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# Introducing Reach And Range For Digital Payment Platforms

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## Abstract

*Numerous digital payment solutions, which rely on new disruptive technologies, have been launched on the payment market in the recent years. But despite the growing number of mobile payment apps, very few solutions turn to be successful as the majority of them fail to gain a critical mass of users. In this paper we investigate two successful digital payment solutions in order to outline some of the factors which contribute to the widespread adoption of a digital payment platform. In order to conduct our analysis we propose the Reach and Range Framework for Multi-Sided Platforms. Our study indicates that the success of digital payment platforms lies with the ability of the platform to balance the reach (number of participants) and the range (features and functionalities) of the platform.*

*Keywords: Digital Payments, Multi-Sided Platforms, Platform Strategy*

# 1       Introduction

Mobile payments have been around for almost 20 years since SMS text messages were first used to pay at Coca Cola vending machine in Finland in 1997 (Asif, 2011). Nonetheless, mobile payment users accounted for just 7% of mobile phone subscribers worldwide in 2013 (EY, 2013). Despite the rapid spread and adoption of smartphones and the emergence of huge array of mobile payment solutions, the much proclaimed mobile payment revolution still hasn't taken place as most consumers still prefer to pay with plastic cards and cash. Indeed, most of the launched mobile payment apps have failed to reach critical mass of users as consumers are hesitant to adopt digital payment services.

In the recent years, however, a number of successful mobile payment solutions have been launched. Offered by new entrants and well-established actors such as banks and mobile network operators alike, these solutions have managed to achieve significant adoption rate, thus prompting other players to seek to replicate their success. Although the failure of mobile payment diffusion has been studied from multiple perspectives (Ondrus et al., 2009), there is a lack of studies investigating the factors which contribute to the success of a mobile payment solution. To address this gap, we seek to outline some of the main principles for designing and executing successful platform strategies for digital payments. Thus, we formulate the following research question:

*What strategies successful digital payment platforms design and adopt?*

To answer this question we construct a framework which helps us analyse the different strategic choices which a platform provider faces throughout the evolution of a platform. Our initial findings indicate that the success of digital payment platforms lies with the ability of the platform to manage its *reach* (number of participants) and *range* (features and functionalities).

This paper proceeds as following: First, we outline the theoretical foundations of this paper and develop the Reach and Range Framework for Multi-Sided Platforms (MSPs). Then we present briefly the two investigated successful solutions and analyse them with our framework. In the final sections of the paper, we discuss our findings, offer some conclusions and suggest promising areas for further research.

# 2       Theoretical background

## 2.1     Digital Payments as Multi-Sided Platforms

Although platforms have been around for centuries, it was not just until recently when academics started paying attention to such market constructions. Despite the growing amount of literature on platforms, there is often confusion between the exact difference between one-sided, two-sided and multi-sided platforms. The problem stems from the lack of a clear definition (Hagiu and Wright, 2011), which leads to an overlapping in the way two-sided and multi-sided platforms are defined (Evans and Schmalensee, 2008; Hagiu and Wright, 2011). In this paper we investigate platforms as systems which enable direct interactions between multiple customer types affiliated to them (Hagiu and Wright, 2011). We also adopt a clear distinction between one-sided (enabling interactions between participants of one distinct group), two-sided (enabling interactions between participants of two distinct groups) and multi-sided (interactions between participants of more than two distinct groups) platforms (Staykova and Damsgaard, 2014).

Digital payment solutions function as digital platforms which facilitate the direct interaction between customers affiliated to them (Hagiu and Wright, 2011; Kazan and Damsgaard, 2013; Ondrus, 2015; Staykova and Damsgaard, 2014). More often than not they are launched as one-sided platforms and

gradually evolve to being two-sided and eventually multi-sided (Staykova and Damsgaard, 2014). This is in contrast to payment cards which are traditionally launched and function as two-sided platforms that enable the interaction between both merchants and consumers and remain two-sided throughout their existence (Rochet and Tirole, 2003; Evans and Schmalensee, 2013). Unlike traditional payment platforms such as credit and debit cards, digital payment platforms are extremely scalable with high development costs and low marginal costs. Costs are almost fixed and the platform's value increases with the widespread platform adoption (Eisenmann, 2002). This means that once the payment platform is developed, it costs very little to add and service additional users. Thus, payment platforms exhibit lower acquisition costs and economies of scale as the fixed development costs can be spread over a growing revenue user base.

