

X COMPANY'S MOBILE PAYMENT BUSINESS STRATEGY BY 2019

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BUSINESS STRATEGY AND GENERAL MANAGEMENT

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Summary

X Company is Tencent Holdings Limited, which is a Chinese multinational investment holding conglomerate founded in 1998, whose subsidiaries specialize in various Internet-related services and products, entertainment, artificial intelligence and technology both in China and globally. WeChat is a Chinese multi-purpose messaging, social media app developed by Tencent. It was first released in 2011 and became one of the world's largest standalone mobile apps by 2018, with over 1 billion monthly active users. WeChat started to offer mobile payment service from 2014, and it took a good position in the market soon after the function was released. It is now duopolizing the market with its competitor Alibaba, the two market leaders almost take more than 90% of the whole market share. Even with the huge user base and numerous transaction amounts, how to make the business profitable is still left as a challenging task.

The objective of the thesis is to first understand Tencent's position in the mobile payment business and make a recommendation to Tencent on how to improve the profitability and the competitiveness. All the information is based on external data and references, so this could be a difficult opinion for Tencent on how to proceed from an outsider's perspective.

In the second chapter of the thesis, the author will give an introduction to the mobile payment business, talk about the common technology and business models involved. The history of mobile payment and the major player would also be mentioned.

In the third chapter, the thesis will look into the mobile payment market by identifying the key issues of the platform business and define the players in the market by analyzing their positions, preferences and bargaining power.

The fourth chapter will analyze the mobile payment business for Tencent, trying to figure out the reason leading to the problem which Tencent is facing at this point, and give a strategy plan to Tencent.

At the last, the author will make the final recommendation to the company and talk about the limitation of the thesis research.

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Chapter 1 Introduction

1.1 Background

X Company is Tencent Holdings Limited (referred to as Tencent), which is a Chinese multinational investment holding conglomerate founded in 1998, whose subsidiaries specialize in various Internet-related services and products, entertainment, artificial intelligence and technology both in China and globally. Tencent is now one of the world's most valuable technology companies, one of the world's largest social media companies, and one of the world's largest venture capital firms and investment corporations.

WeChat is a Chinese multi-purpose messaging, social media app developed by Tencent. It was first released in 2011 and became one of the world's largest standalone mobile apps by 2018, with over 1 billion monthly active users. Around WeChat, Tencent is trying to build a platform which could meet users' multiple need by offering dozens of functions, including mobile payment.

WeChat started to offer mobile payment service from 2014, and it took a good position in the market soon after the function was released. It is now duopolizing the market with its competitor Alibaba, the two market leaders almost take more than 90% of the whole market share. Even with the huge user base and numerous transaction amounts, how to make the business profitable is still left as a challenging task.

1.2 Objective of the Thesis

The objective of the thesis is to first understand Tencent's position in the mobile payment business and make a recommendation to Tencent on how to improve the profitability and the competitiveness. Internet Technology Companies in China usually tend to monopolize the whole market in the first

place, after that, profitability would be taken into consideration, so this thesis will try to consider it as well and still offer the company the best choices on how to progress. Since most of the information is based on external data and references, it could be difficult Tencent to receive such opinion from an outsider's perspective.

1.3 Methodology

Most of the sources are based on the author's collected information from the platform industry data, consulting providers and China's official institutions.

The main providers are:

- PBOC¹: Annual reports for the whole payment running status in China.
- CNNIC²: Annual reports for the mobile network users' status in China.
- Ipsos³: Some available reports and insights will be used as a source on user preference in the mobile payment.
- iResearch⁴: will be utilizing their updated market forecast for the mobile payment market.
- Conferences: Data from one conference will be used as technology background. Namely "Future Generation Information Technology" held in Korea in 2015.

These resources will be used to build hypotheses of how the mobile payment industry is running and will be used as a building block on how to move forward from those assumptions get to Tencent's goal.

An analysis of the market including the platform business and different sides of the users in the

¹ People's Bank of China (中国人民银行), the central bank of China.

² China Internet Network Information Center (中国互联网络信息中心), the administrative agency responsible for Internet affairs.

³ A global market research and a consulting firm with worldwide headquarters in Paris, France. Ipsos has organized its business into several areas of specialization: media and advertising research; marketing research; opinion and social research; client and employee relationship management.

⁴ A Chinese consulting company specialize in Internet market.

mobile payment market will be considered.

Then an analysis of the current Tencent profitability based on the current market share and revenue and identifying the gap between Tencent and a similar company in the payment market.

And finally comes an analysis and recommendation on how to fill the gap to reach the goal.

1.4. Thesis Structure

Chapter 2 gives an introduction to the mobile payment business, talks about the common technology and business models involved. The history of mobile payment and the major player would also be mentioned.

Chapter 3 looks into the mobile payment market by identifying the key issues of the platform business and defines the players in the market by analyzing their positions, preferences and bargaining power.

Chapter 4 will be the analysis of the mobile payment business for Tencent, trying to figure out the reason leading to the problem which Tencent is facing at this point, and give a strategy plan to Tencent.

Chapter 5 will make the final recommendation to the company and talk about the limitation of the thesis research.

Chapter 2 Industry Overview

2.1 Mobile Payment

Mobile payment can be defined as payments for goods, services, and bills with a mobile device by taking advantage of wireless and other communication technologies. Instead of cash, credit cards, or cheque, customers can use mobile equipment like smartphones to pay for a wide range of services and goods. In order to deal with the whole process, there would be a mobile payment provider between the customer and merchant to handle all the accounting and billing process.

Basically, there are five different business models of providers emerged including:

1. Operator-centric model,
2. Bank-centric model,
3. Collaboration model,
4. Third-party model, and
5. Mobile wallet model.

1. In the operator-centric model, the operator contacts with users directly without the participation of banks, so the technology cost is low. All the payments occurred will be directly counted into the telephone bill. But it is not suitable for large value payments. And the operators do not need to apply for licenses involved in financial transactions.

2. In bank-centric model, the bank would provide payment and transaction service, and operator only provides information exchange service just like other applications. Since the bank does not have any barrier in financial licenses, it is suitable for large-value payments. But in order to meet the higher security requirements of a bank system, customized mobile phones and high initial cost would be needed in this model.

3. As for collaboration model, it combines operator centric model with bank centric model, which brings it much higher generality, but also new problems. Considering the strictly closed bank system, and the difficulty of interest coordination, and potential conflicts between operator and bank, the competitiveness of this model is highly under doubt.

4. Third-party model is about building a platform, which integrates merchants, banks and operators. In the traditional payment, the payer's bank needs to verify the authorization information from both the payer and the receiving bank, so the whole process could cost lots of time and money when the payments crosses different bank systems. However, in the third-party model, the payment service provider will act as the trusted third-party to deal with those technical details. Income and profits are divided in accordance with their respective roles. It could be easier for the provider to build an eco-system based on the platform.

5. Under traditional definition, a mobile wallet means a virtual wallet that stores payment card information on a mobile device. You can charge your account balance of mobile wallet by your debit card, or withdraw the balance in mobile wallet back to the debit cards. When you pay for goods, you can use the payment card stored before, or the balance in your mobile wallet account. And in this thesis, the former one would be seen as one variation of the third-party model and would be included in 4., while the latter would be defined as 5. "mobile wallet model".

As for the communication solutions, there are four types of technologies commonly used. 1. NFC, 2. SIMpass⁵, 3. RF-SIM⁶ and 4. QR code³.

1. Near-field communication (NFC) is a set of communication protocols that enable two electronic devices, one of which is usually a portable device such as a smartphone or a portable card,

⁵ Subscriber Identity Module Card Passport

⁶ Radio Frequency Subscriber Identity Model

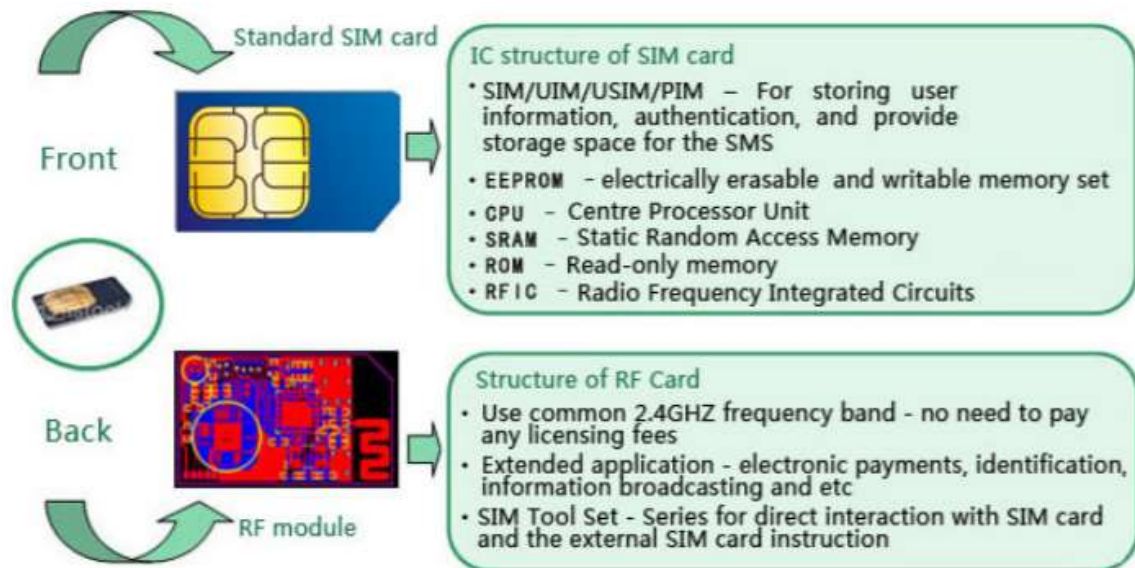
³ Quick Response Code

another is a reader which identifies and processes the communication, to establish communication by bringing them within 4 cm of each other. Customized chips and software are required in this solution, which brings the highest security within all four kinds of solutions, but also the highest cost. The NFC is widely used in the transportation cards such as Suica in Japan and Octopus Card in Hong Kong.

2. SIMpass technology integrates the security module, payment module, telecom module and application module all in one SIM card. Through its interface, it acts as standard SIM card to process subscriber identity authentication to your mobile phone. Via contactless interface it is ready to add contactless capabilities to mobile phone that include transit, movie ticketing, mobile banking and payment, access control and many more applications. This allows mobile operators to stay at the center of the service solution while giving their customers a highly cost-effective value-added service. China mobile once launched a test project in several provinces of China, where customers could use their cellphone as pre-paid card and transportation card.

