various constructs depending on the moderating effects of cultural context and demographics would also be a quantitative improvement to what is currently a qualitative model.

The second implication is connected to the external model also produced in Part I. The correlation matrix, which was developed as a method for analyzing the effects of measures on constructs is a useful tool for future research. Having only gone through two iterations, the framework is a good starting point for future work when attempting to rank the impact of measures on mWallet adoption as it attempts to place measures implemented by stakeholders in the context of the internal adoption model. The correlation matrix gives useful insight into which stakeholders are most relevant for certain constructs and which measures have the biggest impact on adoption as defined by the internal model. Although not precise enough to give true insight of which actors have the biggest impact on mWallets in total, due to the fact that the total average score can be changed by moving, adding and taking away measures, this might be a topic for future research. For more information on how these implications affect future research, see Section 18.2.

Chapter 18

Limitations and Further Research

18.1 Limitations to the Study

In this section, the limitations of the study will be discussed. Limitations to the methodology has already been covered in Chapter 2, and included a limited number of interviewees, subjectivity of the authors and the interviewees, shortcomings with respect to generalization, limited available data and time constraints. The following will add a list of thesis limitations, primarily related to the framework itself.

Unclear Linkages

Part I of the thesis developed a general and comprehensive adoption framework mainly founded on literature from the MFS and primarily the mobile payment arena. In this part there was not made any explicit linkages between the external part of the framework and the internal, leaving practitioners to assess how each stakeholder group can impact the internal constructs. Not explicitly articulating this impact was deemed satisfactory as the framework sought to be generally applicable and not customized to one specific market context. The reasoning behind this is that linkages might vary from one market to another. Causal relationships in the internal part of the framework were drawn based on previous literary findings and should be given more attention in future studies. The extent that each construct is affected by its underlying factors is not described in this thesis, nor is the degree of effect between constructs. An alternative, given the time limitations could have been to exclude some of the adoption constructs at an earlier stage to spend more time on each construct. This would have enfeebling effects on the framework as it no longer is considered as cumulatively exhaustive adding the risk of missing out on relevant information about the consumer.

Limited Verification Opportunities

Part II of the study sought to test the framework and strengthen its credibility. Verification of a framework is a complex endeavor and to acquire such a status several iterations from a variety of practitioners usually is required. Therefore, further research is needed to verify the framework and make it applicable on a general level. The added internal construct was based on *one* interviewee's input only, as no other missing constructs were

identified through the interviews. Another potential shortcoming in this process was that the framework was shown to the interviewees at the beginning of the interview. This could have been done later in the interview to avoid the risk of leading the interviewee in a specific direction, potentially missing out of some valuable contributions.

Limited Data Collection

Relating to the third part of this study, where a market in its early stages of development was assessed, limited information about the market's current standing was available. At times documentation was found to have contradictory results or data could vary widely. For instance, reported Burmese mWallet awareness varied from under 10% to over 90% within the same year and it was unclear whether this variation could be sourced to different definitions of "awareness" or "mWallet" or something else altogether. To increase the understanding of the market it would have been valuable to be present in that market to (i) interview existing and potential customers and (ii) to meet providers in their local market context. This ambiguity will invariably have important implications for the assessment of the market and new potential mWallet adoption measures. Indeed, the prioritized measures resulting from applying the framework are strictly dependent on what information is gathered during the mapping phase. The allocation of measures to different stakeholder groups for instance could arguably be moved about: Agent Training (MC3) is considered a focal firm measure if information showing the focal firm was currently doing or at least planning this was available. Otherwise, it was considered a competitor measure that should be emulated. Although this allocation is not critical, gaps in this mapping can risk omitting important measures altogether, which is an important weakness of the framework.

Measures are Treated Independently

The framework is intended to focus on adoptive constructs, the idea being that measures that have a positive impact on as many of the adoptive constructs as possible will inherently be better for mWallet adoption. It does *not* however take into account the other measures that are already implemented or to be implemented simultaneously. If a construct has already been met by earlier measures then the necessity for a measure may diminish. To exemplify, one can look at marketing. A marketing measure will usually have a large impact on awareness. If the market already is quite aware of the product and its usefulness then another measure to affect awareness may not be a priority. This does not become clear in the current state of the framework, and will need to be considered in the future.