The research on digital payment platforms mainly encompasses studies on payment platform design (Kazan and Damsgaard, 2013), business models (Chae and Hedman, 2015), factors leading to platform failure (Gannamaneni et al., 2015), transformation of the digital payment ecosystem (Henningsson and Hedman, 2014), payment platforms' evolutionary models (Staykova and Damsgaard, 2014). Significant less emphasis, however, is put on investigating strategies for successful entry and expansion strategies for digital payment platforms (Staykova and Damsgaard, 2015). We address this research gap by outlining the factors and conditions which contribute to the successful entry and expansion of digital payment platforms.

MSPs create value for their participants, and profit for themselves, by enabling multiple and frequent interactions between the affiliated to the platform participants. In order to do so, platform providers need to create and manage network effects which occur when the value of a product/service depends on the number of other users (Shapiro and Varian, 1999). The concept of the same-side network effects presupposes that consumers may value a product more if similar consumers use that product as well. Cross-side network effects are present when users value the presence of the other side of the platform. The demand by one side depends on the participation of the other sides and vice versa. Platforms are characterized by homing costs, which are related to the adoption, operation, or any other costs incurred due to platform affiliation (Armstrong, 2006), and by switching costs, or the costs which consumers pay for switching from one platform to another (Shapiro and Varian, 1999).

The success of the platform depends on its ability to attract participants in the right proportions, or platform's ability to achieve critical mass (Evans, 2009). To solve this conundrum, Evans (2009) proposes a two-stage model to explain platform's market entry and growth. During the first ignition stage, customers are trying the platform and assessing its value. In the second "growth" phase, the platform relies on network effects to drive growth to a long-run equilibrium level. Another solution of the chicken-and-egg problem is the gradual transition from one-sided to two - (or multiple) sided platforms (Hagiu, 2006). This approach requires the crafting of an expansion strategy, a precondition for which is achieving platform's depth (Hagiu, 2006). Depth relates to creating more value for existing constituents and intensifies cross-side network effects by making transactions among them more efficient or more frequent. Deepening is achieved by adding functionalities to the already existing platforms. While depth means emphasizing on the existing services to generate more value from the same source, the quest for breadth is for unlocking new sources of value for the platform by adding new sides. Thus, a platform needs to constantly evolve by adding new features and sides to its initial value proposition.

## 2.2    Reach and Range Framework

In order to map out the participants affiliated to the platform and the functionalities associated with them, we adopt the reach and range framework proposed by Keen (1991), who states that the business functionalities of an IT platform can be defined in terms of the concept of *reach* and *range* (p. 179). *Reach* determines the location and people which the IT platform is capable of connecting, with the ultimate goal is to be able to connect to anyone, anywhere. *Reach* also sets the rules about who can access firm's information and online services (Keen, 1997). The concept of *range* refers to the degree

to which information can be directly and automatically shared across systems and services. Later, Keen's (1991) definition of *range* was extended by Weill and Broadbent (2000) to include functionality of shared business activities. The concept of *range* also encompasses the extent to which services are integrated instead of being offered as separate services and systems (Keen, 1997). The purpose of the Reach and Range framework is to identify typical business activities (*range*) for each of the added participants (*reach*) and to show the correlation between them. Thus, the framework serves as a useful tool to map the functionalities associated with specific groups of people. The Range and Reach framework can also be used to better plan and manage the expansion of an IT platform. As Deans and Karwan (2013) point out the ability of an IT platform to enhance in time its *reach* and *range* can lead to significant competitive advantages and help fend off competitors (p. 215).

# 3 Reach-Range Framework for Multi-Sided Platforms

MSPs enable interactions between distinct groups of participants affiliated to the platform in order to create and capture value. Thus, the main goal of a platform is to increase the frequency of the interactions among the different participants affiliated to the platform as well as the type of interactions within one side and across several sides. In order to achieve this, a platform provider needs to make a series of strategic choices regarding the affiliation of different sides to the platform as well as the features and functionalities offered on the platform. Platforms, however, are not static entities as they evolve over time. Thus, a platform provider has to decide on the nature and number of participants and features and functionalities of the platform. Building upon Keen's Range and Reach framework, we propose a framework for MSPs which helps us identify the different strategic considerations which a platform needs to take into account throughout its evolutionary path.

