

Analyzing the Chinese online-to- offline business dynamics

Case: Alibaba Group's Alipay

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Abstract

Research objectives

As the rapid growing Chinese e-commerce market, the online-to-offline business dynamics gain more market power. However, this business dynamics approach lacks of theoretical framework support and detailed analysis. Therefore, this research study will start to analysis the overall condition of Chinese e-commerce industry. Along with the theoretical literatures, the framework is established to tackle business model, service process and the multi-sided platform effect. Lastly, an empirical case is chosen to detailed evaluate the platform dimensions, network effect, risks and opportunities.

Data and methodology

The research study is a qualitative research and descriptive analysis with some numeric indicating figures. By reviewing various literatures, the knowledge of creating an effective online business dynamics will be transferred to the empirical case. The case study helps to understand the Chinese online-to-offline business dynamics concretely. The data collected are mostly textual information from published reports, journals, and articles. The case company information are extracted from its official website and reliable Internet sources, such as Reuters, Bloomberg etc.

Main findings and conclusion

This research study produces four main findings. First, the Chinese e-commerce overview is presented to give readers a broad picture on current development status. Second, The Alibaba Group's business model is examined from four domains. Alibaba Group, as the platform provider, aims to provide high valued services for both buyers and sellers under secured environment. They focus on gaining market share with flexible yet prioritize critical resources in partner selection. Additionally, the service process analysis matrix illustrates Alipay is a fast routine process with value adding features. Alipay is not only a payment method, but also an integrated application for users to improve user experiences. Lastly, Alibaba and Alipay are both multi-sided platform, which involves users, merchants, platform provider and social media. The strong network effect is observed as a snowball effect. The risks and opportunities are addressed for Alibaba.

Keywords e-commerce, online-to-offline, STOF mode, multi-sided network, network effect, Alibaba, Alipay

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From 2015 till beginning of 2016, the thesis writing is quite challenging journey due to the fact of my internship in fall 2015.

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1 Introduction

This chapter will introduce the background and motivation of this study. The study will define the research question and propose the research objectives. This chapter will continue to discuss the methodology to be applied and expected contribution draw. Finally, the structure of this thesis will be present.

1.1 Background and motivation

In the modern technology society, the e-commerce innovations have enriched the business development opportunities through multi-access networking. Multi-access networks or channels are promising due to the benefits of high geographical mobility, qualified services, enlarged capacity, etc. (Johansson;Klas;& Furuskar, 2005).

Nowadays, the e-commerce is prosperous in China, which mostly observed as online mobile applications. There is a hot trend of booming online to offline (O2O) e-commerce in China with better profit gains, increased market share and more opportunities. The O2O business dynamics usually involve online platform that combines offline digital business opportunities with offline products/services together through internet-connected devices. The customers are directed to offline products/services by online information including e-coupons, store locators or QR codes presented on e-shops (Solution O2O Commerce, 2015). The customers acquire the products/services information through QR code scanning from the offline physical stores and paying on-the-spot or later stage via mobile payment system. This marketing strategic operational approach enlarged the benefits for its stakeholders through third party online payment market.

The rapid development in wireless network and mobile information technology empowers better customer user experience engagement and shifts the market power participation. O2O is widely applied across various industry, especially intensive used in service sector including restaurants, traveling, car/house rental service, group selling etc. Along with the expansion of O2O, the traditional industries such as banking services and retail industry start to enable mobile application platform to build a closer customer relationship. Additionally, the O2O enables the entrepreneurs to start the business with lower initial capital requirement. The true innovation of O2O is to boost the economical return in multi-channel access under digitalized development. The O2O business dynamics is a marketing operation that involves of different sides, logistic channels, value network etc. The fundamental value adding of this approach is

to reach the target group more efficiently and effectively mainly from the mobile portal. The platform is a marketing innovation to satisfy the user needs and wishes, which expressed as the mobile downloadable applications.

This research focuses on evaluating the O2O business dynamics, which is a broad concept expanding the value chain with both online and offline activities. According to Xu and Zhang (2015), the Chinese O2O has four modes: online to offline, offline to online, online to offline to online and offline to online to offline. The online to offline mode has one prerequisite that requires setting up an online platform first. Along with the online platform's entry, the offline businesses could establish the relationship with online users. Thus, the O2O platform should entitles a strong resource that supports the ability to interact transactions between online and offline. On the contrast, the offline to online mode requires offline platform establishment first. The offline to online mode is more towards the traditional business expansion path: the successful offline business seeking more customers through online channel. The online platform or third party online platform not only add online commercial flow but also leverage national distribution for online transactions. The online to offline to online mode requires building the online platform first to enable trading activities. The trading activities always realized in offline locations. Additionally, the offline experiences will redirect the customers back to online platform to purchase again. Lastly, the offline to online to offline mode extends the process to offline experiences again based on the offline to online mode. This mode is more likely to choose the readily available or influential social platform to operate their online activities. (Xu & Zhang, 2015)

Table 1 shows the difference between B2C and O2O business model. The O2O model emphasizes more on managing customer flow to offline services. B2C model involves logistic process to deliver the products/services to customers. B2C usually provide tangible products, however O2O is more service-oriented business.

Table 1: Difference between O2O and B2C

	B2C	O2O
Focus	Both goods/services	Service oriented
Logistic process	Deliver to spot	On-the-spot offline service
Stock	Tangible products	Mainly service

The empirical cases show that the O2O has injected new energy into the Chinese market. It broadens the business horizontally by multi-access network in e-commerce. The whole society has influenced by this O2O innovation particularly through third party online payment system. Thus, the companies are seeking to adapt their business model into multi-access channel to increase market share. O2O business dynamics usually express as online payment system to involve users and merchants. The following figures show the third-party online payment facts. Figure 1 states the yearly online payment transaction volume in China. It is clearly observed that the transaction volume keeps increasing year on year under more stable growth rate (iResearch, 2015).

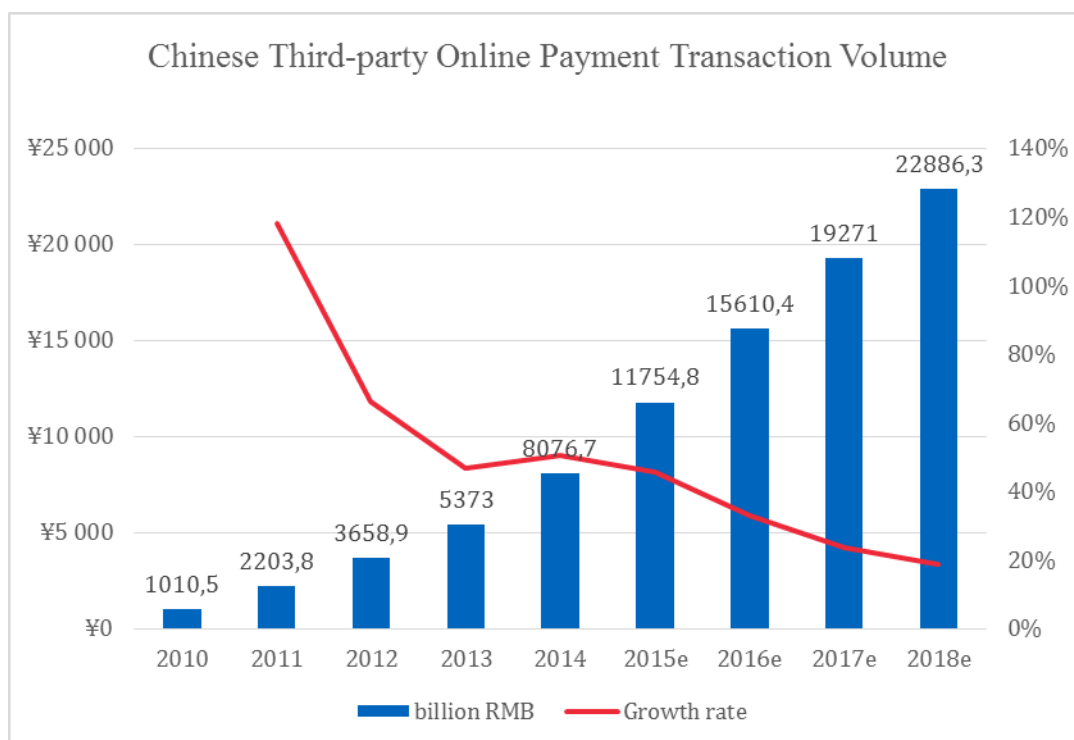


Figure 1 Chinese third-party online payment transaction volume (adpoted from iResearch 2015)

The following Figure 2 illustrates the third-paty mobile payment marekt in China. The transaction value increase dramatically during the previous years. There is a huge jump at the end of year 2012. The mobile payment transaction value in total has increaesd by seven times yearly growth rate in 2013. The transaction value reached around 5992 billion yuan at year 2014. Based on the forecast, the total transaction value will steady go up. However, the growth rate is expected to slow down (Cecilia, 2014).

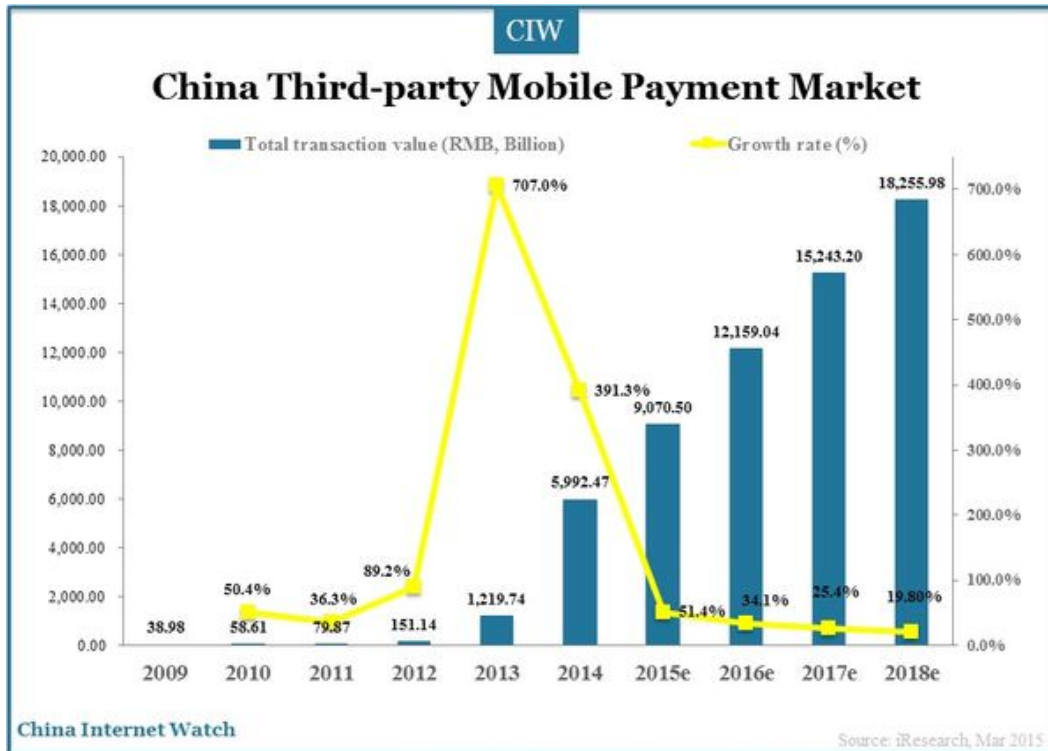


Figure 2 China Third-party Mobile Payment Market

Due to this incredible increase in online payment system, Chinese companies are eager to expand into O2O business dynamics mode. The top three IT leading Chinese companies: Baidu, Tencent and Alibaba group (usually abbreviate as BAT) largely expand their business by applying O2O. The O2O business dynamics generates large business growth in terms of many shocking statistics. For instance, the Alibaba announced on their official micro-blogging that the Alipay wallet system obtained more than 100 million users and over 2.78 billion mobile transactions with total value of 900 billion Yuan in the year 2013 (Reuters, 2014). These statistics show that how much valued added by the multi-access O2O network innovation.

Despite of all the promising sides of the O2O, there are also many challenges during the implementation. First, the O2O is lacking of theoretical framework to offer a systematic understanding of the concepts. The previous researches are limited to certain area of the concept or given a brief illustration with some practical examples. It does not present a holistic and systematic view to evaluate the business flow. Second, the O2O entrepreneurs are facing various challenges and risks in platform management that includes offline product/service quality control, industry capacity estimation problem and user experience management. For instance, the offline service quality problem is one of the management

issues for user experience. Consumers get online promotions and direct them to offline products/services. However, the O2O entrepreneur cannot control the offline service quality. Once there is dissatisfaction from the offline service quality, the users could easily switch to other platforms or even lose the online trustiness. This research study focuses on analyzing the risks and opportunities for the O2O entrepreneurs. Third, the mobile online payment is multi-sided networks that connect different parties. Therefore, it is essential to evaluate each side and their influence power towards the market. Currently, the O2O entrepreneurs just focus on the business expansion and lack of a clear target audience analysis. There is a need for them to tackle the problem in order to improve the business performance. These three problems will be assessed in this research study.

1.2 Research questions and objectives

There are three main objectives. Firstly, this research study is to understand the e-commerce industry condition in China. Secondly, this study aims to establish a theoretical framework to analyze the online-to-offline business dynamics based on various literature synergies. Lastly, the research will investigate the empirical case Alipay platform dimensions, network effects, risks and opportunities.

The **research questions** are defined as following:

1. *What is the Chinese e-commerce market condition now? From the industry point of view?*
2. *How does the Alipay's service process position in Chinese online payment market?*
3. *What is the Alipay business strategy in terms of multi-sided platform ecosystem? What are the risks and opportunities for them?*

1.3 Thesis structure

This research study is structured in five chapters. Here is a brief summary of each chapter.

Chapter 1 introduces the research background and motivation on conducting this specific topic. The current e-commerce industry, especially the online to offline (O2O) dynamics, overview is presented. An iconic Chinese company, Alibaba Group, was chosen for further detailed analysis. The research questions and objectives are proposed to set up this research.

Chapter 2 conducts literature reviews from three main perspectives. Bouwan (2008) presented a business model called STOF model that stands for service domain, technology domain, organization domain and finance domain. It suggested the business model with critical design issues to avoid design failure. The second theoretical framework applied is the Service process analysis matrix (SPA) proposed by Tinnilä and Vespäläinen (1995). It analysis the service and channel type combinations for business process. The last framework used is the multi-sided platform network effect, which illustrates the value network externalities and market phenomena.

Chapter 3 illustrates the research methodology of this research. This research is a qualitative research to synergize different literatures and transfer the knowledge to analysis the O2O business from three perspectives. The main data are textual information that extracts from official or reliable Internet sources. This research study presents a descriptive analysis to examine the current situation of case company. The validity and reliability issues are discussed in this chapter as well.

Chapter 4 develops the framework for Chinese e-commerce industry with an empirical Chinese company study. Along with the literature review support, the empirical case study on Alibaba Group and its third party payment service, Alipay, will be evaluated based on the theoretical framework. The STOF model covers critical design issues for each domain. The SPA matrix helps to positioning Alipay's current service process. The multi-sided platform network reveals O2O characteristics in network effect, winner-take-all and envelopment threats.

Chapter 5 summarizes the findings and draws conclusions for the whole research. The limitations and further investigation recommendations are also discussed in this chapter.

2 Literature review

This chapter reviews various literatures that combined the knowledge into solid theoretical framework integration with existing resources synergies. These literatures serve as key learning resources to first understand the e-commerce business model especially emphasized on the multi-platform market network. After the multi-access network industry condition has been revealed, the study follows up with the service process analysis. Lastly, this study aims to understand the network externalities of the online payment platform. This research study mainly applies the theoretical framework below:

1. The Bouwman's STOF model is reviewed for the e-commerce business model clarification on the internet intensive industry
2. The service process analysis matrix model to illustrate the company positioning and future expansions opportunities
3. The multi-sided platform theory focuses on cracking the different players in the network access and their effects.

With all these literatures, we grasp the synergies from the provided knowledge and apply later on the empirical study.

2.1 Business model

The business model concept has been modified during the past years because of the technology innovations. The business model should adjust to the modern development since the final deliverables gradually turn to intangible products, which is service oriented. What's more, companies have its unique characteristics on strategy, visions and delivery processes. The business model requires tailored design that will fit their conditions best. Therefore, the business model cannot be easily designed and formed. Especially for the rapidly raising e-commerce, the traditional business model is not appropriate anymore and neglected the importance of service character. The e-commerce covers not only the tangible products, also a large amount of customer involvement such as user experience engagements. Additionally, the e-commerce customer breaks the boundaries compared to the traditional business, which have incremental or radical changes in processes, consumer preferences including lifestyle and buying behavior.

Bouwman proposed a framework for business model definition that based on the service concept. It summarized that a service business model is to deliver the service added value and

experience. In order to be visible, it should have the following components: a defined service with clear description, a value target group, revenue sources and a service delivery architecture. The architecture should have the required resource description, involved business actors of roles and cost/revenue allocation rules etc. (Bouwman;Faber;Haaker;& De Reuver, 2008).

2.2 STOF model

Bouwman (2008) summarized from previous research studies that business models concept obtain so many different classifications of components. It stated a customer value oriented approach to capture value from four domains: service domain, technology domain, organization domain and finance domain (Bouwman;Faber;Haaker;& De Reuver, 2008). This model identified the key points that cause a service to fail and denoted the most important design variables under each domain. Thus, we could investigate the service bottlenecks for each domain and prepare the right solution for them.

