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# ANALYSIS OF CHINESE LBSN BUSINESS MODELS BASED ON FOUR-BOX APPROACH

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# Analysis of Chinese LBSN Business Models Based on Four-Box Approach

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**A thesis submitted in partial fulfillment of the**

**requirements for the degree of Master of Philosophy**

**March 2015**

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Wan Qifan

## Abstract

Location Based Services (LBSs) have gained great attention, both in terms of research and business development, due to their enormous potentials of future development. LBSs have been widely applied to emergency responses; vehicle and transportation monitoring; navigation assistance; tourism guidance and etc. Especially, the emergence and enhanced functions of smart phones and fast expansion of wireless network connections have enormously boosted the development of mobile LBSs, supplying the end users with more stable and comprehensive services. Location based social networks (LBSNs have had significant impacts on the LBSs market. The business models of LBSs, especially those of the LBSNs have seldom been studied. In addition, there are only limited profitable business models for LBSNS. The LBSNs market is therefore monotonous with low market entry barriers although with active user rates. Aiming at better understanding the business models of LBSNs, this study is geared towards investigating business models of the Chinese LBSNs market from the service providers' perspective. Case studies of some LBSNs companies are carried out to examine the relationships between their performances and their business models. Successful business models have been developed for the Chinese LBSNs market although further development of such models are still necessary to resolve some of the problems.



Key Words： Location Based Services, Location-Based Social Networks，Business Model

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## *1.0 Introduction*

### *1.1 LBS and LBSNs*

Location-based services (LBSs) are a general class of computer-program-level services that use location data to control features (wiki.com). With the popularity of smart phones and the development of wireless networks, LBSs have obtained wide usage from emergency rescue, vehicle-tracking, and navigation to entertainment.

According to Syed et al. (2011), Richard et al. (2011) and Liu et al. (2011), there are four main elements, which make up a LBS system: the positioning system, the operating system, the network system, and wireless devices. The positioning system is the basic element in LBS, which locates the geographic coordinates of both the end users and the target locations, i.e. a Global Navigation Satellite System (GNSS): GPS (USA), GLONASS (Russia), Galileo (Europe), Compass (China), and QZSS (Japan), is the main positioning method of LBS applications. Among these, GPS, in most instances, could afford a worldwide accurate positioning service with its self-contained devices, which are equipped into a large majority of LBS applications, and it was initially developed for defence use. The GPS has two types of services. The first is the free-of-charge standard positioning system that is wildly used for the civilian purpose, while the other type is limited to the military field with a higher accuracy.

As for operating systems, Windows, IOS, and androids all play significant parts in the wireless devices. Network system transfers the requirements from the users to the services providers, and then replies to subscribers with the geographic -added information. Base stations and 3G or 4G networks, are two examples among these factors in network system. Wireless devices, which are the terminal equipment, have the closest relationship with the consumers. A great quantity of

units can be classified in this part: smart phones, wireless pads, PDAs, and all the handheld facilities that have connected with those three systems. After receiving the request from the user, the positioning system calculates the accurate position of the subscribers, then sends the spatial information to the application through the help from the networking system. The application integrates the present position, the target location, and the other related information to give the practical data. In the last step the user obtains the required information from the application. The emergence of LBSs can be traced back to the 1970s; it was initially applied in the military affairs of the US Department of Defence. However, it was not until the early 1990s that a federal permission named E911 was put into practice in the USA. Since then, the development and deployment of LBSs began to achieve considerable improvement. It was not until 2001 that the first LBSs came to the market. They both provided the end users with tracking service, such as emergency call location, friend-finder, etc. (wiki.com). In addition, the Ericsson Mobile Positioning System (MPS) supplies the positioning technology of these services. At present, LBSs provide the end users with diverse services, including tracking, navigation, games, social networks, marketing services, etc., which cover almost all of the aspects of our lives. Meanwhile, LBSs have attracted numerous researchers' attention in the past two decades. In the early stage, Zagami et al. (1998) started the research on LBS by developing the initial LBS system for the elder Alzheimer patients in 1998.

China is an active participant in the global LBS market, synchronously developing LBSs with the overseas pioneers in 2001. As you could find out from Table 1, we classify Chinese LBS market into three stages in accordance with the key features. In the first stage, industries' LBSs were the main services in the market. For example, China Mobile launched the Che Wu Tong, which provided vehicle location-tracking and dispatching services for industry and group

customers. The mobile network operators dominated the whole LBS market, together with end users, service providers, mobile manufacturers, and content providers, making up the LBSs' framework. Under this business model, most of the mobile network operators are also the service providers. Services and wireless data flow fees are the main capital income of the whole business process. Whether a large number of clients would use the services or not became the key factor of the business model. Limited service accuracy, a lagging of the customers' requirements feedback, simplex services, a charge mode, and coordination problems resulted in the slow development of China's LBSs market at this stage.

In the second stage, the location-based check-in services, which combined social communication and geographic-related services at the same time, were the main characteristics. This was also the beginning when location based social networks applications were first introduced into our daily lives. Jiepang, which was known as the local edition of Foursquare---the most successful LBSNs application in the world, was the representative example, which provides the subscriber with free convenient and discount services after they had checked in within the selected areas. Check in in location based social networks means users of these location based social networks report their geographic locations and share their locations with others. In addition to Jiepang, Kai Kai, Bafang and Baidu Shenbian were also the represented examples in this period. However, most of the LBSNs providers stopped services or change the orientations of their services due to slow increase of subscribers within this period. In this stage, service providers and content providers became the main players in the LBSs' market, while the positions of mobile network operators have been declining gradually. In addition to value-added LBSs that are provided by the network operators, mapping LBS providers, such as Baidu Map and Amap, give detailed positioning and navigation service for pedestrian users, vehicles, and

public transportation modes. Opening the API platform and uploading pictures of the points in the map both increase the interactivities and the users' agglutinant at the same time. With that, individual end users have been the main consumption principal part of the market since then, which has led to the new developing trend and characteristics of the third stage.

From 2011 to present, which is the third stage, in this stage, some innovations of business models have been applied to the Chinese LBSNs market. Paid services ,which are offered by the service providers have launched and received certain acceptances by the subscribers . Online to Offline (O2O) services which means the combination of online marketing , online purchasing , offline operation and consumption, has came to the LBSNs market after the analysis of subdivision demands of users, i.e. as a method of LBSNs precision marketing, which help business users to directly promote their services and products to the selected groups of users, which is the main development trend of future LBSNs development. In the meanwhile, service providers have paid lot attentions to the fulfilment of consumers' needs from different aspects, personalized services are designed and now available in the LBSNs market.

**Table 1.1: China LBS Development Process**

| | Stage 1 | Stage 2 | Stage 3 |
|---|---|---|---|
| Period | 2001-2009 | 2009-2011 | 2011- |
| Key Features | Industries LBS , Telecom Dominated | Individual LBS , Service Providers Dominated | Business Model Exploration |
| Main Service Contents | Vehicle Tracking and dispatching | Check in, Location based social networks | O2O, Location based social networks, Paid Services |
| Major Participants | China Unicom China Mobile | Jiepang , Bafang, Qieke, Beiduo | MOMO , WeChat |

According to the report from Enodesk in 2014, the market size of Chinese LBS market has been keeping rising dramatically since 2009.There is no doubt that the figure would be continuous increased in the following years, owing to the popularization of smart phones and improvement of wireless services.

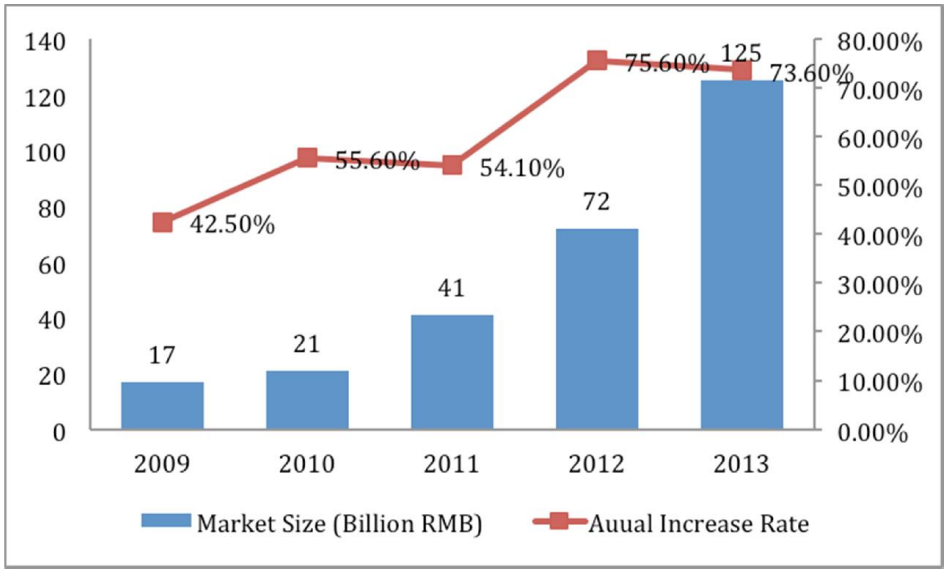


**Figure 1.1: Market Size of Chinese LBS Market 2009-13** (Enodesk, 2014)

Li et al. (2009) pointed out that Location-based Social Networks (LBSNs) allowed users to find where their friends were, to search the location-tagged areas within their social graph, and to meet people nearby. The business of LBSNs is omnipresent, with a growing number of active subscribers. Users range from individuals who use check-in services like Foursquare to the businesses that utilize Foursquare to promote their business in application and to get in touch with the customers directly. LBSNSs are the combination of LBS and social networks, which mimic the real-life social networks of individuals through online platforms. LBSNS is not only allowing people to share information that is location-embedded, but also consists of the connection of users who share the nearby locations. Location-tagged media such as videos, photos, and texts are also shared with the online friends.

After launching the first successful check-in-featured LBSNs application— Foursquare—LBSNs has gained a great popularity from the subscribers. For example, within half a year the number of Foursquare subscribers reached to over 2 million. With the popularization of smart phones and

mobile communication technology, such as 3G and 4G, the development speed of the Chinese LBS market has also emerged as a gratifying development tendency. Figure 1 illustrates the Overall Market Scale of the Chinese LBS market. It shows the continuous development of LBS in China.

### *1.2 LBSNs and Related Studies in China*

Starting from 2010, the appearance of a large number of LBSNs in the Chinese market represented the first year of the era. Kai Kai, Bafang, Check-in, Baidu Shenbian, Jiepang, and Weibo were the major check-in LBSNs service providers in China, once the end users of these applications located their geographic coordinates through check-in function and rate the points of interests(POIs), badges or points would be rewarded within the application interfaces, the end users could make use of these badges or points to exchange for discount coupons or free gifts, which was also a promotion processes to the business users. Meanwhile, the geographic locations of the end users would be shares to the other friends from the connected social network sits when they posted theirs in the LBSNs application. However, within one or two years, the majority of them either changed to other LBSNs or disappeared directly.