Every platform's side can be characterized by its *reach* and *range*. When *reach* refers to a platform's side, it represents the number of participants of one distinct group affiliated to the platform. *Reach* can also refer to the overall platform's *reach* which is a sum of the *reach* of each side affiliated to the platform. *Range*, on the other hand, encompasses the features and functionalities associated with a particular side or several sides. Thus, by combining all the features offered by the various sides and across the sides, we can estimate the overall platform's *range*. The concepts of *reach* and *range* are interconnected and the success of both depends on the right timing within which they are executed. A platform provider usually designs and offer specific set of features (*range*) in order to attract more participants (*reach*). Thus, a platform expands its *range* in order to increase its *reach*. On the other hand, if the number of participants increases (*reach*), but the platform has limited amount of features (*range*), a platform provider needs to guarantee the further entrenchment of the already joined participants by offering new features and functionalities (*range*) which will result in more reoccurring interactions. Thus, a platform provider needs to strike a balance between the *reach* and *range* in order to create and manage multiple reoccurring interactions, which are the main generator of value for the platform.

Platforms exist as one-sided, two-sided or multi-sided. Upon their launch one-sided platforms have limited number of features which serve to attract participants. As a platform needs to gain a critical mass or a certain number of participants in order to become viable, a platform provider adds features which will attract more users, thus expanding the platform's *range* in order to increase the platform's *reach*. As one-sided platform gains a critical mass of participants, it comes to a point of saturation, which slows down the growth of a platform. A platform provider can decide to stay in such position as the one-sided platform has already become viable in terms of network effects (but not necessarily economically viable) after it reached critical mass.

The achievement of significant *reach* and *range*, however, can trigger an opportunity for the platform to reconsider its design further if needed so (f. e. the platform is under threat from new entrants or has to adapt to newly introduced regulation). A platform provider may decide to expand the platform by adding a new side (i.e. a distinct group of participants) to its early value proposition, thus transforming the platform into being two-sided. A platform may also expand its *reach* by launching a platform

envelopment attack. Thus, a platform can bundle functionalities offered by other platforms to its existing products and services if there is a high degree of user overlap between the two platforms (Eisenmann et al., 2006; Eisenmann et al., 2011).

The transformation of a platform into being two-sided results in the creation of significant cross-side network effects and new types of interactions. Just as the first group of participants, the second distinct group of participants (or the second side of the platform) is also characterized by its own *reach* and *range*. The transformation from one-sided to two-sided platform implies that the *reach* and *range* of the platform now consists of the *reach* and *range* of the both sides of the platform (see Table 1). Thus, a platform provider needs to manage the *reach* and *range* of each side in order to increase the number of participants and functionalities on a particular side (same-side interactions). At the same time a two-sided platform creates and nurtures cross-side interactions, which requires a platform provider to also balance the *reach* and *range* across the different distinct groups of participants. For example, the more card holders join a payment card platform, the more merchants will also participate. Thus, the change in the *reach* in one side results in expansion of the *reach* on the other side and vice versa. At the same time MSPs consists of multiple sides each of which has its own *reach* and *range*, thus making the management of MSP extremely complex.

| One-Sided Platform | Side 1 | Reach |
| | | Range |
| Two-Sided Platform | Side 1 | Reach |
| | | Range |
| | Side 2 | Reach |
| | | Range |
| | Interside | Reach |
| | | Range |
| Multi-Sided Platform | Side 1 | Reach |
| | | Range |
| | Side 2 | Reach |
| | | Range |
| | Interside | Reach |
| | | Range |
| | Side N | Reach |
| | | Range |
| | Interside | Reach |
| | | Range |

*Table 1.        Reach and Range Framework for Multi-Sided Platforms*

# 4      Method

In order to illustrate the usefulness of our framework and to provide an answer to our research question, we use a qualitative research method utilizing case study analysis. Thus, our study adopts an explorative research approach of digital payment platforms with two cases of successful mobile payment solutions. Case studies, which are rich, empirical descriptions of particular instances of a phenomenon that are typically based on a variety of data sources (Yin, 2003), provide tools for researchers to study complex phenomena within their contexts (Baxter and Jack, 2008) and to explore differences and replicate findings across cases (Yin, 2003).