3. RF-SIM could be seen as a combination of NFC and SIMpass technology, it uses miniature RF modules and a built-in antenna to connect the external device communication. Some SIM cards is designed for mobile phones to normal communication, authentication, and only for the physical connection; Built-in software for managing is high safety of RF-ID and other logic-based software. The Structure of RF-SIM is showed in the Exhibit below:

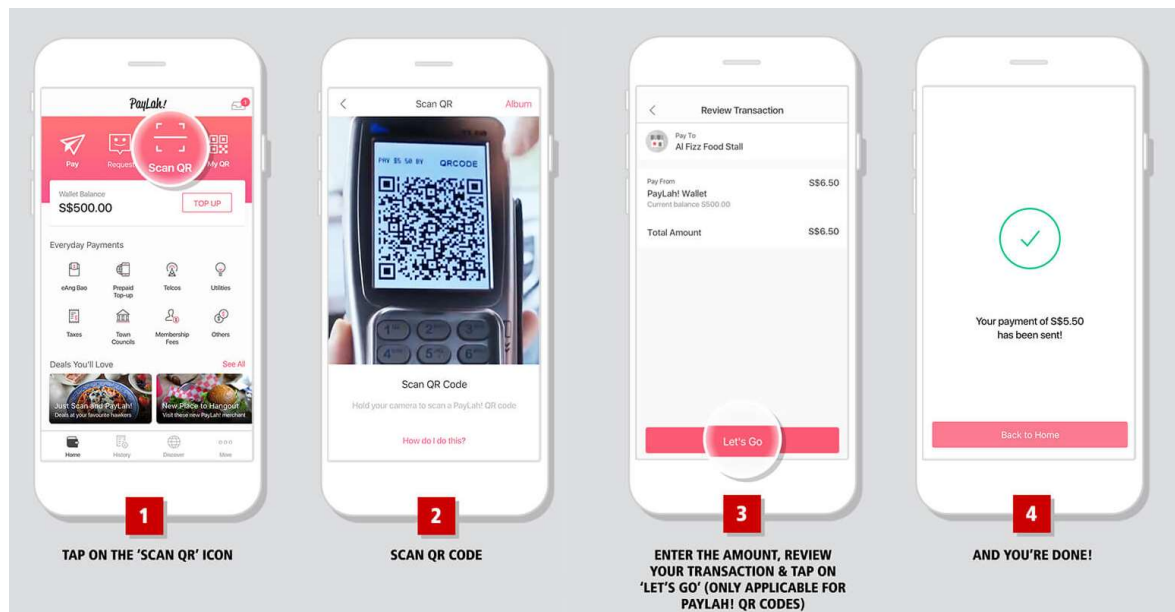
Exhibit 2-1 Structure of RF-SIM



Source: Springer.com

4. The last one is QR Code, QR Code (abbreviated from Quick Response Code), is one kind of matrix barcode first designed in Japan. A QR Code consists of black squares arranged in a square grid on a white background, which can be read by an imaging device such as a camera and processed by normal devices. The required data is then extracted from patterns that are present in both horizontal and vertical components of the image. QR Codes can be of two main categories. The first one, QR Code is presented on the mobile device of the person paying and scanned by a POS or another mobile device of the payee. Another one, the QR Code is presented by the payee (shop etc.), in a static or one-time generated fashion, and the person pays by scanning the code. Such flexibility not only decreases the cost for active deployment of this technology in a large region, but also decreases the using barrier for both payee and payer. The figure below shows a typical usage scene of QR Code, after scanning the QR Code, the customer could check the payment amount and then confirm to complete the whole process.

Exhibit 2-2 Purchase Flow of QR Code in Payment



Source: PayLah website

The main payment providers in China and their business model with technology solution will be shown as below:

Exhibit 2-3 Use of Technology and Business Models by Players

		Business Model				
		Operator-Centric	Bank-Centric	Collaboration	Third-party	Mobile Wallet
Technology Solution	NFC	China-Telecom	UnionPay		Apple Pay	
	SIMpass	China-Mobile		China Mobile & SPD BANK		
	RF-SIM	China-Mobile				
	QR Code		UnionPay		Alipay WeChat	Alipay WeChat

Source: Thesis author based on public data

2.2 Mobile Payment in China

No matter what technical solution is used in mobile payment, a certain speed of network is essential for the payment service. Compared with Japan and Korea, China started later in mobile payment partly due to the serious network environment. But after 3G services got popularized in China, mobile payment also evolved into its golden age.

In fact, mobile payment services in developing markets like China can easily penetrate the markets, which should be partly thanks to their unadvanced markets and quite simple telecom, merchant and consumer infrastructures. For example, even in 2013, ten years after the Union-pay was founded, the credit density only reached 0.26 cards per person, which is about only 10% of the U.S. and 8% of Japan. The reason could be as below. Firstly, most of the small merchants in China are self-employed households. They do not have enough business size to open a company deposit account in the bank, so could bring legal problems when acting as payee. Secondly, handheld POS (point of sale) terminal and trading fee could be an extra cost for those merchants, which is hard to change in a short time. Thirdly, even for many of the individual customers, applying for a credit card could be quite a hard mission, due to the lack of extensive credit evaluating system in China.

In 2009, China mobile and Union-pay started a trial project in several cities to test the business model for mobile payment. Later, China mobile became a shareholder of SPD Bank⁷, trying to build an eco-system with the bank. But due to standard conflicts in the NFC technology that happened unexpectedly, the mobile payment did not start to grow up into a mature business solution until 2012.

In 2011, China mobile and UnionPay finally signed an agreement solving the technical problem, but the huge cost for the new type of POS introduction and network construction hindered further developments. In the same year, the only giant of China's E-commerce, Alibaba, launched a payment

⁷上海浦东发展银行股份有限公司

solution called Alipay for mobile phones by using QR Code, and it was called "the first payment solution for QR Code application in China." With Alibaba's existing huge user base, mobile payment had its first rapid development. In the year 2012, the annual transaction volume reached US\$11 billion, increased 67.8% compared to 2010, and the number of mobile payment users increased by 26.4% to 187 million.

Tencent launched WeChat Pay in 2013 as a payment service for WeChat, the largest social media app in China. As WeChat already had an enormous established customer base, WeChat Pay took a large portion of the mobile payment market immediately.

In 2014, a company called Beijing Inspiry Technology, aiming at the upgrade of mobile payments in China, rolled out a self-service QR Code reader named Smart Box to be used by merchants, which could read most of China's biggest Internet companies' QR Codes that appear in mobile devices, including WeChat, Alipay, and UnionPay. The self-service QR Code scanner soon became the mainstream offline payment receiving option in China, now it holds 70% of the Chinese mobile payment device market. The payment method rose to popularity largely because it is a cheaper alternative to traditional payment systems. The Smart Box is roughly a quarter the price of a handheld POS terminal that is usually priced at around US\$110 to 300. As a more cost-efficient payment receiving option, self-service terminals were widely accepted, especially by small merchants.

Exhibit 2-4 Inspiry Smart Box introduced in Japan



Source: <https://www.inspiry.jp/>

Currently, China has a mobile payment market of more than US\$40 trillion. And Tencent's WeChat Pay and Alibaba's Alipay account for 90% of the mobile payment industry.

2.3 Two Major Players

2.3.1 Tencent

Tencent Holdings Limited is a Chinese multinational investment holding conglomerate founded in 1998, whose subsidiaries specialize in various Internet-related services and products, entertainment, artificial intelligence and technology, both in China and globally. Tencent controls hundreds of subsidiaries and associates in numerous industries and areas, creating a broad portfolio of ownerships and investment across a diverse range of businesses including search engine, e-commerce, retail, video gaming, real estate, software, virtual reality and so on. The company surpassed the market value of US\$500 billion in 2018, becoming the first Asian technology company to cross the valuation mark.

The main products and services of Tencent could be divided into four parts; 1. Entertainment, 2. E-commerce, 3. Utilities and 4. Social media. Especially in the social media area, Tencent has already dominated the market in China. First released in 2011, WeChat now have 1,089 million users (more than 700 million active users in China). In comparison, the whole number in China, who has access to the Internet, is 829 million. Tencent's social communications platforms, WeChat and QQ⁸, represent the largest social communities in China in terms of MAU (Monthly Active Users.) The combined MAU of WeChat and QQ increased to approximately 1,098 million by the end of 2018. WeChat further penetrated lower tier cities and covered a wider age group of users. On average, over 750 million WeChat users read friends' posts on Moments⁹ per day. Relying on WeChat's huge user base, Tencent has already built up a huge eco-system to raise its branding power for competition.

2.3.2 Alibaba

Alibaba Group Holding Limited is a Chinese multinational conglomerate holding company specializing in e-commerce, retail, Internet and technology. Founded on April 4, 1999, the company provides consumer-to-consumer (C2C), business-to-consumer (B2C), and business-to-business (B2B) sales services as well as electronic payment services, shopping search engines and cloud computing services. Just as Tencent's position in social media, Alibaba also dominates China's E-commerce markets. Sales conducted through its various Web sites, in the B2C diversification, the group owns Taobao and T-mall. In C2C diversification, it has Xianyu.com. For B2B, Alibaba's 1688.com maybe the only choice in the online e-commerce market.

Taobao and T-mall continues to lead the retail e-commerce sales in China with 58.2% market share, and the second, JD has only 16%, far behind Alibaba. Their revenue, US\$55 billion, is

⁸ Instant messenger app of Tencent

⁹ A social-networking function offered by WeChat, by which people could share status and pictures with WeChat friends.

comparable with that of Amazon. In 2014, on November 11, known as Singles' day, which is China's biggest shopping day of the year, Alibaba conducted \$9.3 billion worth of transactions through its sites, three times more than the online sales transacted on Cyber Monday in the United States. And the number tripled in 2018. Alipay handled most of the transactions. Alipay, the first net wallet and payment application in China, has now reached 1,000 million active users around the world in early 2019. The number includes more than 700 million users in the China.

2.4 Chapter Summary

In the implementation of mobile payments, among several technologies and business models, QR Code and third-party are most widely used in the real business situation. The reason could be due to mature technology implementation, good cost control and widely accepted revenue distribution. After the rapid growth from 2013 to 2017, mobile payment is now the most widely used payment method in China. The China's mobile payment market is now dominated by two major players, Tencent and Alibaba, which has over more than 90% market share together.

Chapter 3 The Mobile Payment Business

3.1 Overview of Platform Business

a. Introduction

As Geoffrey G. Parker mentions in the book “Platform Revolution,” a Platform is a business based on enabling value-creating interactions between external producers and consumers. In the mobile payment service, the service provider like Alipay and WeChat provide an open, participative infrastructure for these interactions and sets governance conditions for them to use the platform. The platform’s overarching purpose could be: to make matches among users and facilitate the exchange of goods and services, thereby enabling value creation for all participants on the platform.

Basically, there are two types of business models for platforms, depending on their primary functions. The first type could be called "innovation platforms." These platforms usually consist of normal technological building blocks, that the owner and eco-system partners can share in order to create new complementary products and services, such as smartphone applications or digital contents such as from Google Stores, or Hulu. “Complementary” means that these innovations add functionality or access that make the platform increasingly useful and efficiency. The network effect comes from the increasing amount and new utility of the applications. While there is more high-quality contents and application in the platform, the more attractive the platform will be, as well as other potential players such as advertisers and investors. Operating Systems and computing services like Windows, iOS, Android and AWS, commonly serve as innovation platforms for computer and smartphone ecosystems.