Jiepang was the sole company that still existed and obtained a 20% increase in its revenue quarterly since it has established until the end of 2012. Similar to Foursquare, Jiepang began its operation by launching two platforms—Jiepang application and Jiepang website—through which subscribers could find points of interests (POI), communicate with colleagues and friends, check in, obtain discounts, and record their life events. Meanwhile businesses could promote their products, services, activities, etc. The most outstanding achievement of Jiepang was that with less than 5 million subscribers, 10 million RMB incomes had been earned through the co-

branding projects in 2012. Nonetheless, the success was short-lived as the poor performance of the promotion and the increasing number of inactive end users led to its failure. Jiepang closed its website and stopped updating its application in 2014. Meanwhile, MOMO has remained thriving in the Chinese LBSNs market since it launched its first-edition application in 2011. Now MOMO is considered to be the leading LBSNs throughout the stretch of China. MOMO is renowned for flourishing in the Chinese LBSNs market and is now entitled to over 1 billion users. Being different from the first generation of LBS which just providing the end users with emergency rescue service, as the most successful LBSNs service provider in China MOMO provides the end users with location-based integration services along with the LBSs. For example, a gift centre, with which subscribers could give presents to their online friends through the Alibaba online platform, while the address of the receivers would only be seen by Alibaba, which protects privacy. It is definitely a new O2O service that was designed by MOMO. It is certain that with the innovation of the business models of LBSNs there will be a new combination of technologies and services in the future.

Privacy protection, behaviour analysis and precision marketing are the three main research topics of LBSNs. Preservation of privacy is one of key the research issues of LBSNs. Currently, location perturbation and obfuscation are both fields that have been contracted (Shin et al., 2012). The end user's privacy has been preserved through, pseudonomyzation (Niu et al., 2013a) and adding dummies (Zhu et al., 2013). Niu et al. (2013b) proposed privacy preserving pseudo-location updating system (3plus )to achieve k-anonymity , which users were able to get k locations from the disordered users' buffer and then protected their privacy . Nonetheless, in order to expand the cloaked region, the location anonymizer (Chow et al., 2006) is needed in this kind of approach, which persuades the anonymization server to provide the key points of the

performance of this protection. In addition, the quality of the performance is weakened with the enlargement of the cloaked region. Although encountered based solutions (Niu et al., 2013) could be applied in averting the location anonymizer by changing the data into a peer to peer (P2P) mode, the disadvantages are also noticeable. Niu et al. (2014) introduced virtual-circle-based (v-circle) and virtual-grid-based dummy location generation schemes in location for privacy protection, i.e. for the purpose of implementing k-anonymity, side information was used to overcome the negative effects of adversaries, which was developed from adding the dummies method. Wang et al. (2014) designed a new privacy-preserving framework in road networks that focused on location and query for privacy protection. Meanwhile, a policy service (PS) and anonymizing service (AS) were interplayed with each other to assure that the context-dependent framework works properly.

Friendship prediction researches on the possibility of two users becoming friends with each other. Li et al. (2009) remarked that users who have the same interests, share nearby geographical location, or have a mutual friend or friends, would more likely be friends. Luo et al. (2013) used network topology and geographical feature fusion to predict friendship between the end users. The check-in data that was collected from Jiepang and Foursquare, which were two representative LBSN service providers, supported the accuracy of the prediction. The social behaviour analysis of LBSNs end users from the spatial temporal aspect is another research topic. Through Innovation Diffusion Theory and the theory of Uses and Gratifications, Zhang et al. (2014) analyzed the adoption and loyalty of LBSNs end users. The intention and frequency of LBSNs users could be measured and compared under the approach. Feng et al. (2013) investigated the end users' dynamics of check-in behaviour on the basis of the related date from Jiepang. Spatial and temporal dynamics, and individual and population dynamics have been

studied. With the collected data of the interval time and jump size, authorities could be able to establish the right policies in public administrations. Through the analyses of correction between location prediction of LBSNs users and demographics showed that the age and gender have strong relevance in the location predictability. Gao et al. (2012) made use of social and historical ties to predict the future location of the end users and modelled their check-in behaviour based on the power-law distribution and short-term effect of the historical check-in data. Because of the time-sensitive data volume and numerous elements of the check-in data from Weibo, Zhou et al. (2013) proposed the new method of POI enrichment and updating through the collection of the Weibo check-in data.

Lian et al. (2014) drew attention to location promotion or precision marketing, which helps the business to promote and market its goods or services to the selected customer and attract many attentions. Zhu et al. (2014) used a Distance-based and Mobility Model (DMM) concerning the spatial and temporal sparsity of the LBSNs check-in data and successfully obtained the effectiveness of LBSNs in location promotion. According to the check-in data of the LBSNs users, related communities could be categorized. Wang et al. (2014) established a multimode multi-attribute edge-centric clustering framework to promote advertising and promotion effectiveness. In addition, owing to the abundant social attributes within the check-in data, under the thematic map of check-in data Wang et al. (2012) found the positive correlation between the distribution of urban population and the check-in data, which would be applied in the further research of the national socioeconomic situation. Peng et al. (2010) analyzed current weakness and difficulties of industrial LBS and Lin et al. (2014) designed location-based personalized mobile search application. There is rare research which focus on analysing LBSNs from the business perspective, through the combination of this fields, we would narrow the gap of

technology convention  and reform the present commercial LBSNs , further updating the industry to a higher level.

### *1.3 Research Questions*

This study seeks to examine the business models of the Location-Based Social Networks in Chinese Market by focusing on the business models of Weibo Corporation and MOMO Inc., which are the representative examples in the market. In addition, we seek to understand the factors that have affected the sustainability of the companies' businesses by comparing their performance and giving possible suggestions.

This study has three research questions which would be analyzed in the upcoming chapters. They are as follows:

- To classify the present business models of LBSNs service providers' into certain categories.

- To analyze the strengths and weaknesses of the present business models of MOMO Inc. and Weibo Corporation.

- To provide possible suggestions for Chinese service providers of LBSNs to upgrade their services from business model perspective.

The main contribution of the thesis is to raise researchers' attention to the investigation of the relationship between business models and LBSNs service providers' business performances, which has been rarely analyzed in the previous studies but is of significance to the further development and deployment of LBSNs. For the second contribution, based on analysing the

reasons behind opposite business performances of two well-known service providers in the Chinese LBSNs market, certain practical suggestions will be given. Although the thesis concentrates on the business model analysis of Chinese LBSNs service providers, the conclusions are meaningful for service providers in the world LBSNs market.

### *1.4 Thesis Structure*

The study is organized into four chapters:

The first chapter introduces the background information about LBS, LBSNs, and the business model; research questions which specify the purpose and objective of the thesis are also put forward. In the next chapter, Chapter 2, the business models classification has been made and MOMO and Weibo—the two representative service providers—are researched, with emphasis on the financial conditions and the four major boxes of their business model framework. Then the reasons behind the success and failure of these two companies were obtained respectively. The last chapter is conclusion and future works, from which practical and effective solutions to the further developments of the business models will be given.

### *2.0 Business Model' Classification*

Classification is of great importance in understanding the essence of the appeal of the objects. It contains the process of categorizing the objects into different groups in accordance with their resemblance and their own characteristics. Along with the development of the business world and the diverse business features, especially while the analyses of business models in depth and breadth, which has been expanded, the definition of 'the business model' has been changing and updating from time to time. In 1994, Drucker was one of first researchers who gave scientific definition of business models, had defined the concept of the business model as "theory of business". At the initial stage, majority business models has been defined as a framework focused on the interrelationships between the various participators (Timmer, 1998; Mahadevan, 2000;). Weill et al. (2001) indicated the business models to be a description of the role and relationship between the participants who participate in the process of the major flow of product, formation, money, and major benefits, which counteracts the interrelationship between the related parties within the value-creation framework. While, Chesbrough et al. (2002) commented that a business model is a blueprint for the way a business creates and captures value from new services or products. As the study develops in depth, researchers have analysed business models from different aspects, then proposed several corresponding definitions of business models based on their researches. Afuah (2004) defined the business model from the individual enterprise aspect as meaning the activities which create superior customer value and obtain appropriate value for itself. While Morris et al. (2005) discussed the business model from the entrepreneur's viewpoint. Recent years, researchers emphasise their researches on value creation and value transformation between all the participants in the processes. Zott et al. (2011) expanded the definition to the overall value framework, in which it was believed that the business model

concerned content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities from the e-business perspective., Brink et al. (2009) defined business models as "… how a firm creates value, the internal source of the firm's advantage and how the firm will capture value". These definitions of the business model obviously focused differently on their scope and concept. Most of the definitions simply define themselves from the industries' perspectives and pay much attention to the value generated and the value's transformation. However, among these there are also diverse differences in their focuses. Different from the other researchers, Osterwalder et al. (2010) paid less attention to the value framework and emphasized the interactions between the internal parties of the organization, which is known as 'the business model canvas'. Nine key building blocks were listed in the business model framework:

1. Customer Segments, 2. Value propositions, 3. Channels, 4. Customer relationships, 5. Revenues Streams, 6. Key Resources, 7. Key Activities, 8. Key Partnerships, and 9. Cost Structure.

Bouwman et al. (2008) defined the business model as "a blueprint for a service to be delivered, describing the service definition and the intended value for the target group, the sources of revenue, and providing an architecture for the service delivery, including a description of the resources required, and the organizational and financial arrangements between the involved business actors, including a description of their roles and the division of costs and revenues over the business actors". George et al. (2011) defined the business model from the perspective of the organization structure , seeing a business model as the design of organization structure to enact a commercial opportunity. The Four Box business model (Johnson, 2010), which we would use to analyze the business model of Chinese LBSNs service providers, emphasizes the

interrelationship between the four boxes in accordance with goal congruence from four key aspects and the financial facets. Among each box, certain elements are included in them, i.e. through the design of the elements of the four boxes we may obtain a complicated framework for the business model. According to Johnson (2010), “a business model, in essence, is a representation of how a business creates and delivers value, both for customer and company.” As for the company only, if the value of both customer and company could be realized in the long term, we could consider the business models as feasible, i.e. the value of both customers and companies has come to the centre of the definition. Four interrelated boxes make up the framework of that business model: Customer value proposition (CVP), Profit Formula (PF); Key Processes (KP), and Key Resources (KR). Specific definitions for each of the four components are as follows:

1. CVP: An offering that helps customers more effectively, reliably, conveniently, or affordably to solve an important problem at a given price.

2. PF: The economic blueprint that defines how the company will create value for itself and its shareholders. It specifies the assets and fixed cost structure, as well as the margins and velocity required to cover them.

3. KR: The unique people, technology, products facilities, equipment, funding, and brand required to deliver the value proposition to the customer.

4. KP: The means by which a company delivers on the CVP in a sustainable, repeatable, scalable, and manageable way.

The central content of the concept of the business model is how these four interrelated elements could be integrated to create and deliver values between all the parties within the related activities and processes. The Four Boxes business frameworks have some similarities with the Business Model Canvas in content. However, the Four Box business model framework pays more attention to the financial aspects.

It is clear that there is no common acceptable definition of the business model at this stage. In the meantime, it is certain that the business model is a multi-dimensional concept, the definition is closely related to the research fields and industries. Among a large number of definitions, we would choose the definition from Johnson's theory above as the starting point of or research, because of its comprehensiveness. A large number of investigations have emphasized the relationship between the business model and organization performance. Meanwhile, Lambert et al. (2013) have researched the business success and the related business model in order to further deepen the underrating of the business model. Other than the previous researches that focused on concepts and the content of business models, the present studies turn to the analysis of business models from different industries. Sorescu et al. (2011) studied the innovation of the retail business model, which offers the framework for the business model innovation in the industry. Schief (2014) discussed and proposed the software business model, based on the software value chain with 25 elements, which built up the basement for the further empirical studies of the business model characteristics.