Subjectivity

Although mentioned in Chapter 2, Methodology, the subjectivity of the study cannot be understated. First, the authors' interpretation and personal judgment of the desktop findings, interviews and evaluation of the measures' impact are crucial for the outcome of the study. Especially important in this regard is the choice of most impacting internal measures and ranking of measures in the correlation matrices and the prioritization matrix. The choice of specifically three critical constructs which get double weights in the correlation matrix, and the requirement to also create continued usage (through goal

accomplishment) are examples of where the authors have taken the liberty to make a subjective decision. Both of these decisions are recommended to be scrutinized and improved in future iterations of the framework. With two authors this limitation can be somewhat reduced by the use of cross-checking of each others work. Other mitigating measures were sending interview summaries to respective interviewees for approval to make sure that there were no misunderstandings, and that a theoretical foundation was used to strengthen the validity of the framework. An issue that is not so easy to resolve was the limited number of interviewees, and although representing a company or an organization their responses will be colored by their personal perceptions. This could only have been mitigated by including even more interviews, a measure that was not practical given the time frame.

18.2 Further Research

Based on the limitations presented in the previous section and opportunities uncovered during the thesis work, some recommendations for further research within the field of mWallet adoption will be presented. By following these research paths, it is assumed that deeper insights into mWallet consumer adoption will follow. In specific, Telenor and other practitioners are expected to be able to extract more value from the current study. Three specific suggestions for further research will be given:

Causal Relations in Internal Adoption Model

Other than continuing research to verify the current model, the authors recommend future research to look into what factors can affect the linkage between intention to use and actual usage and goal accomplishment. An identified challenge is that measures taken by the focal firm make people sign up for mWallets, but very few actually use them. For financial inclusion to occur actual usage is vital. Also, a more thorough evaluation of the extent that the proposed linkages between the constructs affect one another should be considered. These relations could for example be related to the moderating effects of culture and demographics, where for example in some markets the effects of awareness on usefulness could be more than in others.

Strengthening the Framework's Assessment Method

The matrix that has been used to correlate the external stakeholder groups' measures to internal adoption constructs has two obvious shortcomings: (i) it does not account for dependencies between measures (e.g. measure C cannot be deployed before measure A is deployed) and (ii) critical adoption constructs are given a simple double weight than the others in the average impact score. Therefore, an alternative assessment should be considered. A suggestion is to include dependencies and more precise weights for all constructs when finding the average impact score for each measure. For the prioritization matrix, the two last dimensions cost and complexity were also very vaguely defined. Considering they were only illustrative to discern between the different measures they were deemed appropriate for this study, however, a more precise method for assessing costs and complexity could be devised in the future. Note, this would require more insight into the costs and complexity of each measure, which would require more time and resourcesthat would be unfeasible for a master thesis with similar scope.

More Extensive Primary Data Collection

For Myanmar in specific, a majority of the data collected were secondary data from less reliable sources such as news articles and interviews from a partially homogeneous group. To strengthen the findings more research should be performed that targets the core sources and preferentially including people from other sectors than MNOs, such as fintech providers, banks, agents and merchants.

Part V

Appendix

Appendix A

Acronyms

AML - Anti Money-Laundering
Anti-money laundering is a set of regulations and procedures designed to stop the series of steps that make it look like money that came from illegal or unethical sources was earned legitimately.

ARPU - Average Revenue Per User
The ARPU is a commonly used measure to see how much each customer adds to the total revenue generation. Being able to increase the ARPU will have a positive effect on the top line, hopefully also trickling down and increasing the bottom line.

ATL - Above the Line Marketing
Widespread brand-building advertising. Above The Line advertising uses mass media to promote the brand and reach out to the mass as consumer audience. This includes conventional media as we know it, television and radio advertising, print as well as internet.

B2B - Business-to-Business
A situation where one business makes a commercial transaction with another, often contrasted to business-to-consumer (B2C).

B&M - Brick and Mortar Bank
Brick and mortar banks are the traditional banks with branches that keep capital and take care of transactions. This is opposed to C&M and PPIB which exceedingly have an online presence.

BB - Branchless Banking
"The delivery of financial services outside conventional bank branches, using agents and other third-party intermediaries as the principal interface with customers, and relying on technologies, such as card-reading point-of-sale terminals and mobile phones, to transmit transaction details" (CGAP, 2013, p. 1).

BISP - Benazir Income Support Program
A social safety program initiated in 2008 by the Government of Pakistan.

BTL - Below the Line Marketing
Highly targeted direct marketing focused on conversions. Below the line advertising is one to one, and can involve the distribution of handouts and similar promotions at point of sale. It could also involve product demos and samples at busy places like malls and market places or residential complexes. Social Media marketing is often considered BTL.