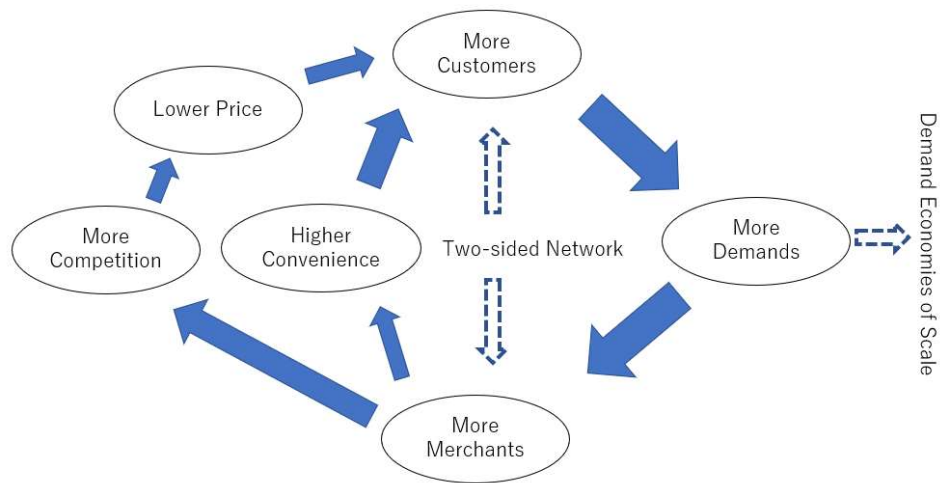
The second type is called "transaction platforms." These platforms act as online marketplaces or intermediaries that make it possible for users and organizations to buy, sell, exchange or access

dozens of goods and services. The more participants, functions, contents and services available on a transaction platform, the more useful and popular it becomes. In today's business world, the new digital technology and the great scale make these platforms powerful and unique. For example, Alipay and WeChat are typically transaction platforms used by billions of people every day. In comparison, credit card systems such as Visa and Mastercard are transaction platforms that originated before the digital era. A large, well-managed platform could facilitate significant value creation for all the users on the platform. On the opposite, a poorly-managed platform can reduce the value for every user on the platform. Positive network could be the source of additional value creation and competitive advantage for a platform.

b. Network Effects

One of the most important characteristics of the platform business is the network effects. It refers to impact that by the increase of the platform users, the value created for each user will also increase. As a platform acquires more users or complementary innovations, positive feedback loops emerge and can get stronger with the rising number of users or complements. The network effects make the platform increasingly valuable by attracting increasing numbers of users and complementors. The graph below shows how such self-reinforcing feedback loop works in a payment service platform.

Exhibit 3-1 Network Effects of Platforms



Source: Platform Revolution (Geoffrey G. Parker)

c. Demand Economies of Scale

Strong network effect could be a strong drive toward a winner-take-all or winner-take-most market outcome. In the traditional industry era, giant monopolies were usually created based on the supply economies of scale. The driving power comes from production efficiencies, the unit cost of a product decreases when the quantities produced increase. Such supply economies of scale can give the giants in an industrial economy an advantage that is almost impossible for competitors to overcome. But, when time comes to the Internet era, as Hal Varian¹⁰ mentioned, comparable monopolies are being created by demand economies of scale. Contrary to supply economies of scale, demand economies of scale take advantage of technological improvements on the demand side. Demand economies of scale are driven by efficiencies that make bigger networks more valuable to their users. This gives the giant company in a platform market a network effect advantage that is extremely difficult for competitors to overcome. And that is the reason why in the China payment service market, the two giants: Alipay and WeChat have taken over more than 90% of the whole

¹⁰ The former chief economist at Google

market share.

d. Two-sided Network Effect

David Sacks¹¹ suggested a type of dynamics in the study of Uber, one referred to as "two-sided network effect": in an intermediary economic platform, two distinct user groups are providing each other network benefits.

A two-sided network has two kinds of networks effects. Same-side effects are network effects created by the impact of users from one side of the market on other users from the same side of the market, this kind of effect happens when the consumers have influence on other customer and the producer have influence on other producers. Such phenomena are quite familiar in social media, where users are sharing, commenting and interacting all the time.

By contrast, cross-side effects are network effects created by the impact of users from one side of the platform to the users on other side of the platform.

This usually happens on a transaction platform, where two sides of the market are involved: customers attract merchants and vice versa. Such attraction is amplified significantly under the network effect and its positive feedback. The importance of these effects for stimulating network growth is so great that platform businesses will often spend money to attract participants to one side of the market. It is obvious for both WeChat and Alipay, that if they can get one side to join the platform, the other side will follow, because consumers want to use a platform with ample merchants and merchants want to use a platform with ample consumers. And this positive feedback explains how both payment service providers spend billions of RMB to give more than 50% discount for every payment of products and services in the platform.

¹¹ Entrepreneur and investor in internet technology firms, co-founder of PayPal

The figure below shows a campaign started by WeChat in Hong Kong, which offers HK\$50 off for each payment exceed HK\$100. Such campaign is highly welcomed because there are no other additional conditions, any product or service used by WeChat to complete the payment could get the discount.

Exhibit 3-2 A Campaign Example of WeChat in Payment Service



Source: WeChat Pay Hong Kong website

e. Red-Packet Campaign

One of the most important differences between WeChat and Alipay is that before becoming a payment platform, WeChat was already the largest social network in China. As a social media network, WeChat has a strong one-side network effect. In order to take full advantage of the effect, Tencent started a campaign of “Red-Packet” in 2014.

Red packets are gifts presented at social and family gatherings such as weddings or holidays such as Chinese New Year. The red color of the envelope symbolizes good luck, and is a symbol to ward off evil spirits. The tradition is popular in most areas of China. In Chinese New Year, red packets are typically given by the married to the unmarried, most of whom are children. For most of children do not have any source of income, the red packets give them an extra income to purchase some toys and

snacks which are not available in daily life. Such memory is so impressive for most of the children grown up in 1980s due to lack of living resources. And, one of the most important characteristics of red packet is that red packet is not only given out in one way by the sender, it could be asked by the receiver intentionally. The act of requesting red packets is normally called “taohongbao” in Chinese. Such two-way exchange greatly increases the interactivity of this traditional action, so as the one-side network effect. In WeChat’s red packets campaign, people were encouraged to send multiple red packets to their family and friends but only need to pay for one red packets. Even the amount is limited to no more than RMB ¥20, the campaign still attracts more than 20 million users in a single night. Through this campaign, WeChat successfully linked WeChat to the payment action of China’s users. Before WeChat started this campaign, people usually sent red-packet by cash. But now, most of the people in China tend to use WeChat to send red packet, not only on holidays, but anytime people want.

e. Multi-Homing

Platform providers always want customers to stick to one platform. But when multiple platforms compete in the same market, multi-homing would be inevitable. In payments such as Alipay and WeChat pay, the Multi-Homing cost is small for both consumers and merchants. Joining both platforms is not costly, because one equipment can support both platforms. Especially when both platforms try to lure users by incentives, multi-homing increases incentives. Multi-Homing by the users will weaken network effects, which platforms depended on to attract other market sides. Such impact would also decrease a platform’s revenues and profits.

In the China mobile payment service market, the high level of overlapping users between multiple platforms, leads to a strong multi-homing effect, followed by intense competition that have already lasted for several years. Such intense competition impacts the potential revenues and profits for both

Alipay and WeChat because neither the platforms dare to charge a reasonable transactions fee from the merchants.

f. Competition

In the traditional businesses, the ability to control inimitable resources generally decides who will hold a superior position in the competition. In the world of platforms, new competitive factors have entered the game. And those new factors will help us determine the participants in the platform ecosystem, the value creation they brought into, the controller of the value, and the ultimate size of the market.

3.2 Mobile Payment Value Network

In order to identify the key factors for mobile payment providers to succeed in serious competition, we will start with reviewing the industry chain in the beginning, to clarify the key stakeholders based on their depth of participation and power in the game.

- Supervisor

Mobile Payment supervisors include the government, especially the financial regulation bureau and Internet regulation bureau. They are rule makers especially in China. Since there is not quite a room for lobbying, and the national banks have a strong tie with the central government, they enact related laws, regulations, and industry standards independently. And sometimes, they would coordinate the relationship among the players in the mobile payment industry chain. In China, most of the regulations related to the mobile payment are made by the central bank, People's Bank of China. Since the regulations already brought huge revolution to this industry, we will mark it as the key element and discuss the influence in the next chapter.

- Technology Providers

Technology providers could be divided into two sections, software and hardware technology providers. The former are software technology providers, which offers the technology solution in the payment services to transfer the billing information and so on. The latter is terminal equipment manufacturers. In the QR Code area, the technology solution is open sourced, and widely used for a long time. So, the technology provider is usually integrated into the payment service providers, such as Alipay and WeChat.

Considering the low technological level and low enter barrier for POS terminal production, the hardware producers will more act as a simple product provider in the business, and its production resources have limited influence in the whole industry chain.

- Financial Institutions

Financial institutions include banks, credit organizations, and interbank network. As account managers, they tend to ensure the process of mobile payments' safety and smoothness. With experience of operating traditional payment and money business, they are able to build a safe and flexible mobile payment system. In China, there are no independent credit organizations, and all the credit institutions are under specific banks. And the only interbank network, which is called Union-pay, has a strong relationship with the central Bank.

- Mobile operators

The main responsibilities for mobile operators are to setup the network for mobile payment service, supply a secure telecommunication channel, and develop a variety of services to meet the demands of network users. It looks as if it holds the central position in the whole mobile industry, but the truth is that the mobile payment is just another normal application running on the network.

Since there are no specific requirements needed from both service providers and the customers, mobile operator like China Telecom and China Mobile do not have enough bargaining power in the game.

- Payment service providers

As a link between the financial institutions, merchants and customers, payment service providers play a significant important part in the development and running of mobile payment. On one side, they need to integrate the resources existing in industry chain, coordinate the relationship of stakeholders in this game; on the other side, they need to develop services and applications, which could both meet the different demands of payer and payee. In the mobile payment system, they have to implement three interfaces, one of which is the link with banks to deal with the financial affairs, and the second is to link to mobile communication network to identify the terminal, and the last is to link to the end users to finish the payment. The only two powerful payment service providers in China are Alipay from Alibaba Group, and WeChat from Tencent Group.

- Merchants

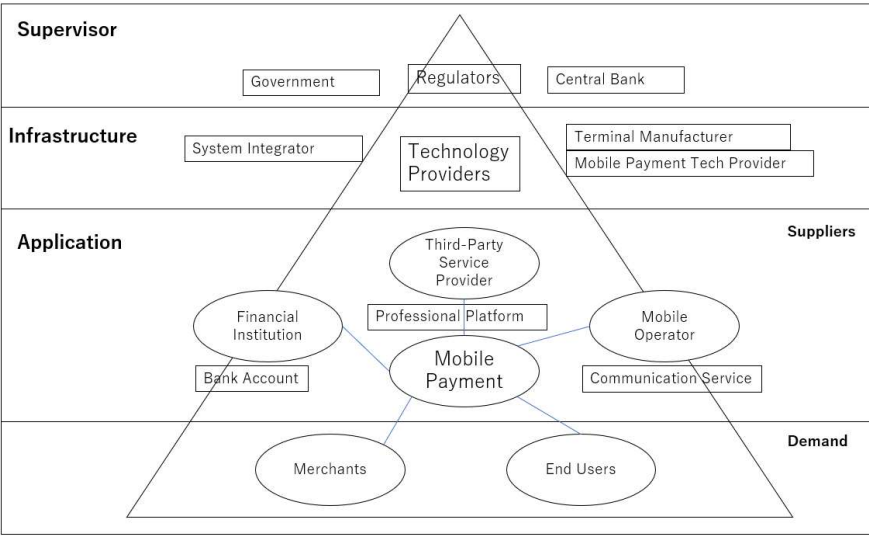
As one of the user groups in mobile payment system, the acceptance of merchants could be a key issue in the competition of payment service provider. Of course, they would prefer the provider honored by more payers, and vice versa. But also, a faster payment service, which could reduce the intermediate links, and lowers the service, operation, and management costs, would also bring better customer satisfaction.

- End Users (Payers)

As end-users of mobile payment, their concern should include the financial security, operational

convenience, and abundance of services. The number of users is an important indicator used to measure the success of mobile payment. To meet the demand of users, payment services should be designed to a fast, convenient and secure application.