Along with the analyses of the definitions of business models from the various aspects, the business models classification researches have also emerged with need. At the initial stage, there was no classification of business models, simply listing different kinds of business models rather than dividing them into related classes in terms of their characteristics. Some, such as Bambury

(1998), summarized 14 different kinds of Internet commerce business models which combine the transactions between business to business (B2B) , business to consumer (B2C) and the combinations of the above two. While Laudon et al. (2003) described 7 kinds of E-commerce business models from B2C aspect: portal, e-tailor, content provider, transaction broker, market creator, service provider, and community. In the meantime, the unsystematic taxonomy of business models led to some uncertainty and confusion about the relevance of business model investigation. Recently, the classification could be seen from the whole business model perspective, e.g. the low-cost business model of Tata Motor, or from one participant of the business model. In addition, one key factor within the whole of the business models also could be categorized into one standard of business model classification. Empirical studies of the business models have been used in order to analyze the specific research topics, e.g. the market and financial matters of the software industry (Markus Schief, 2013). In Table 2, we list some reprehensive business model classifications since 1998 to 2010. According to two criteria： degree of innovation (lower to higher) and functional integration (single to multiple), Timmer (1998) classified the Internet business models into eleven categories. However, there were still some superpositions in this classification. The business models, which related with Internet commerce had been classified by Rappa (2000) into nine groups which covered all the aspects of web business models at that stages. Both classifications which were proposed by Weill et al.(2001) and Afuah et al. (2003) have overlapped with the elements within the business model frameworks in some extent. Johnson (2010) listed nineteen types within its business model analogies, based on paying methods, industry, service and service mode . Johnson (2010) and Osterwalder et al. (2010) both concentrated on the financial aspects of business models.

Therefore, their classification of business mode

ls were both considered the financial aspects as a characteristic.

**Table 2.1: A Selective Overview of Business Model Frameworks and Elements**

| *Author(s)* | *Classification* | *Comments* |
|---|---|---|
| *Timmers (1998)* | Internet business Model<br>•e-shop •Virtual communities<br>•e-procurement •Value chain integrator<br>• e-auction •Information broker<br>• 3rd party marketplace provider •Value chain service<br>• email platforms •Collaboration | Classified by 2 criteria:<br>• Functional Integration<br>•Degree of innovation |
| *Rappa (2000)* | Business Models on the web<br>•Brokerage model •Affiliate Model<br>•Advertising Model •Community Model<br>•Informediary Model •Subscription Model<br>•Merchant Model •Utility Model<br>•Direct Model | |
| *Weill and Vitale (2001)* | Atomic e-business models<br>•Content Provider •Shared Infrastructure<br>•Direct to Consumer •Value net integrator<br>•Full Service Provider •Virtual Community<br>•Intermediary •Whole of Enterprise/Government | Described by 4 elements:<br>•Strategic objectives & value proposition<br>•Sources of revenue<br>•Critical success factors<br>•Core competencies |
| *Afuah and Tucci (2003)* | (Internet) Business models (based on dominant revenue models)<br>•Commission •Referral<br>•Advertising •Subscription<br>•Mark-up • Free-for-service<br>•Production | • Profit site (role in value network)<br>•Revenue Model<br>•Commerce strategy and<br>•Pricing model |

| | | |
|---|---|---|
| *Johnson (2010)* | Business model ontologies<br>•Affinity Club •Negative operation cycle<br>•Brokerage •Pay-as-you-go<br>•Bundling •Razonrs-and-blades<br>•Cell phone •Reverse aunction<br>•Crowdsourcing •Reverse razors-and-blades<br>•Disintermediation •Product-to-service<br>•Fractionalization •Standardization<br>•Freemium •Subscription Club<br>•Leasing •User Community<br>•Low touch | |
| *Osterwalder and Pigneur (2010)* | •Unbunding •Free(Freemium, Bait& Hook)<br>•Long tail •Open<br>•Multi-sided platforms | •Customer Segments • Key Resources<br>•Customer Relationships • Key Activities<br>•Communication, Distribution & Sales Channels • Key Partnerships<br>•Value Propositions • Revenue Streams<br>•Cost Structure |

( Source: Erwin Fielt ,2013)

### *2.1 LBSNs Business Models*

Some of the challenges encountered in the further development of LBSNs included homogeneous services, not well-defined business models, and consequently a weaker growth in the number of the users.

Although the business mode as a concept had been raised in the 1950s, it was not until the end of the 20th century, when e-business begin to flourish, that business models began to gain a lot of attention.

Certain attentions have been paid to the field of cell phone communication and wireless services, which have induced the advancement in the technique and structure of the industry. Currently, with the inception of paid and multilevel services that are provided by the service providers, the business models of mobile services have been constantly discussed by the researchers. Context-aware services have been discussed by Hegering at al. (2004), Killsorom (2007), Bormann et al. (2007), and Pawaret al. (2008) from different slants. Walravens (2015) analyzed the interrelationship between the business model of the mobile service and the local government's Smart City strategy, which applied the business model logic of the mobile services into the practice of the smart cities that provide the convenient services to the local citizens. It was not until the prevalence of smart phones, such as iPhone, Samsung Galaxy, HTC, etc. that the popularity of LBSs has induced the investigation of mobile services from the LBS and LBSNs perspective. Rüdige et al. (2005) were very early to study the business model of the in-vehicle GPS-enabled services across Europe, which were mainly focused on the revenue field. Although the investigations of the mobile services business model have obtained certain results, still few of them have paid attention to the business model of LBSs and LBSNs. In Europe, the study of

business models and LBS or LBSNs has obtained some results from different angles. Reuver (2013) investigated the relationship between the commercial services of Galileo and the business models of service providers, which concluded that the direct impact of Galileo CS on the latter would influence the further design and development of the LBSs. Ryschka et al. (2014) focused on the components and characteristics of feasible LBS business models from the German market perspective, recommending that some new components could be added to the current STOF (Service, Technology, Organization, and Finance) model. Malabocchia et al. (2014) designed a successful indoor LBS business model from which all the parties within the ecosystem would benefit, while Bonazzi et al. (2010) proposed two privacy friendly LBSs business models that could not only provide high-quality services to the end users, but also collect less personal data than possible at the time. With regard to Asia, Sallabi (2010) introduced a unique business model for dynamic LBSs that focused on the technical aspects. LBSNs, as one subsidiary of LBS, has obtained huge development in these years, attracting less attention to its business model analysis. Although there are certain numbers of business models in LBSNs industry, there is limited thesis which focus on the research of LBSNs from the points of business model analysis, which lead to the unsystematic understanding in LBSNs business models.

### *2.2 LBSNs Business model Classification*

In this thesis, we define LBSNs as the services which the initial purpose of it is to build up the social relationships between different users through positioning–abled wireless devices. Therefore, although some service providers, i.e. DiDi (location based taxi-booking services) and Open rice (location based restaurants –finding services ), also provide the end users with interpersonal communications and services base on their geographic coordinates, because the main purposes of these services are beyond the scope of location based social networks, these kinds of location based services are not included in the scope of our study. In addition, although there are certain researches that concentrate on the business models from diverse perspectives, because the emergence and development of location-based social networks are still new in the LBS market, meanwhile, the majority of researches about LBSNs are merely focused on the data-mining aspects. Therefore, there is only rare research that focuses on the business models of LBSNs location based social networks currently. Considering that, we wished to classify the business models for the present LBSNs viewed from the service providers' perspective. We followed the classification design steps that were designed by two-widely accepted theories: Lambert (2015) and the Four Box business model framework (Johnson 2010). Since the geographic location of the end users and the social functions are both the key characteristics of LBSNs location based social networks, according to the positioning modes and the degree of familiarity of the end users, we have divided the current business models into the following categories from the four box aspects:

First, we classify the business models into three categories, according to Customer Value Proposition (CVP) point of view, we would classify the current business models into three groups. The first group is these supply the end users with 'Nearby stranger communication',

Skout, WeChat, and MOMO are three reprehensive examples of this group ,which provides the subscribers with direct communication opportunities to the nearby strangers, i.e. nearby subscribers would be listed in the application interference of the end users in accordance with their distances. This kind of service overcomes the barrier between the strangers who would like to communicate with each other but do not have the proper methods of knowing others. There were certain social networks, such as Facebook and Twitter, which were the expansion of the real social network into the virtual world. However, it was a white space within stranger social networks. Weibo represents the second group, which records the lives following the paths of the subscriber, and share this information with their friends and are able to communicate with their online friends and nearby users regarding the POIs, which would improve relationships between friends. Dianping, Jiepang and Foursquare stands for the third group of the business model which life services to the end users in accordance with their present geographic location are provided to the end users. The group, which connect online and offline services also provide e.g. nearby promotion information of the POIs together.

Under the second box—PF—according to the revenue model, we classified the current business model of LBSNs into two groups. Membership subscription fee and mobile game make up most of MOMO's revenue model, which is the typical example of the first group. As for Foursquare and Weibo, advertising fees take up the majority of the second group, which provide the business users with diverse, tailored, and designed advertising services. For example, Foursquare and Jiepang award the end users with virtual badges of the advertiser after the check-in within the specific location. Jiepang was the pioneer of the Chinese LBSNs market, which has earned 20 million RMB in 2012 from the advertising and personalized cooperating promotion services with the famous brands all over the world. Now the server has closed, i.e. its revenue stream became

zero. Foursquare also has provided the business users with promoting services that help to target the potential customers who are looking for the POIs within fixed areas, or those would search for the same kind of business, but not the advertisers.

Cost structure could also be used in the classification of LBSNs business model. This is different from the service providers like Foursquare, who have already achieved the extensive brand-awareness all over the world; it is the acceleration stage (4–8 years since establishment) (Johnson, 2010) of the business model implementation of most Chinese LBSNs service providers. Therefore, sales and marketing expenses account for a certain amount of all the Chinese LBSNs cost structures, due to the promotion of services, brands' images, etc. In addition, no matter how the numbers of total users or the monthly/daily active use have been rising dramatically, the cost revenue has also become a large amount in the total expenses. However, the overseas LBSNs service providers such as Foursquare and Shout, which are the core services that are fixed, to attract the user's stickiness must spend more budget on the research and development, exploring the white space of the CVP and updating the services in accordance with the trend.

The key process is the continual value delivery of CVPs, which has close connection with the CVP of each provider. However, the service developments of the Chinese LBSNs applications have their own characteristics. The CVPs of Weibo and MOMO are totally different from each other, while apart from this the paid services offered to the individual users are all the same, i.e. membership privilege, mobile games, and personalized decoration of user page, etc. Therefore, although the target users may have some duplication the providers have launched some of the same services to the end users in common. Meanwhile, since Alibaba is the second largest stakeholder of these two enterprises, the interfaces both have connected with Taobao or TMall, which are the two main online shopping platforms of the Alibaba Group. Jiepang provides the

individual users with promotion services within specific areas after their check-in. It is the simplest method of an online to offline service, with which there is no paid service from the side of end users at all. Skout stands for the other group of the classifications, which offers two editions of the application: a free-of-charge edition and a premium edition.

According to the KRs, we have categorized the current business models into two groups. The first group is made of those who were launched by established enterprises. A famous brand could be the key resource as the foundation of the success of these kinds of LBSNs in the beginning, which would attract certain attention from the end users. For example, WeChat was launched by the Tencent Group, which is one of the leading IT Groups in China. The users of the other services that were launched by the company, e.g. QQ, would be the first users. Likewise, the cases of Weibo, MOMO, Foursquare, and Skout are all the representative examples of the other group that were newly established companies. The popularity of the services of the service providers makes the brands of these companies become well-known brands, and now brands have also become the KRs of these companies.

To conclude, according to the elements within the Four Box business model framework, we divide the current business model into eleven different groups at this stage. It is certain that with the advancements and developments in positioning technologies, GNSS has enabled devices and the researches of business models, along with the changes of business models' classification, and the classification of LBSNs seen from the service providers' perspective may be changed accordingly. In addition, according to the criteria, one company could be categorized into more than one group. This is because the present LBSNs companies have their own characteristics from different aspects.