BVS - Biometric Verification System

C1 - Cluster 1
Cluster name used for measures deemed as long term investments in the prioritization matrix in Part III.

CBM - Central Bank of Myanmar

CFT - Countering Financing of Terrorism
Involves investigating, analyzing, deterring, and preventing sources of funding for activities intended to achieve political, religious, or ideological goals through violence and the threat of violence against civilians.

CGAP - the Consultative Group to Assist the Poor
The Consultative Group to Assist the Poor is a global partnership of 34 leading organizations that seek to advance financial inclusion.

CNIC - Computerized National Identity Card
An identity card issued by Pakistan's National Database and Registration Authority (NADRA). The card is issued first at the age of 18 and is needed to open an mWallet account.

COD - Cash on Delivery
Cash on delivery is a type of transaction in which the recipient makes payment for a good at the time of delivery.

DFID - Department for international development
A UK government department responsible for administering overseas aid with the goal "to promote sustainable development and eliminate world poverty".

DFS - Digital Financial Services
Digital Financial Services can be defined broadly as digital versions of formal financial services allowing excluded and underserved populations to gain access to them usually through a device.

FESR - the Framework for Economic and Social Reforms
Framework imposed by the Burmese government to outline policy priorities for the long-term goals of the National Comprehensive Development Plan.

FICF - Financial Innovation Challenge Fund
The FICF was launched in Pakistan in 2011, aiming to "foster innovations, test new markets, lower cost of delivery, enable more efficient systems and procedures, and provide new ways of meeting unmet demand for financial services" (CGAP, 2013, p. 4).

FII - Financial Inclusion Insights
InterMedia's Financial Inclusion Insights (FII) Program was conceived in 2013 in partnership with the Bill and Melinda Gates Foundation to build meaningful knowledge about the financial landscape in eight countries across Africa and Asia including Pakistan.

FIP - Financial Inclusion Programme
The Financial Inclusion Programme (FIP), implemented by SBP with support of the UK Department for International Development (DFID), aims to transform the financial market with a clear objective to provide equitable and efficient market-based financial services to the otherwise excluded poor and marginalized population including women and young people

FMCG - Fast Moving Consumer Goods
Fast-moving consumer goods are products that are sold quickly and at relatively low cost. Examples include non-durable goods such as soft drinks, toiletries, over-the-counter drugs, processed foods and many other consumables.

FMI - First Myanmar Investment
First Myanmar Investment Co., Ltd. (FMI) is one of the largest public companies in Myanmar with more than 8,000 shareholders, and the first Burmese company to be listed on the Yangon Stock Exchange in March 2016 (First Myanmar Investment Co., Ltd., nd).

FSP - Financial Services for Poor Program
The Bill & Melinda Gates Foundation's Financial Services for the Poor program aims to play a catalytic role in broadening the reach of robust, open, and low-cost digital payment systems, particularly in poor and rural areas—and expanding the range of services available on these platforms.

G2P - Government to Person
In general refers to transfers between the government and individuals. In the context of this study it refers to the transfer of money, most often social security.

GSMA - Groupe Speciale Mobile Association
An association for mobile operators worldwide and organizations in adjacent industries devoted to representing the interests of mobile operators.

IB - Internet Bank
Internet banks offer its customers the ability to transact business with the bank over the Internet. Note that this definition does not confine the term to Internet-only or "virtual" banks but also services offered by click and mortar banks.

IBFT - Inter-Bank Funds Transfer
Myanmar specific system that allows for the transfer of money between otherwise sepparate banks.

ICT - Information and Communication Technology
ICT is an extended term for information technology (IT) which stresses the role of unified communications and the integration of telecommunications, computers as well as necessary enterprise software, middleware, storage, and audio-visual

systems, which enable users to access, store, transmit, and manipulate information.

IS - Information System
An IS is an organized system for the collection, organization, storage and communication of information.

KYC - Know your Customer
Financial institutions and regulated financial services providers are obligated by regulation to perform due diligence to identify their customers. KYC documentation is required for mobile money providers to facilitate financial inclusion, especially in rural areas.

MADB - Myanmar Agriculture and Development Bank
State owned bank in Myanmar specialized in issuing loans to farmers.

MAI - Ministry of Agriculture and Irrigation
Ministry in Myanmar.

MAP - Making Access Possible
A multi-country initiative to support financial inclusion.