## 4.1     Case Selection

In this paper we aim to investigate successful digital payments platforms, thus the selection process requires first defining what constitutes a successful payment platform and then identifying solutions

which meet these criteria. As the success of a digital payment platform can be measured by the size of its installed base of users relative to the market (Zhu and Iansiti, 2007), we define a successful digital payment platform as a solution with more than 2 million registered users. Through our analysis of various mobile payment solutions, we managed to identify two payment apps which exceed the limit of 2 million users. The first solution is the UK-based Barclays's Pingit app which currently has 2,7 million registered users. The second solution is MobilePay offered by the Danish-based Danske Bank, which has managed to attract more than 2,6 million users. Thus, we select to study these two digital payment apps as both have managed to attract and maintain significant amount of users.

## 4.2    Data Collection and Analysis

Our research is informed by both primary and secondary data. We collected primary data for MobilePay by conducting interviews with senior managers based on questionnaires in the period April – May 2014. A significant amount of secondary data was also collected. The data we gathered for Pingit were exclusively secondary. We collected and analysed 838 press releases from Barclays for the period 2012-2015. We also consulted publicly available sources: annual reports, online news and interviews. The two apps were installed on the researchers' phones so that better insights into the apps' functionalities could be obtained. The data was gathered in the span of 8 months and systemized in tables in order to identify the specific evolutionary path of the two selected platforms.

# 5    MobilePay

Danske Bank's MobilePay app is a bank-operated, card-based mobile payment solution which allows users to transfer money from a card to a bank account via a mobile phone number and a PIN code. The app was launched in May 2013 and proved to be extremely popular among the Danes as more than 50 per cent of the adult population has downloaded it since its launch. Currently the app has 2,6 million registered users.

## 5.1    MobilePay as one-sided platform

MobilePay was launched as one-sided platform which facilitated the interaction between a sender and a receiver, thus forming one distinctive group of users with interchangeable roles (user A can send money to the receiver B; the next day B can become the sender by sending money to A).

### 5.1.1    Range

The MobilePay app allows a user to transfer money by selecting the mobile number of the person, who is to receive the money, without thinking about exchanging account or card numbers or using complicated sign-in procedure. Initially, users could send no more than 201 EUR per day to other users. In February 2015, this payment range was extended further to allow larger sums to be transferred. A new version of the app was released in September 2013, just 5 months after the initial launch. The updated app introduced new features such as split the bill and allowed for higher amounts per transaction. The introduction of these new features is a concrete step to increase the *range* of the app in order to increase the frequency of the interactions (i.e. by enabling a new use such as split the bill) and achieve lock-in effects. The increase of the *range* is also aimed at attracting more users, thus strengthening the same-side effects.

### 5.1.2    Reach

The app targets both Danske bank customers and non-Danske bank customers, which contributed to its high adoption rate. 10 weeks after public launch MobilePay was downloaded almost 300.000 times.

Approximately 64 per cent of the MobilePay's users are non-Danske Bank customers. Danske Bank put considerable efforts in attracting new consumers and growing its user base. The app was initially developed only for iPhone and Android devices, but in September 203 a version for Windows phones was launched. Users were also able to send money to receiver who had not downloaded the app, who in order to claim the money, had to sign up for the app. Getting a critical mass upon launch and reaching as many users as possible was critical for the success of the solution. Thus, during the first few months after the launch of the solution, the efforts were focused on gaining significant user base with strong same-sided network effects.

## 5.2     MobilePay as Two-Sided Platform

As MobilePay managed to attract significant amount of users by expanding its *range*, it gradually became attractive to small businesses that form another distinctive group of participants who wanted access to the large user base of the app. Thus, by adding first small merchants and later big retail chains, MobilePay transformed from being one-sided to being two-sided platform which creates cross-side effects.