**Table 2.2 : The classification of LBSNs business models**

| Criteria | Classification |
|---|---|
| **Customer Value Proposition** | **Nearby Stranger Communication, Acquaintances Virtual Social network ,Life services** |
| **Revenue Model** | **Membership and games, Advertising** |
| **Main Cost structure** | **Sales and marketing , Research and development** |
| **Product development** | **Same subsequent services ,Different editions** |
| **Brand** | **Famous brand , Newly famous brand** |

In the mean time, among all the criteria, we believe that customer value proposition is the most important criteria in business model classification, under this criteria, although there maybe individual example has two characteristics at the same time, in the overwhelming majority of cases, we could be able to classify all the current business models of LBSNs into the above three categories as we have mentioned about in above table.

### 3.0 Four Boxes Business Model Analysis

Based on the definition and the components from Johnson's theory (2010), there are four interrelated domains in a business model, CVP, PF, KRs, and KPs, and certain factors are included in each domain (See Figure 2). We will investigate the four domains of MOMO and Weibo, point for point. Meanwhile, theoretical and technical factors, which are the basics of the business model, will also be deliberated, which most importantly are concerned with updating and designing business models.

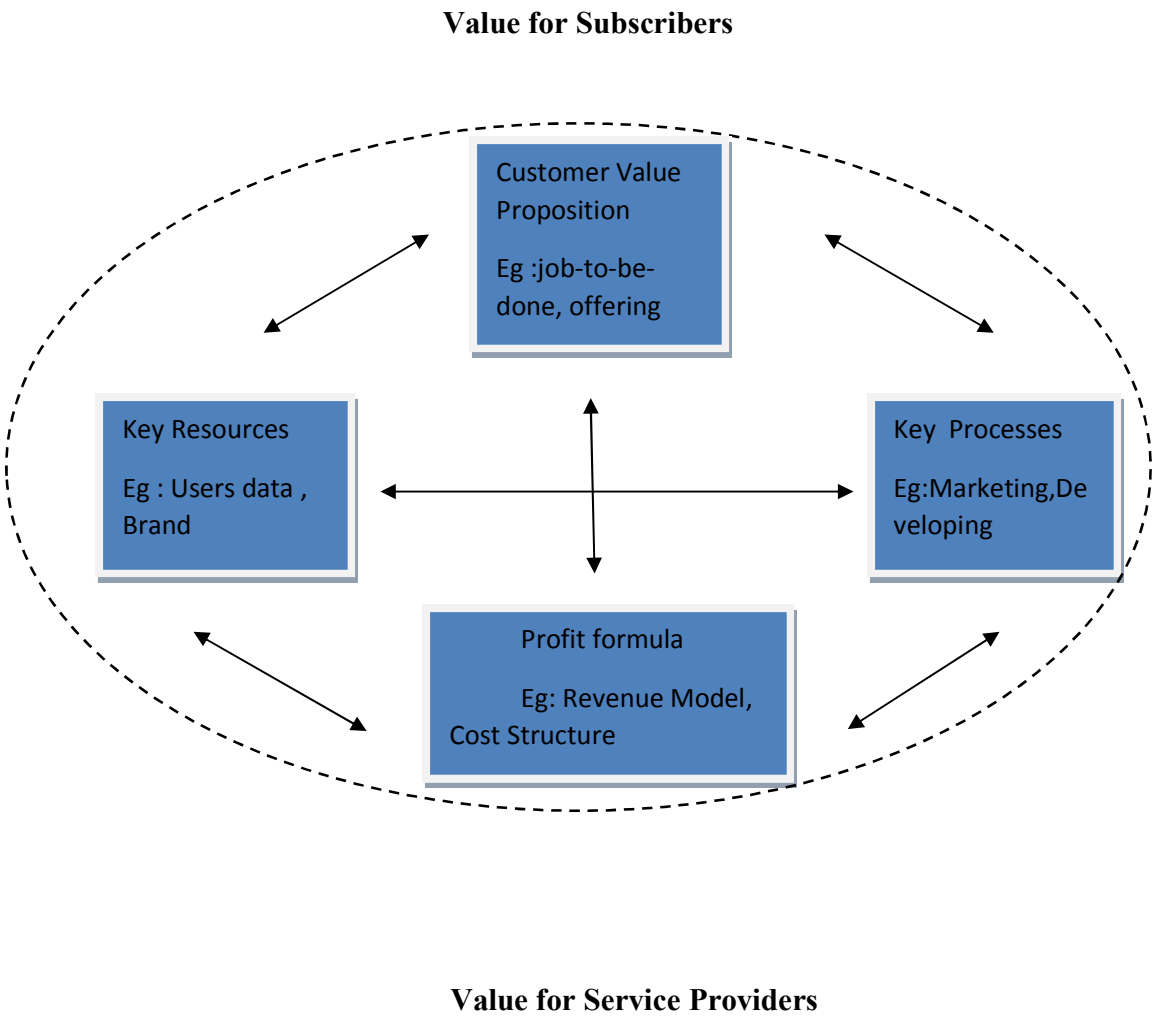


**Figure 3.1: The Four-Box Business Model Framework (**Johnson, 2010)

In each business model, CVP, which refers to whether the business is able to provide the customers with the needed and timely products or services at an acceptable price or not, is always the central issue. It has two elements: Job to be done which means the unsatisfied customers' demands and Offering which means satisfy the customers' needs in the proper method .We begin our research from the CVP domain. CVP acts as the basis of the other three domains within one business model. Once we have a clear CVP, PF would come into place to test the feasibility of the offering to the customers. For example, analyzing the financial statement of the company, we could obtain the overall operation condition. The range of KRs could vary from tangible to intangible resources, such as human resources, technologies, brands, etc. It is only through KPs that integrate KRs into the finished goods or services that CVP could be achieved under the PF.

The combination of the four domains forms the definable architecture of an overall business model. In the following sections, MOMO Inc. and Weibo Corporation will be investigated from the four domains and the detailed items within each domain will be obtained. Then intuitive comparison will be listed in the end.

### *3.1 MOMO Inc.*

MOMO Inc. is one of the leading LBSNs providers in China. It was founded and released its smart phone application in 2011. Within one year, MOMO was rewarded with the Best Annual Application of Apple Store 2012 and the number of subscribers reached 22.5 million. In 2013, the number surged to 84.23 million. Since then, MOMO Inc. has taken over the leadership of the LBSNs market and was listed in NASDAQ (National Association of Securities Dealers Automated Quotations) in December 2014. MOMO provides the end users with a smart-phone-based social networks platform, with which subscribers can stretch their social boundaries based on their location and interests, same services have been provided by Skout in the overseas market two years ago. The achievement is realized through the MOMO application, which offers a free social networks platform providing instant messaging at the initial stage. After obtaining a large amount of users, paid services were added into the application as the driving force of further development. MOMO is renowned for taking a customer-based approach in the provisions of right and convenient services to users. For example, a close evaluation of the company's services reveals that the organization caters for the social needs of groups and individuals by providing one-to-one and group chatting alternatives. It is through the undying commitment to update their services in accordance with changing consumers' behaviour and market patterns as well as the related technologies that MOMO continues experiencing a soaring growth, even as companies in the same market have experienced a stunted, diminished market growth. MOMO is believed to serve more than 25 million daily users and 60 million monthly users, and the number continues to rise year by year.

In the previous chapter, under the virtual criteria ---customer value proposition, the business models of the service providers in LBSNs industry could be classified in to three groups. MOMO

Inc. is the represented example of "Nearby Stranger Communication" group. The company have obtained dramatically development since the paid services have been added into the application which lead to rapid growth in financial data. .

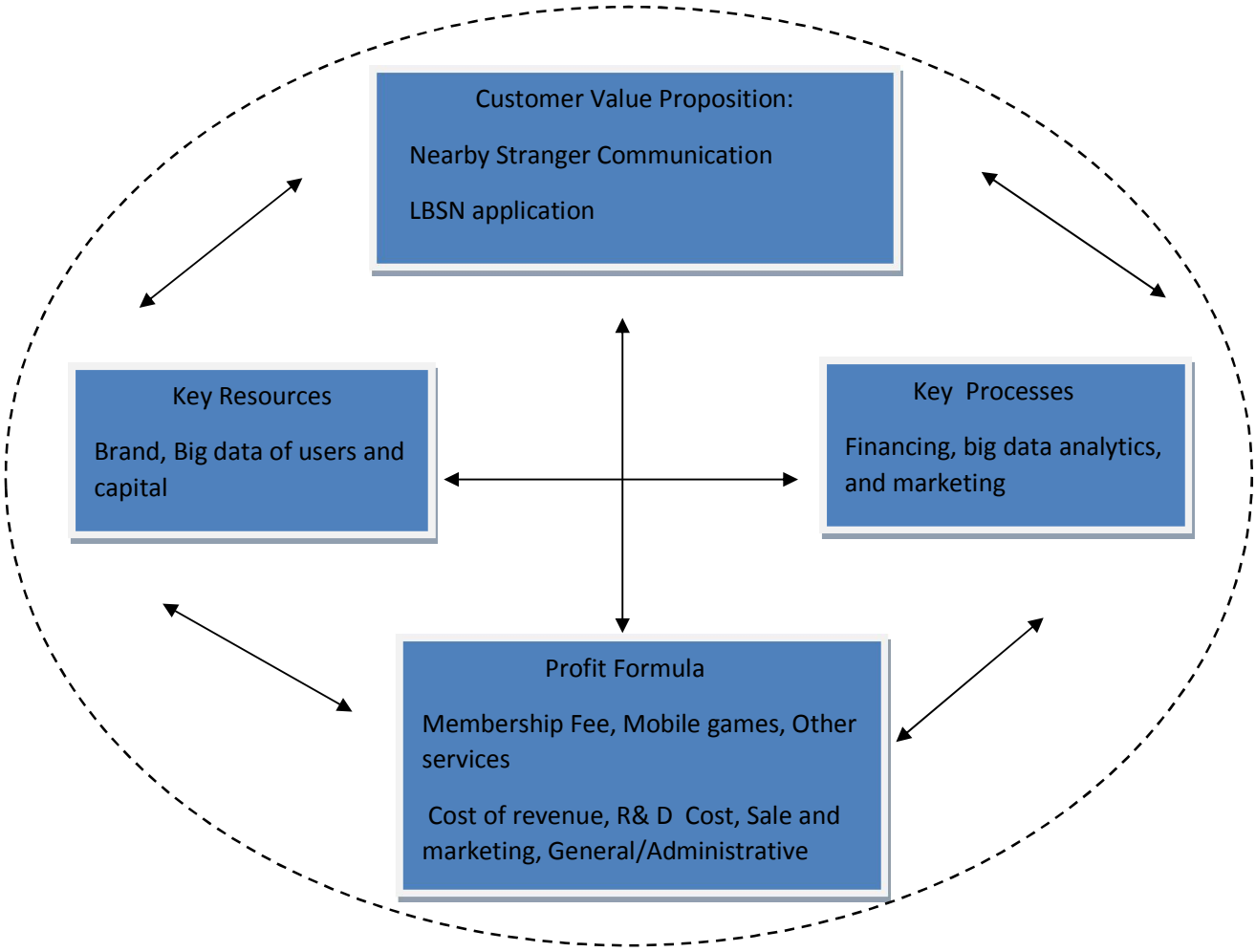


**Figure 3.2 The Four-Box Business Model Framework of MOMO Inc.**

In the following passages, we analyzed the data from MOMO Inc. employees, based on four elements, to come up with the following results:

### *3.1.1 Consumer Value Proposition (CVP)*

CVP is the key domain within the business model. A successful CVP means that the demand gap of the consumers has been satisfied by the companies' service/products or both, at an acceptable price. Successful LBSNs service providers must offer convenient and needed services for end users to gain support from them. Differing from other LBSNs companies in China, MOMO was able to experience sustainability and expansion in the number of users for the period ranging from 2011 to 2014. This is the period when most LBS companies experienced losses or withdrew from the market. In the case of MOMO, the initial CVP was to supply the end users with a new social network that allowed them to chat with the nearby users without barriers; it was a blank space. i.e. for those who want to know the nearby users and make friends with them", MOMO was the first LBSNs application in China that focused on the stranger social networks and hence was greatly different from QQ, which had set up a communication platform between friends in both PCs and Smart phones.