MCIT - Ministry of Communications and Information Technology
Ministry in Myanmar.

MFI - Microfinance Institutions
"MFIs are the pivotal overseas organizations in each country that make individual microcredit loans directly to villagers, microentrepreneurs, impoverished women and poor families. An overseas MFI is like a small bank with the same challenges and capital needs confronting any expanding small venture but with the added responsibility of serving economically-marginalized populations."

MFS - Mobile Financial Services
MFS covers the use of financial services and execution of financial transactions through a mobile phone. In this study MFS includes mobile money (mobile payment and transfers), mobile banking and mobile finance (savings, credit & loans and insurance).

MNO - Mobile Network Operator
A MNO or telecom operator with a government issued license who is responsible for running the telecommunications infrastructure offering telephone and Internet coverage.

mPOS - Mobile Point of Sale
An mPOS is a smartphone, tablet or dedicated wireless device that performs the functions of a cash register or electronic point of sale terminal (POS).

MPT - Myanmar Post and Telecommunication
One of four telecommunication providers in Myanmar.

mWallet - Mobile Wallet
A mobile wallet is a way to carry your credit card or debit card information in a digital form on your mobile device. Instead of using your physical plastic card to make purchases, you can pay with your smartphone, tablet, or smartwatch. Also referred to as a mobile account.

NADRA - National Database and Registration Authority
NADRA "is a federal department responsible for issuing identification cards (CNIC) to all citizens 18 years and older based on a biometric database" (CGAP, 2013, p. 4) in Pakistan.

NBP - National Bank of Pakistan

NFIS - National Financial Inclusion Strategy
National Financial Inclusion Strategies (NFIS) can be defined as roadmaps of actions, agreed and defined at the national or sub-national level, which stakeholders follow to achieve financial inclusion objectives. NFIS provides a comprehensive approach to expanding access and usage of financial services.

NGO - Non-Governmental Organization
A non-governmental organization (NGO) is a non-profit, citizen-based group that functions independently of government. NGOs, sometimes called civil societies, are organized on community, vi national and international levels to serve specific social or political purposes, and are cooperative, rather than commercial, in nature.

NKP - Not Key Priority
Refers to those measures in Figure 15.3 that are not part of any cluster and not considered key priority measures.

NLD - Opposition National League for Democracy A democratic socialist and liberal democratic political party in Myanmar (Burma), currently serving as the governing party.

NRC - National Registration Card
NRC is Myanmar's equivalent to a National ID of a country and is a unique alpha numeric (displaying region/township and 6 digit unique numeric number).

OTC - Over-the-counter
A mobile money solution that depends on agents to perform consumer transactions. This is in contrast to mobile wallet systems where the consumer has a registered account and transact themselves.

P2G - Person to Government
Transfer from person to government.

P2P - Peer to Peer
In general refers to transfers between two individuals. In the context of this study it refers to the transfer of money.

POS - Point of Sale
A retail location where the merchant and consumer transact goods for mobile money. Can often be used interchangeably with "agent" or OTC merchant. See also mPOS.

PPIB - Pure Play Internet Banking
Pure play refers to a company that focuses on a particular product or activity instead of various interests. Investing in a pure play can be considered as investing in a particular commodity or product of a company. In this study's context Pure Play Internet Banks focus solely on their online services and are therefore branchless and completely virtual as opposed to general Internet banking which can be offered by click and mortar banks.

PTA - Pakistan Telecommunication Authority
The PTA is the telecom industry regulator in Pakistan.

QW - Quick Win
Refers to one of the clusters in the prioritization matrix in Part III.

ROSCA - Rotating Savings and Credit Association
Rotatory Savings and Credit Associations (ROSCAs) are a popular mode of saving in Pakistan. Also described as "committees", ROSCAs are particularly popular among women. A set contribution is given in fixed intervals to a fund which a member of the group gets through a draw or mutual consensus of the members. This process is repeated until everyone in the group gets one pooled payment. Record-keeping practices among ROSCAs might vary, but, generally, record keeping is conducted in an informal manner. (I. Khan, 2016a)

SBP - State Bank of Pakistan

SE - Secure Element
Component used for verifying identity, usually a SIM card.

SEA - South East Asia
Although relatively self explanatory, only a selection of nations have been included to represent the geographic area: Hong Kong, Indonesia, Malaysia, Singapore, Taiwan, Thailand and Vietnam. This selection is similar to the article by Rarick and Nickerson (2006).