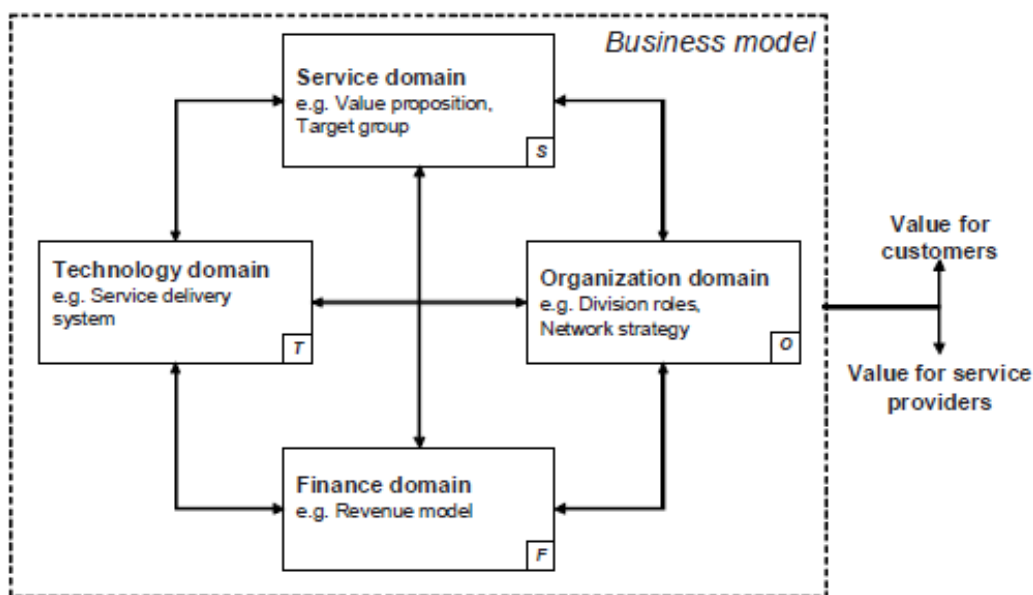


Figure 3 STOF business model domains

The core of business success is to explore the customer values both defined and undefined, with the most appropriate approach. The defined customer values are the transparent needs including benefits, advantages and satisfaction towards the end user. However, the undefined customer values are hard to evaluate since the customer wants cannot be differentiated out easily. Thanks to innovation, technology brings more opportunities to break the boundaries

and generate new values. Thus, the business model should prioritize the customer value proposition during the business model design.

On building the business model, Bouwman (2008) starts from the service domain. The service definition is the key to set the scene and serves as a reference for the other domains. The service domain matters the most since it closely related to customer value and service delivery. The technology domain generates new channels to approach target groups. In addition, the technology domain provides two different strategies: push model or pull model that focuses on innovation driven or user requirement elaboration. After the service and technology domain setting up, the organization domain deals with the internal resource allocation and finance domain prepares the investment (Bouwman;Faber;Haaker;& De Reuver, 2008).

All of these four descriptive domains are connected and influenced by each other. Hence, this STOF model offers a descriptive conceptual framework for the business model design (Bouwman;Faber;Haaker;& De Reuver, 2008).

After the design variables are clearly defined, the designing process take lead in building up a feasible business model. Bouwman developed the design process based on balancing the requirements and strategic interests within and between each domain. Moreover, it is essential to understand the critical design issues (CDIs) and critical success factors (CSFs) in designing process. The CDIs serve as an importance indicator to evaluate business model viability and sustainability. The CSFs are the niche characteristics, which is linked by CDIs. (Bouwman;Faber;Haaker;& De Reuver, 2008)

2.2.1 Service domain and design

The service domain summarized the actual provided service key factors specifically for the mobile service. The mobile industry or the e-commerce obtains high degree of mobility that allows users and customers to access the product 24/7. The service domain mainly examines the customer value with both provider's and customer's side descriptions, the value proposition and the targeted market segment (The STOF Businss Modelling Method, 2008).

As previous stated, the customer value is the core that should lay large emphasize on. The customer value has split into several perspectives: perceived customer value, customer expected value, delivered value and intended value. These items will be detailed explained

later during the service design section. The customer value is a customer's perceived performance for the evaluation of those product attributes, attribute performance, and consequence arising from use that facilitate achieving the customer's goal and purposes in use situation. The customer value definition asserts to become more sensitive towards what customer received from the product and services in terms of desired benefits (Chen & Dubinsky, 2003).

After all these customer values are defined, the value proposition combines the customer requirements with supplier offerings and revealed as a relationship on fulfilling the customers' needs (Clarke III, 2001). More concretely, the value proposition is to deliver the satisfaction that includes needs, wants or customer experience. Under the e-commerce, the Internet infrastructure enables the value proposition increasing connectivity network. The delivery process and distribution channel migrated to online that could attract more customer group at one time easily.

Clarke III (2001) proposed that the value proposition for mobile commerce has four attributes: ubiquity, convenience, localization and personalization. The mobile industry enables ubiquity for location and time matters. The value proposition can be leveraged by notifications such as stock prices, application notifications, music etc. The agility and accessibility of wireless network has improved intensively the quality performance for users. The mobile devices and the network together have generated great convenience to users. For instance, many airplane companies offer the requested electronic boarding pass with bar code or QR code send to mobile phones. In addition, Delta Company claims that their application could save your parking reminder in case you forget your car location (Delta, 2016). The location based marketing would benefit from the GPS technology which to manage geographical promotion. The mobile usage is relatively more individualized device that varies based on different preferences. Thus, the value propositions could apply more personalized target marketing strategy by using consumer data analysis. These four attributes evaluate the mobile value proposition from the marketer's point of view and give an effective and efficient targeted delivery concern.

The market segmentation deals with different groups in the marketing with shared interests, needs, preferences or marketing mix. (Kotler & Gary, 2010) The targeted market segments could be individualization of the mobile services based on various variables such as geographic, demographic, social or psychological variables. The targeting implies the aiming

at certain group segment selection on market size, growth opportunity, profit margin and match making etc. (Bouwman;Faber;Haaker;& De Reuver, 2008)

The Figure 4 illustrates the service design process and the key elements that should be considered. It is obvious that service domain is well-connected with technology domain and finance domain (Bouwman;Faber;Haaker;& De Reuver, 2008).

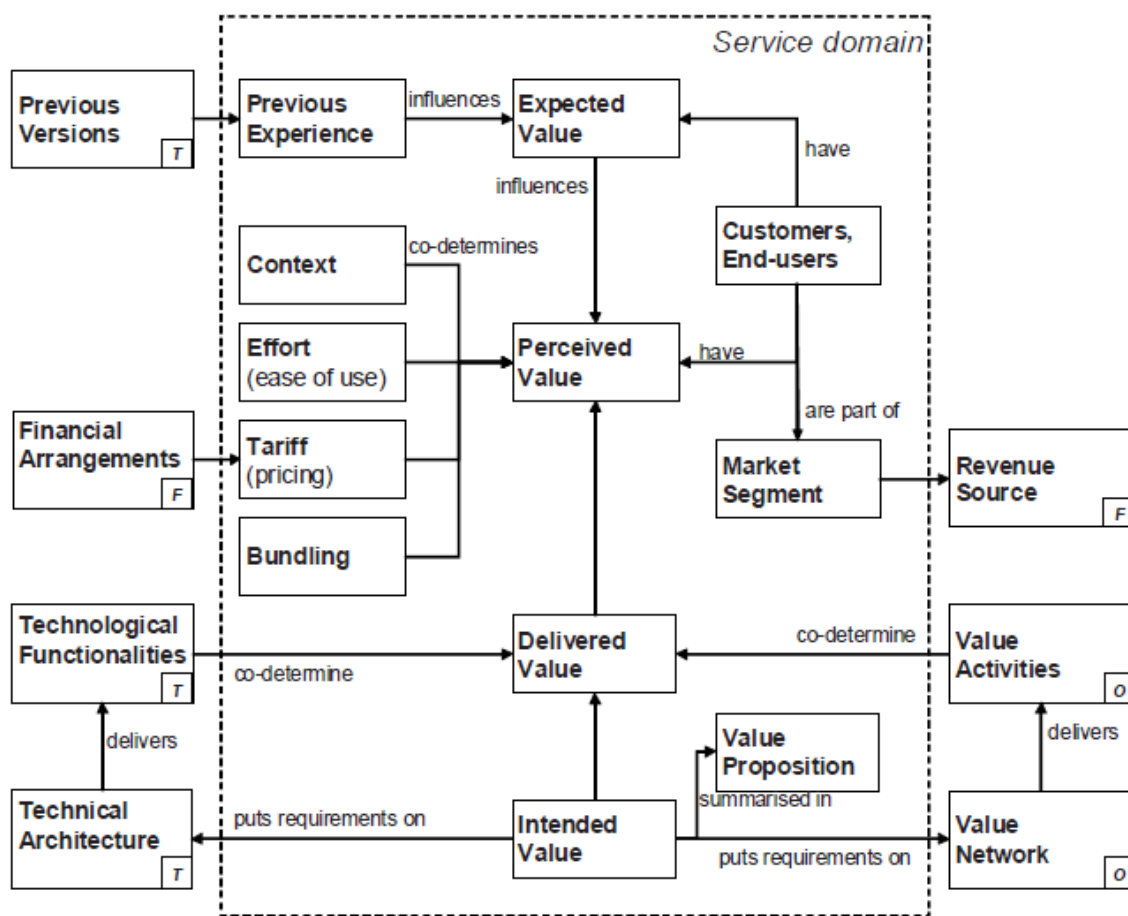


Figure 4 Descriptive model for the service domain

There are four forms of values, which present the core of the service domain. The expected value and perceived value are extracted from the customer side. However, the delivered value and intended value are from provider side. Based on the historical information, the customers or end users would arise newly expectation on the service. It usually involves with incremental changes such as updated version with new features and functions. Additionally, the expected value has constraints in company resources and capabilities from organization design, financial requirement from finance design (Bouwman;Faber;Haaker;& De Reuver,

2008). Zeithmal has suggested the perceived value is the customer’s overall assessment of the product utility based on perceptions of what is received and what is given (Zeithaml, 1988). The delivered value is the final benefits provided to end-users and the intended value is the provider’s intend to give to end users or customers.

The CDIs in the service domain is summarized in the Table 2 below. There are five main issues: targeting, creating value, branding, trust and customer retention. (Bouwman;Faber;Haaker;& De Reuver, 2008)

Table 2 Critical design issues in service domain

Critical design issue	Description	Balancing requirement
Targeting	How to define the target group?	Generic vs. niche B2C vs. B2B service
Creating value	How to create value for the targeted users of the service?	Technological possibilities vs. user needs and wishes
Branding	How to promote/brand the service?	Operators vs. content brand
Trust	How to enhance end users' trust in the service?	Security vs. ease of use Privacy vs. added value
Customer retention	How to simulate recurrent usage of the service?	Customer lock-in vs. customer annoyance

In order to approach customer effectively, the service provider need to formulate the customer segmentations based on their needs and wishes. Different segments should apply the growth strategy accordingly. The providers need to consider the value proposition on where to emphasize. Is it a niche market strategy or a more generic one? The customer types would affect the targeted group strategy much in buying behavior analysis for instance. The service offered is the value adding process that delivered to customers or end-users. The value elements are to please the customers’ needs or wishes in form of trust, fun, efficiency etc. However, the value creation process is usually hard to break through on analyzing customer needs. Often of the times, the technological support cannot easily be applied into the process on matching customers’ wishes. The brands are the iconic transformation from visual logos into perceived values. The customers receive and arise brand image through its services and products. The promotion needs to balance out from the operators (on multi-channels) or content brand (sub-brands on increasing features). The trust issue gains increasing attention in the Internet industry mostly for the privacy and security problems. For

instance, the mobile payment system requires large efforts on building the trust with users on personal information protection to attract more users. Lastly, the customer retention addresses the problem of maintaining the current customers and keeps them as loyal customer with service in the future. The different strategies in promotion are to stimulate customers in using the services, such as pricing strategy (Bouwman;Faber;Haaker;& De Reuver, 2008).

2.2.2 Technology domain and design

The technology development necessitates for service provide under multi-access network. It enables various inventions on approaching the customers faster and boarder. The digital transformation generates incredible business opportunities for both the customers and companies for visual enjoyment, quality performance and even change their lifestyle (Bouwman;Faber;Haaker;& De Reuver, 2008). The companies through technical innovation and development allow more advance service delivery and make profit.

The Internet industry has developed strongly in wireless network, cellular network and mobile web services. Thanks to the rapid growth and expansion, the mobile commerce is rising and exploring into one of the growth market for companies. The technology infrastructure is the fundamental support to implement the user interfaces, applications services and back-end data service. For instance, the 3G network largely empower the Internet usage anywhere anytime for the users. It frees the Internet from on-spot usage into any location under the network. However, the network infrastructure needs to be established in order to obtain a better coverage rate.

The technology domain is directly connected with service domain and organization domain. The service is enabled with radical or incremental development under technology innovations. The organization (service provider) is the push actor in the technical functionalities research and development process (Bouwman;Faber;Haaker;& De Reuver, 2008). The following Figure 5 illustrates the technology domain description. The technical architecture is the providers need to establish or to adopt for the service delivery.

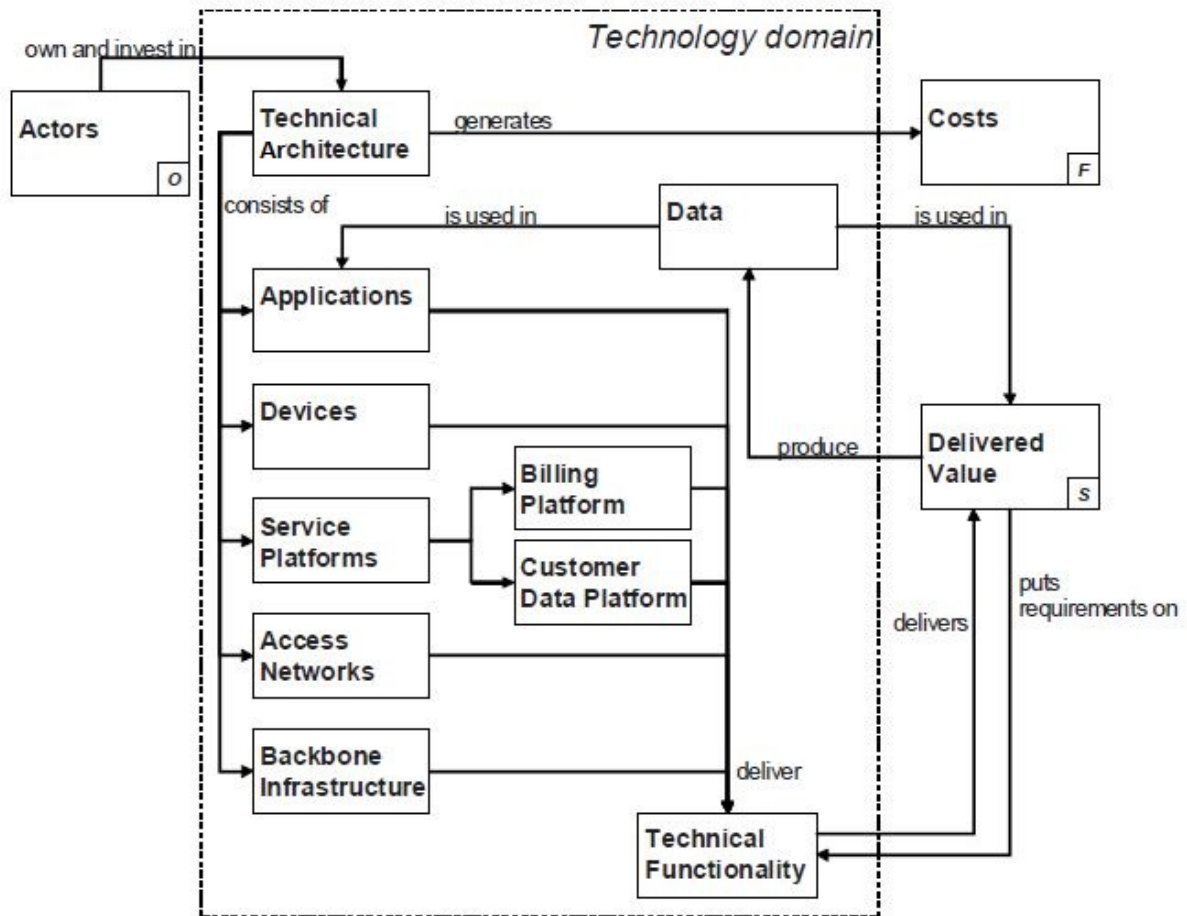


Figure 5 Descriptive model for the technology domain

The actors own and invest in the technical architecture development that contains applications, devices, service platform, access networks and backbone infrastructure. All of these infrastructure components achieve technical functionalities that serve values delivered to customers or users. Based on the customers and users' actions on using the service, the user data (both user personal and using patterns) would naturally get back to the provider. An excellent architecture definitely is costly to establish.

The Table 3 presents five CDIs in designing the technology domain: security, quality of service, system integration, accessibility for customer and management of user profiles (Bouwman;Faber;Haaker;& De Reuver, 2008). The trust issue appears at the first stage for the users especially for the payment feature involved mobile interfaces. The technical architecture grants access for users to store the information on the interface and protect with password, fingerprint, and security questions etc. Although these security protection originate a safe and private system, but it would buffer the user using process.

Table 3 Critical design issues in technology domain

Critical design issue	Description	Balancing requirement
Security	How to arrange secure access and communication?	Ease of use vs. abuse and privacy
Quality of service	How to provide for the desired level of quality?	Quality vs. cost
System integration	How to integrate new service with existing systems?	Flexibility vs. costs
Accessibility for customer	How to realize technical accessibility to the service for the target group?	Open vs. closed system
Management of user profiles	How to manage and maintain user profiles?	User involvement vs. automatic generation

The performance of the technical architecture would directly link with the service quality. Nevertheless, the quality performance of IT functionalities always comes with more effort in investment, idea inspirations with intensive research on technology and customers. The costs climb up due to the enormous investment. After the technical architecture has been set up, the system needs to be adopted and integrated with the current IT infrastructure. The trade-off for system legacy is between the flexibility and costs. The system with high flexibility obtains with high costs as well. All the investment in technical development aims at serving users and customers with better quality and effective method to approach targeted group. The accessibility is accomplished through platform selection, devices and architecture. The closed system implies to provide services to a restricted target group like service provided exclusively from mobile entertainment operator. However, the open system release more flexibility for customer to access the resources (Bouwman;Faber;Haaker;& De Reuver, 2008). Lastly, the user profile is the database that collects all the user information including user information, preferences, buying behavior. The database creation can be realized under different approaches. The more user involvement would add more personalized value in preference recommendation, but it will also increase the technical complexity. The automatic generation skips the complexity and produces a relative standardized database. (Bouwman;Faber;Haaker;& De Reuver, 2008)

2.2.3 Organization domain and design

The organization domain addresses the current resources and capabilities condition and process the value network under strategies, finally create delivered values to customers or users. The company resources could be defined as assets (both tangible and intangible), capabilities, organizational process, firm attributes, information, knowledge etc. (Barney, 1991). Due to the information and communication technology (ICT) development, the traditional value chain component boundaries become more vague. Allee (2010) proposed that the value network is the knowledge and intangibles exchanging process leveraged in an Internet strategy. The value network becomes more sharing the resources between other organizations (Allee, 2000). On the other hand, the shared network also comes with costs as well. The shared resources and processes with other organizations have associated agreement costs. Therefore, the organization should consider what to share with and remain the core competences protected.