Later, in 2012, location-based nearby group chatting came into the market. According to the interests and hobbies, subscribers were able to form their own groups with the nearby users and communicate in their own space. In addition, nearby activities, e.g. opera, photo exhibition, concerts, etc. have been listed in a Nearby Activities column in accordance to the distance to the end users since that year. Meanwhile, all the activities that are initiated by the subscribers and their friends are also displayed in the column.

In 2013 one of the utmost development steps of MOMO was the fee-based services, such as premium membership, sticker shop, and application game, added in the application. It was the first time, and MOMO has obtained income from its application and the sustainable impetus for

developments. In 2014, a new gift market allowed the subscribers to give real presents to the others without knowing the privacy information of the receivers, i.e. every subscriber could press the 'I want this' button beneath each gift, and then other users could buy the present and it would be delivered through the privacy-protected delivery process. This is a triple-win situation. Both the service provider and the end users have benefited from the paid and the free services. As for the subscribers, they have enlarged the range of their social activities, while the service provider could gain the capital of the follow-up developments.

Online to Offline (O2O) was the next development direction. There are over 1.8 billion subscribers and a huge size of user data. MOMO launched the 'Dao Dian Tong' service, which is not only a precision marketing service for the business users, but also a communication platform between individual and business users within the business profile pages on the platform. According to the geographic position of the shop, the business users could choose the coverage and promotion time of the Dao Dian Tong services, which detailed information of the shop to be automatically displayed in the applications of the end users, which are covered in the selected scope of the services. However, a roughly estimated distance between the shops and the subscribers is given, since a navigation service is still not provided to the end users, which is inconvenient. Until now, there have been over 20,000 businesses that have turned on this service. It has been the beginning of MOMO's O2O process and we will hold continual attention of the new CVP attempt. It is a business transformation of MOMO, which will turn the major CVP to the location-based community network. Cooperating with 58.com at the end of 2014, the largest classified website in China, MOMO supplies the subscribers with easy access to 58.com's marketplace via the built-in function of the applicant. Based on this strategy, the result of the future development is not clear at this stage. MOMO was initially designed as the location-based

stranger social networks application. Although the number of users is huge, how to keep the stickiness of the users and find out the new CVP for the subscribers is still an open question. The transformation of MOMO‘s service orientation largely relies on more accurate positioning and navigation technologies, which would largely be connected with the updating of the recent LBSs.

### *3.1.2 Profit Formula (PF)*

PF is one of the virtual components needed in the CVP. Profit also sets the lowest standard for the services that would be able to provide for the end users or not. Within PF, there are two main elements: revenue model and cost structure. Revenue model, which is frequently misunderstood as business model, indicates the CVP process. Cost structure represents the total cost of the enterprise, no matter whether direct or overhead costs. Both these items vary between different industries and companies. In the Chinese LBSNs market, the PF of MOMO Inc. also has its own characteristics.

#### 3.1.2.1 Revenue Model

The revenue model is closely connected with CVP because the selling price is crucial to both of them. In the revenue model, the selling price should be fixed in a piece by which enterprise could benefit from the products or service offerings; otherwise the sustainable development of the company would not last. Meanwhile, the selling price in CVP is a vital factor that affects the choice of the users, even if the goods or services are in need. If the price is far from the acceptable range, the fulfilment of CVP would also be met. Membership subscription revenue, mobile games revenue, paid emoticons, and mobile marketing services revenue constitute the revenue model of MOMO Inc.. It was not until the fourth quarter of 2013 that MOMO launched its paid services, and the number of registered users then reached 84.23 million in that year.

**Table 3.1: Net Revenues of MOMO Inc.(2013 and 2014)**

| | 2013 | Percent | 2014 | Percent | Growth Rate |
|---|---|---|---|---|---|
| Membership Fee | 2,808 | 89.7% | 29,756 | 66.5% | 959.7% |
| Mobile games | 92 | 3.0 % | 11,237 | 25.1% | 12114.1% |
| Other services | 229 | 7.3% | 3,762 | 8.4 % | 1542.8% |
| Total Net Revenues | 3,129 | 100% | 44,755 | 100% | 1330.3% |

（Unit: U.S. Dollars in thousand ）(MOMO, 2014 a,b)

According to Table 3.1, all of the three revenue streams have obtained considerable growth within one financial year (2013–14). It is worth noting that the mobile games revenue, which was 92,000 USD in the fourth quarter of 2013, rocketed to 11.237 million USD in the same period of the next year, obtaining a 121x increase. The reason behind this was that there had been only one mobile game in MOMO in 2013, whereas 16 diverse games were listed in the game centre. On the basis of published data by MOMO (2012), the ratio between female and male users was 2:1. Female mobile games took a majority account of all the games in the centre. It is certain that this trend would be followed in the following game settings and introduction.

The member subscription fee, which accounted for almost 90% of the revenue streams in 2013, also obtained a 959.7% increase in the next year, reaching 29.756 million USD in 2014.The driving force of this was the soaring rise in the number of users, monthly active users who have active their account within the past 30 days,were also increased by the expansion of the user base. There were 0.6 million MOMO members in 31 December 2013. This figure came to 2.9 million in the same period of 2014. One month, three months, six months, and one-year membership

could be chosen by the subscribers, and a 25% discount would be given to the one-year membership users. Dynamic head pictures, hiding services, tailored member emotions, and privileged ability in the games, etc. were included in the membership services.

Other services consist of paid emotions and mobile precision marketing services, such as Build-in Banner advertisements, the Dao Dian Tong service, gift centre services, and user traffic advertisement services, i.e. merchants' targeted advertisements, and local community services comprised the other services, which later would become one of the main revenue streams of MOMO Inc.. Comparing the revenue stream of this category between 2013 and 2014, a 1542.8% annual increasing rate had been achieved between 2013 and 2014. Accordingly, the total revenues increased from 3. 129 million US Dollars to 44.755 US Dollars, over 13x the number compared to the previous year. This was the beginning of MOMO Inc.'s commercial exploration and although O2O is no longer a new concept in the business world, until then, there had been no successful example in the Chinese LBSNs market. Follow-up development of MOMO's revenue stream is worth paying special interest to. However, as same as the other LBSNs service providers in the Chinese market, the paid services of MOMO Inc. are almost the same with the other companies, instead of the paid services in common with the core offering of each service providers.

3.1.2 Cost Structure

As one of the service providers of the LBSNs industry, the cost structure of MOMO Inc. has its own characteristics: cost of revenue, research, and development costs, sales and marketing experiences, and general/administrative costs comprise the structure. The cost of MOMO Inc. (2013-14) is shown in Table 3.2.

**Table 3.2: Total Cost of MOMO Inc.(2013-14)**

| | 2013 | Percent | 2014 | Percent | Growth Rate |
|---|---|---|---|---|---|
| Cost of revenue | 2,927 | 23.5% | 15,762 | 22.2% | 439% |
| R& D Cost | 3,532 | 28.3% | 9,264 | 13.1% | 162% |
| Sale and marketing | 3,018 | 24.1% | 35,538 | 50.1% | 1078% |
| General/Administrative | 3,010 | 24.1% | 10,354 | 14.6% | 244% |
| Total Cost | 12,487 | 100% | 70,918 | 100% | 468% |

（Unit: U.S. Dollars in thousand ）(MOMO,2014 a,b)

Cost of revenue and R&D cost are included in the direct cost, while sale and marketing, and general/administrative costs constitute the overhead cost, e.g. in the cost of revenue of MOMO, the sharing of revenues with 58.com and Alibaba in the cooperative services. It is believed that through the transformation to the local community platform and expansion of O2O services, the figure would rise further in the coming years. Meanwhile, the boom in the service scale, both in users and diverse service types, has led to the continued rising of maintenance and operating

costs in 2014, including commission fees, depreciation, Short Message Service cost, and bandwidth cost. Compared to the cost of revenue in 2013, the figure increased by 439%, reaching 15.762 million USD in 2014. Research and development cost saw a 162% increase in 2014,but the percentage in the annual cost decreased from 28.13% to 13.1%. The reason for this is there have been few developments in updating of the application and the technological platform in 2014 comparing with that in 2013.

However, the research and development costs would always keep to a standard. There are three reasons: First of all, with the booming of O2O services, a higher-level precision positioning of service requirements is made by businesses and end users. Secondly, it is certain that the white space of users' needs is the starting point of the investments of research and development, beside the current positioning service; there will be more and more positioning and navigation services which will be tailor-made by MOMO in the future. Thirdly, the LBS industry is one in which there have been rapid changes in the following fields: new generation of the positioning technologies, occupation standards, framework updating, etc. Therefore, whether MOMO would be able to show a quick response to the new technical changes directly affects the future performance and development of the company. Meanwhile, the advancement of mobile communication technologies and the increasing of the distributed storage will both increase the cost.

Sale and marketing, which took over 50% of the annual cost in 2014, obtained approximately 11times increase when compared to the figure in 2013. Other than the development direction in new functions and services of the application and the platform in 2013, rebranding was the one of the key development issues of MOMO Inc. in 2014. Since the negative publicity of the brand would harm the further development and the brand reputation of MOMO, a series of rebranding

and brand awareness activities were followed with the new slogan: “Fun and Excitement Surrounded you” . Commercial advertisements were scrolled to be played in satellite television channels, prevalent video websites, and subway stations. With the purpose of explaining the slogan to different users, there were eight commercial advertisements, each of them telling a unique story of a user and his MOMO life.

Similarly, the increasing salaries and welfare expanses were largely due to the expansion of the company that more employees needed in order to cope with rising service demands. Meanwhile, rising ways have also led to the increase. Office relocation was another reason resulting in the ascending of the costs. It is forecasted that the overall cost will rise further in the near future, since the company will broaden its user base and increase user engagement, developing and implementing new features and services that require more complexity. Until now, the break-even point has still not been reached, although the revenue streams have rocketed year by year.

### *3.1.3 Key Resources (KRs)*

Brand, Big data of users and capital are the three KRs of MOMO Inc.. According to the report of Analysys International, in the third quarter of 2014 MOMO took the second place of the mobile social instant messaging application in the average number of times each user opens the application per day in China, which was behind the giant WeChat. Meanwhile, listed in NASDAQ in 2014, the initial public offering of MOMO was 3 billion USD, and the brand evaluation was estimated to be 30 billion USD. MOMO gained high popularity and reputation within 5 years’ operation in China after starting from scratch and MOMO was always one of the top 20 social applications in the IOS application store; this is different from WeChat, which relies on the over 8 billion users of QQ for the user base.

In addition, through the 5 years operation in the Chinese LBSNs market and the booming number of end users, the huge amount of data from the subscribers has been obtained in accordance to the range of activities; points of interest, habits, etc. are collected and analyzed, e.g. cooperation with the third parties. Based on the analysis of the users' big data, MOMO Inc. cooperated with Alibaba Group, according to the preferences of the end users, and related products and services were introduced to them. In the road show presentation of MOMO Inc.,MOMO Inc. pointed out big data analysis is the important factor in enhancing content relevance and improving content management. That is, The big data would be applied as a reference for the new functions and services development and further affects the technologies development, in order to providing relevant technological support to the new functions and services.