### 5.2.1     Range

In October 2013, Danske Bank started a trial period with selected small merchants (coffee shop owners, hot dog stand owners, taxis) which could accept payments from customers. After the successful pilot, MobilePay solution for business was launched in February 2014. As most of the MobilePay users use the service to transfer small amount of sums, it was considered logical first to test C2B low-value payments. The solution uses the businesses' phone number to execute the transaction with shop owners being equipped with a smartphone with a MobilePay app. After the money is transferred from the consumer's bank account, he or she gets a receipt with the company's name, logo and time of payment on it. At the same time businesses can easily verify the transactions and the overall amount of money sent to them, display their logo on the receipt, export transaction data, and point out to consumers the location of their shops. Thus, with the introduction of new platform interactions (between users and business), a platform has to design features which support these interactions on both sides. Thus, the adding of a second distinct group of participants requires the management of the *range* of the both affiliated sides.

In June 2014, a coffee shop in Denmark incorporated MobilePay as a payment method in its own app (Andersen, 2014), thus expanding MobilePay's *range* by enabling new ways of using the app. In July 2014, MobilePay entered the e-commerce sphere by partnering with 5 online stores which now use MobilePay as a payment method. Danske Bank continued to bring more merchants in the solution by enabling online shops to use MobilePay as a payment method. In May 2015 MobilePay app integrated technology from m-commerce vendor Powa. By integrating PowaTag, through Powa's SDK, Danske Bank can enable mobile payments from more than 1200 companies around the world (Finextra, 2015). The expansion of the MobilePay's range was further reinforced in July 2015 when large retail chains introduced MobilePay in their stores, thus expanding the *range* of the second platform side even further. Unlike the solutions for small merchants and online shops, payment transactions with MobilePay in large retail shops are executed much faster and more conveniently with the help of NFC and Bluetooth technology.

### 5.2.2     Reach

MobilePay extended gradually the *reach* of the second distinct group which was added to its initial value proposition. Initially, the solution for businesses targeted only small merchants and consisted of an app which needed to be installed on the merchant's smartphone. Approximately 1,975 small business places, such as coffee shops, clothing companies, hairdressers, bike repair shops, doctors etc., have adopted the solution as of September 2014. Later, MobilePay was incorporated as a method of

payment on the websites of various online shops, thus the *reach* of the business side was extended as to encompass Internet retailers. Initially big retailers were reluctant to use MobilePay in the same way as small merchants do mainly due to the high volume of transactions which a larger retailer has to process in a quick and efficient way. Thus, MobilePay had to design different functionalities if wanted to bring large retailers on board. After couple of months of trial, the large retail chains in Denmark launched MobilePay. Thus, MobilePay's *reach* on the business side was gradually extended to encompass small merchants, online traders and large retail chains. The extension of the *reach* was facilitated by the introduction of new features for each of the business types, thus expanding the *range* of the platform's business side.

# 6    Pingit

The UK-based Barclays bank launched in 2012 its P2P transfer app Pingit which allows one user to send money to another user fast, easily and efficient. The service is available for Barclays' customers and non-customers as long as they have a UK current bank account and a UK mobile phone number. Pingit has been downloaded over 4.2 million times, while over 67 000 businesses have registered to use the service (Moore, 2015). Initially, Pingit was launched as one-sided platform and later expanded to become two-sided.

## 6.1    Pingit as one-sided platform

Pingit was first launched as a payment app enabling peer-to-peer transactions (P2P) between a receiver and a sender who are subject to same-side network effects. The more people use the app, the more valuable it becomes. As the sender and receiver of P2P payments can change their roles easily, they form one distinct group of users. Thus, upon its launch Pingit functioned as one-sided platform.

### 6.1.1    Range

Upon its launch, Pingit's main functionality was to enable P2P payments among Barclays' bank account holders who can select the recipient's phone number, enter the amount and press the send button. The app allowed users to split the bill, send a personal message and receive a SMS confirmation for each transaction. App users could also set up and customize their profile by adding a photo. In May 2012 Barclays released a new version of Pingit removing the cap on payments and incorporating new features such as integration with current accounts, and user-friendly options for handling joint accounts and multiple phone numbers, thus expanding the *reach* of the platform. Barclays customers can also view current account transactions alongside Pingit transactions. In August 2012, Pingit enabled the possibility for users to send money abroad free of charge. In March 2015 Pingit allowed its users to use Twitter accounts to send and receive payments, thus broadening the *range* of the platform. By increasing the number of features offered by the app, Barclays aimed at creating more interactions on the platform, which will drive value for the app users. At the same time the introduction of new features is directed not only towards more interactions within current app users, but also towards attracting more users. Thus, by increasing the *range* of the app, Barclays also tried to increase its *reach*.