Exhibit 3-3 Players at various levels



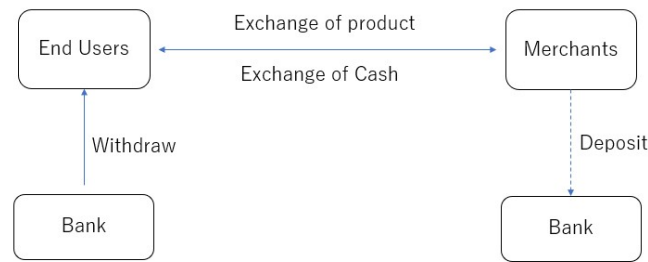
Source: Study of Mobile Payment Business Model Based on Third-party Mobile Payment Service Provider

3.3 Comparison of Business Models

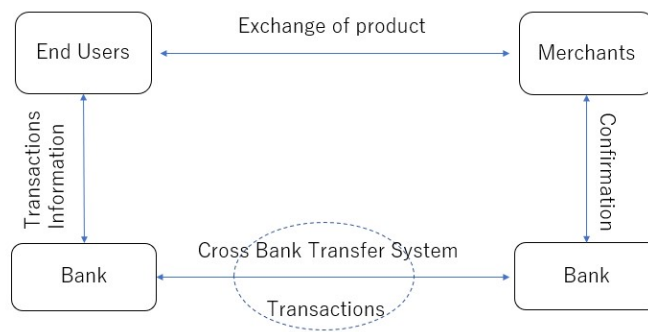
3.3.1 Traditional Payment Model

In the traditional payment method, the bank system stays in the center of the whole process. Whether transactions by cards or by cash, customers and merchants need to open accounts in the bank system. When transactions happen between different banks, the banks will use cross bank transfer system to exchange the account and billing information to complete the payment.

Exhibit 3-4 Traditional Payment Method



A: Cash Transaction



B: Card (Debit/Credit) Transaction

Source: Thesis Author

- Distribution of revenues of the model

The banks will get all the transactions fees from both customers and merchants.

- Characters of the model

The most obvious character of bank system is its closure, i.e., all the data is transported in a dedicated network, which is physically separated from the Internet.

Safety: As the system already exists and has been running for more than 100 years, bank system has a full set of risk management systems and manuals to ensure the fund security. As the whole system is running on the dedicated network, the hacking that spread on the Internet hardly influences the bank system. Furthermore, as the industry has been managing credit over a century, the financial security is guaranteed by the bank's credit.

As for the privacy problem, all the files including personal information is under strict management, the risk of personal information leak is also very low.

- Disadvantages

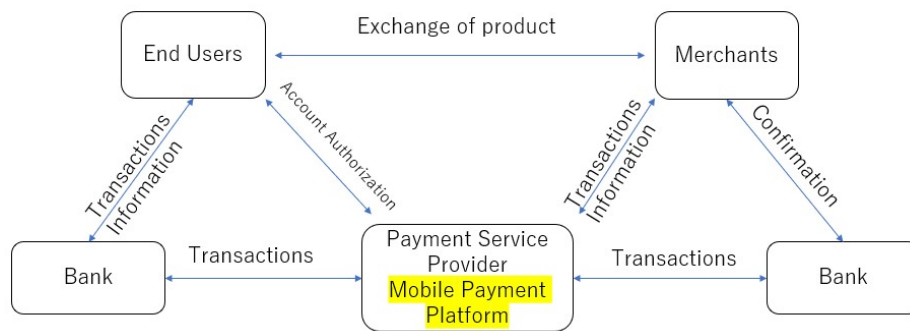
Carrying cash could be a burden for both customers and merchants. Theft, robbery and counterfeit reduce people's willingness to use cash. Especially the counterfeit problem is serious in the rural area especially in China, because lack of money detector and law enforcements aggravates the situation.

As for user experience, the cumbersome authentication process significantly reduces the convenience for both customers and merchants when the transactions amount is quite small.

3.3.2 Third-party Business model

As shown in the exhibit below, mobile operators will not play a important role in this model, but act only as the information channel, or an agent of settlement. Especially under 4G network, the net broadcast is wide enough to contain several service communication at the same time, and there is no need for payment service providers to apply net accessing priority from the mobile operators. Banks act as account managers in the system, but neither paying bank nor receiving bank has access to the whole payment information. Independent third-party service providers is in the center of the whole payment.

Exhibit 3-5 Third-party Business Model



Third-party Payment Model

Source: Thesis author

- Distribution of Revenues of the model

The third-party providers charge merchants for platform fee and share it with the banks. Banks charge for costs of financial information from the providers. End users do not need to pay the transaction fees, but instead, their privacy information such as account information and trading preference would be collected by the platforms.

- Characters of the model

With proper coordination, this model could benefit from the tremendous exchange information and a wide scope of shared resources. Both financial institutions and merchants could benefit from the network effect by sharing the customer from different sources. And the third-party providers themselves can integrate the payment information and coordinate relationship with the other players, with flexible and fast response to market.

Efficiency: By combining the complicated relationship among stakeholders in the value net, third-party mobile payment providers, as information and processing center, can change the many-to-many (banks-consumers-merchants-banks) links to many-to-one (consumer-platform-banks) and one-to many (banks-platform-merchants.) Thereby improving the efficiency of the entire system. For example, merchants only need to set up one interface to the

platform instead of various interfaces to respective banks. It will save time and costs for merchants to maintain the interface systems. And customer only need to download one application to pay for all the products and services in the daily life instead of holding dozens of cards.

Additional Value: By convergence of a large number of customers and merchants on one platform, the payment services providers could offer additional value to the payment service. The big data collected from the transactions could be used to build more effective customer persona, and the merchants could use the persona to achieve precise advertising and promotion. As for the customers, the precise recommendation could save both time and money.

- Disadvantages

The success of the platform highly relies on the network-effect and the scale effect, which means that the platforms need to have the trust from both customers and merchants. The high requirements and costs of marketing, technology solution and financial operating could be a hard task for the payment service providers.

Since all the transactions data and authentication of the bank & credit accounts are transported through the Internet, the leak of personal information or card fraud could be huge threats to the customers.

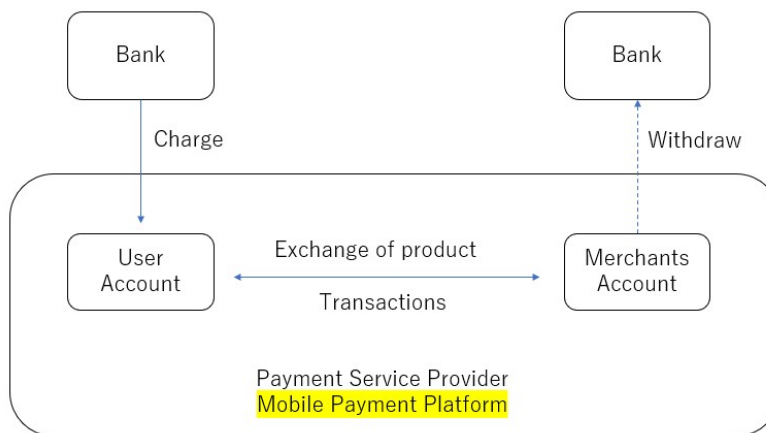
What is different from the bank system is that, through the bank system, players only hold half of the information of the transactions, but on the payment platform, every transaction will leave a complete digital record to the service providers. That makes the users become much easier to track, leading to certain privacy problems. Furthermore, with the cooperation of the company, tax department could have the advantage that they never used to have, against the civilians.

3.3.3 Mobile Wallet Business model

Mobile wallet payment model is quite similiar with the third-party model, as the mobile payment

providers stay in the center. Furthermore, the payment service provider almost take full control in this model. The banks work just as the sources of funds in this system, and they do not get any information of the payments.

Exhibit 3-6 Mobile Wallet Payment Model



Source: Thesis author

- Distribution of revenue of the model

The payment service providers could still charge merchants for platform fee, but they do not need to share it with banks. Banks charge fee for withdrawing from both users and providers. End users do not need to pay the transaction fees, but same as third-party model, their privacy information such as account information and trading preference would be collected by the platforms.

- Characters of the model

Basically, the mobile wallet payment model would have almost the same advantages with the third-party payment model, because they both have the payment service provider in the center of the whole systems. But there remain some differences.

After customers charging their account balance of the mobile wallet, the account acts like a bank account except that it does not bear interest incomes. If the platform cannot offer more additional value, people would not put so much money in, and that would highly impede the business value of

the platform.

On the opposite, without the direct participation of bank system in the payment process, the payment service provider can not only avoid the financial regulation risk, but also have a chance to build an eco-system, which is under its full control.

Conclusion: the table below lists the key issues that the four main participants are concern most under different payment models.

Exhibit 3-7 Concerns of Four Types of Players in Three Different Business Models

	Customers			Merchants		
	Convenience	Financial Safety	Privacy Protection	Cost Saving	Marketing Suitable	Convenience
Traditional	Low	High	High	Low	Low	Medium
Third-party	High	Medium	Low	High	High	High
Mobile wallet	High	Medium	Low	High	High	High

	Platform			Bank		
	Profitability	Control	Additional Value Creation	Profitabil ity	Control	Additional Value Creation
Traditional	None	None	None	High	High	High
Third-party	Medium	Medium	Medium	Medium	Medium	Low
Mobile wallet	High	High	High	Low	Low	None

Source: Thesis author

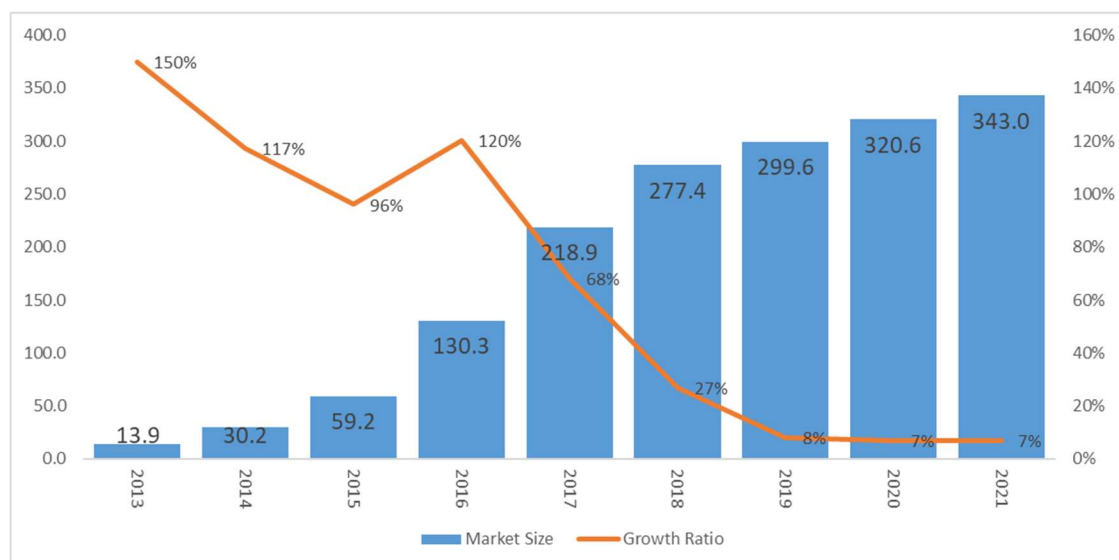
3.4 Mobile Payment Market Analysis

3.4.1 Market Size

In 2018, according to the payment yearly report announced by the People's Bank of China (central bank), the whole market size of mobile payment in China has reached RMB 277 trillion, which already surpassed the card (credit card and debit card) payment and the cash payment, becoming the most commonly used method of payment. The rapid growth of mobile payment market could be partly due to the development of 4G networks and popularity of smartphone.