Additionally, Hawkins defines the value network into three types. The structural, contributing and support partners with degree of collaboration from tight to loose. The structural partners touch the core of the network, while the other two remain relatively superficial (Hawkins, 2002). In order to design the organization domain, the company should focus on whom to cooperate with. The actors are the critical resources that require thoughtful evaluation. Some resources can be achieved with support partners, but some core technology knowledge must be conducted with structural partners. The company should integrate their current situation with the partner evaluation to make the final corporation (Bouwman;Faber;Haaker;& De Reuver, 2008).

The Figure 6 illustrates the organization domain process that is closely connected with technology domain and finance domain (Bouwman;Faber;Haaker;& De Reuver, 2008). The actors place in the center of the domain since they are the push power for organizational arrangements. Based on Hawkins definition of three types of partners, the structural partners hold stronger degree of power in value network than support partners do. They also utilize greater in control over the network. The resources and capabilities are the actors seeking for to build up the value network between organizations. Moreover, the company would apply their current strategy and future vision into the partner finding process. These resources and capabilities will transfer into value activities as the role performance. Finally, all these processes are aiming at deliver better values to user and customers.

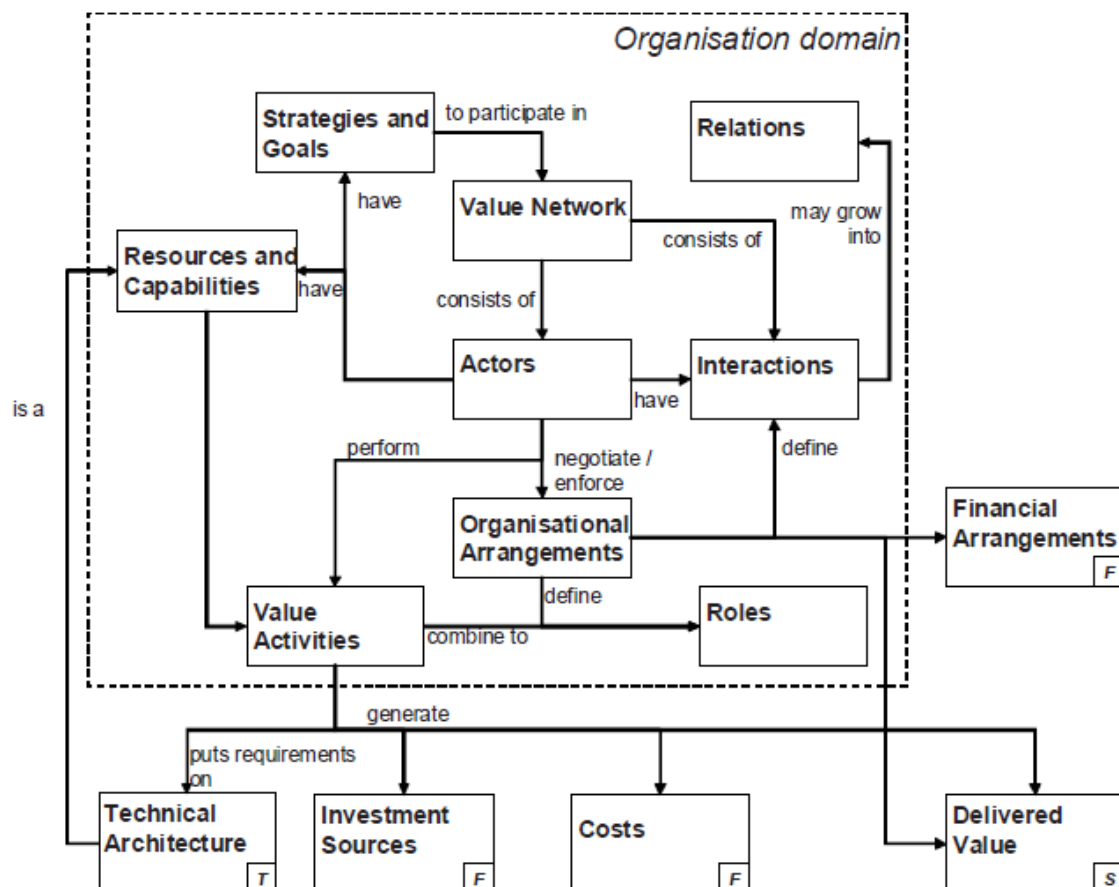


Figure 6 Descriptive model for the organization domain

The Table 4 summarizes the four CDIs in organization domain: partner selection, network openness, network governance and network complexity (Bouwman;Faber;Haaker;& De Reuver, 2008).

The partner selection is essential towards on what resources and capabilities to emphasize on. The corporation is to create a mutual beneficial value network between organizations. As a result, the organization should evaluate the resources and capabilities that must obtain to remove the obstacles during the business process development. Additionally, the partner selection must match the business strategy, or the value proposition more precisely. For instance, the luxury company positions their products and services to a more niche market with relatively higher cost. Their partner selection would more focus on the quality performance and more willing to accept the new technologies. Thus, they could have select just quality of service based on their strategic interest. However, the commodities in fast moving industry might select the contrary strategy on taking more partners in the value chain to get larger market coverage (Bouwman;Faber;Haaker;& De Reuver, 2008).

The network openness decides the degree that new business actors can join the value network. Bouwman observed two different organizational arrangements: closed model and open model. (Bouwman;Faber;Haaker;& De Reuver, 2008) The closed model indicates a more restricted model for new partners to join. On the contrast, the open model is willing to welcome new comers. The network governance is required for managing the regulations, selecting new partners, setting up the rules for collaboration and monitoring compliance under these rules. The shared value network has a multiple effect on reaching out the customer base from different organizations. As a result, the customer ownership remains the most essential for strategic concern for value network actors. Lastly, the more actors enter the value network definitely add more value in increasing customer base. However, the network becomes more complex in relationships and raises the management issue. Bouwman observed that business actors tend to reduce network complexity through intermediaries. For example, the mobile payment platforms now become more sensitive and strategic in selecting the partners. The companies limited the number of the partners to reduce the network complexity.

Table 4 Critical design issues in organization domain

Critical design issue	Description	Balancing requirement
Partner selection	How are partners selected?	Limited number of partners vs. quality of service and strategic interest
Network openness	Who is allowed to join the value network?	Openness and customer reach vs. control and exclusiveness
Network governance	How is the value network orchestrated? Who is the dominant actor?	Entry, compliance and exit conditions: individual vs. network interest
Network complexity	How to manage increasing number of relations with actors in a value network?	Need to reduce complexity vs. need of access to critical resources and capabilities

2.2.4 Finance domain and design

The finance domain describes the value network with four key areas: costs, revenue, risks and investment sources. The finance is the main supporting resource for value network

building, which constructs the investment decisions and revenue models. The Figure 7 illustrates the finance domain components. The performance indicators according to the financial arrangements monitor these four key areas. The financial arrangements determine the pricing strategy.

The cost issue ties the relationship internally within firm, externally with actors. The transaction costs explain the cost structure of the firm that includes cost planning, adapting, executing and monitoring task completion (Bouwman;Faber;Haaker;& De Reuver, 2008). Analyzing the transaction costs could improve the economic efficiency in resource allocation in value network. The cost structure of mobile industry usually has higher fixed cost compared to variable cost. Therefore, the shared value network would largely benefit for the collaboration due to intensively investment on construction costs, technical investment etc.

The companies generate incoming revenue streams by offering the delivered value to customer or users. The revenue model could be adapted to revenue streams with different pricing models. As we can see from the Figure 7, the revenue sources generate revenue under the performance indicators. The performance indicators assess the factors that are essential to success of the company (Bouwman;Faber;Haaker;& De Reuver, 2008).

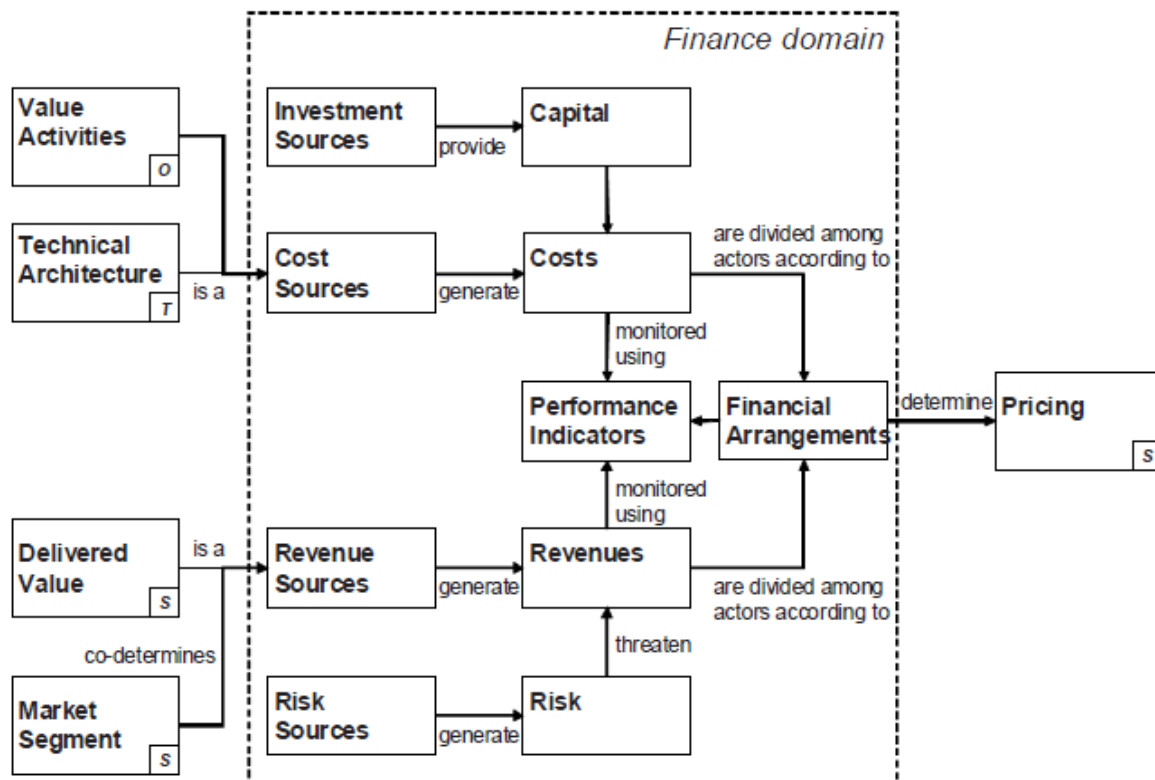


Figure 7 Descriptive model for the finance domain

Every business has its risks, both from positive and negative sides. The risks threaten the revenue and increase the uncertainty for the business. For mobile industry, one typical risk is the new technology updates. The new technology updates are positive for business in terms of efficiency and productivity. However, the updates can be negative as well. For instance, the implementation of newly technical innovation will influence the stability of the system.

The pricing is a dynamic process to set up the price of the product or service based on internal and external factors. Kotler proposed price setting by price ceiling and price floor (Kotler & Gary, 2010). The price ceiling indicates there is no demand above this price from customer perceptions. The price floor indicates there is no profits under this price from product costs side. Moreover, other external and internal considerations would formulate the marketing strategy, objectives and mix with competitors. For this reason, the price setting should analyze the core product prices with substitute and optimal product price information. Additionally, the pricing is dynamic that can be seen from the product life cycle. The shared value network characteristics of mobile industry would lead to a question of how to arrange the investment and revenue. The collective decision making process could solve the conflicts for inter-organizational investment proposals.

The Table 5 summarizes the CDIs for finance domain is pricing, division of investments, valuation of contributions and benefits and division of costs and revenues (Bouwman;Faber;Haaker;& De Reuver, 2008).

The pricing is one of the critical issues in finance domain that aligns with the aims of the value network. The primary goal of the pricing strategy is seeking the maximized profits or enlarges the market share (Bouwman;Faber;Haaker;& De Reuver, 2008). There are many factors to be considered in setting up the price. In mobile industry, the high competition makes the pricing decision harder. The customers and end users are seeking for more effective, fun, efficient services. Usually, the revenue generation comes from horizontal or vertical expansion (Bouwman;Faber;Haaker;& De Reuver, 2008). The horizontal expansion focuses on expanding the network coverage on getting more users or customers. On the other side, the vertical expansion focuses on improving the profitability with their current service. The company prioritizes their revenue mark-up based on their business strategy.

Every new investment comes with risks that threaten the financial conditions such as defaulted value, uncertainties, low customer adoption etc. (Bouwman;Faber;Haaker;& De Reuver, 2008) In the mobile industry, the shared value network bound partners together more closer. Thus, the investments need to split down towards each partners benefiting from the network. It should balance out the profitability and risks from the investment. The investments mostly consider the cost side, the benefits and values should also been measured to each partner. The benefits in mobile industry include both intangible and tangible contribution. The intangible contributions mostly correspond with the strategic interest such as market knowledge, customer access in terms of brand image and business development. The tangible contributions appear in resource accessibility of individual partner (Bouwman;Faber;Haaker;& De Reuver, 2008).

The costs versus revenue division among partners is relatively depend on each case, which could be individual accessibility toward critical resource, resource valuation, risks from the investment and intangible benefits. It can be summarized into two main categories: cost based or value based. The company deals with the business relationship could either emphasize on costs or revenue. The valuation objective can be network or the individual.

Table 5 Critical design issues in finance domain

Critical design issue	Description	Balancing requirement
Pricing	How to price the service for end-users and customers?	Realize network profitability vs. realize market share
Division of investments	How to divide the investments among business partners?	Match individual partners' profitability and risk
Valuation of contributions and benefits	How to measure and quantify partner's contributions and (intangible) benefits?	Operational financial interest (ROI) vs. intangible benefits (Options)
Division of costs and revenues	How to divide the cost and revenues among business partners?	Cost-benefit valuation on level of network vs. cost-benefit for individual partners

2.2.5 Section summary

Bouwan has developed the STOF model with four main dominant areas in the ICT based business. It describes the company value creation and capture process from four areas: service, technology, organization and finance. The STOF model presented a business design approach to tailor their model based on the services. The author explains the theory by applying large amount of real life examples and diagrams. These helps the readers understand the theory more thoroughly. Bouwan went deeper analysis for each area including the key actors under and the critical design issues. This approach emphasizes the value network and service value delivery. What's more, the balancing requirements for the critical design issues are provided to notify the possible conflicts that might encounter.

2.3 Service process analysis matrix model

Unlike the tangible product industry, the service industry is an integrated process of all related intermediaries, which finally deliver to customers. Tinnilä and Vepsäläinen summarized a normative model called service process analysis (SPA) which explain the relationship between service and channel. There is a trade-off between production cost and transaction costs while evaluating the service. The SPA model facilitates a graphical illustration on service positioning (Tinnilä & Vepsäläinen, 1995).

This specific model is designed to understand the two concerns: enhancing the services and organizations, matching the service and channels. (Tinnilä & Vepsäläinen, 1995) The services are designed and developed by the organizations. However, the customers are becoming more demanding on the service variety features that drive the organizations to try different service-channel solutions. These solutions could be cross the business collaborations or even cross industry. For instance, the McDonald's drive through service concept is inspired by the Formula 1 pit stop. This new presenting service solution largely improved McDonald's performance. Another concern is to match the service and channel efficiently that ensure a better combination for organization business solutions.

2.3.1 Service and channel types

The Figure 8 is a service process analysis matrix that evaluates the different alternatives of service types and channel types. The horizontal axis evaluates the service transactions. The vertical axis evaluates the delivery channels. Tinnilä (1995) indicates four types of services and four types of channels. Service is a relative complex concept, which involves high degree of uncertainty, customization, complexity etc. Based on the purpose or output of the services, four types of service are categorized as: **mass transactions, standard contracts, customized delivery and contingent relationship**. These four types are divided based on the degree of service mix complexity. The mass transaction only allows simple transactions with limited customization on delivery channel selection. It is more towards a fixed pattern payment such as money withdraw. Compared to mass transaction, the standard contracts increase its complexity on service. But, it still lacks of customization level to certain customer. The customized delivery addresses relatively tailored service with some customized level of delivery to protect the service quality. Lastly, the contingent relationships require highest customization will in need of close relationship in channel selection. It can be seem as risk sharing relationship as well (Tinnilä & Vepsäläinen, 1995).

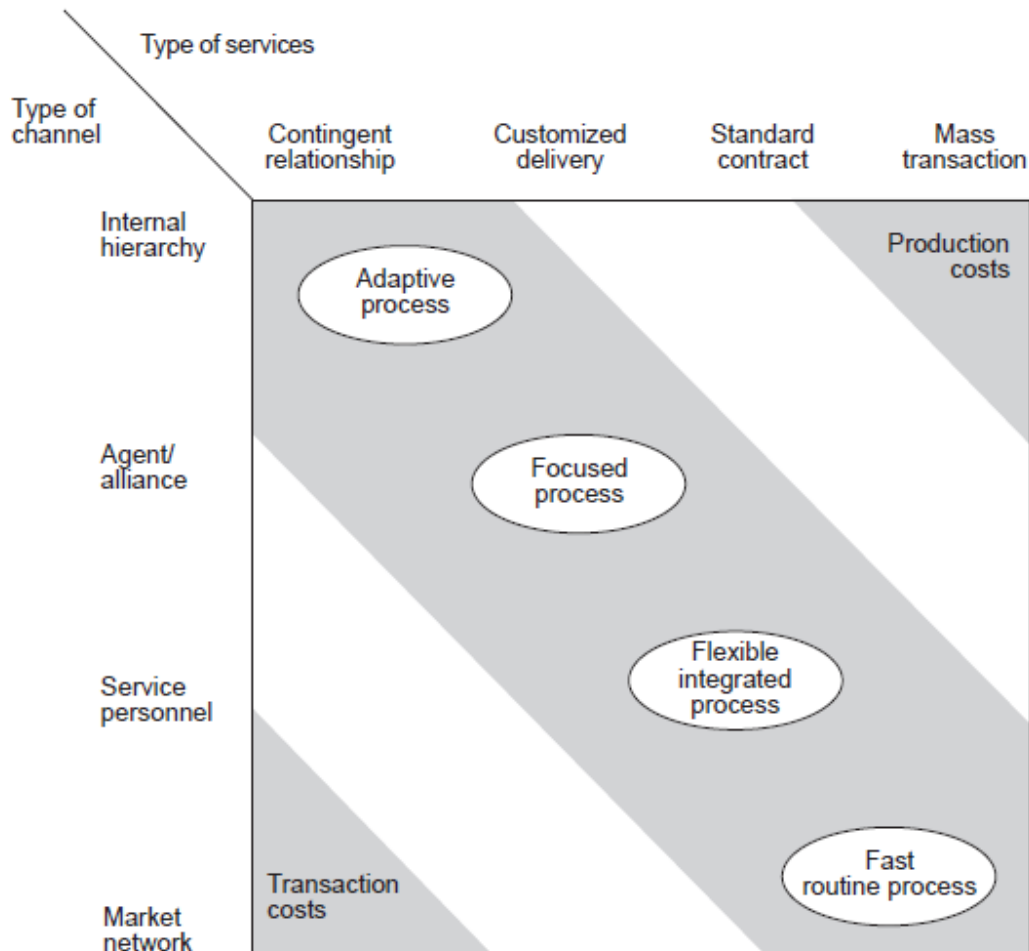


Figure 8 Service process analysis matrix

The channels aim to transfer the service to customer, which could include front-line employee, outside agents and other intermediaries' layers. The SPA also takes customer in channel selection in order to examine the current business boundaries. In addition, companies can apply several channels to reach the customers. Therefore, the channel type selection is not restricted to one type to serve one service type. They can always combine different channels to optimize their benefit.