### 6.1.2    Reach

Upon its launch Pingit was available only to Barclays' bank account holders who can use the app to send P2P payments. Payments, however, could be received by both Barclays and non-Barclays customers with the latter having to log-in a website to claim the transferred money. Initially the app was available only to Barclays's customers over 18 years old who had iOS, Android or Blackberry devices. Just 5 days after its launch, Pingit was downloaded over 120 000 times (Sheerman, 2012). Following the successful launch, with two subsequent updates in February and April 2012, the app

was expanded beyond Barclays' customers and was made available to anyone in Britain over the age of 16 years with a current British bank account. Furthermore, in July 2014 Pingit become available for Windows Phones devices. Thus, Barclays extended the platform's *reach* by changing the rules of access to the platform and by making the app available across multiple devices.

## 6.2 Pingit as two-sided platform

By adding new functionalities and easing the rules for platform access, Pingit's user base grew significantly and reached 1,8 million users within an year and a half. As the Pingit's user base grew in size, it became attractive to small businesses that form a second distinctive group of users who pay to get access to the installed user base. As Barclays started to add various small and large businesses, the app was transformed from being one-sided to being two-sided platform. Thus, Pingit has to design strategies for managing two sides (users and sole traders) each of which has its own *reach* and *range*. The management of the *reach* and *range* for businesses requires strategies for attracting more business owners (*reach*) and features which increase the interactions between the two sides (*range*).

### 6.2.1 Range

In May 2012 Pingit enabled users to pay sole traders such as carpenters, plumbers and beauticians by scanning a QR code on their bills, thus eliminating the need for exchange of bank account details. With the introduction of the "Pay Now with Pingit" button to third-party app and the "Buy it" button within the Pingit app in September 2013, the app allows for users to connect to merchants, thus enabling the possibility for more types of platform interactions. In November 2013 Barclays retooled its Pingit app to enable large firms to send funds for insurance claims, utility refunds and other corporate payments directly to consumers. Large businesses use Barclays' existing File Gateway channel to send electronic payments directly into an individual's Barclays Pingit account. Even though Pingit was extended to cover B2C payments, the app still functions as two-sided platform.

### 6.2.2 Reach

By bringing sole traders on board and enabling the interactions between users and small business, Pingit become two-sided platform and started building the *reach* of its second side. In 2013 Barclays announced that Pingit can be used for paying utilities bills, thus adding utility providers to its *reach* and enabling new uses. Couple of months later, in September 2013, when Pingit had 1,8 million users, the app enabled functionalities which extended the *reach* to encompass small and large merchants. Thus, Pingit expanded the *reach* of its second side by absorbing gradually different types of business. It is even more interesting to note that Pingit introduced different features (*range*) in order to add a particular business types (sole traders vs. merchants).Thus, Pingit partitioned the second (business) side of the platform by designing different features for each of the different business types.

## 7 Discussion and Conclusion

In this paper we adopted a framework which allows us to gain a better insight in some of the strategic considerations which platform providers face in order to ensure the success of their platforms. To this end, we introduced the Reach and Range framework, which we adapted for studying MSPs and applied it to two selected case studies of successful digital payment platforms. We found that the key to successfully launch and manage digital payment platforms is to balance the *reach* and *range* on each of the platform's sides and across sides. Thus, a platform provider needs to design and execute strategies to grow the number of participants and types and volume of interactions on each side and to have in place a strategy which nurtures the interactions across sides. To do so, a platform provider leverages the *reach* and *range* of each side.

If platform providers wish to attract more participants to their platforms, they can increase the *range* of the platform by adding new functionalities and features which will unlock new uses. An example of this is MobilePay which added "split the bill" functionality in its platform in order to give more value to its users (see Table 2). A platform can also expand its *reach* by changing its access rules as Pingit did when it lowered the age limit for the use of the app from 18-years old to 16-years old. A third possible way to expand the *reach* of a platform's side is to enable cross-side functionalities by adding another group of participants. For example, both MobilePay and Pingit are used as a payment method by merchants who add a payment button on their websites or apps. Thus, by enabling cross-side functionality a platform could unlock new uses for its app and expand its *reach*. Finally, the expansion of the *reach* of a platform's side can also be proportionate to the expansion of the *reach* of the other platform's sides. As more users join Pingit and MobilePay, more merchants would become affiliated with the platform.