According to the prospectus of MOMO Inc., which was disclosed in December 2014, financing activities supported certain activities, which would maintain the further development, such as R& D, IPO and etc. Initial public offering (IPO) means the stock of the corporation was sold in the publishing market to the institutional investors for the first time .That is, in recent five years, MOMO has raised capital for five times to support the expansion of the services, techniques advancement, and marketing expenses. It is obvious that since the fee-based services of MOMO began from the third quarter of 2013, MOMO Inc. has achieved considerable improvements in its net revenue. The net cost has also soared to the highest level in 2014, which was far beyond the number of the annual net revenue. Whether MOMO Inc. would be able to maintain an abundant capital or not greatly affects the sustainable development of it.

### *3.1.4 Key Processes (KPs)*

Financing, big data analytics, and marketing are the KPs of MOMO Inc.. As we have discussed in the previous chapter, a sustainable capital flow is of significant importance to the future development of MOMO. The initial public offerings of MOMO'S stock have raise funds from the global market, rather than being focused on the local capital of China, which would be a strong driving force and capital support. The collected large-scale data has been analyzed by the company and consulting firm through the detailed behaviour habits and active area analysis of the active users, especially the registered MOMO members, and new services would be launched on the basis of the results. Then, the technologies issues—mainly the positioning techniques—would be designed to match the changes. As we could find in the prospectus of MOMO Inc., it emphatically point out the importance of rebranding . This is the rebranding stage of MOMO, in order to change the negative publicity that has harmed its brand reputation, by means of the scrolled campaigns that are displayed in the underground stations, TV channels, and websites, organizing the activities with the local communities, and good results may be gained in the marketing process.

Certain findings have been obtained through the investigation of MOMO Inc.: Right offering and abundant capital support are the strengths of Weibo. In the first place, it is not until the emergency of MOMO, there was the first nearby stranger commutation LBSN had came to the Chinese LBSN market which fulfils the white space of the market, which has been proved to be the right offering. In the second place, It is the rebranding and acceleration time of MOMO, and in order to prepare for the capital rise of company's IPO in NASDAQ, sale and marketing cost have been kept in a high level, which also lead to the dramatically rising in the total cost . Strong capital support is of significant important for the future development of MOMO. In addition, the

negative publicity and homogenous fee-based services are the weakness of MOMO in this stage . First of all , it is the most important point of the rebranding process of MOMO ,in which MOMO would like to change its brand image and turn to LBSNs virtual community. That is, MOMO would like change its image to be more positive and to provide the end users with nearby POIs, instant individual and group communication services and help to connect with other users who share interests and habits in common. Meanwhile, although the fee-based services of MOMO has already became one of the driving force for its revenue model , as to the CVP of MOMO, the fee-based services do not have close relationship with the its CVP which would decrease the users' stickiness to the application and may lead to the further decline of the usage .

And according to the study of Zott et al. (2007), they believed that novelty-centred business model design has a positive impact on the performance of the corporation. And as the first generation LBSNs service provider in Chinese market, in terms of offering, key resources and etc., new elements have been applied in the novelty-centred business model on the basis of the previous ones. Meanwhile , the success of MOMO Inc.'s development prove the positive effect of the right business model in the performance of the company. which has been proved once again by the continuous soaring finance data and increasing monthly active user year by year, especially from the considerably annual rising revenue streams. However, it is the initial stage of MOMO in Chinese LBSNs market, we would continue the attention to the relationship between business model and business performance of MOMO Inc..

### *3.2 Weibo Corporation*

Since it was established in 2010, Weibo has always been the most popular social media platform in the Chinese market, supplying the individual and business subscribers with a real-time platform to express themselves and share their ideas in diversely connected other social network platforms, which is well-known as the Chinese edition of twitter. At the end of 2010, it launched its LBSNs, which helped the end users to add their location tag along with the other social media content. After that, no matter the depth or width, the LBSs have reached a certain standard. According to the official website of Weibo, the number of monthly active users (MAUs) and average daily active users – users who active their account within one day (DAUs) reached to 175.7 million and 80.6 million respectively in December 2014. While the number of MAUs and DAUs were 129.2 million and 61.5 million, in the same period last years' obtained 36% and 31% increase respectively. Weibo Corporation is the representative example of the second group in the business model classification --- "Acquaintances Virtual Social network " group. This is the reason why MOMO has been chosen to be studies in this thesis. The following reasons explain why Weibo achieved its popularity:

1. It is an open social media platform that has no barrier between the users. All users could open an account and post their pictures, videos, texts, music, etc. Subscribers are free to write their feedbacks and repost all the information in Weibo, which creates a new virtual communication community.

2. A large amount of celebrities and organizations have opened their accounts in Weibo, whereby the users are able to post their feedbacks to those with whom they would hardly have any

connection in their ordinary lives. There were over 80,000 accounts that were from government and officials. Organization-users use Weibo as a distribution and publishing channel and celebrities use Weibo to directly communicate with their fans, which gains more support from them.

3. The booming number of subscribers has led to the further increasing of the new users, because of the virtualization of a real social networking system in Weibo. In order to obtain the relationship with friends in real lives, new users would open their accounts in Weibo as well, which further increases the 'stickiness', holding the present users longer.

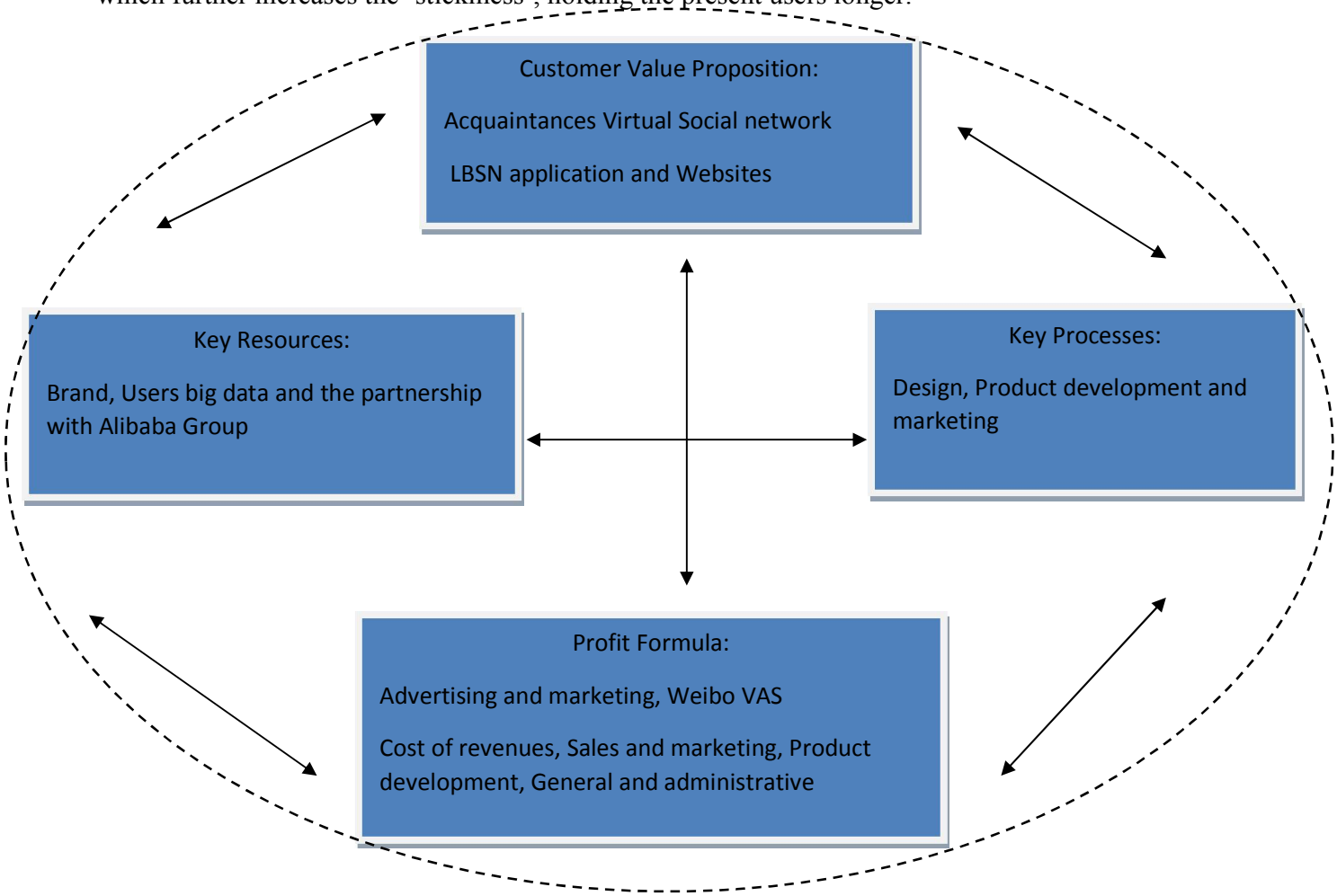


**Figure 3.3 The Four-Box Business Model Framework of Weibo Corporation**

After investigating Weibo's business model based on the Four Box business model (CVP, PF, KR, and KP), we discovered the following findings:

### *3.2.1 Consumer Value Proposition (CVP)*

Weibo, in the first place, is a virtual social media platform with which users are able to communicate with others without boundary, and in addition, users are also able to discover relevant and rich content. This meets the requirement of direct communication among users from different social networks and different layers of the society. Celebrities, officials, government agencies, and commercial and charity organizations all have their Weibo accounts. Any users are able to follow messages, leave comments, repost, and send private messages to the other users, whereby a subscriber could make a social impact. Secondly, nowadays users prefer a simple and direct way to express themselves at these moments, rather than a detailed description of the incidents. This is the reason why users switched from blogs to Weibo. The maximum length of the text that the user could post in their Weibo is 140 words. Thirdly, Weibo is the extension of the real social networks of the subscribers, with which the user may stay currently involved and connected. As a supplement of the social networks in reality, the relationship between Weibo users could enhance the relationship among them in return. Fourthly, along with the development of positioning and communication technologies, especially wireless communication techniques, a location tag function was added into the application that users could choose to place a marker at the corresponding coordinates along with the sharing of contents in their Weibo. In the built-in Nearby function, according to the geographic location of the end users, POIs, nearby landscapes, and end users would be listed in terms of different distances to the users. This function relies on the check-in data uploaded by the other end users who are near the current location of the

subscribers, which would help to expand the social networks of the end users with the nearby subscribers.

In the fourth quarter of 2013, the total figure of check-in information reached 1.2 million. Meanwhile, POIs, such as restaurants, department stores, hotels, etc. also are listed in different categories while the users who have checked in at the points are also displayed in the categories. In addition, on the basis of the end users' and friends' check-in data, the 'Footprint' function was designed to record the end users' own paths of life and then share these with their friends, while also exploring more common interests and places with their friends. Last but not least, further to those functions and services Weibo encouraged the subscribers to bind their Weibo account with the other social network sites, such as Ren Ren, Instagram, and WeChat, which provided seamless sharing of the geographic-related status with the friends from other social platforms automatically. Until now, there have been seven different mobile games developed by Weibo that could be found in the game centre. At the initial stage, all the games were free of charge. At present, users have to pay for their games' currencies in order to achieve scores. As the second largest shareholder of Weibo, Alibaba deepened the cooperation with Weibo in various aspects. Weibo also became the extension platform of Taobao and TMall, e.g. Weibo users could connect their Weibo, Taobao, and Alipay Accounts together, then typing tweets about their products/services with the links of their online shops. For the business users, two different advertisement services—brand and paid-for-performance advertising—are provided for big enterprises, and small and medium-sized enterprises respectively.