There are four types of organizational channel: **market network, service personnel, agent/alliance and internal hierarchy**. These four types are categorized based on presenting length of the channel and cost per service transaction. The length goes longer for the channel while upward of the vertical axis. The market network provide straightforward network that enables customers directly access the service without little intermediation. The service personnel are short channel with personal interaction within the organization. The agent or

alliance has largely increase the personal interactions not only with the organizational staff, but also with third party involvement. All these personnel serve closely to the customer as mediators whom to bound the relationship with trust in formal contract form. The internal hierarchy requires long channel and the relationship between channel members is ultimate and the whole process is owned by the organization. This channel manages more for the internal stakeholders rather than outside real customers.

We could easily observe from the Figure 8, the production costs rise while service provided more towards left. The transaction costs increase while channel delivered more towards down. These grey corners are not feasible for companies. The market network asks for high transaction costs with highly customized services will face uncertainties and risks in quality control. On the other hand, the internal organizational and the routines will generate enormous costs of providing this service. The optimal market network combination is seeking a relatively equilibrium point to minimize the sum of production costs and transaction costs. The production costs mostly concern about the inner costs to associate with the service, while the transaction costs relate to external costs to maintain or explore customers.

The SPA matrix model has defined four efficient service processes on the diagonal area from the Figure 8: **fast routine processes, flexible integrated processes, focused processes and adaptive processes**. The fast routine processes combine the mass transaction service with low customized channel distribution. These processes remain lower costs and under short-time response. But a filed distribution system is required to support the easy accessibility. The flexible integrated processes combine the standard service contract with some degree of personnel involvement. The standard service contract indicates the customers only have choice with pre-defined options prepared by organizational personnel. The focused processes provide the customized service with agent or alliance personnel support. These processes allow higher level of customization provided expertise. The adaptive processes demand most in customized channel under flexible access which usually in form of strictly confidential agreement. The efficient processes combination stay in the diagonal to fit in with their process strategy. However, some companies could also survive away from these process types due to monopoly power or regulation. (Tinnilä & Vepsäläinen, 1995).

2.3.2 Revised SPA matrix model

Understanding the SPA matrix model more deeply, the revised model illustrates a more simplified review. The Figure 9 presents the revised model with service as horizontal axis and delivery channel as vertical axis.

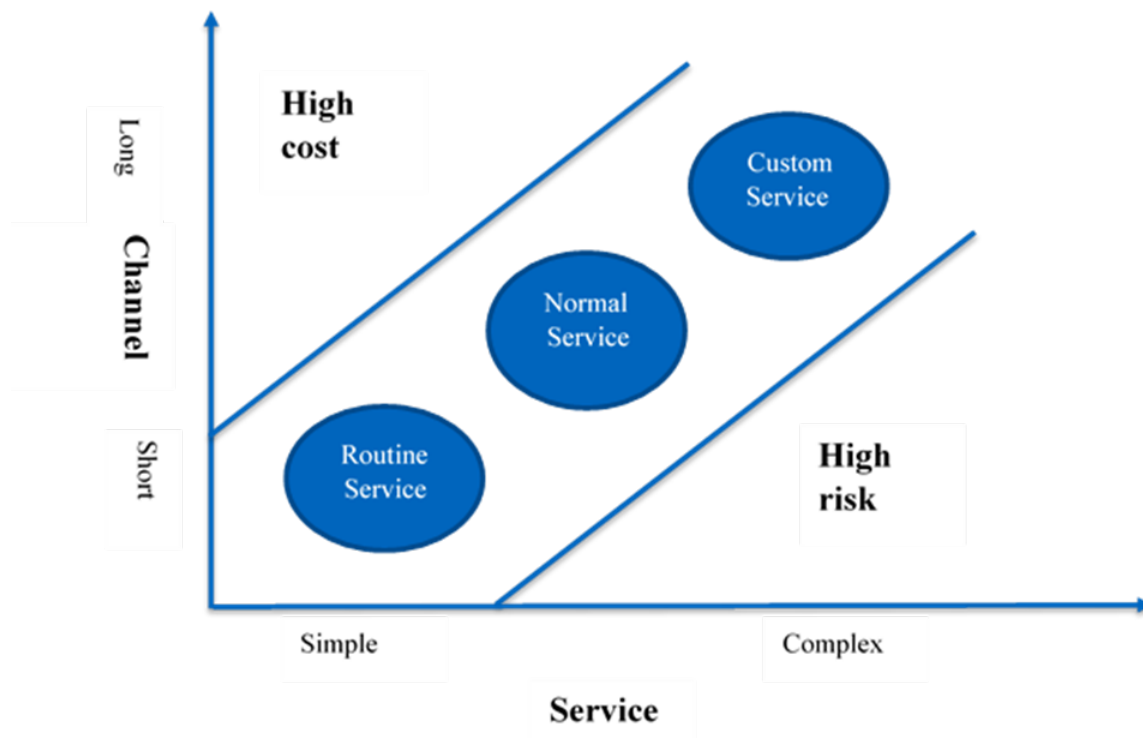


Figure 9 Revised SPA matrix model (adopted from Tinnilä & Vepsäläinen, 1995)

The service starts from simple to complex outwards and ends up with high costs for the organization. The channel lifetime axis increase upward and so does the cost level along it. Compared with the original SPA matrix model, this revised model flip the diagonal and maintains only three types of services.

This revise model only maintains three types of services: routine service, normal service and custom service. The routine service represents simple service with short channel delivery, which can be seem as fast routine processes in the original model. The normal service indicates service provided with relatively longer channel time and with some degree of complex. The normal service is combined the flexible integrated processes and focused processes. Lastly, the custom service holds highest degree of complexity with longest delivery time, which is an adaptive process.

This simplified version of SPA matrix is created because of understanding the service and channel. Additionally, this would be easier for company positioning for the empirical studies later on.

2.4 Multi-sided platform theory

In the modern society, the business comes along with both more opportunities and risks due to the technology development. The platform bounds players together with products or services. The concept of platform is a set of stable components that supports variety and evolvability in a system by constraining the linkage among the other component (Baldwin, 2008). It provides a three distinct fields to analysis the platform architecture: product development, technology strategy and industrial economics. The product development emphasizes the platform's new channel function to deliver the product or service value. The technology strategists focus on the value added from platform in industry control perspective. The industrial economists identified the platform as an intermediate between the groups, which realize the economies of scale.

For the distribution channel, there are mainly three types of intermediaries: two-sided platform, reseller channel, and traditional channel. According to Hagiu (2007), the platform has significant difference with classic form of intermediaries. For example, the pure merchants are the distributors for the sellers. They take fully control of the selling process and the products are obligated once the pure merchants received from the seller. They are mostly seemed as distributors, resellers or corporate partners. However, the two-sided platform enables the sellers' control power and determines buyer and seller affiliation with a common marketplace. (Hagiu, 2007) Moreover, the two-sided platform enables the direct interaction from the sides. Additionally, Eisenmann T. (2006) also stated that the traditional value chain is a relatively flat form, which cost is on the left and revenue from right. But the two-sided platform, the cost and revenue exist in both sides.

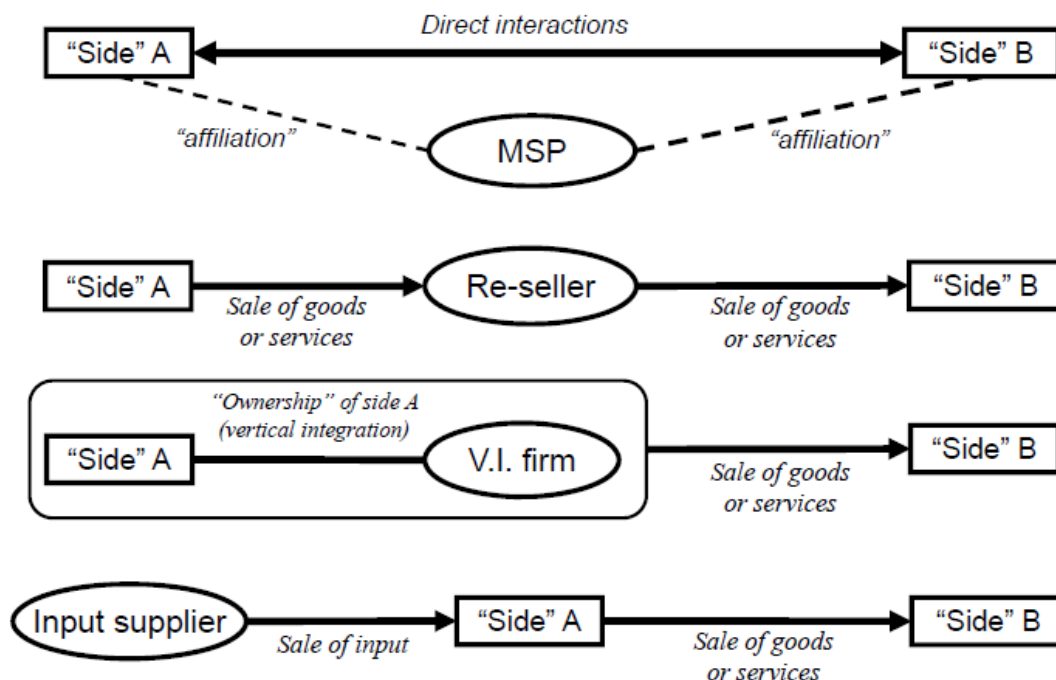


Figure 10 Multi-sided platform vs. alternative business model

Hagiu and Wright (2015) have further developed the multi-side platform by adding one more business model. The Figure 10 clearly demonstrates the difference between multi-sided platform (MSP), re-sellers channel, vertical integrated firm (V.I. firm) and traditional channel. The product platform is a straightforward produce to sell process. For example, the multi-sided platform involves several players as sides: the buyers, the sellers, the platform provider and social media side. The sellers sell their product or services to buyers through the platform. The social media could direct the buyers or sellers into the platform to buy or sell goods. The multi-side platform obtains two essential characteristics, which differ from the other platform. First, the participants from each side are the customers in a meaningful way. Second, the multi-side platform allows a direct interaction or transaction between the sides. The direct interaction indicates the both sides are left with control power in transaction (Hagiu & Wright, 2015). The V.I firm platform refers to the company owns the upper streamside and transfers the product direct to the stores and finally sells to the end customers. The product or services selling at the physical store are completely legalized to the firm. However, the resellers do not involved in any of the production process. They served as intermediaries who owns the product and sell to the final customers. From another business angle, the input supplier channel served as the upper incoming stream for the downstream side. The suppliers sell raw materials to one side, most typically are the companies. The

companies take these raw materials and assemble into final product or services. The customers will not have any direct interactions with the suppliers. The following sections will elaborate the features of the multi-sided platform more.

2.4.1 Network effect and user sensitivity

In the previous section, we mentioned two essential characteristics. This section will emphasize more on discussing the features of the multi-sided platform. The multi-sided platform has provided an infrastructure, which facilitates groups' transactions. These groups are attracted to each other – a phenomenon that economists call the network effect. The network effect realize the value of the platform by the number of platform users and it grows meet the demands for both sides (Eisenmann;Parker;& Alstyne., 2006). The network effect is defined as the effect that one user of a good or service has value to other people. The strong and positive network effect increases the economic return of scale, which indicates the average cost per unit will decrease as the number of users increase. In terms of platform, the increasing economic return of scale implies the average cost of serving a customer or of enabling an individual transaction declines with the total number of customers that participate or transactions that are enabled (Hagiu, 2014).

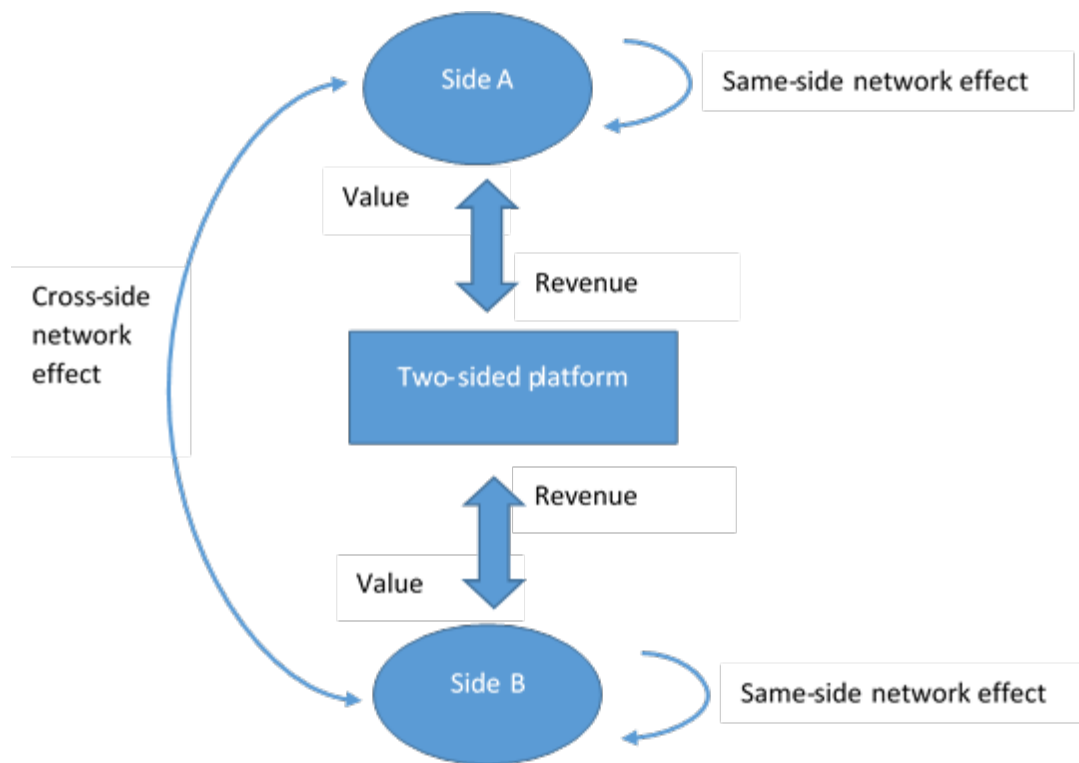


Figure 11 Network effect for two-sided platform (adopted from Hagiu 2007 and Eisenmann 2006)

The Figure 11 illustrates two network effects in the two-sided platform: cross-side network effect (also called as indirect network effect) and same-side network effect (also called as direct network effect). The cross-side network effect refers to the value to customers on one side typically increase with the number of participating customers on the other side (Hagiu, 2014). For instance, the Facebook, a successful social media platform, will automatically attract new users by their current users whom would like to share their personal activities, interests, and concerns with them. Thus, Facebook would increase their business value by the increasing number of users. The same-side network effect occurs within the side. For example, the online auction platform, eBay, the bidders would not enjoy the bid competition to seal the deal. This could be considered as a negative same-side network effect. The multi-sided platform involves more sides which would obtain a snowball impact on the groups. Despite all the benefits added, these network effects could create high barriers to entry and cause market dominance problems.

Since the network effect has such strong influence in participants, there is a common question about how many sides to get involved in. Hagiu (2006) pointed out there is a trade-off

choosing more or fewer sides. More sides enhance the cross-side network effect, larger scale and potentially diversified sources of revenue. The fewer sides, i.e. two-sided platform, could have more exclusive approach towards both sides with certain control power. Nevertheless, the more sides would have several issues. Firstly, it is not economically viable for one or several sides to stay independently. Secondly, the complexity, conflicts and risks will increase by adding more sides. Thirdly, the more sides involved might cause lower common denominator issue, which adding constraints to introducing groundbreaking features. The platform cannot stand out from those different and heterogeneous platform competitions by blindly adding more sides. Lastly, more sides are operating in the platform will naturally cut off the profit margin in vertical integration.

The network effects directly influence the platform's pricing problem due to large participates or transactions volume. Hence, the platform designer has to consider the pricing strategy for each side. In general, Eisenmann (2006) suggested that to charge less for the subsidy side which groups of users are high valued by the money side. The subsidy side users are crucial to establish strong network effect, which the money side would like to target. Moreover, the user sensitivity to price can be a useful indicator to set up the pricing strategy. After synergize the multi-sided platform strategy developed by Hagiu (2007) and Eisenmann (2006), we could conclude that the pricing strategy should consider three aspects: user sensitivity to price, user sensitivity to quality and value extracted. First, the users whom are more sensitive to price need to be subsidized. The Abode's writer and reader could be a great example to illustrate the relationship for price sensitivity. The reader would refuse to access the view the documents by Abode if it starts to charge fee per reading time. The writer, who creates the documents won't get any views if Abode starts to charge the readers. Finally, Abode as the platform to spread out the documents would gradually collapse. Therefore, the readers are more price sensitive than the writers. So they should get more subsidies to access the resource. Second, the users are more demanding to the quality need to be subsidized. For example, the conference organizer should price more on the audience side who are more demanding for the speech. The speakers could be regard as the supply in the conference event. We could foresee that the speakers become the charging side would mostly turn back for this event. Third, the extracted value indicates the side that gets more benefit from the other side(s). This logic can be implied with the conference example above. The audience naturally receives more benefits than the invited speakers. In addition, the e-commerce

websites such as eBay and Amazon would price more towards the sellers than the buyers. The sellers extract more value than buyers and their price sensitivity are more inelastic.