Even though a platform has managed to increase its *reach* i.e. it has attracted a significant number of users, it also needs to deepen its value proposition in order to lock-in the existing participants. In order to do so, platform providers need to design and enable reoccurring interactions by adding new functionalities, thus expanding the *reach* of the platform. As peer-to-peer payment transactions occur on sporadic basis (f.e. most people don't transfer money to their friends on daily basis, but just on some occasions) users have low levels of engagement within the app. To solve this, both MobilePay and Pingit enabled C2B interactions by allowing people to use their apps in more contexts, thus increasing the types and volume of interactions on the platform. Apart from enabling cross-side interactions, another possible way to increase the value of a platform is to increase the types of same-side interactions. For example, MobilePay and Pingit allow their customers to split the bill among multiple customers in addition to being able to transfer money between two users.

We also found that successful digital payment platforms follow a particular evolutionary path which ensures high adoption rate among the platform participants. Both MobilePay and Pingit were launched as one-sided platforms and expanded into being two-sided. Thus, platforms tend to carefully orchestrate their move into the market. User adoption on either side of the platform is not an automatic event, but rather requires a carefully designed step-by-step strategy, where not only platform's sides are gradually added to the platform (i.e. first one-sided, then two-sided platform), but also participants on each of the affiliated to the platform sides. Even though a platform has added a new distinct group of participants, a platform provider still needs to nurture the *reach* and *range* of the already existing platform side(s). An example of this is Pingit, which enabled Twitter payments to grow the *reach* of its first group of participants after it added its second side, i.e businesses.

By using the Reach and Range framework we were able to find evidence for the heterogeneity of the participants which take part in each of the platform sides. In particular, neither MobilePay, nor Pingit added the merchants as one homogenous group (or one side). Instead they gradually added different types of business as a second side starting by first offering solutions to small merchants, and then expanding to online retailers, large retail chains, insurance companies (see Table 2). Thus, by partitioning the business side the digital payment platforms take into account the heterogeneity of the different actors and design specific solutions in order to get them on board.

The contribution of this paper is threefold: First, we have conceptualized a framework, which provides vehicle lens to understand what makes digital payment platforms successful. Secondly, we also offer insights how a payment provider can design and execute strategies for platform's launch and expansion. Lastly, although we applied the framework to the cases of digital payment platforms, we demonstrate that the Reach and Range Framework can be used to guide the strategic planning of every business which functions as a platform.

| Transformation from one-sided to two-sided platform | MobilePay | Pingit |
| --- | --- | --- |

| One-Sided Platform | Side 1 | Range | P2P payments<br>Increase payment per transaction limit<br>Split the bill | P2P payments<br>joint accounts<br>multiple phone numbers<br>send money abroad |
|---|---|---|---|---|
| | | Reach | All banks customers<br>15-years old<br>iOS, Android | All banks customers<br>16-years old<br>iOS, Android<br>remittance receivers |
| Two-Sided Platform | Side 1 | Range | Increase daily payment limit | Twitter payments |
| | | Reach | Windows Phones | Windows Phones |
| | Side 2 | Range | Mobile Business App with functionalities for merchants<br>MobilePay Button in third-party apps<br>NFC/Bluetooth device at check out | QR Codes on bills/increase payment transaction limit<br>*Pay now with Pingit* button in third-party apps<br>*Buy it* button in Pingit<br>*Send payment* button |
| | | Reach | Small merchants<br>Online retailers<br>Large Retailers | Sole Traders<br>Utility companies<br>Small merchants<br>Insurance companies |

*Table 2.        Reach and Range Framework for MobilePay and Pingit*

We limit our analysis to investigating only the number of platform sides and platform features. In reality, the success of a platform is also dependent on other factors such as pricing, governance, choice of right technology. Nonetheless, we believe that the ability to balance the *reach* and *range* of the platform's sides is the main key to platform success as it defines the platform's value proposition. Future research may pinpoint how the Reach and Range Framework relates to broader topics such as platform governance and platform-based ecosystems. The framework can also be applied to MSPs other than digital payments. Finally, applying the Reach and Range Framework to cases of failed mobile payment solutions can also be used to further validate and improve this analytical tool.

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