Check-in services were added to Weibo with the development of mobile wireless and positioning technologies when the subscriber numbers reached one billion in 2011, which enabled the end users to attach the location tags with their tweets. In 2012, Weibo launched its mobile game

centre and chargeable VIP membership services to the subscribers. In the first place, the first attempt at the commercialization of Weibo not only strengthened the users' loyalty, but also opened the further commercial exploration of Weibo. From the video advertisements in television stations, bus stops, subway stations, and the video websites to the sponsorship with the several satellite television stations, Weibo has been investing a certain amount of investments in the marketing aspects. All those activities have further enhanced the market share of Weibo, which is the solid foundation for its sustainable development. At this stage, the LBSs of Weibo are all focused on check-ins, which have limited time-sensitive and information integrity for the end users. It is certain that with the updating of the application and the positioning technologies, new types of the services would be added.

### *3.2.2 Profit Formula (PF)*

#### *3.2.2.1 Revenue Model*

Advertising and marketing service together with Weibo Value-added service (VAS) comprise the two revenue streams of Weibo's revenue model. VAS means the non-core services, which provide the customers with additional services based on the initial service demands of costumers at a reasonable price. It is coincident that the percentage of the two items of the total revenues remained the same from 2013 to 2014. This shows that the dependence on advertising and the marketing service is high, which would cause some problems in further development. Advertising and marketing services, which took a majority of the total revenue, have been kept at about 79% in these two years. However, with the increasing of the total revenues, the annual growth rate of it was 78%. These were the reasons for the rising percentage:

Firstly, all the competitors of Weibo in the Chinese market have quit the market in 2014. Tencent Group and Sohu Group both withdrew from the market, while Netease Group replaced its Weibo with LOFTER, which defines the target users as being those who are passionate about creating visual works. Accordingly, the advertisers of those competitors would turn to post their advertisements in Weibo instead. Secondly, the active users, both monthly and daily, have being soaring year by year. The monthly active users of December 2014 were 1.757 billion, both the highest MAU and the highest year-on-year growth rate among the whole operation period. These indicated the popularity and the wide coverage of Weibo that would promote the brand recognition.

Social display advertisements and promoted marketing are the two services within the category. After clicking the social display advertisement displayed on the homepages and other pages,

users would be redirected to the advertiser's Weibo pages. The advertisers of social display advertisements are always big enterprises with which the price is also relatively high.

Regarding promoted marketing, the promoted feeds, promoted account, and promoted trends are the three elements, which have been designed for different customer segments. Within promoted feeds--- Same as tweet; like text and attached multimedia in expressing themselves in Weibo, FST ---self service marketing solution which provides small and medium enterprises with bidding system in Weibo promotion, which is a tailored design for the small and medium enterprise, enabled the customers to target the users under certain conditions, for the purpose of the maximum promotion effects. Promoted accounts would appear in the recommended-account category and would help to increase the followers and the brand acceptability of the accounts. There is a trending topic column in the feeds of Weibo; users would be redirected to the home page of the consumers' if they were to click a promoted trend. The Weibo value added services (VAS) in 2014 was 1.74 times of that in 2013 from 39.887 million USD to 69.390 million USD, with the same proportion in the total revenues. VIP membership and Weibo Games are both the main Weibo VAS. It was in the second half of 2012 that Weibo launched its VIP membership. The end users could select monthly or yearly payment, and a different discount would be provided in accordance with the membership period. With personalized and decorated users' home pages, more users could be followed, sending voice feeds, enjoying more cloud storage, SMS notification of the changes of account issues, and a premium games privilege are offered under the membership subscription. In the game centre, there are seven different mobile games now, which were developed for both male and female users. According to the Weibo data centre, although the ratio of male to female users was 1:1, the ratio of Weibo game players was 4:6. This is the reason why the mobile games were developed for the needs and characteristics of female

users. In order to accomplish some tasks and achieve a high ranking in the games, users would spend on the virtual items or currencies from their Alipay account directly.

Besides those two services, through cooperation with the Alibaba Group, Weibo is an extension platform of Taobao, whereby users are able to redirect to the related landing pages once they click the relative button. Weibo and Alibaba would share the revenue of the transition through Alipay. Although in the fourth quarter of both 2013 and 2014 Weibo had obtained profit, from the perspective of the yearly performance, Weibo remained at a loss. Furthermore , it is obvious that comparing with the fee-based services with MOMO Inc., the fee-based services of Weibo corporation are almost same with the previous one's , rather than supplying the end users with the services around the unique customer value proposition .

**Table 3.3: Net Revenues of Weibo Corporation (2013 and 2014)**

| | 2013 | Percent | 2014 | Percent | Growth Rate |
|---|---|---|---|---|---|
| Advertising and marketing | $148,426 | 79% | $26,4782 | 79% | 78% |
| Weibo VAS | 39,887 | 21% | 69,390 | 21% | 74% |
| Total Revenues | 188,313 | 100% | 334,172 | 100% | 77% |

(Unit: U.S. Dollars in thousands) (Weibo, 2014 a,b)

*3.2.2.2 Cost Structure*

Cost of revenue, sales and marketing cost, product development cost, and general and administration costs comprise the total cost of Weibo. The annual growth rate of the Sale and Marketing costs is worth noticing in that it increased by 91%, and reached to 120.314 million USD, compared to 63.069 million USD in the previous year. The Road Show was one of the reasons that induced the increase of the cost, due to the preparation for its initial public offering (IPO) in NASDAQ (2014). Because the Weibo brand is widely known in China and Chinese communities, however, for the international investors of Weibo . Inc. , remained the company with which they were still unfamiliar. The other reason was the rising expenses to promote products and attract new users in second- and third-tier cities. A large number of Weibo users were in the first-tier cities with high income. However, with the closure of Tencent Weibo and with the purpose of receiving new users from the second- and third-tier cities, Weibo cooperated with over 100 television programmes in 20 satellite television stations all over China. There was a 40% increase in cost revenue, from 59.891 million USD to 83.599 USD. The reason behind this is also the increasing number of new subscribers, leading to the rising cost of short message services when they created their Weibo accounts.

The proportion of product development cost in total cost decreased from 41% to 35%; meanwhile the annual growth rate was 25%. The enormous rise of sales and marketing costs in 2014 and the updating of Weibo resulted in the increase and decrease of product development cost in the same year. In 2014, Weibo launched its 4.0 version, which changed the whole interface and also updated the version 3 times. In the technique development and advancement, Weibo has been always ahead of the competitors. Weibo We Media also was introduced in 2014, which classifies the published content of We Media writers into 23 advertisement categories and

makes the writers benefit from cooperation with the sponsors in precision marketing along with the feed publishment. Weibo We Media integrates advertisers, Weibo writers, followers, and Weibo, then actively promoting the development of the four parties. General and administrative costs have suffered a slight rise of 14% between 2013 and 2014, while the proportion of the total cost has in fact declined by 2% compared to the numbers of 2013. The slight increase is mainly due to the rise of price levels and the currency appreciation.

**Table 3.4 : Total Cost of Weibo Corporation (2013 and 2014)**

| | 2013 | Percent | 2014 | Percent | Growth Rate |
|---|---|---|---|---|---|
| Cost of revenues | $59,891 | 24% | $83,599 | 24% | 40% |
| Sales and marketing | 63,069 | 26% | 120,314 | 34% | 91% |
| Product development | 100,740 | 41% | 125,832 | 35% | 25% |
| General and administrative | 22,517 | 9% | 25,719 | 7% | 14% |
| Total Cost | 246,217 | 100% | 355,464 | 100% | 44% |

(Unit: U.S. Dollars in thousands) (Weibo 2014,a ,b)

### *3.2.3 Key Resources (KRs)*

Brand, huge data from the users, and the partnership with Alibaba are the three KRs of Weibo, which have been pointed out in the prospectus of Weibo Corporation in the United States securities market. Weibo was named Sina Weibo after being set up in 2009 by its parent company, Sina, one of the leading Internet companies in China. Beginning from 2009, the sales and marketing costs have continued to rise year by year. Until 2013, there were four well-known top forms of Weibo in China: they were Tencent Weibo, Netease Weibo, Sohu Weibo, and Sina Weibo. With the celebrity effect, marketing and promotion activities, Sina Weibo took 70% of the market share, but in the next year it became the only Weibo in the Chinese market. In 2013, the registered users of Sina Weibo were 5 billion. In order to achieve its independent development and also prepare for its first public offering in the US financial market, Sina Weibo was replaced by the name 'Weibo'. The large amount of data from the users, which has been collected since 2009, was one of the most valuable resources in the future VAS design, precision marketing with the advertisers, etc. The users would be categorized in accordance their geographic location, gender, age, education level, points of interest, the path of lives, etc. and then the related interesting information or advertisements would be shown on the feed of the users automatically.

Also, in the design of VIP membership privileges and mobile games, Weibo could supply corresponding services and games to the paying subscribers. In addition, the advancement of the mobile positioning also could provide the end users with various LBSs, rather than check-in only. The Alibaba Group is an Internet company that has the largest e-commerce platform: Taobao.com in China. Meanwhile, the Alibaba Group is also the second largest shareholder of Weibo, which has held 30% of the total shares. Through the cooperation with Alibaba Group in

social commerce, data exchange, platform integration/account sharing, and the Alibaba payment solution, Weibo has obtained some solid capital, more abundant customer data, and a convenient online/mobile payment method, which would promote the further sustainable development of Weibo.

### *3.2.4 Key Processes (KPs)*

Design, product development, and marketing are the KPs of Weibo, which could also been found in the prospectus of Weibo Corporation. It is undeniable that Twitter is the prototype of Weibo. However, Weibo developed its own services and products that coincided with the social behaviour and language habit of Chinese input countries. For example, in Twitter the user could only repost a tweet with no comment. Elsewhere, Weibo users are able to add their own comments in the reposts, which could help to express their own views at the same time. In addition, the products of Weibo mainly focus on media attributes while the products of Twitter are mainly social attributes. In its first three years, Weibo has paid attention to promoting the products in order to increase the popularity and acceptance of Weibo among the competition with the other three competitors in the Chinese market, and all the products and services have been free of charge.

We analyse the second example in the Chinese LBSNs market ---Weibo Corporation in this chapter from customer value proposition, profit formula, key resources and key processes as well. Famous Brand, excellent cost control and abundant techniques and capital support are the strengths of Weibo. Firstly, different from MOMO, Weibo was designed by its parent company ---Sina Group, which is the leading IT Company in China. Since it has been launched to the Chinses Weibo market, Weibo has already attracted lots of public attentions and the Sina users

were mainly the first end users of Weibo. Secondly, along with the soaring number of revenue streams, the cost streams were controlled in the certain range which owing to the excellent financial team and the stable development stage of the company. Thirdly, the capital rise in the international stock market and the partnership with Alibaba Group provided the company with capital and techniques support for its development .Homogenous fee-based services and undesired updates are the weakness of Weibo. In the first place, similar with MOMO Inc., Weibo Corporation also makes profit from the same fee-based services---membership subscription, game centres and business promotion, although the customer value proposition of these two companies are different from others. Check-in services is the only location based service which is provided to the end users by Weibo application at this stage, however, this would be the new VAS in Weibo's further development if personalized location based services would be designed to the end users in accordance with their habits, preferences and life paths, which could be collected through the data mining. In the second place, comparing with previous version, the related updating which emphasize on the CVP were limited, lots of undesired updating were added into the new version. The current proper business model of Weibo Corporation has a positive impact on the business performance at this stage, with the development of LBSNs in Chinese market, more corresponding data would be disclosed to public which could be used in the further analyses, in order to achieve the more support for the relationship. As the sole Weibo in Chinese market; we have the reason to believe that the rising number of new end users, which were the users of other weibo, would be the foundation of the future development.