SHIFT - Shaping Inclusive Finance Transformations
A special UNCDF program for women to expand their economic empowerment through financial inclusion. SHIFT aims at stimulating investment, business innovations and regulatory reforms, with a special focus on women's economic participation (Wong et al., 2017).

SIM - Subscriber Identity Module
A subscriber identity module is an integrated circuit that is used to identify and authenticate subscribers on mobile telephony devices (such as mobile phones and computers).

TAM - Technology Acceptance Model
The TAM describes how perceived ease of use and perceived usefulness are fundamental determinants of adoption and usage of technical systems (Davis, 1989).

TMFB - Telenor Microfinance Bank Limited
Easypaisa's partnership bank in Pakistan now owned by Telenor (previously named Tameer Microfinance Bank Limited).

TPB - Theory of Planned Behavior In psychology, the theory of planned behavior is a theory that links beliefs and behavior aiming to explain human behavior.

TRA - Theory of Reasoned Action The theory of reasoned action is one of the classic models of persuasion and aims to explain the relationship between attitudes and behaviors within human action.

UNCFD - United Nations Capital Development Fund
The UNCDF is the UN's capital investment agency for the world's 48 least developed countries.

USSD - Unstructured Supplementary Service Data
USSD is a GSM communication technology that is used to send text between a mobile phone and an application program in the network. Applications may include prepaid roaming or mobile chatting.

UTAUT - Unified Theory of Acceptance and Use of Technology
The unified theory of acceptance and use of technology (UTAUT) is an alternative technology acceptance model to the TAM model used in this thesis. It is formulated by Venkatesh et al. (2003) and like the TAM aims to explain user intentions to use an information system and subsequent usage behavior.

VAS - Value Added Services
The value added services defined in this thesis are the three key services needed for financial inclusion: credit, savings and insurance.

WBG - World Bank Group
A family of five international organizations that is dedicated to provide financial assistance to countries struggling with poverty and economic development. The bank provides loans and grants at discounted rates to developing third-world countries.

Appendix B

Case Study Protocol

When performing a case study, Yin (2014) recommends to develop a case study protocol that functions as a guide throughout the process and increases the reliability of the study. The following case study protocol was developed in the beginning of the process, however, as the authors have not previously performed this type of research, some elements were added along the way.

B.1 Overview of the Case Study

The overall goal of the study is to identify what factors are most important in the adoption (or lack of so) of mobile wallets (mWallets). The researchers aim at creating a holistic perspective, thus looking at both internal customer adoption factors (such as perceived usefulness, trust and awareness), and environmental influences that can frame and impact the internal customer characteristics. By obtaining insights into this subject, the authors hope to assist mWallet providers in shifting from the dominant OTC solution into mobile wallet usage, with the overall goal of contributing to increase financial inclusion.

The study will be performed in collaboration with Telenor and the project supervisor, Associate Professor at NTNU and Telenor Research's Senior Advisor, Per Jonny Nesse. Interviewees will be determined in collaboration with Mr. Nesse, and will constitute people involved in academical or empirical research on adoption of mobile wallets in Pakistan and Myanmar, both within Telenor and other organizations.

The thesis proposes that by obtaining an overview of a set of internal customer factors based on the technology acceptance model (TAM), one can understand what affects their decision to adopt, or not adopt mobile wallets. According to network and contingency theory these internal factors are closely interrelated to a set of external factors (the focal firm, its competitors, the government, and collaborators). Part I of the thesis provides an in depth description of the mWallet adoption framework constructed in this thesis.

B.2 Data Collection Procedures

Part II and Part III of the thesis will concern two specific cases: (i) Easypaisa in Pakistan and (ii) Wave Money in Myanmar. Both parts will consist of a desktop study covering the status of internal and external factors in each market, and collection of empirical

evidence through interviews. Thus, for each part *primary data* is to be collected through interviews with practitioners from the mWallet (or MFS) field within each country, both from within and outside Telenor, while *secondary data* is retrieved from desktop research, using *ad hoc* searches on Google as the primary method. The desktop search will also be influenced and supplemented with advice from out supervisor and the interviewees.