After five-year high-speed growth from 2013-2017, the growth ratio of mobile payment market has gradually stabilized. In the fourth quarter of 2018, the growth rate has dropped from the previous 50% to about 8%. Considering the GDP growth of China will be stable at 6.0-6.5% in the future several years. In the next three years, if the growth speed of payments should be stable at around 7%, the whole market would reach RMB 343 billion in 2021.

Exhibit 3-8 Mobile Payment Market Size



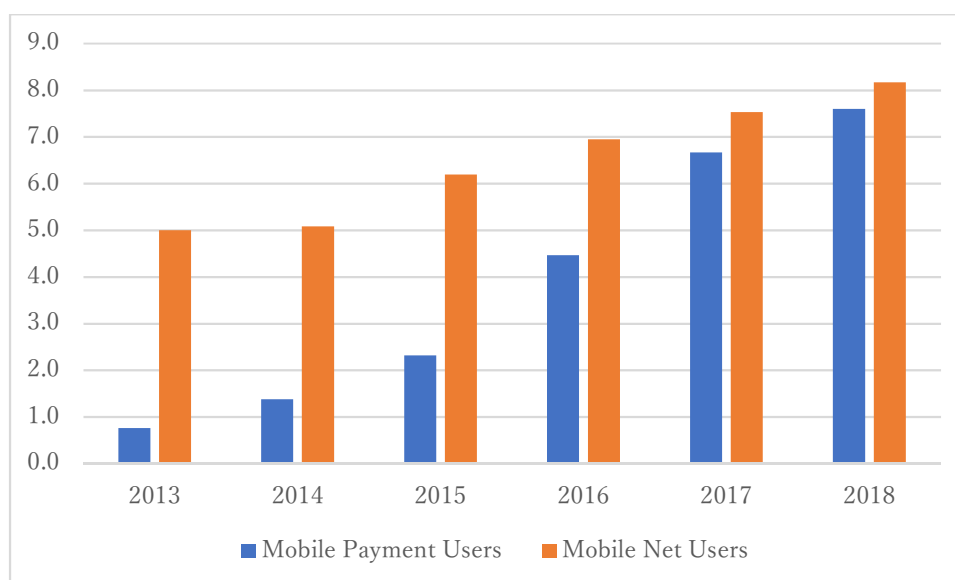
Source: People's Bank of China

3.4.2 Market Penetration

After the rapid growth in the last five years, the user's number of mobile payments continued to grow, but the growth speed has already slowed down, due to market saturation.

According to the Ministry of Industry and Information Technology of China: at the end of December 2018, the total number of mobile Internet users in China has reached 829 million, a year-on-year increase of 14.5%, and the number of users using mobile phones to access the Internet was 817 billion. According to an independent survey, the penetration rate of mobile payments among mobile Internet users is 92.0% in December 2018, which is basically the same as in May 2018 (92.4%). Obviously, because the penetration rate has reached a very high level, the growth of mobile payment users has slowed down, and the increase basically comes from new users of mobile Internet. This means that market growth will have to rely more on further taking over the share of other payment methods, and the natural growth of mobile Internet Users.

Exhibit 3-9 Growth of Mobile Payment Users and Mobile Internet Users

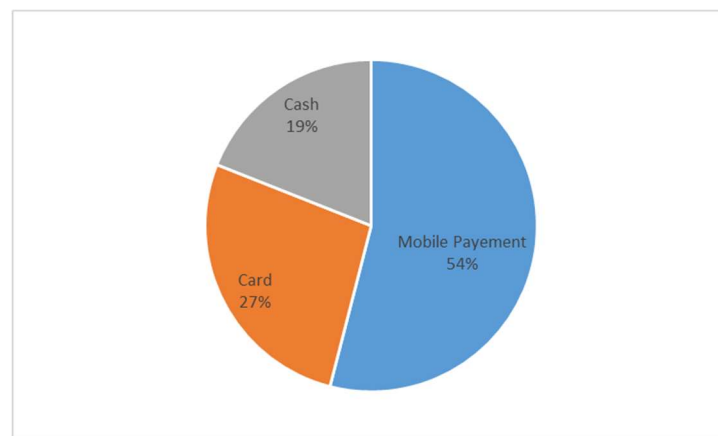


Source: Ministry of Industry and Information Technology of China

3.4.3 User Preference

Based on the mobile payment user behavior survey, the proportion of payments in regular consumption continued to rise. It can be said that mobile payment has steadily become the largest payment tool for users' daily consumption, and the trend of “no cash” has become more apparent. Mobile payment has been widely infiltrated into various scenes of users' daily lives.

Exhibit 3-10 Breakdown of Payment Methods

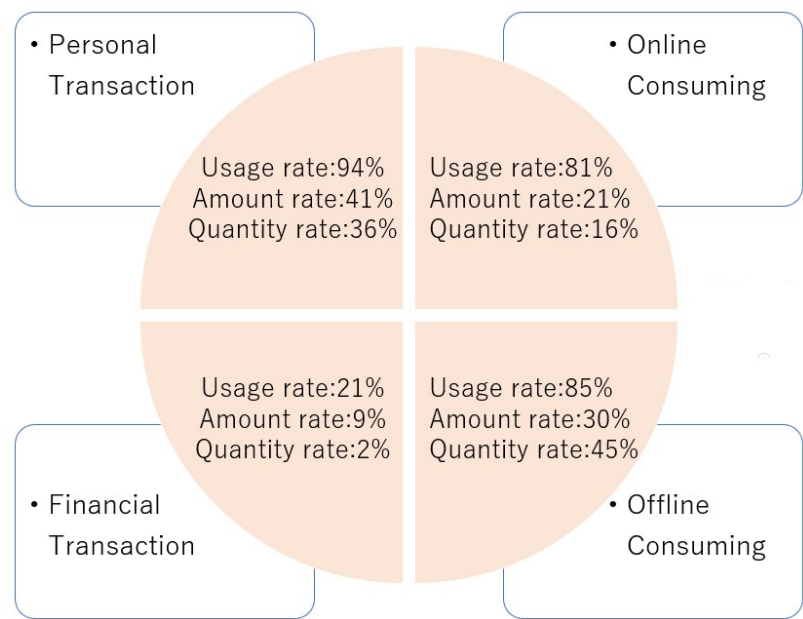


Source: Mobile Payment User Behavior Survey issued by IPSOS (2018Q3)

The survey covered four major types of basic payment scenarios: personal transactions, online consumer transactions, offline consumer transactions, and financial transactions, showing that in the last three months, mobile payment usage in the above four scenarios was 94%, 81%, 85%, and 21%, respectively. The first three categories basically cover the daily life scenes of people's food, clothing, housing and transportation. The mobile payment usage rate is maintained at a high level and is widely infiltrated. The relationship between financial transactions and daily life is relatively weak, and the incidence rate is not high, and in financial transactions, the proportion of using mobile payment is relatively low.

Further, we use the proportion of transaction amount and the proportion of the number of transactions to measure the importance of the specific application scenario to the overall market of mobile payment. In terms of transaction amount, the proportion of mobile payments in personal transactions, online consuming transactions, offline consuming transactions, and financial transactions was 41%, 21%, 30%, and 9%, respectively. In terms of the number of transactions, the proportion of mobile payments in the four scenarios was 36%, 16%, 45%, and 2%, respectively, and the proportion of offline consumer payments increased significantly. Offline consumer transactions are the most typical small-scale, high-frequency payment scenarios.

Exhibit 3-11 Usage of Mobile Payment in Various Types of Payments and Value and Frequency



Source: Mobile Payment User Behavior Survey issued by IPSOS (2018Q3)

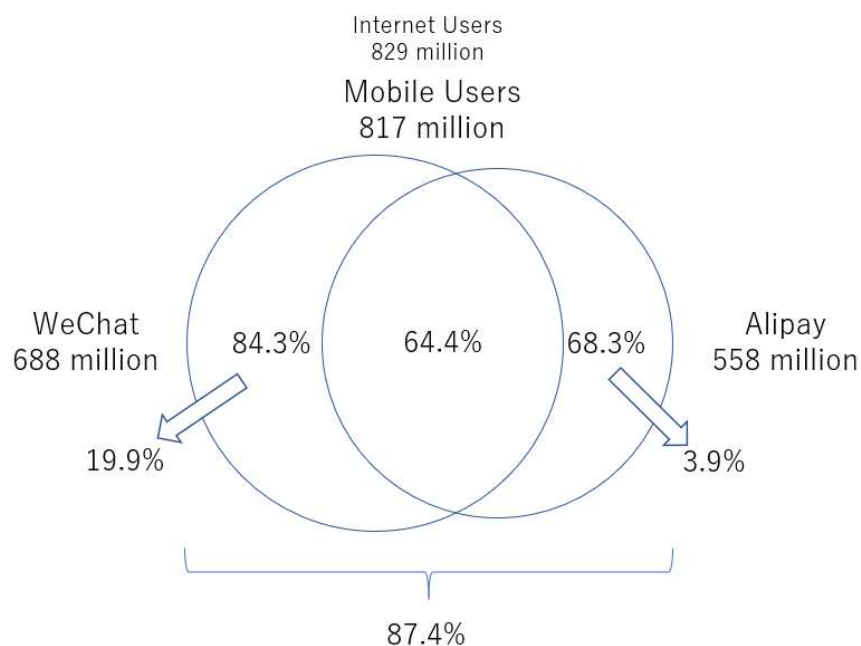
3.4.4 Market Leader

Benefiting from the rapid growth of the e-commerce market in China during 2005-2015, Alipay acquired a huge user base and the trust from customers. Alipay did not meet too many troubles when

they started the mobile payment service. Since there was no competition in the beginning, Alipay once dominated the whole market. But limited by the lack of the logistics and short of service network in rural areas, most of the Alipay users, which are also Taobao users, were located in the urban areas.

People in rural areas may not go shopping online, but they still need to keep in communication with friends and family. Such difference gives WeChat a huge advantage when they entered the market as a follower. In the rural area and in the customers of elder ages, WeChat takes most of the market.

Exhibit 3-12 Duopoly in the China's mobile payment market



Source: Mobile Payment User Behavior Survey issued by IPSOS (2018Q3)

Among 800 million Internet users in China, 92% has once experienced mobile payment. Furthermore, WeChat has penetrated 84.3% of the market while Alipay has penetrated 68.3%. The combined penetration rate of WeChat and Alipay reached 87.4%, which is very close to the overall penetration rate of mobile payment users (92.0%).

And, the more important point is that nearly 20% of the WeChat users are not Alipay users, while the Alipay unique users are only 4% of the mobile Internet users.

The share of mobile payment transactions between WeChat and Alipay is basically the same, and together they account for about 92% of the total transaction volume of mobile payments. WeChat and Alipay accounted for 46% and 45% of mobile payments in transaction amounts, respectively, accounting for 53% and 39% of transactions, respectively. (Exhibit 3-12)

More specifically, although the two companies divided the market, WeChat holds a larger base of users and larger numbers of transactions, but Alipay has a larger number of transactions value. As a natural derivative of online shopping, users still tend to use Alipay, when they purchase expensive goods on smartphones.

Exhibit 3-13 Transaction Value and Transactions of the Players by Services

	Transaction Amount Ratio			Transaction Number Ratio		
%	WeChat	Alipay	Others	WeChat	Alipay	Others
Personal Transactions	48	44	8	58	34	8
Red Packet ¹²	79	19	2	76	20	4
Telephone Bill	54	37	9	54	37	9
Other Service Bill	48	44	8	51	44	5
Transfers	46	44	10	51	44	5
Travel Card	46	48	6	54	42	4
Public Service Bill	44	44	12	46	42	12
Credit Card Repayment	39	48	13	40	50	10

Source: Mobile Payment User Behavior Survey issued by IPSOS (2018Q3)

¹² A monetary gift which is given during holidays or special occasions

3.5 Chapter Summary

As a platform business, network effect plays a key role in the success of the mobile payment, what is needed in leveraging the company resources to connect the different customers from two sides could partly explain the market situation of China's mobile payment market.