2.4.2 Winner-take-all dynamics and Multi-homing costs

We have mentioned the network effects could create market dominance issue. Another features of network effect are the winner-take-all dynamics, which indicates that the successful market player would take all the market benefits as the platform dominator. They could be the pioneer market player, inspiring platform provider or highly reputation market player who grasp the customers' interest. Their performance differentiates them with other competitors, which comes along with huge rewards. The winner-take-all battle rises due to the increasing return of scale in network. The platform always address the concern of collaboration or exclusiveness while hit the success.

Furthermore, Eisenmann (2006) has introduce three conditions that a networked market to be served by a single platform: Multi-homing costs are high for at least one user side, Network effects are positive and strong – at least for the users on the side of the network with high multi-homing costs, neither side's users have a strong preference for special features. Firstly, the users are not stay with only one certain platform. The users make their “home” on various platform including adoption, operation and the opportunity cost of time. The multi-homing costs are meant all the costs related to build up and maintain the platform. While the number of homes increases, the users increase their outlays accordingly (Eisenmann;Parker;& Alstyne., 2006). While the platform has established and became excellent market player, the network effect grows stronger which the multi-homing costs need to be allocated. The platform provider invests largely on establishing the platform in terms of resources, technology and financial inputs. These costs incurred will be allocated to users. Therefore, the users would gradually move towards one platform to minimize their multi-homing costs. Lastly, the winner-take-all dynamics occurred with market dominance of one platform with massive user base. Since the massive user base, one single platform cannot satisfy highly customized need. Hence, the winner-take-all dynamics rarely focusing on niche market.

Eisenmann (2006) has pointed out the cost minimization and differentiate advantages are the crucial part in winner-take-all dynamics. The cost minmization would attract the low price seekers into their user base. This strategy emphasizes more on satisfying the public needs. On the contrast, the differentiation advantages focus on niche market for small scale of users.

Additionally, there are three crucial assets to generate winning power in market network. First, the platform provider would naturally gain advantage over other competitors by obtain pre-existing relationship. Second, a good reputation of the platform gives a great help in the intensive platform competition. Third, the money matters. The financial support seems as the greatest weapon in the competition battle expressing from price war, data science, market reasearch etc.

2.4.3 Envelopment threat and bundling benefits

In the previous section, we have discussed the network effect leads to winner-take-all dynamics. This section would continue on reveal the envelopment threat. The network platform leadership changes due to various reasons. One of the threats is called platform envelopment phenomenon. Platform providers that serve different networked markets often employ similar components and have overlapping user bases. The platform envelopment is defined as entry by one platform provider into another's market, combining its own functionality with the targets in a multi-platform bundle that leverages common components and/or shared user relationships (Eisenmann;Parker;& Van Alstyne, 2007). On the other hand, the market dominated platform provider would survive thanks to their strong network effect and high switching costs from the envelopment threat.

The multi-platform envelopment threat enforces the platform providers to leverage their shared user relationships, which gain more powerful competition advantage. This collaboration always can be observed as multi-platform bundling. The mobile phone could be a great example to illustrate the multi-platform bundling. The mobile operator leverages their shared user relationships with music, video and online payment to their price bundles. These price bundles yield more functionality with lower prices would hinder other stand-alone platforms. Hence, this envelopment threat would be seems as a powerful force to shaping the platform evolution. (Eisenmann;Parker;& Van Alstyne, 2007)

Continuing on explore the multi-platform bundling benefits, Eisenmann (2007) proposed three types of platform and six propositions for bundling benefits. The types of platforms are: unrelated platforms, weak substitutes and complements. The unrelated platforms indicates that two platforms do not have shared functionally, but obtained shared demographic or behavior traits. For example, the car owner needs both emergency roadside services and auto loan brokerage services. They companies could gain market power by bundling these two

unrelated services. Due to the traits, the correlation of user preference could be very strong and the price discrimination gains will be available (Eisenmann;Parker;& Van Alstyne, 2007). The valuation of the bundle contains two weak substitutes is higher than two separate items for the users under the assumption of not overlapped platforms' functionality. The complements are the economical concept of one good's demand increases as another good price decreases. Therefore, the complements type users have strong demand of one platform would highly value the other one. The bundling potential benefits usually express as price discrimination gains, efficiency improvements and strategic advantages. First, the bundling simply reduces the valuation of the product or service set. For instance, the DVDs platform and video game platform bundling cannot largely improve the benefits since users will buy the product anyway. Therefore, the eager to pay is not as much as the first situation. As a user, this price discrimination package increases their willingness to pay. And the market powered selling side extracts more market surplus than separate selling approach. The first proposition has concluded that the multi-platform bundling would yield a better profit in two circumstances (Eisenmann;Parker;& Van Alstyne, 2007).

Proposition 1: *Assuming marginal costs are low, bundling two platforms is more likely to yield increased profits through price discrimination when:*

a. Platforms are functionally independent, and their use is not associated with common underlying demographic or behavioral traits.

b. Platforms are complements, but their use is not reciprocally specific.

Second, the bundling could improve the efficiency through four perspectives: economies of scope in initial marketing, economies of scope in production and ongoing operations, quality advantage and avoidance of double marginalization (Eisenmann;Parker;& Van Alstyne, 2007). The bundled package would reduce the costs for both customers and company. The customers save time on searching separate items and the company realizes customer acquisition and reduces delivery costs by one promotion. Moreover, the bundled package help to decrease the production cost by leveraging shared components. It also generates quality advantages by tighter management and component interfaces simplification via integrated platforms (Eisenmann;Parker;& Van Alstyne, 2007). For example, the restaurant platform and entertainment service platform are weak substitutes. The single platform would bundle the food service with the cinema tickets together have better profit margin. The

double marginalization caused by the monopolistic supply and demand stream, which harm the total welfare. However, the bundled package could lower down the double marginalization effect by allocating resources to different platforms. The efficiency improvement benefit could be summarized into three following propositions for multi-platform network market (Eisenmann;Parker;& Van Alstyne, 2007).

Proposition 2: *Bundling weak substitutes are likely to yield increased profits through economies of scope in production and ongoing operations.*

Proposition 3: *Integrating reciprocally specific complements and weak substitutes may yield quality improvements compared to platforms provided by separate firms.*

Proposition 4: *Bundling reciprocally specific complements otherwise supplied by separate platform providers with significant market power may yield increased profits through avoidance of double marginalization.*

Not only for the competitive market, Eisenmann (2007) also investigated the monopolistic market. For the monopolistic market, the bundled package requires exclusive suppliers, which create entry barrier, such as high cost premium, for the market. Furthermore, the market dominator could control their market power by weaken other existing competitors or potential new player through their bundled package. For instance, the dominant platform sells a bundled product packages. The rival platform could focus on gain competitive advantage in one of their product to increase profit. This strategic advantage benefits is concluded into two propositions in below (Eisenmann;Parker;& Van Alstyne, 2007).

Proposition 5: *Through envelopment, a platform provider can profitably extend its market power when its target supplies either: 1) a reciprocally specific complement; or 2) a unilaterally specific complement that is used mainly but not exclusively with the attacker's platform.*

Proposition 6: *Through envelopment, a platform provider can profitably weaken or deter rivals in its own market when its target supplies a reciprocally specific complement.*

3 Research methodology

The previous chapter established the theoretical framework based on various literature reviews. This chapter will continue on discussing the research methodology in the empirical case study along with the data analysis. Lastly, the validity and reliability issue will also be addressed.

3.1 Research method

The purpose of this research study is to describe the current Chinese e-commerce industry situation with risks and opportunities. After examining the e-commerce environment, an iconic case company strategic business model analysis will be conducted for understanding its network power and platform strength. Therefore, a qualitative research approach is well founded. The qualitative method seeks to understand a given research problem or topic from the perspective of the local population it involves. The qualitative research method could effectively deal with culturally specific information such as values, behaviors and social context for certain population groups (Mack; Woodsong; MacQueen; Guest; & Namey, 2005).

As we discussed in Chapter 1, this thesis investigation contains three main parts: Chinese e-commerce market analysis, theoretical application on business model and service process positioning and empirical case study. The e-commerce business model and process analysis are strategic concepts that cannot be easily measure by numeric indicators. The qualitative study obtains the strength in exploring, describing, interpreting and gaining a complete picture of complex textual description. As a result, this thesis will focus on qualitative approach on investigating the business insights.

Firstly, this thesis study collects large amount of information and concept of Chinese e-commerce industry from Internet sources. This part examines the external environment for Chinese e-commerce development including the economical, technical, social and policy support. These information were collected mostly by published reports written by research based companies and consulting companies. With the numeric figures support, it illustrates a more concrete picture of Chinese customers consuming behavior, which set up a fundamental background scenario for building the theoretical framework. Secondly, the theoretical reviews provide an integrated support on evaluating the companies from an internal dimension perspective. The STOF model and SPA matrix suggest model components,

network power, risks and opportunities analysis. The STOF business model offers literature framework support on investigating the relationship between different internal components to become successful. The SPA matrix positioning emphasizes the positioning evaluation based on the company performance. Consequently, we could observe the Chinese e-commerce both from external and internal perspective by combining these two frameworks. The first two parts gives a broader picture of the whole industry condition with theoretical back up. A great example would bring vivid understanding on the whole business environment. The case study of one iconic company, Alibaba Group's Alipay, presents a good explanation for the readers to grasp Chinese e-commerce characteristics. The section below will discuss more about the case study.

3.2 Case study

Besides the qualitative research method, this thesis applies an empirical case study to add a more realistic example to elaborate the discussed theories above. Case studies are useful when dealing with the relatively unknown research area. The case study research study is a pertinent on addressing either descriptive or explanatory questions (Yin, 2008). With its unique, real time features of case study, it explores more unrevealed fields or phenomena. The case study helps on illuminate a particular situation to produce an in-depth or first-hand understanding of people or events (Yin, 2008). Moreover, the output of the case study could serve as an empirical testing on extending the theoretical framework. On the contrast, a well-designed experiment follows certain research pattern, model, and analysis with updated data test.

Among all the companies, the author has chosen Alibaba Group's Alipay as the case company in empirical study. Alibaba is the leading company in Chinese e-commerce market in term of online retailing services including both B2C and C2C. As stated before, the online retailing takes the largest market contribution for Chinese e-commerce development. Picking Alibaba Group as a representative will offer a typical comprehension on Chinese e-commerce development. Since Alibaba maintains high market penetration rate, the business information and published figures are easier to extract as a researcher. Furthermore, the O2O concept gains market attention quite recently and Alipay as the third party payment system already keep abreast with this new market dynamics. However, this newborn concept has not directly revealed by any articles or journals. Thus, an empirical case study would perfectly illustrate this phenomenon with real time touch on this upcoming hot trend.

3.3 Validity and reliability of research

All the researches need to be examined of its trustworthiness issue. The validity and reliability are the key indicators to examine the quality of the research output. The validity and reliability have traditionally applied for testing or evaluating the quantitative research (Golafshani, 2003). However, some researchers argued that the qualitative studies could also apply these two factors while designing a study, analyzing result and judging the quality of the study (Patton, 2002). Yin (2008) introduced the criteria for judging the quality of research design including trustworthiness, credibility, confirmability and data dependability. He summarized four tests for the quality empirical social researches. The Table 6 stated four tests to all social science methods: construct validity, internal validity, external validity and reliability.

Table 6 Case study tactics for four design tests

Test	Case study tactic	Phase of research in which tactic occurs
Construct validity	Use multiple sources of evidence	Data collection
	Establish chain of evidence	Data collection
	Have key informants review draft case study report	Composition
Internal validity	Do pattern matching	Data analysis
	Do explanation building	Data analysis
	Address rival explanations	Data analysis
	Use logic models	Data analysis
External validity	Use theory in single-case studies	Research design
	Use replication logic in multiple-case studies	Research design
Reliability	Use case study protocol	Data collection
	Develop case study database	Data collection

The construct validity identifies the concept correct operational measurements. According to Yin (2008), the researcher needs to cover two steps in order to meet the construct validity. Firstly, the defined research topic sets up the objectives for the investigation. However, the related specific concepts can also influence the topic in the dynamic social environment. Secondly, these related concepts require operational measures to match the original objectives, which preferably expressed in the published works. The construct validity deals with the data collection and compositions in the material preparation.

The internal validity only concerns for explanatory studies in terms of relationship revealing between different parts. Additionally, the internal validity extends to establish an informal relationship especially in case study research. As discussed above, the case study focus on specific topic for certain company. The internal relationship between the components may obtain high complexity other than vertical, horizontal or integrated system. Yin (2008) suggested four analytical tactics during the data analysis process: comprise pattern matching, explanation building, address rival explanations and use logic models.

The external validity refers to examine the generalized findings whether relate to the study domain. The qualitative research, especially the case study, deals with limited amount of non-numeric data. The researcher is meant for synergize different literatures and integrated into a suitable theoretical that can apply to the empirical cases. Yin (2008) suggested the external validity tactics would apply single-case study and replication logic in multiple case studies.

Lastly the reliability seems to be discussed the most for all research works. The reliability indicates the work can be reproduced and updated by applying new datasets and data collection patterns. Thus, the later researchers could arrive with similar findings with earlier researches. In general, the reliability test approach is to show the operational steps as many as possible for following researchers.

In conclude this research study is a qualitative research with case analysis. The research design starts with motivation and objectives, which the Chinese booming e-commerce market lacks of business framework support. Along with the authentic literatures, journals and articles, the business model and service analysis process will be analyzed. For the data collection, the case study information mainly extracted from Internet published sources. The data are mostly extracted from reliable Internet sources such as Reuters, Bloomberg and published articles and journals.

4 Chinese e-commerce analysis with case studies

The online e-commerce has become an intensive topic during the recent years. This chapter will first investigate the whole Chinese e-commerce industry. The e-commerce describes the buying, selling and exchanging of products, services, and information via computer networks, primarily the Internet (Turban;Rainer;& Potter, 2003). The e-commerce would apply to various area, such as direct marketing, stocks, online banking etc. The people are the focused group in the e-commerce and the public policy would influence the business environment. The marketing and advertisement are the company promotion methods in e-commerce and supply chain indicates the distribution channel. Moreover, the e-commerce obviously needs technical infrastructure to gain network influences. Lastly, the management includes the personnel management, sales management, branding etc.

The e-commerce is proven to be a leading market power sector in Chinese economic environment including the Business to consumer (B2C), Consumer-to-consumer (C2C) and the Online-to-offline (O2O). The core essence of O2O is to initial the business from online, which can be seen as the marketing strategic operations. It starts the business online to release the grand investment constraint level. With the technical support on online platform development, the channel is established to attract both users and merchants. The whole operation process is a closed loop with payment features. The build in payment features differ the O2O business dynamics than other as a service oriented operation for the platform provider to survive. The online payment is a most important part for electronic commerce that realized the online consumption. This study will continue to access the company case for risks and opportunities. After the industry overview analysis, the STOF model and SPA matrix analysis will be conducted with three iconic Chinese leading companies: Alibaba Group.

4.1 Industry overview analysis

Nowadays, the Chinese e-commerce market is growing rapidly under the wireless Internet construction and various platform influences. The whole e-commerce industry is booming since 2008. The Figure 12 indicates the market size of e-commerce from year 2008 till 2017 under predictions. We could observe a dramatic market growth trend for both B2C and C2C. A giant increase can be observed in year 2011. The Chinese e-commerce has developed starting from 2009 and end up with \$300 billion in year 2013. The e-commerce market

expands largely due to the online retailing increases, which can be seen from the Taobao's early success in C2C, which most of the e-shops are operated by individuals. The early stage of Taobao platform is more like eBay style, which allows individuals direct transactions. However, Alibaba group launched Tmall on their platform that is a B2C based e-commerce. The early success of Taobao has attracted business patterns to affiliate their business in the platform. In order to separate the sellers, Alibaba has opened Tmall for the business partners to co-operate with under their pre-existing brand name. Under the market exploration in user bases, the B2C channel was driven to high growth in 2013. (Goh & CheeWee, 2014) In addition, another study shows the rural area generates more market contribution due to relatively poor retailing system geographically.

Recently, the O2O business phenomena is a fast growing trend. It is hard to estimate the O2O market size from both market supply and demand side. There are thousands of mobile platform launches during these three years. It is been reported that only 5 percent of mobile applications can survive after using 5 month period (Zhao, 2015). There is an intensive competition to survive in the mobile portal in the supply side. The potential market demand is large, which comes from the massive mobile Internet users. Hence, this study will present the current condition of Chinese e-commerce and potential growth areas.