General Interview Guidelines

Some general guidelines for the interviews apply:

1. All interviews will be held on appear.in due to geographical distance from the interviewees, and they will last for approximately 1 hour. The exception will be in the case where the interview is performed locally in Norway.
2. Both authors will be present during the interviews to ensure that both authors build experience in performing these types of interviews and to gain a holistic understanding of the interviewees position and thoughts around all relevant aspects of the model. By having two interviewers the chance of interviewer bias and error is reduced.
3. The interviews will be recorded so that they can be transcribed and reviewed to ensure that no relevant information is lost or misunderstood. A summary of the key insights will be sent to the interviewee for confirmation and included in the thesis.
4. Care will be taken to make sure that the records are securely stored, to avoid leakage of sensitive information. Additionally it is important that the interviewees will have to approve that the interview will be recorded.

B.3 Data Collection Questions

Yin (2014) proposes five different levels of questions, differentiating between questions targeted towards the interviewees and at the case researchers. According to Yin (2014) the case study protocol should focus on Level 2 questions, which are questions asked of the individual case. This applies even if the research is a multiple case study. The questions directed at the researchers reflect the actual line of inquiry, thus functioning as a reminder of what needs to be collected and why. Below follows both a broad line of inquiry directed towards the researchers and an operational interview guide that will instruct the interviews.

B.3.1 Broad Line of Inquiry

Listed below is the broader line of inquiry. Each key bullet has sub-bullets attached to it that are likely sources of evidence associated with that key bullet. As Yin (2014) remarks "the protocol is for the data collection from a single case (even when part of a multiple-case study) and is not intended to serve the entire project". Therefore only a general description is provided below not one specified for Pakistan or Myanmar.

1. Describe the factors that affect the consumer when it chooses to adopt or not adopt mWallets in the specific market

- Collect data related to the consumers in the market using secondary sources. Critical sources will include white papers on the target market demographics and cultural context defined by Hofstede results.
- Provide interviewees with a proposed framework based on a theoretical grounding and ask for their perceptions of how this applies in that market. Critical constructs for that market are key.

2. Describe the external market environment in the specific market

   - Collect data related to the nature of the market using secondary sources. Common sources will be the actors homepages, blogs and news articles and governmental laws or regulations.
   - Provide interviewees with a proposed framework based on a theoretical grounding and ask for their perceptions of how this applies in the given market.
   - Ask the interviewee to draw linkages between the external and internal part of the framework. What stakeholder groups and measures do they consider to be most important?

3. Evaluate the applicability of the framework

   - Draw connections between internal adoption constructs and measures taken by external stakeholder groups using primary and secondary data collected. Which ones seems to be most important?
   - Are there any constructs or actors missing according to the interviews?

4. Define measures that should be taken to increase mWallet adoption

   - Suggest measures that can spur adoption in the market
     - What stakeholder groups and actors seem to be most important in affecting critical internal adoption constructs?
     - What of these measures are most likely to be implemented based on a cost-time evaluation?
     - Based on cost, complexity and impact, which measures should be considered quick wins, long term investments or not to be prioritized?

B.3.2 Operational Interview Guide

Table B.1 presents the basic outline of the interviews. Adaptions will be made to accommodate the intention and setting of each interview. Also, the interviews will be semi-structured, allowing some deviations from the given outline.

Table B.1: Operational interview guide

Category	Question
Introduction	• A short introduction about the master thesis and the authors • Formalities about the interview • Interviewee's background and position in the firm
About the Consumer	• Explanation of the internal adoption model • What type of customers use the service? Key demographics • Are there certain groups that should be targeted more than others? • Would you say there are any factors missing?
About the Market	• Explanation of the external part of the framework • Would you say that this map of major stakeholder groups in the market who can affect the mWallet adoption is exhaustive? • What are the major measures that each of these actors can implement? • What have they already implemented? • When referring to the internal model, which constructs/receptors are being stimulated?
Wrap Up	• Anything to add? • Anyone you recommend us to contact?

B.4 Guide for the Case Study Report

The format of the case study report will be a master thesis. The audience will be the thesis' supervisor and examiner, in addition to Telenor employees and practitioners working within mWallets and financial inclusion. Note the thesis will be on lockdown for 5 years from publishing date. Guidelines for outline of the report will be provided by NTNU, and where options are available the author's will do a subjective judgment. The APA style will

be used for citation purpose. The general outline will be as follows:

- Introduction and posing of research questions
- A description of the methodology (research design and data collection procedures)
- Theoretical background and framework development
- Presentation of the data collected for case country 1 (Pakistan)
- Evaluation of the frameworks applicability for analysis of mWallet adoption
- Presentation of the data collected for case country 2 (Myanmar)
- Analysis of data collected and assessment of recommended measures
- Discussion of findings and conclusions
- Limitations and further research

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