The mobile payment of China is now a huge market that the whole consumer market is involved in. As the market penetration already reached a high level, the mobile payment market would enter saturation stage in the future years. Even, Tencent and Alibaba are still competing with each other in multiple market segments intensively, the market share would not change much due to the user preference and market characteristics. But the regulator still plays the most important role in the whole eco-system, with the power to decide whether the business model still works.

Chapter 4 Analysis of the Business

4.1 Regulation: the supervisor changed the rule

Just as we discussed before, regulations play an important role in the payment service business. And since the PBOC (People's Bank of China) is the initiator and leader of China Union Pay, it is quite understandable that the regulations will tend to protect the interest of banks, which deal with the payment service providers. But, on the other hand, the payment service providers also have taken advantages of the slow movement from the PBOC. Before the regulation was officially announced, Alipay and WeChat nearly dominated the whole market, which did not give a huge space for regulators to set the rule. But still, the new regulations could highly influence the profitability of the two Giants.

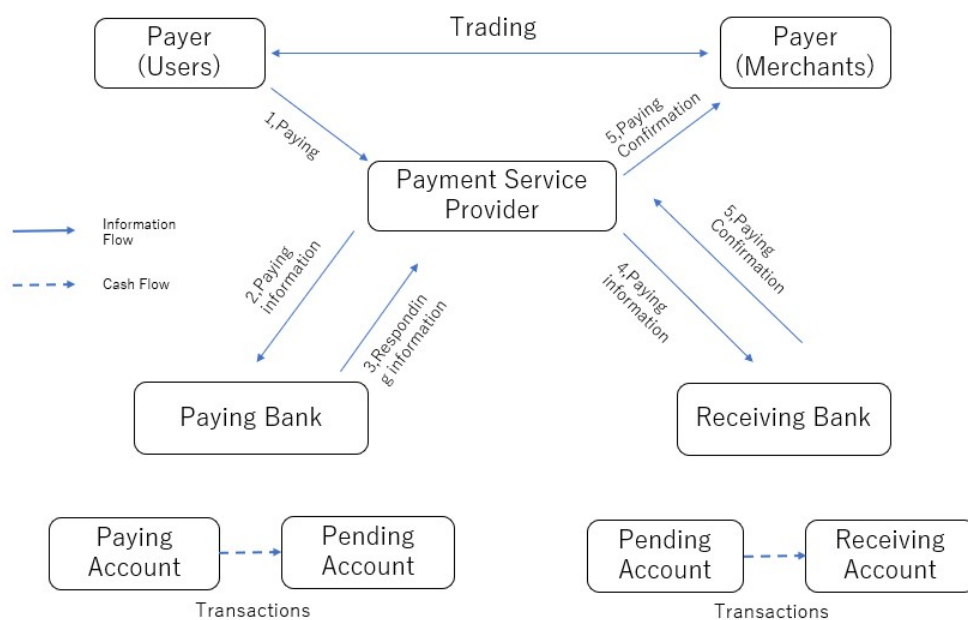
In 2017, PBOC announced Notice of the General Office of the People's Bank of China, on "Matters Concerning Implementing the Centralized Deposit of the Funds of Pending Payments of Clients of Payment Institutions" (CLI.4.288811). According to the notice, a payment service provider shall deposit a certain percentage of the funds of pending payments of its clients in a special deposit account with a designated institution, and there is no interest on the funds in such an account for the time. The percentage will be raised in steps and finally reached 100% in January 2019. At the same time, the connection between bank and the third-party payment service providers will be cut, and all the trading process should be integrated into the UnionPay's regulation.

We can see from the exhibit below, that before the regulation, in the former business model, the payment service provider could have a direct connection to the bank system, and open the pending account in the bank, which also means that payment information is transferred directly between the bank and the providers to complete the whole payment process. Due to the existence of a certain timing difference in the cash flow between the different accounts, there would be deposit in the

vending account. Because the payment service providers owned the vending account, the interest income from that account belonged to the service providers, and became the main income source for the payment service providers. According to an estimation, the total amount of pending money has exceeded one trillion RMB. And the huge deposit amount also brings the provider a strong bargaining power when they negotiate the service fee with the Bank.

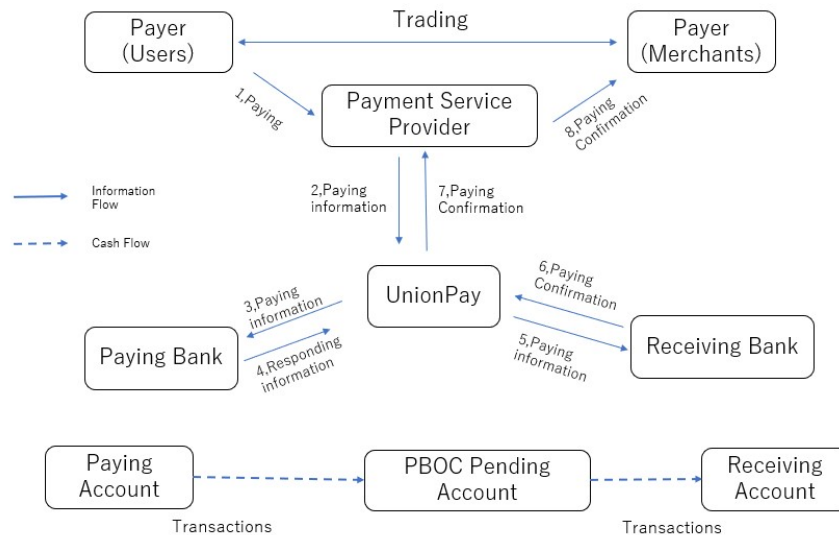
But after the regulation, all the pending deposit is under the regulation of PBOC, and the interest will not be counted. The loss of interest income and bargaining power with the bank could decrease the income for the payment service provider significantly. According to estimation, the interest income is about 3-7% of the total income for the third-party payment service division of both Alipay and WeChat. And the increase of bank service fee could be 1% of total income.

Exhibit 4-1 Process before regulation



Source: Thesis author based on public data

Exhibit 4-2 Process after regulation



Source: Thesis author based on public data

Under the new regulation increased the cost of payment service providers and did not allow them to have funds as their assets. The increase of cost may still be acceptable, but the loss of interest income could be quite damaging to the profitability of the mobile payment service providers.

4.2 Implications of the Changes

1. End users:

a. Low Switching Cost

In the traditional business world, switching service could bring a huge cost, especially for the platform services. For example, switching from Windows to MacOS, not only means that the customers need to purchase a new computer, but also need to learn a full set of new operation of software and system. But the smartphone era changed the whole game set. Almost all the application on the smartphone OS is designed for purpose that people could be familiar with the operation in a short time. Even switching the Operation System (OS) itself could be an easy task. Both iOS and

Android have smart tutorial for new users. By following the guidelines, users could easily learn new items in several minutes.

The innovation of technology also set fire to this trend. Under 3G network, the net speed average was about 3-5 Mbps, and the average size of application was about 50~100MB, meaning that downloading a new application would require 3~10 minutes. But, under 4G networks, the net speed increased to at least 50Mbps, and the time required for downloading a new application became far less than half a minute.

The mobile service plan also had a huge change, for example, a standard plan cost US\$20/month would only offer 300MB data traffic under 3G, but a familiar plan under the 4G could offer more than 2000MB data traffic. People usually download application only under Wi-Fi network, but when 4G came, they could download whenever and wherever they wanted.

Another change happened in the smartphone storage space. Before 2015, the average storage size for a smartphone was about 16G, so excluding the compulsory storage of system and photos, there is not too much storage left for many applications. So, in these days, people tended to keep one application for one specific job. But in 2018, the average storage for a smartphone was 128G, even the system size was triple compared with 2015. People were able to install multiple applications and switch between them, as they liked.

b. Price Sensitivity

According to the statistical data offered by National Bureau of Statistics, in 2018, the per capita disposable yearly income of residents in China was only 28,228 RMB, about US\$300 a month. This means, when average people are selecting applications, price could be the most important point, instead of privacy, user experience, and UI¹³ preference.

Such price sensitivity brings four unique characteristics into the Chinese internet business. Firstly,

¹³ UI: User interface design is to produce a user interface, which makes it easy, efficient, and enjoyable (user-friendly) to operate the devices.

when internet service enters a new area of business, the company can use deep discount and cash back to grab huge market share and develop customer preference in a short time. The service provider only needs to spend a certain amount of money. As a comparison, the mobile service provider in Japan, Line Pay, needed to spend about 40 US dollars to acquire a new payment user. The same number in China is about 2~5 dollars but could be even much lower for Alipay and WeChat, considering their huge user base.

Secondly, a latecomer can easily copy the business model of forerunner and use almost the same promotion strategy to take the market share. Such war of attrition will never end until one consumed all the cash in hand.

Thirdly, because unprofitable businesses would continue on for the long term, in order to keep the company alive, the managers of the company tend to use the associated resources of the business to make some non-operating income, even if it might incur legal and reputation risks. For example, more than a dozen companies once had scandals of selling their customers' personal data to make money. And deposits from the users are another hardest-hit area. In the end of 2018, after the bankruptcy of the famous shared bike service provider-OFO, its users found it was almost impossible to have refunds of their deposits in this service. According to the investigation report by the financial media, most of the deposit was misappropriated for stock investments, and supply chain payments.

Fourth, the population of China is quite transient. People giving birth, going to elementary and high school, enrolling to university, and working in different cities or provinces, are quite usually seen in this country. Such domestic migration brings a high differentiation in demands and supplies and fragments the entire consumer market.

Conclusion: from the discussion above, we can see that the net users in China today can keep

multiple applications even for one task, such as using WeChat and Alipay together. And usually, they would choose which one to use, based on how much discount the service provider could offer, unless it is an exclusive one. It is hard to create user loyalty for basic use like payment or travelling services and catering services. The profitability of one application is highly dependent on; when it could beat all competitors, take the whole market, and end the cash burning competition. If taking the whole market is difficult in the short term, the cash burning competition will continue unless both decide to share the market.

2. Merchants: Tencent Vs Alibaba on Payment Service

Just as we discussed before, in a two-sided market like mobile payment, end users prefer the platform honored by more merchants, while the merchants prefer the platform installed by more customers. But for a normal vendor or merchant, sticking to only one platform means losing the potential customers only using the other one. And the technology barrier in the mobile payment is very low. So most of the merchants tend to purchase the POS machine, which could process the QR Code from both Alipay and WeChat. Or much easier, just post two QR Codes on the wall, one from Alipay, another from WeChat, and let the customers choose which one to scan. And considering that the retail market in China is so fragmented, even if mobile payment provider intends to sign an exclusive agreement with merchants, the management cost could far beyond the potential benefits. For example, even in Shanghai, the self-employed convenience stores, still have more than 40% market share. Dominating a single segment of the market could be mission impossible, not even the whole market.

So, in order to take advantage of network effects, and to decrease the multi-homing by the users, getting itself into a better position in the competition will be important. Both Alipay and WeChat are

using agent war¹⁴ to create the scale advantage, and limit resource for the platform. By supporting the service providers exclusive to one specific payment method, Alipay or WeChat could create the service differentiation with those ideal merchants.