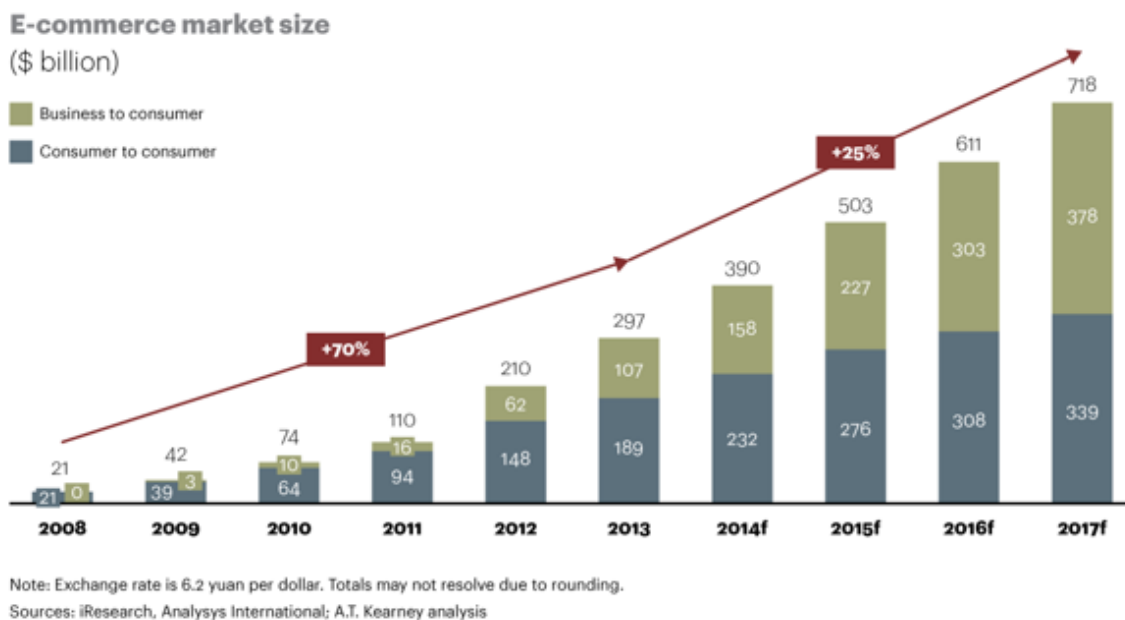


Figure 12 Chinese e-commerce market size

Various aspects trigger the Chinese e-commerce evolution. They can be summarized into three categories: economical reason, technical reason and social reason. According to Goh and CheeWee (2014), the purchasing power has increased for household. Thanks to the Chinese prosperous economic growth, the personal disposal income per capita reached \$3000 in 2013 and is expected to grow up to \$5000 in 2018. The stronger purchase power would largely increase the willingness to pay and the Chinese buying behavior would gradually switch to diversified, quality seeking pattern. Thus, it will benefit both the production and service industry with increasing payment transactions. Moreover, the blooming e-commerce cannot leave without the technical development: internet infrastructure and online payment security. The wireless internet connection enables users to browse and conduct payment through smart phones. China obtained 600 million internet users in 2013 only with 46% internet penetration rate, compared with 83% in the US market. However, the average time spent online of Chinese users is longer and the most of the users are aged from 18 to 35 (Goh & CheeWee, 2014). This age group has the most buying power and is willing to spend money online. Additionally, the more secured online payment environment guaranteed the safety of users' experiences. The transparency of online credibility breaks through the users' psychological barrier. Lastly, the social media enlarged the e-commerce influence. The Chinese social media platform, such as Wechat or Sina Weibo, already take large part in users' daily life with high subscribe rate. The subscribers use these social media platform to ask for advice on buying decisions. (Stanley & Ritacca, 2014)

In addition, some of the users or company also use social media platform as selling channel, such as social media celebrity endorsement in Weibo and "Weishang" in Wechat. The "Weishang" is a phenomenon that Wechat users open online stores in Wechat platform, mostly are individual foreign product importers or dealers. The Figure 13 indicates the most popular Chinese social media applications among social media users (Half of Consumers in China Use Social Media, 2016).

Leading Social Media Sites/Chat Apps Among Social Media Users in China, 2013-2015
% of respondents

	2013	2014	2015
WeChat*	64.5%	71.8%	75.9%
Qzone	72.5%	53.0%	50.5%
Weibo	58.8%	39.9%	35.0%
Forum/BBS	24.3%	16.8%	12.9%
Renren (formerly Xiaonei)	25.4%	15.0%	12.4%
Friend**	-	-	10.0%
Douban	7.0%	4.8%	4.8%
Momo	-	4.0%	4.3%
LinkedIn	-	1.0%	1.4%
Other	6.9%	6.7%	4.9%

Note: 2013 n=12,221; 2014 n=13,341; 2015 n=13,512; *also known as Weixin; **a social network within Alipay
Source: Kantar, "2016 China Social Media Impact," Jan 28, 2016

204761 www.eMarketer.com

Figure 13 Leading social media apps in China, 2013-2015

Online to offline, however, is a new business dynamics other than B2C and C2C. The online to offline business dynamics is a mostly service oriented with the technical support. The O2O cannot stand out from the B2C or C2C pattern if it just a pure platform for searching information. The product or services to be purchase in the online platform will yield profit for the provider to survive. Most of the O2O platform has entitled payment functionality, which allows real time free refund if the offline experience cannot be realized. The booming of O2O dynamics occurs under four environment supports: policy support, economic support, social environment support and technical support. Back to 2000, the electronic payment is on the beginning discover stage until the first related law, Interim Measures for the Control of Online Banking Operations, enacted in 2001 (iResearch, 2015). Along with the online payment market expansion, more law was enacted to legislate the market. The high e-commerce growth rate empowers the continuous booming of online payment, which even up to 47% in year 2014 (iResearch, 2015). The Internet demographic figures ensure the user base for online payment services. The overall Chinese e-commerce received intensive expansion due to enlarged mobile users mainly from online shopping and other customer services. Thanks to the Taobao's success, the online shopping has rapidly accepted by the public. The technical support on wireless network development and electronic payment authentication system improvement has guarantee the transaction safety and protect the users'

personal information. The Chinese buying behavior gradually accepted the online payment system. The third party payment has got attention since 2010 along with the mobile application explosion, which established the bridge to connect the online shoppers and the customers. As a result, the online consumption raises can be observed last decades. Most of Chinese online services are connect with various payment methods: bank payment (credit card, debit card, online banking service), third party payment (Alipay, Tenpay, UnionPay etc.) and platform wallet (JD wallet). At the beginning, the bank payment system was the pioneer in online banking system. However, the public does not trust the online payment environment due to market immature and risk averse psychology.

The raise of the B2C, C2C and O2O has brought massive benefits and opportunities, but they also come along with risks. First, this newborn business environment has high “fail fast” effect and missing regulations. The user preferences become much more complex than before to be traced. The platform design and innovation can be easily crushed due to lack of user subscription. In addition, the online environment still requires legislation on malignant market competitions and management issues. Various similar platform applications exist in the market, the intensive competition leads to issues like price war, secret coupon offline, offline customer engagement flight etc. There is always the service provider’s credibility issue on online transactions on fake or counterfeit products. Besides, the Chinese e-commerce market is facing the merge and acquisition trend. The leading company in e-commerce, Alibaba, acquires the successful advantage in online shopping. They have gradually acquired stocks from Star Museum Entertainment (Korean pop music), Autonavi (navigation application), Koubei (Chinese rating application like Yelp) and Yahoo (search engine) etc. (Alibaba, 2016) We could see that Alibaba has diversified their company profile not only on online shopping, but other filed to diversify the company performance. Moreover, these investments could also have certain benefits to support their mainstream business. For example, the Autonavi and Koubei can collect user geographic and preference information for better recommendations system. The merge and acquisition would definitely improve the company performance, but this brought out another question: where should they invest on? Wrong and risky decisions could yield a destructive result for them. Furthermore, the diversification of company profile would obviously increase the competitive advantage. The merge and acquisition would build up an even stronger business empire, which might have market dominance issue. The market dominance would force the other innovative small median sized companies struggle to survive or to be acquired. Additionally, the

diversification on company profile leads to more blur market boundaries. The whole e-commerce tends to become a converging industry with the integrated functions. Hence, the competition on satisfying widening range of customer preferences and interest gets more complex.

4.2 Alibaba's Alipay case study

The Alibaba group is a well-known Chinese e-commerce that provides retail services, cloud computing and other services. Jack Ma found Alibaba as the leading online and mobile retailing company in 1999 (ChannelAdvisor, 2014). Alibaba has gradually expanded their business in Mainland China. In 2010, Alibaba officially launched AliExpress to enable exporters in China to reach and directly transact with consumers around the world (Alibaba, 2016). He has gradually build up to an empire that result 35 billion RMB in year 2015, of which around 19 billion RMB are from mobile revenue (Alibaba, 2016). They have obtained 334 million active buyers by the end of 2014 of total 649 million Internet users (Statista, 2016 & Carsten, 2015). While the Internet users growing stably, there are 57 million mobile Internet users by the end of year 2014 with slight higher growth rate (Carsten, 2015). In September 2014, Alibaba entitles to initial public offer (IPO) at the New York Stock Exchange. The underwriters exercised Alibaba's option to purchase additional shares at the \$68 IPO price (Mac, 2014). Obviously, these numeric figures prove that Alibaba has established their empire with high market penetration rate.

In order to understand Alibaba's business, their ecosystem would give a whole overview of their company structure. The Figure 14 illustrates that there are four main parts in Alibaba's ecosystem: seller, buyers, logistic partners and Alibaba e-commerce infrastructure (CIW, 2014). At the very beginning, Alibaba focused on their online platform business, which collect sellers and buyers called Taobao.com. Nowadays, the sellers are offered with Alibaba's professional marketing team to improve their performance, such as Alimama (Online marketing support) and Alibaba Finance (Financing advice support). As for the buyers, they could not only access through Internet but also from the smart phones. The social media channel helps to increase market influence: Most importantly, the Autonavi served as an essential indicator to track user geographic location for recommendation engine. The Autonavi has already taken leading location based service navigation service performance in user download rate, application ratings and market share. Moreover, Autonavi provide the user-friendly environment as API to iOS, Windows and Android

system (Jin, 2014). This acquisition action would enforce the entry portal with Alibaba’s business in term of online directing and offline searching. The e-commerce platform requires strong support on logistics distribution to enable an effective seller-buyer relationship. Alibaba claimed to establish Aliyun as a cloud computing and data management service to produce data analysis for marketer (Aliyun, 2016). Of course, their main services are shown in the Figure 14 of Alibaba Group capable of, such as Taobao.com as the C2C retailing platform, Tmall as the B2C retailing platform, AliExpress as exporter channel etc.

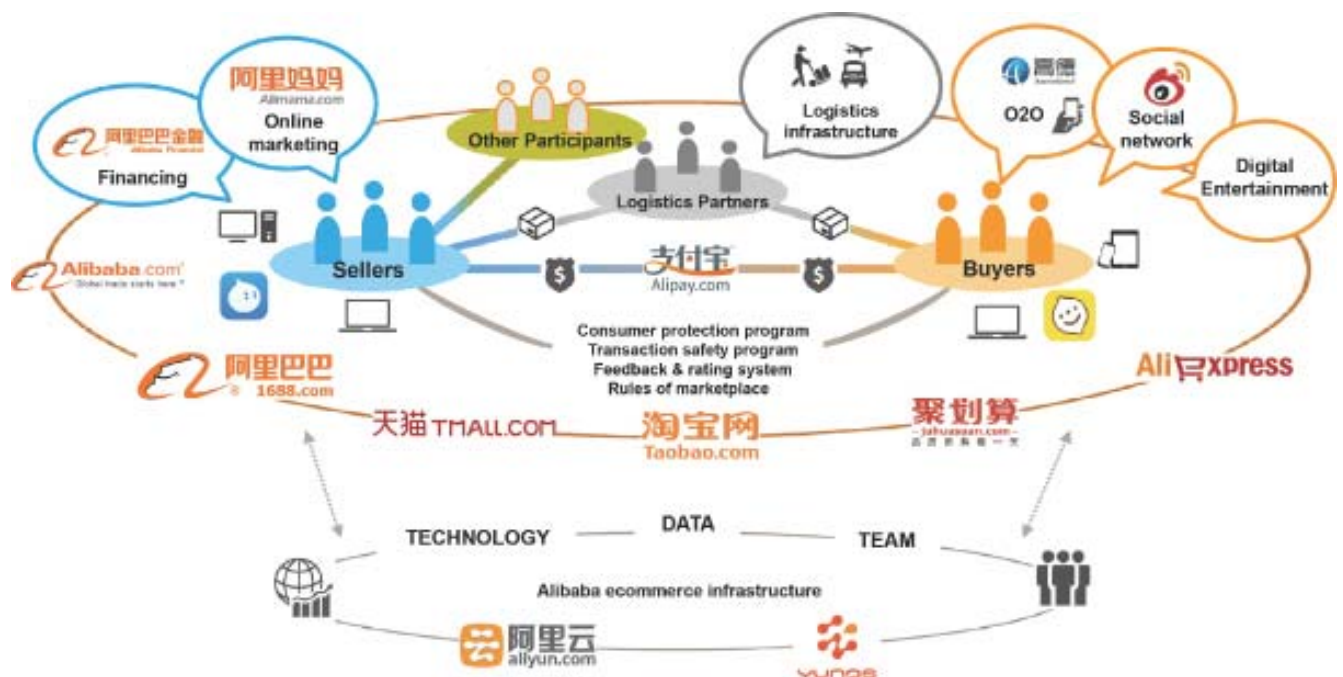


Figure 14 The ecosystem of Alibaba

The online to offline has brought new business opportunities that it enables good mobile payment application environment. Due the increasing demand in the online transactions, the third party online payment becomes more popular with higher accessibility and security. The big part of Chinese e-commerce is the online transactions through online payment method. The online payment methods have three categories: online banking system, credit card payment and online payment. The first two payment methods are common as traditional banking services. The online payment method is mostly the online payment both on PC and mobile side, such as Alipay and Tenpay. The Alipay allows the users to deposit their money with relatively higher interest rate than the banks. The users can transfer or place the order scanning the unique generated QR code for mobile portal, which contains the account

information. The PC portal entitles more detailed account management with SMS notification ID authorization. The online transactions drive homogenous integration on combining the online services and offline services due to merchant development. However, there is also a threat on online payment: the cash on delivery service (CNNIC, 2014). The cash on delivery eats up part of the online payment transaction market. The key competitor Jingdong (JD) operates the most effective cash on delivery service which guarantee the products delivered under customer acceptance especially for the high valued product (Liu, 2013). Overall, the online payment system developed rapidly due to increasing B2C market booming. The Alipay's success explores more business opportunities for Internet finance market such as e-investment products and services.

While we have discussed the Chinese online payment environment, the big players in the market can be observed in Figure 15. Cecilia (2014) has illustrated the market share of third party online payment by transaction value. It is obvious that Alipay is the market winner and Tenpay by Tencent is following behind. The Alipay is not only just for Alibaba's marketplaces, but can be accessed to almost all online platforms.

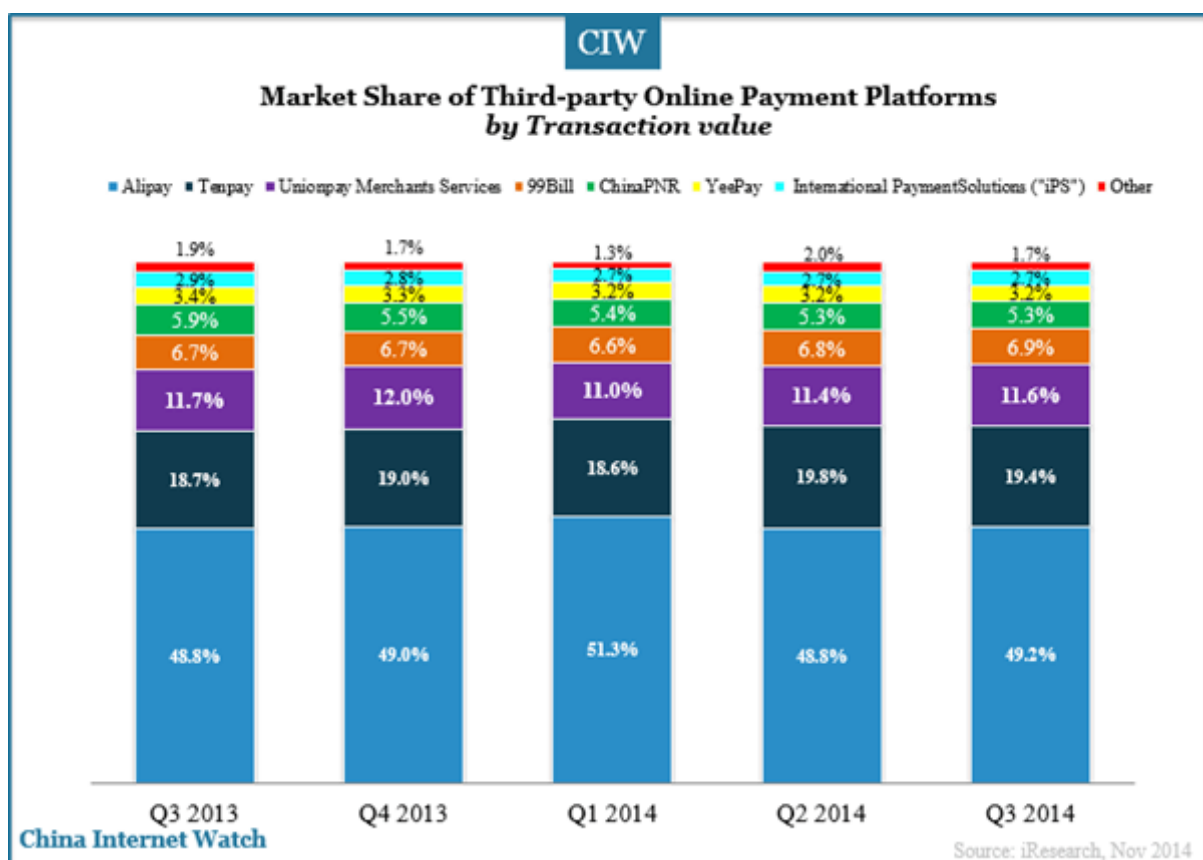


Figure 15 Market share of third-party online payment platforms by transaction value

4.2.1 Alibaba STOF model analysis

This section applies the STOF model to analyze Alibaba Group's e-commerce performance. The Chapter 2.2 introduced the STOF model as four domains: service domain, technology domain, organization domain and finance domain. This section would discover Alibaba's performance accordingly.

4.2.1.1 Service domain

The service domain focuses on the products or services provided that the target customers could accept its value. Alibaba claims that the company values are serving their community with passion, integrity and committed teamwork under the changing environment (Alibaba, 2016). The four types of value proposition stated by Bouwman (2008) are expected value, perceived value from customer side and delivered value and intended value from provider side. Alibaba's community consists of both buyers and sellers. Usually, there is a difference between what a customer expected and perceived of the service or product. CNNIC (2011) concluded the reasons of customer dissatisfaction. The top one priority is the large discrepancy between the actual product and description up to approximately 36 percent (CNNIC, 2011). The quality control for online shopping platform becomes a tough issue to ensure customer to receive the perceived value at least. As for the sellers, the difference between the deliver value and intended value also exist. The delivered value is what buyers actually received and the intended value is what seller wants to deliver to the buyers. This difference might not be as large as the customer value one. But the failure of intended value may lead to less profit margin and slow down the brand image building.