After 2010, Alibaba already dominated the e-commerce market, and Tencent dominated the social-media market. Many venture companies found themselves to be in a subtle situation. On one side, with the help of Alibaba and Tencent, they could easily get a huge number of initial users to launch their business, however in exchange, of course they would have to accept Alibaba and/or Tencent as investors, and give away part of the company control. On the other hand, if they refused the capital proposal, they would find the cost to acquire new users would far exceed their ability to afford, and they would be left behind by the competitors, who accepted the help from the giants.

From this time, almost all the segments in China internet consumption market could find a pair of companies supported by each giant. We can see the detail as below:

Exhibit 4-3 Startups Supported by Tencent and Alibaba

Segmentation	Tencent series	Shareholding Ratio	Alibaba series	Shareholding Ratio
Shared-Car	Didi	11.40%	Didi	9.50%
Shared-Bike	Mobike	15% (First Major Shareholder)	Hello	36% (First Major Shareholder)
Takeout Service	Meituan	20% (First Major Shareholder)	Eleme	33% (First Major Shareholder)
Supermarket	Yonghui	15% (Second Major Shareholder)	Hema	50% (First Major Shareholder)

Source: Public data

¹⁴ Trying to find and invest into big businesses that support only one platform.

But, unfortunately, there remains a conflict of interest between the giants and their “agents”. In the beginning of the business, with the investment from Alibaba or Tencent, these venture companies were able to use incredible discounts to take over the market. For example, it was quite easy to order a hearty dinner on the takeout service applications by only paying 3-5 Yuan and such dinner could cost more than 20 Yuan in the restaurant. At that time, these venture companies were willing to keep their payment methods exclusive for Alipay or WeChat.

But things will change when the venture company grew. After the market share reached a certain scale, the bargaining power between the giant and the agent could be reverted. For the further development of the company, and considering the interest of other shareholders, there remains a very high probability that the company would start to receive both applications as payment methods. And since the company had already become big enough, the investment return was quite considerable, so even Tencent or Alibaba would not want to risk damaging the company’s market capitalization.

Exhibit 4-4 Payment Available Via Various Service Providers

Segmentation	Company	Market Share	Payment-Exclusive
Shared-Car	Didi	85%	None
Shared-Bike	Mobike	35%	WeChat
	Hello	20%	Alipay
Takeout Service	Meituan	65%	None
	Eleme	34%	Alipay
Supermarket	Hema	<1%	Alipay
	Yonghui	<1%	WeChat

Source: Thesis author based on public data

As we can see from Exhibit 4-3, when a market is still under strict competition, the companies tend to keep their payment exclusive, but when they become the absolute market leader, they tend to receive both as payment methods.

In the middle of 2017, after Tencent increased its investments to Meituan and became the first major shareholder, Meituan once cancelled Alipay as its payment method quietly, but soon the criticism from the net society increased, and decline of orders forced Meituan to add Alipay back.

Conclusion: In a two-sided market like payment service, in order to get the scale advantage over competitor by creating new merchants under control seems to work in the beginning, but the competitor could easily catch up by the same way. And considering the conflict of interest problems, the real long-term effect should be highly under doubt.

4.3 Financial Analysis of Tencent (WeChat Pay)

Tencent is a listed company, so we will use its annual financial reports to analyze the profitability of the payment service business. After 2015, the revenue of Tencent is divided into three parts: VAS (value added service), Online advertising, and Others. Revenues from VAS primarily include revenues from the online games and social networks services. Revenues from online advertising include revenue from social and other advertising revenues, and revenue from others is primarily contribution from fintech and cloud services. Mobile payment service is the main business of fintech division.

The specific amount of the revenue from fintech and cloud services is unpublished in the annual reports. But, according to the 3rd quarter financial report of Tencent, the revenue from cloud service in the first three quarters of 2018 is about 6 billion RMB, and according to the report from financial media, the projected revenue for 2018 is about 9.1 billion with a more than 100% annual increasing

ratio. So, the revenue in 2017 was about 4~4.5 billion, for calculation convenience and the deviation is less than 2% of the total others revenue, the thesis author assumes the cloud service had a revenue of 4 billion in 2017 with the similar 100% annual increasing ratio.

By referring to the cost structure of Amazon Web Service, the cost of cloud service is about 50~60% of the whole revenue. Considering that Tencent's cloud service is still on the start edge, the thesis author estimated the ratio to be 60%. The financial condition for the mobile payment service division is estimated as below.

Exhibit 4-5 Income and Expenses by Business Segments of Tencent (estimate)

		RMB million	2015	2016	2017	2018
Revenue	ALL		102863	151938	237760	312694
	VAS		80669	107810	153983	176646
	Advertising		17468	26970	40439	58079
	Others		4726	17158	43338	77969
		Cloud Service	1000	2000	4000	9100
		Payment Services	3726	15158	39338	68869
Expenses	ALL		41631	67439	120835	170574
	VAS		28422	37622	61389	73961
	Advertising		8941	15396	25586	37273
	Others		4268	14421	33860	59340
		Cloud Service	600	1200	2400	5460
		Payment Service	3668	13221	31460	53880
Profit Ratio	ALL		59.53%	55.61%	49.18%	45.45%
	VAS		64.77%	65.10%	60.13%	58.13%

	Advertising		48.81%	42.91%	36.73%	35.82%
	Others		9.69%	15.95%	21.87%	23.89%
		Cloud Service	40.00%	40.00%	40.00%	40.00%
		Payment Service	1.56%	12.78%	20.03%	21.76%

Source: Thesis author based on Tencent's Annual Reports (2015-2018)

By combining the financial data with the market share, we can easily find out that, in 2015-2018, size of the mobile payment service increased. The network and scale effects are obvious that the profit ratio rose from 1.56% to 20.03%. But when time comes to 2018, even the market size and the revenue kept increasing. However, the profitability of this business remained stagnant. The reason could partly be due to new regulations, as we have discussed above, so the profit rate could have been reduced by 5%-8% under the regulations. But even without the influence of regulation, the profitability is still not ideal compared to other payment services like Visa. (Of course, the business model is different, but the thesis author considered Visa to be one successful financial platform with some competition, which looks similar to WeChat in China.)

Exhibit 4-6 The Payment Volume and the Profitability of WeChat in RMB (Summary of Exhibit 4-4 and market share data.)

	2015	2016	2017	2018
Revenue (million)	3726	15158	39338	68869
Profit Ratio	1.56%	12.78%	20.03%	21.76%
Whole Market Size in China	59.2	130.3	218.9	277.4
Market Share	23%	37%	39.50%	38.90%

Source: Thesis Author based on public data

Visa's financial data all comes from its annual reports. Its payments volume is the total monetary value of transactions for goods and services that are purchased on Visa-branded cards and payment products.

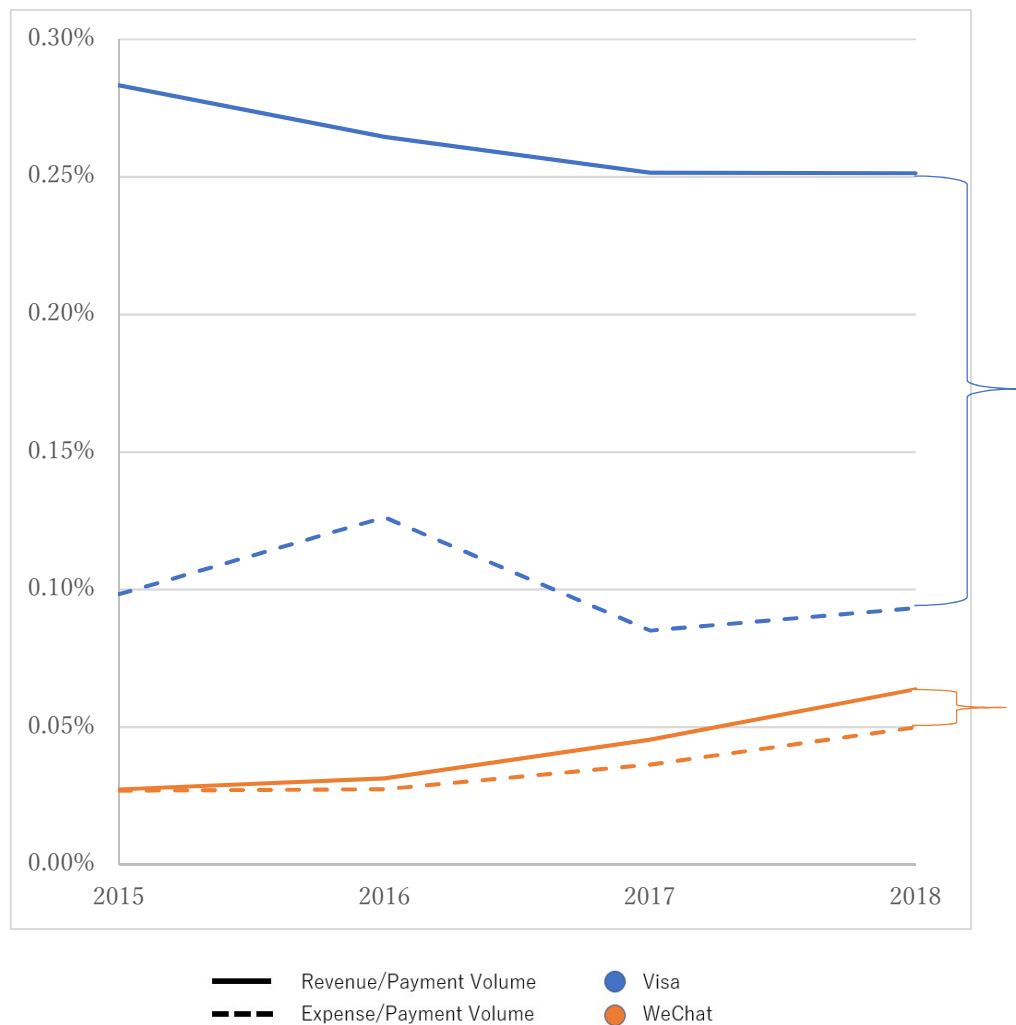
Exhibit 4-7 The Payment Volume and the Profitability of Visa in US dollar

	2015	2016	2017	2018
Revenues (million)	13,880	15,082	18,358	20,609
Expenses (million)	4,816	7,199	6,214	7,655
Operating Profit Ratio	65.30%	52.27%	66.15%	62.86%
Payment Volume (trillion)	4.9	5.7	7.3	8.2

Source: Visa's Annual Reports (2015-2018)

After comparing the revenue and expense with the total payment volume, we find out that even WeChat has done quite a good job in cost control, which seems to be better than Visa in absolute terms. But, its ability of earning money from the payment service business seems to be far behind Visa. We can see the difference clearly in the Exhibit below. In order to raise its profitability, Tencent should find a way to increase the revenue from its huge transactions volume.

Exhibit 4-8 Profitability Comparison of Visa and WeChat in payment business



Source: Thesis author based on Tencent and Visa's Annual Reports (2015-2018)

4.4 Strategic Plan

For Tencent (WeChat) to reach its goal of increasing revenue and profit in the payment business division, and to occupy a better situation in the competition with Alibaba (Alipay), the company needs to change its former strategic focus on the scale, and develop a new strategy to utilize its resources and advantages.

Tencent needs to realize that even if winner-take-all should be ideal to achieve the maximum

income for a platform business like mobile payment, the reality is that Duopoly in the mobile payment market will last for a long time. Tencent needs to learn how to share the market and make profit together with Alibaba.

The following is a proposal outline for Tencent's strategy planning in the mobile payment market.