According to the Table 2, the service domain has five critical design issues: targeting, creating value, branding, trust and customer retention. As the Chinese online and mobile retailing marketplaces, the target users are both sellers and buyers. As discussed before, Alibaba has operated both B2C and C2C platform. Alibaba launched the Taobao.com as the C2C retailing platform. However, the B2C platform, Tmall has growing faster in terms of more pre-existing brand cooperation, not only the local brands but also international well-known brands such as Burberry, Casio, Shiseido, Bvlgari etc. (Tmall, 2016) This cooperation would expand these international brand market rate as adding new channel. On the other hand, the majority of the online buyers are aged from 20-29 year-old with bachelor degree office workers (CNNIC, 2014). The younger generation is easier to accept the new buying

behavior and has certain buying power as well. Therefore, the target buyers would be more towards generic and stay closely with the trends.

Since the target users are clarified, the value creation process is more complex which cannot be easily addressed. Nowadays, Alibaba has already established a strong brand image as a Chinese leading online retailing platform. The better way to empower the market effect by the products and services is the brand selection in the platform. More specifically, the online platform needs to select the new coming potential merchants from the target users' perspective on lifestyle. The younger generation's buying behavior is seeking for trendy, interesting products than just focus on the functionality. Alibaba has expanded the feature from only Taobao.com (C2C) to Tmall (B2C), Juhuasuan (online group buying), Alipay (third party payment), Ant Financial Service Group (online financial services), Aliyun (cloud computing) etc. (Alibaba, 2016) To enhance the trust, Alibaba has developed a stronger security system with more legislations on accessibility to personal information. For instance, they have enabled mobile SMS random generated pin-code to protect your transactions. Alibaba has also modified their personal data claims in order to have more secure and privacy platform environment (Alibaba, 2015).

Lastly, Alibaba has already maintained large user base. They provide different coupons to encourage the buying activities. Furthermore, they have also integrated more features to attract customers. The Table 7 summarized the critical design issues for Alibaba.

Table 7 Alibaba's critical design issues in service domain

Critical design issue	Description	Balancing requirement
Targeting	Sellers: More pre-existing merchants (B2C) & maintain individual sellers (C2C) Buyers: younger generation has certain buying power	Generic & B2C
Creating value	Customer value creation on grasp needs and wants	User needs and wishes
Branding	Enrich the features by adding sub-brands	Content brand: Tmall, Taobao, Yu'Ebao, Juhuasuan
Trust	Launched security measures and privacy policy	Security & privacy
Customer retention	Pricing strategy and branding	Customer lock-in

Alibaba entitles their O2O services mainly through the third-party payment application with different add-in features, such as Taobao.com, Koubei (rating application), Tmall, Didichuxing (Chinese transportation network) etc. (Alipay, 2016). The O2O service domain has expanded not only as the third-party payment tool only. By adding more features, they are able to expand their customers rang to satisfy more needs or wishes. The Didichuxing could be a good example to connect taxi payment via Alipay. As for Alibaba, they could retain more detailed information on each individual behavior on purchase ratio, buying power analysis and finally to improve their services. The section below will continue on technology domain

4.2.1.2 Technology domain

The technology domain emphasizes on the inventions that enables the customer approaching more effectively. The Internet and smart phone have incrementally changed our life by adding more opportunities for companies. The technology development supports the service domain by new incremental or radical changes. It also closely connected with organization to facilitate the business operations. Thus, the technology domain could be seem as a connect bridge that connects domains with better productivity. The technical architecture is the core infrastructure to realize the user accessibility and deliver the value.

Alibaba has built up the infrastructure for their e-commerce marketplaces. However, the mobile turnover spotted doubled in all their marketplaces thanks to the mobile architecture development (Zhuang, 2015). In order to protect the massive transactions for both buyers and sellers, the Alibaba Security Response Center (ASRC) was established to solve any suspected security vulnerabilities (Alibaba, 2016). Moreover, Alibaba enforced the ID authentication for sellers to guarantee buyers' benefit (Alibaba, 2015). Alibaba developed their mobile architecture towards a more C/S style architecture. Alibaba summarized four essential points of mobile architecture ecosystem design concepts. Firstly, the mobile architecture requires design isolation in order to maximize the server concurrency during the development and data package. Secondly, the operation isolation is also necessary in order to improve the accountability of ports. Thirdly, the mobile architecture would enable stochastic monitoring and organizational management capabilities such as HTML5 engine. Lastly, the compatibility would be a large benefit to lower down the issues during the update process (Zhuang, 2015). Overall, these design concepts are meant for a more effective technological environment to support the growing market demand.

Bouwman (2008) has proposed five critical design issues for the technology domain. Based on the current design concepts, their security issue is taken care of by the Alibaba security center to protect the communication and privacy. Alibaba has made large investments to obtain a better infrastructure while dynamic system to improve the performance. The mobile platform design is meant to fulfill the user's need of real time browse and transaction placement. Since Alibaba has enabled both mobile and PC platform services, it requires more flexible system in order to integrate the entire environment. Besides, the more adding features also need to be synchronized on different devices. Due to large user base, it would be better to have an open system to meet different buying preferences. Even though the target buyers for Alibaba marketplaces are mostly younger generation, the 40s and 50s are also a big user group that cannot be ignored. Therefore, the open system could involve more users in terms of large user group. Lastly, the user profile management needs both user involvement and automatic generation. The user involvement could have a better understanding on users' needs and wishes. But it requires large effort on digging their buying patterns and conducting complex buying behavior analysis. The automatic generation would save the time in relatively standardized services such as re-order and online Q&A. The Table 8 summarized the Alibaba's critical design issue in technology domain.

Table 8 Alibaba's critical design issues in technology domain

Critical design issue	Description	Balancing requirement
Security	Alibaba Security Response Center (ASRC) ID authentication	Privacy protection
Quality of service	System improvement	Quality
System integration	Mobile, PC, more platform	Flexibility
Accessibility for customer	Large user base with different preferences	Open system
Management of user profiles	Customer buying behavior analysis	User involvement & automatic generation

The O2O platform is all about the technology architecture and management. The online promotions direct to offline experiences must via the technical support. However, the system improvement and integration via different devices are still in need of improvement. The O2O business dynamic mostly realize by the smart phone. However, the PC platform is relatively

week than the mobile platform. There is still opportunity to penetrate the business to other marketplaces. The user profiles are harder to manage in O2O business dynamics since the target customers are directed by the third party platform. The actual physical stores could have more obstacles to analysis their behavior.

4.2.1.3 Organization domain

The organization domain indicates the structure of the value network, which could provide the services offering (Bouwman;Faber;Haaker;& De Reuver, 2008). The organization domain is closely connected to technology domain and finance domain.

The Table 9 indicates the four critical design issues for Alibaba's organization domain. Alibaba was firstly founded by 18 people led by Jack Ma in 1999 and 7 of them are still the current partners work as chief officers (Alibaba, 2016). Alibaba have few virtual products while a more service oriented company. Alibaba has initiated business relationships with various corporations in different fields, such as health care, entertainment, medication etc. (Lin, 2015). Additionally, Alibaba has acquired stock internationally such as the shared car service application, Lyft in 2014 (Bischoff, 2014) and Korean Entertainment Company: S.M Entertainment in 2016 (Dong, 2016). The partner selection towards more diversified area, not just the online platform related. Due to all these evidence of partnership, Alibaba regards the value network is more open which aims to build up a more diversified network. The network governance is essential in taking control of the whole organizational structure and future strategic decisions. Therefore, it should have a dominant actor to set up the strategic vision in value network selection and management. The dominant actor would have to balance between the individual interests and the network interests. Alibaba rejuvenates their partnership dynamics by admit new partners each year. Alibaba embodies a vision of large group of management partners, but still under the partnership committee control in consistence. The partnership committee must consist of at least five partners and is currently comprised of Jack Ma, Joe Tsai, Jonathan Lu, Lucy Peng and Ming Zeng (Alibaba, 2016). Along with more partners, the network becomes more complex and raises conflicts in management issues. First of all, Alibaba would carefully evaluate the upcoming partners with the strategic visions on critical resources and capabilities. Secondly, the new coming partners would have held the regular business meetings to lay down the common goal. Eventually, all of these partners maintain a collaborative and coherent culture with Alibaba Group.

Table 9 Alibaba's critical design issue in organization domain

Critical design issue	Description	Balancing requirement
Partner selection	Business cooperation Merge and acquisitions towards a diversified value network	Quality of service and strategic interest
Network openness	Diversification strategic value network	Openness and customer reach
Network governance	Original partnership committee in control power	Entry, compliance and exit conditions: individual & network interest
Network complexity	Strategic selection of partners Foster a collaborative culture	Need of access to critical resources and capabilities

While considering the O2O business dynamics in the organization, the O2O business is a hot trend that adds more business opportunities. Aliyun, as the cloud computing services, provide data analysis for the offline companies. The Alipay served as the financial product to support their main business. Both Aliyun and Alipay enhanced the business performance by broader the value networks resulting excellence, innovation and sustainability. The partner selection usually from the existing partners in Alibaba Group, such as Koubei, AutoNavi etc. The degree of network openness could be higher since they are open to all the merchants to enjoy the services. The Alibaba Group still has some limitations on selection criteria. But, the O2O business dynamics would have better performance by adding more merchants. Nevertheless, the network governance is also essential in quality control and management issue. The dominant actor in control would be the platform provider, here as the Aliyun or Alipay, in order to set up the regulations. Even though allowing merchants' entry adds value to the network, the O2O also needs to assess the further resources investments.

4.2.1.4 Finance domain

The finance domain describes how the organization generates revenue through the value network and the division of risks, investments and profits. There are four main issues in the finance domain: costs, revenue, risks and investment resources.

In year 2015, the total revenue of Alibaba Group is around 76.2 billion RMB of which 18.75 are from mobile revenue (Alibaba, 2016). The revenue is generated mostly from their C2C,

B2C and group buying platforms. The mobile penetration rate was up to 67 percent in year 2015. The revenue mainly from two parts: the transaction commission from the sellers and advertisement (Fenghuang, 2014). Unlike other e-commerce player, Alibaba generates revenue most from the advertisement: brand advertising and banners. The brand advertising indicates that the direct advertisement for certain brand on the front page or notifications. The banners are pop-up windows, narrow advertisement, buttons, short videos etc. In addition, the financial products published by Ant Financial Service Group and cloud computing start to gain more attention. On the other side, the costs are mostly from operating costs, product development cost and equity incentives (Alibaba, 2015). As an e-commerce platform provider, it does not have much tangible facilitates and the cost mostly are for operating costs. Despite the fact of booming business, yet the product counterfeits issue remains a fatal problem for them. The business is highly affiliated as lose control power ecosystem. The diversification of recent investments in entertainment filed raises confusion for their investors (Riley, 2014). These risks hinder both the local investors and international investors for their future performance. Alibaba got financial support not only from the local investors but the IPO action in 2014 shows that the global ambition of Alibaba empire.

The Table 10 suggested the Alibaba's critical design issue in finance domain. Even though Alibaba obtain large user base, the sellers are the actual target customers for them. Therefore, the pricing strategy should focus on the sellers' benefits while ensure the buyers margin in cost incentives. Alibaba has entitled an urbanized value network for the end buyers. To become an international player, the penetration pricing strategy would add more profits for both the sellers and platform provider in terms of increasing sales and market share. The discount pricing strategy is another way to retaining loyal customer in the intensive platform price war.

The investment division is a complicated issue to balance the each partner's profitability and risks. So does the contribution measurement for each partner. The investment usually considers the cost benefit ratio. Thus, the investment division could use the cost as the indicator to allocate the profitability. For instance, Alibaba made an investment in Lyft in US. The benefits bring along could allocate back to the investor partner with some fraction to Alibaba Group. In addition, the Alibaba Group also bears risk of this investment. The tangible contribution could use return on investment (ROI) as one financial indicator to allocate the benefits.

The cost-benefit valuation on level of network would add strength to Alibaba as a rapid growing company. Alibaba is still exploring more opportunities to expand their business. The value network still the priority as to stronger the network effect. One possible method to measure is the critical resource accessibility. For instance, the technical support would have bigger effect than back-end operations. The network level priority does not mean to neglect the individual benefits. Alibaba could distribute the equity incentives to partners to satisfy the partners' profitability.

Table 10 Alibaba's critical design issue in finance domain

Critical design issue	Description	Balancing requirement
Pricing	Penetration pricing strategy & Discount	Realize market share
Division of investments	Based on the cost of investment	Match individual partners' profitability and risk
Valuation of contributions and benefits	Concentrate on tangible benefits	Operational financial interest (ROI)
Division of costs and revenues	Benefit based on critical & resources accessibility	Cost-benefit valuation on level of network & equity incentives

The O2O business dynamics utilized even higher degree of service level. The penetration and discount pricing strategy would serve better in competing market share. The Aliyun and Alipay platforms are the new services offerings on analysis and financial fields. The cost level is higher due to more investment on product development, promotions and platform development. Thus, the profit margin level might not be an appropriate indicator on performance measurement. The managers could stimulate the contribution risks analysis on investment under the business strategic visions. The ROI indicator might stay lower than the Group number due to the unrealized return on investment. Therefore, the regular forecast report on contribution can served as the business review to allocate the costs and revenue.

4.2.2 Alipay SPA matrix analysis

The SPA model analysis the business efficiency of different service type and channel type combinations and try to investigate new solutions within industry or cross industry. The service types have been categorized based on the transaction frequency, uncertainty,

customization degree, information complexity and resources type used. The channel process indicates the how to proceed the product or services towards the end users (Tinnilä & Vepsäläinen, 1995).

Nowadays, Alibaba Group has expanded their businesses only on B2C and C2C platform services into a more diversified ecosystem. With the Aliyun, Alipay and other merge and acquisitions, Alibaba Group added more value in their service offering. As the early research categorized the O2O modes, the Alibaba Group would be the online to offline to online mode. The online marketplaces, such as the Alipay, have first founded that enable the online trading transactions. The online services offerings direct the users to realize the offline enjoyment. The users receive would have redirect back to online platform based on their offline experience feedback. Thus, it has completed a closed loop that could re-generalize the activities. Although O2O is not the main stream for Alibaba Group, the future value adding makes the strategic move on O2O expansion. Alibaba Group broadens their mobile life business strategy on various filed. In 2011, Alibaba has acquired the Juhuasuan (Group buying), Laiwang (social networking platform) and launched Taobao travel (travel service) to satisfy the user interests and needs. The Alipay developed the voice recognition and face recognition payment methods to further enhance the personal account security issue (Sun, 2014).

The Alipay is a third party payment platform, which enables timely transactions by scanning the QR code or money transfer between accounts. The Appendix A presents the detailed features of Alipay (Alipay, 2016). The main advantage of Alipay is the convenience of payment. Considering the daily grocery shopping, the Chinese citizens now can only use their smart phone and leave their actual wallet home. The uniquely generated QR code is scanned to make the purchase. The build-in features such as Didichuxing allows the users to pay the taxi through Alipay as well. Until 2012, Alipay has obtained 700 billion registered accounts with 2.78 billion transaction volume (Statista, 2013). This massive transaction volume and user base illustrate that the service type is massive transactions. The transactions remain relatively simple and standardized. Moreover, Alibaba has cooperated with InTime Retail to realize more offline service offerings. The InTime Retail operates shopping malls that allow Tmall accessibility on their inventory and the items has QR code tag to be scanned (Chen Y. , 2014). The transaction payments mostly express as QR code scanning and password protected payments. As a third party payment service, it does not need much flexibility or

customized design or delivery. The goal of delivery process is time saving with minimum intermediaries. To simplify the analysis, the time spent on channel delivery and degree of complexity can also present a better understanding on Alipay’s service process. As an online payment service, the service delivery depends on the Internet and platform infrastructure. The nature of online payment is time saving and cost effectively. There is no such actual distribution channel. All the actions are behind the information technology support. The service nature remains relatively standardized like the money withdraw even though they have added more features within the Alipay. The final step is to make the purchase no matter what service you placed. Thus, we could draw conclude that Alipay business process belongs to fast routine process.

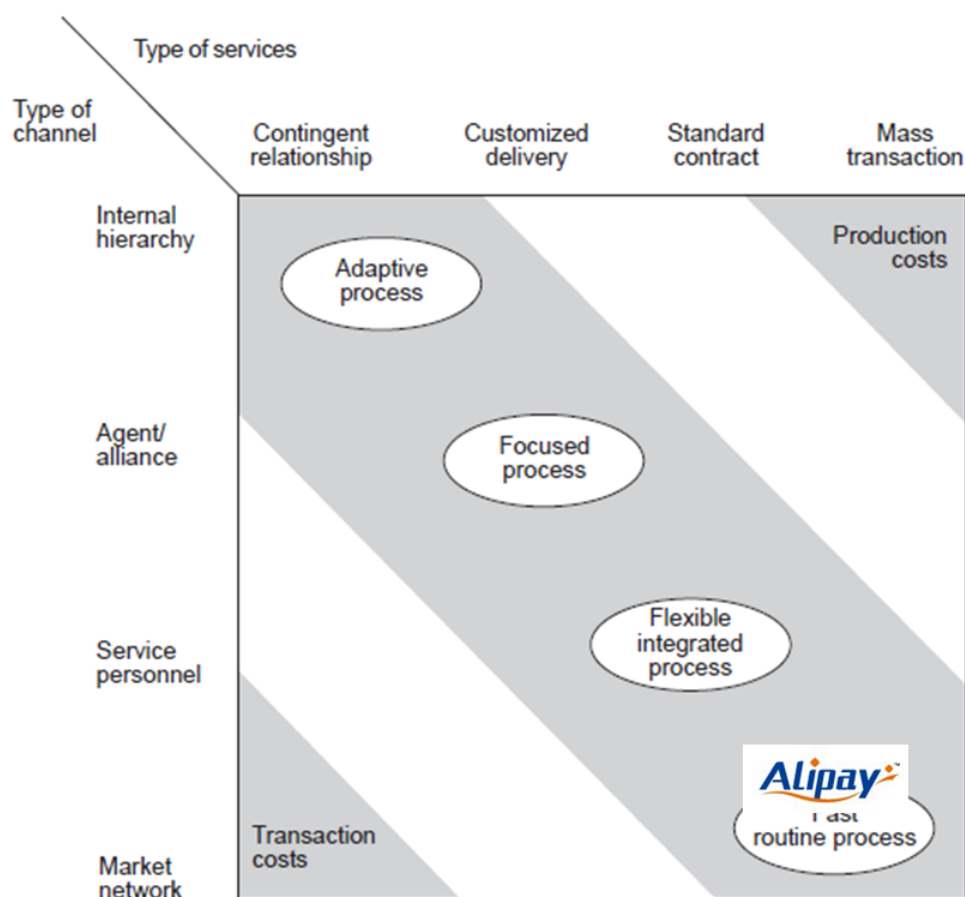


Figure 16 SPA matrix analysis for Alipay

The O2O business dynamics remain more simplistic to attract more users to enlarge the mass transaction effect. The O2O business dynamics require large quantity to survive in term of service offerings. The business pattern is a compound of “electronic market + to shop” mostly seen in entertainment, restaurants, online shopping, travel and social network fields

(Xu & Zhang, 2015). The objective of O2O is to double the return on their services through online platform network. The online platform for pre-existing services is merely a distribution channel to promote their already have services or to compound different services. Hence, the service provided online usually couldn't have high degree of customization to ensure massive transactions. However, Alipay is not just a common online payment method as online banking application. The Chinese banking companies have also developed their own mobile payment application. But it is only provide simplify services such as money transfer, credit card management, limited financial product selection from one bank. On the contrast, Alipay has more value adding features in one mobile application. The Appendix A illustrates the different features. For instance, Alipay allows users to add different bank debit and credit accounts to manage their account. It also enables cinema tickets ordering, taxi reservation service, monthly spending report and of course direct to Alibaba online shopping services. Hence, Alipay is definitely not just a routine service. It has more value adding than pure banking applications.

4.2.3 Alibaba and Alipay as multi-side platforms

The multi-side platform bounds different sides together through products and services. In Chapter 2.4, the characteristics of multi-sided network have been explained. Alibaba Group is definitely a multi-sided platform: it involves the end users, merchants, cooperate logistics companies, platform provider etc. The buyers and sellers are the most basic players in the multi-sided platform. First of all, the platform initialized the possibility to exchange value between the buyers and sellers. The buyers are the end users who receive service and product through the platform services. The sellers could use the platform to sell their products. The logistics company is the deliver channel to realize the transactions. The other possible stakeholders could be the social media network cooperation and other companies in advertising and consulting. As mentioned above, the sellers are the actual target customers for Alibaba Group. At the initial stage, Alibaba has successfully attracted enormous buyers into their platform. Nowadays, the sellers are their target customers to explore more choices in their platform. Thus, the pricing strategy should be designed for the sellers. The penetration pricing strategy and discount strategy also can be applied as well. One of the most successful discount strategy events is the “11.11 e-commerce holiday”. Alibaba started this large sales event from 2009 regularly on the Nov 11th. All the merchants implement

discount on this specific day and the total sells reached 14.3 billion dollar in 2015 for one day (Rao, 2015).

Due the large user base, the network effect grows stronger as a snowball with more involved users. As a multi-sided platform, it has both same-side network effect and cross-side network effect. The same-side network effect occurs within the group. A negative example of same-side network effect is competition between the sellers in Alibaba's marketplaces. The cross-side network effect could increase the number of participants in the other side. A positive cross-side network effect for Alibaba is user-to-user interactions in Alipay. The Alipay allows the friend money transfer interactions with its build-in chatting features. The split bill can be easily realized through Alipay during the payment. This also encourages the new user to download this application in order to connect their friends online. As for the O2O business dynamics, the same-side network effect seems not very competitive than C2C or B2C due to the operational service mode. However, the quality or ratings for online services could largely affect the next time purchase. The cross-side effect is enhanced because of the increasing user base introduced by friends or social network.

Furthermore, an investigation on subsidy side in the multi-sided platform is required for user sensitivity. Even though the sellers are the target customers for the platform, the buyers are more sensitive on price. The buyers are less willing to online services if there is membership fee or transaction fee for every service placement. Without the buyers, the platform would not attract any seller and it will fail eventually. Therefore, the buyers are the subsidized side. However, Alibaba Group intends minimize the costs for sellers in their marketplaces. According to Alibaba Group (2016), open an online store is completed free in Taobao. The sellers only need to pay 1000 Yuan (expect Phones) security deposit to Taobao in order to publish their products in their store. The Appendix B stated the detailed information for selling item in their store. The sellers sell multi-item in their store only pay the security deposit once. Compare to the revenue, the security deposit is rather small amount (Taobao, 2016). The cost of operating an online store remains relatively low. The detailed annual security deposit for Tmall stores can be found in Appendix C (Tmall, 2016). As for Alipay, the service for payment on scanning or transfer to another Alipay account is completely free. The Taobao sellers will pay 0.5 percent service fee per transaction above 10,000 yuan (Alipay, 2016). The buyers receive values from sellers through the products and services. Thus, the sellers provide quality services to offline buyers. According to Eisenmann (2006),

the charged side should be the supply quality. The sellers amortize their cost from better quality service providing through attract more buyers. Charging sellers will guarantee customer satisfaction and go back to enjoy the online service again.

Alibaba as the pioneer Chinese e-commerce player shows the market dominator's power in terms of winning large market share, user base and high reputation. Alibaba has obtained strong market network effect as winner-take-all for B2C and C2C marketplaces. However, the strong network effect leads to the multi-homing cost issue. The multi-homing costs are high for the platform provider side. For those already existing platform, the platform maintenance, operations and improvements. For the new comers, the breakthrough innovation and platform inspirations will costs largely to kick off the new platform. The O2O market share is hard to evaluate since the rapid growing service platforms. The market potential is unknown from both the demand and supply side. The potential customer demand is high, but the customer acceptance still low due to the market regulation and security issue. The supply side does not prepare well enough in platform innovations, technology support etc. Despite all these difficulties, the booming O2O business dynamics inherit the advantages of massive information with across industry boundaries and geographic boundaries via Internet.

Moreover, Alibaba also has the envelopment threat as the competitive e-commerce market. As B2C and C2C marketplaces platform operator, the other competitors like JD.com have overlapping user bases. According to Eisenmann (2007), the bundling, reciprocal complements and substitutes integration strategy is suggested in competitive market. Alibaba has adopted the bundling strategy in their C2C platform that most of the sellers provide packages. For the O2O business dynamics, the overlapping user base issue still remains. Alipay has involved travel platform and taxi ordering platform features to direct user fast searching. These bundling services would increase Alipay's profit for unrelated services. For the platform efficiency, Alipay also include online lottery and donation features. By bundling these two weak substitutes, the platform itself could improve their profit margin and customer efficiency. This integration of various features will improve the platform advantage than other separate platforms. Although Alipay has strong advantage in online payment market, the market environment is more competitive rather than monopolistic. As a result, Alipay can still improve their product or services by different bundling or service integration.

The O2O is a new and hot business dynamics in Chinese market. It has brought both risks and opportunities for the market. There are several risks for the O2O business. Firstly, the O2O still requires market regulations and reinforces the security issue. The market regulations are sick competition, pricing issue, fraud etc. The online payment plays a crucial role in completing the online to offline loop. Therefore, the security issue on transaction payment and user information protection must be settled in order to improve the user acceptance rate. The offline control problem is also a challenge for the platform provider. The offline control for both buyers and sellers is an essential problem. For instance, the inconsistency between description and actual product always leads to bad user experiences, even problems. The sellers also encounter the issue of protect their rights. The Airbnb has cases of inappropriate behaved guests or landlord such as destroy the facilities, sexual harassment and stealing. These offline service quality risks are also fatal for the online service provider and the platform provider.

The O2O business dynamics open up new opportunities. As for the whole society, the O2O business dynamics blur the boundaries for cross-industry collaborations. The businesses is not only limited to traditional PC side. The users reach the platform from PC side and mobile portal. O2O stimulates the consumption by effective public penetration. The mobile economics can push the business further with more profit margins. Additionally, starting the services from the online platform would reduce the limitations on business constraints. The restaurant preference is a good example for location dependency. The better location is more costly for the shop owner. However, the online platform can promote efficiently based on the customer reviews. Thus, the restaurant location can be relatively less essential and save the costs. Furthermore, the O2O enables the platform provider to specify the localization services. The massive user information could help to design the highly localized services.

5 Conclusions

This research study focuses on the booming online to offline business dynamics in Chinese market. The O2O is one type of e-commerce expressions, which has is different than what the B2C and C2C. The O2O business dynamics is more service-oriented and start from the online serving. It is one type of marketing strategic operational approaches to reach the target group more effectively. However, this specific business dynamics lack of detailed analysis on the business model and service process. Thus, this study focuses on revealing the O2O and Chinese e-commerce market with a case study. This study aims to provide a holistic overview of Chinese e-commerce industry and detailed analysis on business model canvas, service process analysis and network effect. Under each section, the case study will give a more empirical and concrete view to present the condition of Chinese market.

After synergize different literature researches, the theoretical framework have been established for further empirical studies. This research study evaluate the O2O business from three perspectives: STOF business model, SPA matrix evaluation and Multi-sided network. By collecting numeric indicating figures and qualitative textual information, the research findings are developed along with these empirical data support. The empirical cases, Alibaba and Alipay, are chosen to evaluate the business performances

This study has three specific findings from STOF business model, SPA matrix analysis and Multi-side network. The STOF business model stands for the service, technology, operation and finance domain. It illustrates the components for each domain and the critical design issues (CDIs) to avoid failure. Alibaba's main services are their marketplaces. Thus, the service is to deliver the value service or product to the end customer via the platform promotion. The core of the business is to ensure the customer to receive value product or services. The CDIs for service domain analysis shows that Alibaba focuses on increase the brand power with better performances for their stakeholders. The technology domain provides the technical support to the services. As for Alibaba Group, they should aim at providing quality and flexible services for both sellers and buyers under secure environment. The organization deals with the internal and external relationships for company partners. Alibaba Group has brought more partners to broaden the platform product and service range. As a result, their strategy in partner selection is relative open but the critical resources and capabilities are prioritized in selection processes. Lastly, the finance domain evaluates the internal contribution and costs divisions. Alibaba Group's strategy still concentrates on

gaining market share and the network incentives place above the individual incentives. It is recommended to apply some financial indicators such as return on investment to measure the contribution.

The service process analysis matrix develops a framework to evaluate the business performance for different service and channel type combinations. Alipay as the third party payment application allows mass transactions just like the other online payment. In addition, the Alipay's channel is a market value network without any intermediaries in between. However, it has more value adding features rather than just money payment or transfer. It enables great user experience in terms of services.

The multi-sided platform indicates the platform consists of different sides. As for Alibaba and Alipay, they are platform users, platform providers, merchants and social media partners. Alipay as the third party online payment application has already attracted large subscriber base. As a result, the network effect is strong to maintain the current users and attract new users by social influence. The strong network effect could dramatically increase the profit for the sellers because of channel expansion. The cross-side network effect is essential for Alipay to generate user engagement. However, Alibaba is already a leading online payment company in Chinese market. Their actual customers are the cooperative merchants. In order to balance the benefits for both users and merchants, Alibaba should still subsidize the users with free entry and limited the transaction service fee for the merchants. Lastly, there are opportunities for platform cooperative due to the overlapping user base service. The feature integration and bundling service packages can increase Alipay's market share.

Nevertheless, this research study also has some limitations. Firstly, the O2O business dynamics is such a broad concept. The STOF business model provides an overview for the whole business dynamics. The further investigation could be conducted for each domain. Additionally, this research study does not reveal much about the logistic channel interplays, cross selling, showroom effect etc. The growing online activities cannot be realized if there is no strong logistic system to support. The Chinese logistic channel is facing serious challenge on building effective and productive distribution system. Lastly, the company interview could improve better understanding the business performance of the case company. It would bring more insights for deep analysis in their network effect.

This thesis research focused on producing the theoretical framework to analysis the O2O business dynamics. There was not much previous literatures or detailed analysis on this specific marketing strategic operation approach. Thus, this research study aims to provide a broad overview of the whole e-commerce condition with one empirical case study. However, this business dynamics involves logistic channel, service process, operational mode, market innovations and technological development. There are still potential researches in developing each area. The representative case studies only illustrate three main perspectives for online payment. The further study could address on the case company comparisons both local and global competitors.

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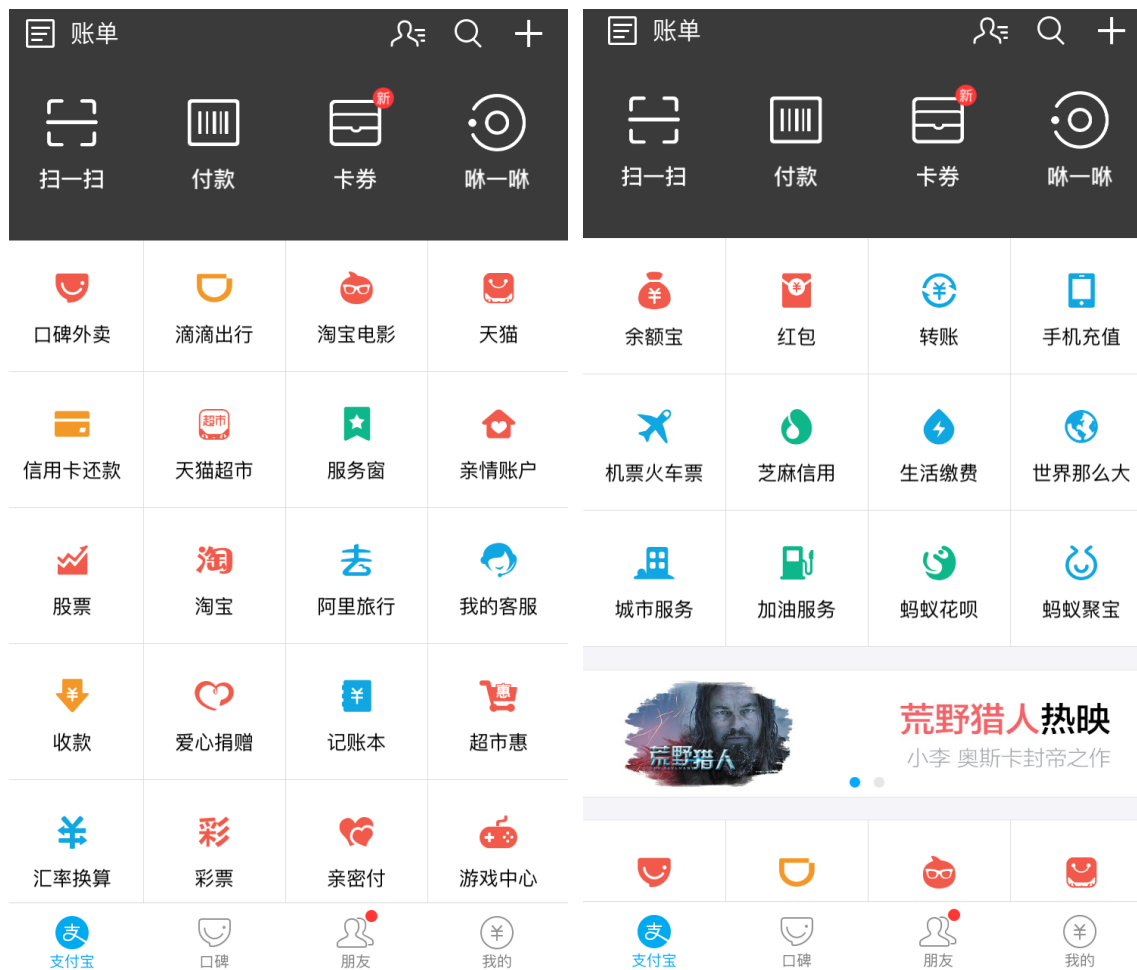
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Appendix A: Alipay interfaces and service features



The main services are:

Money transfer, Scan for payment and Coupons.

The value added features are:

Food takeout, Taxi, Taobao Movie, Tmall, Credit card management, Tmall fresh grocery, Ali Travel, Lottery, Donation, Currency exchange, Gasoline, City service, Travel ticket (airplane and trains)...

Appendix B: Taobao security deposit for new sellers

Item	Security deposit (RMB)
Travel package/Visa service	1 000
Attraction tickets/Live performance/Theme park	1 000
Discount hotels/Feature hostels/Apartments	1 000
Cellphone number/Cellphone packages	1 000
Internet service/Software	1 000
Gaming equipment/Game currency/Game account	1 000
Phones	10 000
Desktop/Server	1 000
Computer hardware/Monitors/Computer related items	1 000
MP3/MP4/iPod/Voice recorder	1 000
Personal Care/Health care	1 000
Office equipment/Office supplies	1 000
Kitchen Appliances	1 000
Large household appliances	1 000
Pet - Dog related	1 000
Pet - Cat related	1 000
Memory stick	1 000
Network equipment/Network-related	1 000
Music/Video/Celebrity items	1 000
Tablets/MID	1 000
Books/Magazine/Newspaper	1 000
Domestic elite products/Digital	1 000

Audio-visual appliances	1 000
E-dictionary/E-books	1 000
Electrical appliances	1 000
Games/Video games	1 000
Cosmetics/Perfume/Beauty tools	1 000
Laptop	1 000
Skin care product/Beauty body/Essential oil	1 000
Hair care/Wig	1 000
3C digital accessories	1 000
Digital Cameras/SLR camera/Video camera	1 000
Tencent QQ Zone	1 000
Network game cards	1 000
Mobile operator recharge packages	1 000
Toy/Model/Animation	1 000
Kid clothes/Kid shoes	1 000
Snacks/Nuts	1 000
Renovation materials	1 000
Movies/Sport events	1 000
Localization of life services	1 000
Milk powder/Baby food supplement/Nutritions	1 000
New car/Second-hand car	1 000
Store coupons/Web store membership points	1 000
Leisure and entertainment	1 000

Appendix C: Tmall annual security deposit for new seller

Trademark type	Tmall merchant type	Annual security deposit (RMB)
TM	Brand flagship store	100 000
TM	Exclusive stores	100 000
R	Brand flagship store	50 000
R	Exclusive stores	50 000
TM	Franchise store	15 000
R	Franchise store	100 000

Exception for Tmall stores	Annual security deposit (RMB)
Department store (multi-brands store)	150 000
Unauthorized trademark exclusive stores in Mainland China (Such as imported fruits and goods)	150 000
Electronic invoice	10 000
Books and Videos flagship store	50 000
Books and Videos exclusive store	50 000
Books and Videos franchise store	100 000
Medication	300 000
Online gaming/Travel/Phone billing	10 000
New car/Second-hand car	100 000