Reviewing the Pricing strategy

Based on the four major types of basic payment scenarios, i.e.; online consuming transactions, offline consuming transactions, and financial transactions, the transactions fee is charged from merchants for online and offline consuming transactions. In the early age of the mobile payments, in order to attract both customers and merchants, both Alipay and WeChat tended to set the transaction fees at a very low level (about 0.1%). In the growth stage of the market, such pricing contributed a lot for customer acquiring, which is very important for a platform to achieve network effects. But when the market goes into the maturity stage, such price war will not have good effects as before, because the margin has diminished. So, charging a reasonable transaction fee to the merchants could be an effective means to increase the revenue.

The average transaction fee of a card used in China is only about 0.5%. In order to maintain the competitive advantage against card payment, the payment fee for mobile payment should be less than the card transaction. And in order to leave enough time for the market adaptation, the fee should be increased only in a step-by-step way.

The new pricing plan is shown in Exhibit 4-7, in the three years, only transaction fees could bring more than RMB 200 billion revenue for Tencent Company. And the whole payment business could bring more than 250 billion, which is almost 2 times of the Visa's whole revenue in 2018.

Exhibit 4-7 Increase of Transaction Fees over Time and Financials

	2018	2018	2019	2020	2021
Market Size (RMB trillion)	277.4	277.4	300	321	343
Market Share	38.90%	38.90%	38.90%	38.90%	38.90%
Payment Volume (WeChat)	107.9	107.9	116.5	124.7	133.4
Consuming Volume (trillion)	55.0	55.0	59.4	63.6	68.0
Fee Percentage	0.10%	0.20%	0.25%	0.30%	0.35%
Fee Revenue (million)	55033	110067	148585	190783	238161
Other Revenue (million)	13836	14942	16138	17429	18823
Revenue (million)	68869	125009	164723	208212	256984
Revenue Increased		55033	89151	127189	170115

Source: Thesis author based on public data

In order to achieve such revenue increase, the fluctuation of market share after increasing the transaction fee should be taken into consideration too. The transaction is charged directly to the merchants, which means even if the end users are highly price sensitive, they are hardly influenced by such change.

Even as the industry changes, the gross margin ratio would change as also. Most merchants in the mobile payment eco-system has a gross profit margin of 30%~50%¹⁵. Which means the transactions fee is only 0.14%~0.2% of the whole cost. Even after Tencent triples the transaction fee, the cost from the payment transaction would not exceed 0.5% of the whole cost. And even if Alibaba follows Tencent to raise the transaction fee, the transaction cost still will not exceed 0.6% of the whole cost,

¹⁵ According to the statistics of the 经济观察报 (The Economic Observer)

which is totally affordable. According to the cost structure calculated, we find out that the raising of transaction fee would not influence the acceptance of WeChat in the payment services. And the merchants would hardly change the retail price to pass the cost to customers.

Exhibit 4-7 Cost structure of Transaction Fees for Merchants

	Before	After (Only Tencent)	After (Followed by Alibaba)
Revenue	100%	100%	100%
Cost	50%-70%	50%-70%	50%-70%
Transaction Fee	0.10%	0.18%	0.28%
Fee/Cost	0.14%-0.20%	0.25%-0.36%	0.4%-0.56%

Source: Thesis author based on public data

Without the change in the retail price, Alibaba could hardly find way to take over the market from Tencent, the most reasonable strategy would be taken by Alibaba is to raise the transaction to a same level with Tencent.

Business Model Revolution

In 2018, almost 80% of the total transactions through the WeChat was processed under the third-party model, and the remaining 20% was processed through the mobile wallet¹⁶. As we mentioned before, because of the new regulations, the profitability of third-party model has been highly decreased. Since the payment transactions through mobile wallet is totally inside the payment platform without any financial institution involved, the mobile wallet model is not influenced by the regulations until now. And considering the situation that Tencent could take full control of the

¹⁶ According to Tencent related resources.

payment business, since there is no other party involved in the revenue distribution, Tencent should put their resources to switch from third-party model to mobile wallet.

Even the mobile payment already became the major method for daily payments, most of the customers still tend to save their money in bank accounts inside of WeChat's mobile wallet, the most important reasons are:

- In the first place, for most of the customers, the only source of funds (their salaries) are directly issued to the bank accounts.
- Saving money in a bank account could receive an interest income.
- Financial institution like bank could offer better financial services
- The money in a bank account is guaranteed by bank credit.

In order to achieve the goal of transforming to the mobile wallet model, WeChat needs to increase its customers' willingness to charge for the platform and to let them keep their money on the platform by offering additional value to the mobile wallet. And since most of the small merchants in China are self-employed households, the additional value and service offered for normal customers would also be available for them.

In the third-party business model, the WeChat platform only works as a transaction platform by offering the transaction services for information and funds to players from different sides.

But an innovation platform, such as Google Androids and Amazon Web Services, offer technological building blocks that third-party innovators use to develop new complementary products or services. Such methods may lead to interest conflicts in the third-party model, since there are other revenue distributors in the eco-system and could go against the regulations. But in the mobile wallet model, since Tencent take full control of the platforms, such method would not cause problems.

As part of WeChat, the payment service platform could take advantage of WeChat by adding new

features and encouraging other third parties to create complementary products and services that enhance the additional value of the platform. And Tencent could give technical and financial support to the complementors.

By combining innovation and transaction functions together, Tencent could turn the payment platform of WeChat into a marketing & financial platform. By unlocking new form of value hidden within transaction data itself, which only new digital companies and tools could gather by analyzing those data.

For the merchants on the platforms, knowing who has transacted with whom can help companies discover consumer tastes and spending habits, information they can leverage to generate more activity. Leveraging contextual data captured on the platform, the platform could create an environment easy for customer to make a purchase decision, by determining the next possible payment opportunity, prompting the user toward it, and facilitating the interaction. Such platform infrastructure could create huge additional value to the merchants on the platform. And the complementors on the platform could design complementary marketing product or consulting services for the merchants.

For the customers on the platforms, the third-party financial advisor on the platform could offer a professional advice on investment in real-time. Service provider could develop a set of recommendations to build precise and personal asset management plan to the users. By achieve a more profitable and risk controllable returns than the bank savings.

4.5 Chapter Summary

Mobile network users in China tend to keep multiple applications and choose which one to use, based on how much discount the service provider could offer, unless it is an exclusive one. It is hard to create user loyalty for basic use like payment or travelling services and catering services. And in a

two-sided market like payment service, in order to get the scale advantage over competitor by creating new merchants under control seems to work in the beginning, but the competitor could easily catch up by the same way.

Under the new regulation related to the third-party mobile payment, the profitability of the mobile payment service providers is significantly affected.

By using Visa as a comparison, after comparing the revenue and expense with the total payment volume, we find out that even WeChat has done quite a good job in cost control, which seems to be better than Visa in absolute terms. But, its ability of earning money from the payment service business seems to be far behind Visa.

In order to raise its profitability, Tencent should find a way to increase the revenue from its huge transactions volume. There are two strategy that Tencent could take to achieve that goal.

The first is to increase transaction fee it charged from the merchants in the mobile payment services. By increasing transaction fee in a step-by-step way, the new pricing strategy would bring more than 44 billion RMB revenue to the company and solve the low profitability problem. The second is to switch the business model by increase the additional value of the platform. By supporting the other third parties to create complementary products and services that enhance the additional value of the platform, Tencent could attract users to charge their fund into the platform. So as to change its main business model for the mobile payment from third-party to the mobile wallet. Under new business model, Tencent could not only receive a higher profitability but also bypass the strict financial regulations.

Chapter 5 Recommendations

5.1 The Path Options Till 2021

Tencent will make two progress on how implement its strategy.

First Recommendation:

Re-pricing the mobile payment service

Description:

Tencent would increase transaction fee it charged from the merchants in the mobile payment services. By increasing transaction fee a step-by-step way, the fee rate would raise from 0.1% now to 0.35% in 2021. The new pricing strategy would bring more than 44 billion RMB revenue to the company and solve the low profitability problem

Pros:

- Directly revenue and profit increase.
- Mitigating relationships with the biggest competitor, Alibaba
- Provide the funds that may be needed for business model transformation.
- Take no damage to the company's existing market share.

Cons:

- Probably criticism from the public may hurt the company's brand image.

Second Recommendation:

Business model transformation

Description:

By supporting the other third parties to create complementary products and services that enhance the additional value of the platform, Tencent could attract users to charge their fund into the platform. So as to change its main business model for the mobile payment from third-party to the mobile

wallet. Under new business model, Tencent could not only receive a higher profitability but also bypass the strict financial regulations.

Pros:

- Full control of the platform
- Increase customers' willing to pay for the platform.
- Third-party complementors add value to the platform.

Cons:

- The increase amount of the precipitation funds on the platform may be noticed by regulator, which may lead to unpredictable strict regulations.
- The possible misuse of personal data by the third-party complementors may lead to serious reputation risk for the platform and Tencent.

The author has given two major recommendations, which is critical to WeChat's future. There are risks but the author believes that the risk is worth taking.

5.2 Limitation

The gathered information including industry reports, customer behavior surveys, financial reports and regulations will be updated by June 2019 and could change slightly by the time the thesis was published due to the volatile and unpredictable condition of the regulator.

Another fact that could affect this study dramatically is that the market size and payment transaction amounts change significantly in different reports published by different institutions, the probably reason could be the divergence of statistical calibers and methods. Even the thesis author is trying to collect the data from official institutions with higher credibility, there still leaves the possibility that the data may not reflect market conditions accurately, which may lead to some flaw

in the related analysis.

And since the thesis do not have internal information from the Tencent, most of the financial and business analysis are based on public information. There could be gaps between the author's analysis and the real condition of WeChat's business operations. And in the thesis, the payment business is seen as an individual business division of Tencent, the synergy between payment business and the other business in WeChat could be ignored. And the position of payment business in the Tencent's whole eco-system is unrevealed. So as the recommendation to Tencent on how to improve its profitability with the mobile payment business may not fit the corporate strategy of Tencent.

References

Books:

- Parker, Geoffrey G. (2017). “Platform Revolution”, W. W. Norton & Company
- Cusumano, Michael A. (2019). “The Business of Platforms”, HarperCollins

Articles:

- Jie Guo (2016). “An ecosystem view on third-party mobile payment providers: a case study of Alipay wallet”, Emerald Group Publishing Limited
- Pousttchi, Key (2009). “Proposing a comprehensive framework for analysis and engineering of mobile payment business models”, Information Systems and e-Business Management
- Guoling Lao (2011). “Study of Mobile Payment Business Model Based on Third-Party Mobile Payment Service Provider”, International Conference on Management and Service Science
- Schierz, Paul Gerhardt (2010). “Understanding consumer acceptance of mobile payment services: An empirical analysis”, Electronic Commerce Research and Applications
- Gu Ruijun (2010). “Research on Mobile Payment Technology and Business Models in China under e-Commerce Environment”, Future Generation Information Technology 2010
- Dahlberg, Tomi (2015). “A critical review of mobile payment research”, Electronic Commerce Research and Applications

Websites: All websites were checked between April to June 2019

English:

- Tencent website, company information and financial reports: <https://www.tencent.com>
- Visa website, financial reports: <https://investor.visa.com/>

Chinese:

- CNNIC(中国互联网信息中心), mobile network users' statistics: <https://www.cnnic.net.cn/>
- iResearch(艾瑞咨询), industry and market report: <https://www.iresearch.cn/>
- Ipsos(益普索), survey on user preference and market trends: <https://www.ipsos.com/zh-cn>
- People bank of China(中国人民银行), payment market statistics: <http://www.pbc.gov.cn/>
- The Economic Observer(经济观察报), industry and financial media: <https://www.eeo.com.cn/>