### 3.3 Discussion

By investigating the two representative business models of the Chinese LBSNs market from the Four- Box business model perspective, it has been seen that both of these two examples have been proved successfully in operation, which show the positive effect of the right business models to the performance development. In addition, based on this, we would like to compare the business performances of these companies under the present business models. Two financial ratios: Efficiency Ratio and Operating Expense Ratio, are used in the comparative analysis , which indicate how much the company should spend in order to obtain one unit revenue and the operating cost in services providing processes respectively. The detailed information of these two ratios are listed in the Table 3.5 and Table 3.6 blow.

| Efficiency Ratio | 2013 | 2014 |
|---|---|---|
| MOMO | 3.99 | 1.58 |
| Weibo | 1.31 | 1.06 |

(Weibo and MOMO 2014,a ,b)

**Table .3.5 The Efficiency Ratio of MOMO and Weibo (2013-14)**

Efficiency ratio indicates the relationship between cost and revenue, the bigger number of the ratio, and the inefficiency of its business performance. It is obvious that, efficiency ratio of MOMO had changed from 3.99 to 1.58 in these two years, which shows less cost is needed to obtain one unit revenue and the efficiency of its business performances had been improved. In addition, he Weibo's ratio also indicates the same situation which the ratios drop from 1.31 to

1.06. However, when comparing the ratios of these two companies, we could find out that in both 2013 and 2014, the business performances of Weibo were better than that of MOMO, although the business performance of MOMO has already achieved certain improvement, which mainly resulted from the rebranding and brand awareness activities which help to reduce the harm to the brand and the negative attitude of the brand also has changed.

| Operating Expense Ratio | 2013 | 2014 |
|---|---|---|
| MOMO | 1.64 | 1.13 |
| Weibo | 0.04 | 0.07 |

(Weibo and MOMO 2014,a ,b)

**Table 3.6 The Operating Expense Ratio of MOMO and Weibo (2013-14)**

The higher number of operating expense ratio shows the lower utility of its operating expense ratio, which has a negative relationship with its business performance. As to the operating expense ratios, in 2013, the ratios of MOMO and Weibo were 1.64 and 0.04 respectively. It shows the operating expenses of Weibo have stronger ability of revenue-increasing than that of MOMO. While although the ratio of Weibo increased to 0.07 which has obtained 0.03 rising , which was still much lower to that of MOMO. In a word, the utility of Weibo's operating expense was higher than that of MOMO, which meant the performances of Weibo were better than that of MOMO in these two years. There are following reasons behind this: In the first place, Weibo has much more professional cost control team than MOMO has. In the second place , comparing with MOMO who was in the expansion stage , both in services and employees , Weibo was in the stable development stage which the operating expense would not

increase at that speed . The present size of the staff is able to provide qualitied services to the end users, while with the service expansion, MOMO has to increase input into different aspects of operating, with the purpose to supply the end users with related and stable service.

According to the calculations of two important rations---Efficiency Ratio and Operating Expense Ratio and the four-box business model analysis of both companies , we conclude that although both business models have positive effective to their business performances , the business performances of Weibo, were better than that of MOMO.

In the meantime, we have also discovered the following findings:

First, although the revenue of the two service providers has kept rising since the fee-based services have been added into their applications the costs have also been increasing accordantly, even exceeding the increase of the revenue streams. Notwithstanding that problem, MOMO Inc. and Weibo Corporation have sometimes obtained profit in sole quarters according to the annual financial statement, but there has been no profit since their establishment.

Secondly, the dramatic rising number of end users has contributed to most of the rising revenue of these service providers and is also the driving force to further development. However, it is certain that the number of end users could not continue at a considerable increase in this speed. Once the number of users hits the ceiling, how to continue sustainable development of LBSNs would be a question needed to be resolved. In addition, before that the decrease of the MAUs of Weibo is now a question that the service provider must confront.

Thirdly, no matter what CVP the LBSNs offers to the subscriber, when it comes to fee-based services, the service providers offer the same services to the end users, i.e. there is a

homogenization problem. Membership services, game centres, and virtual coins in the applications can be found in all the LBSNs applications, which will lead to the decrease of stickiness between end users and applications to some extent. That is, because of the homogenization services in all Chinese LBSNs application, the end users would turn to the new LBSNs application if this new application could provide new service to them and uninstall the previous one with no doubt.

Fourthly, Research and Development costs account for a certain amount of Weibo in 2014, along with the new interfaces—Weibo Camera and Seconds Camera—which were added to Weibo, which help the end users to record a personalized short video or take a photo with certain beautification. However, regarding the services that closely relate to CVP, there has been no difference since it was first launched. Within the research and development cost, certain amounts of budgets have been used in these unnecessary parts. Instead, we should provide end users with some new services, which are really in need and still in the white space.

Fifthly, at this stage, both of Weibo and MOMO have achieved success in Chinese LBSNs market with rising end users and revenue year by year. Both Weibo and MOMO explore the white space of customer value propositions and offer the related services to the subscribers well. In addition, both business models are properly match the development status of the service providers , which indicate the relationship between the business performance and business model.

## 4. Conclusions and Future Work

This thesis is the first one which use four-box into the LBSN business models analysis from open literature --- propose the first LBSN business models classification and analyze the business models of two typical examples--- MOMO Inc. and Weibo Corporation in the Chinese LBSNs market from the service providers' perspective, CVP, PF, KRs, and KPs of them have be studied respectively. According to the five criteria, we classify the present business models of LBSNs service providers into eleven groups. Further, we are able to categories the present business models in LBSNs market into three groups according to the core criteria--- customer value proposition .After obtaining the strengths and weaknesses of these two companies in business models' aspect, although MOMO and Weibo are both successful examples in Chinese LBSN market and have also achieved certain developments during this period, there still are some questions which need to be overcome in order to maintain the sustainable development of the Chinese LBSNs market, then certain tailored suggestions are given to them in accordance with the above items, with the purpose of improving the services of these companies from the business model perspective. In addition, both Efficiency Ratio and Operating Expense Ratio of MOMO Inc. and Weibo Corporation have been calculated , which indicates that the present business models of both companies are suitable for the development phase of the service providers. Further, according to the results of four- box business models analysis and these two ratios in both two years , we could find out the business performance of Weibo are better than that of MOMO in 2013 and 2014.

The main contributions of the thesis are as follows:

In the first place, business model is of significant importance for the business performance. Through the study of the main LBSN business models, we categorized the present LBSN business models in to certain categorizes based on the four-box business model framework. It is the foundation of further research of the booming market and also the first research that focuses on the LBSN business model classification.

In the second place, in this thesis, through the analysis of two typical LBSN business models in Chinses market from their Customer Value Proposition, Profit Formula, Key Resources and Key Processes one by one , certain problems in their business models have been founded .With the purposes of improving the services from the business model perspective ,we would give the following suggestions to the further improvements of the business models:

First, from the aspect of CVP, it is well known that most of the LBSNs services in the Chinese market could find the models from the overseas market, i.e. originality is lacking in the design of the LBSNs in the Chinese market. The original model of both MOMO and Weibo could be found in the overseas market , we should design our own LBSN application , rather than localizing the prevalent LBSN application in the Chinese market. The service providers should pay more attention themselves to the white space of the service, then redesigning the services, i.e. through the operation in recent years, the service providers have collected a large amount of users' data. Service providers could cooperate with the consulting firms in data analysis with the purpose of understanding the white space of the services by analysing the behaviours and habits of the end users. For example, at present, users all pay more attentions to their health, however, owing to the busy urban lives, they also forget to make use of some break time to do exercises. We could provide them with the exercises reminder service, once the end users have stayed in the same geographic location over 5 hours, when a automatic message would be sent to the end

users to remind them to do some exercises in the break time . In addition, in order to improve the data quality and reality and protect users' privacy, it is necessary for service providers to spend certain budgets in the data analysis and protection fields which would lead to the increased cost and then revenue as well.

Secondly, as has been mentioned before, service homogeneity is the other problem. All the LBSNs service providers offer the end users the same type of membership and game content, instead of relevant services in accordance with their initial customer value proper position. It is certain that the low entry barrier of the LBSNs market, both in cost and techniques, would lead to a low stickiness between the end users and the applications. End users quickly turn their attention to other LBSNs applications, once there are new services added. For instance, MOMO provides nearby stranger communication services to the subscribers. In the game centre, MOMO could design the location-based games instead, which would increase users' interest in using this application and would also highlight the difference from other LBSNs applications. From another standpoint, apart from the above paid services with the initial CVP, supplementary services, especially paid ones, should be added to the current ones. In addition, according to the analysis result of the users' data, with the help of developing position techniques and wireless technologies, service providers could continually pay their attention to the designing of new services, rather than some unnecessary updating, e.g. of the interfaces of the applications.

Thirdly, the developments of these two companies are closely relied on the sustained increasing of registered users. However, once the growth slows down or even starting to drop in the further, relevant responses and solution have to be put forward before that. The result would be of practical significance for obtaining the business performances of each company and making strategic plan.

The limitations of the research are that LBSNs has remained at its initial stage since it was first launched and there were only two Chinese LBSNs service providers listed in the stock market last year. The limited types of business models and financial information disclosure of both listed companies narrows the scope of the research.

In this study, we have classified the current business models and analysed the business models of two examples from the Chinese LBSNs market. In further analysis, with the increasing financial data which would be released by the listed companies in the following years and the establishments of the new LBSNs companies in Chinese market and the appearance of new business models in this market, which would help to provide more comprehensive analysis base on the abundant financial data and research sources, we would be able to continue our systemic analyse of the business models from the four boxed framework's aspect and improve the integrity of the classification . That is, through the studies about the business models of service providers from the financial aspect, we could figure out the changes of the revenue and cost streams, then investigate the reasons behind these. In addition, through the calculation of the ratios from corporate finance's filed; we would understand the performances of the companies and forecast the development trend, then find out the possible drawback factors in the recent business models. Meanwhile, in order to obtain sustainable developments, business models should be change in accordance with the advancement of positioning technologies, business knowledge and the new needs of end users'. In the end, based on the preliminary researches and analyses, we would like to design the new business model for the service providers from Chinese LBSNs Market.

In conclusion, along with the technological development of LBSNs and advanced business knowledge, there would be certain continuous growths in the future; we would follow the trend in the further research.

## Appendices I

### MOMO Inc.

MOMO Inc., which was founded by Yan Tang who was the former chief editor of Netease.com in July 2010 and re-domiciled in the Cayman Island in July 2014. The headquarter is in Beijing with almost 400 employee. At present, MOMO had established its subsidiaries in Hong Kong, Chengdu and Shanghai. In August 2010, MOMO Inc. launched its location based social networking application ---MOMO which help end users to communicate with nearby strangers, take part in group activities and discover interesting point of interests near them. In the end of 2014, MOMO Inc. completed its initial public offering (IPO) and listed on the NASDAQ Global Select Market. Until December 2014, the total end users of MOMO have reached 1.8 billion, among them, the monthly active users reached to 69.3 million and registered members were 2.9 million. Mobile games, paid emotions, membership subscription and marketing services are the main revenue streams of MOMO at this stage. The total revenue of MOMO Inc. was 44.755 million USD.

## Appendices II

### Weibo Corporation

Weibo Corporation was founded by Sina .com and started by original name---Sina Weibo since 2010, headquartered in Beijing and domiciled in Cayman Islands, which provided individual and organizational users with real time location based social media platform to express themselves and connected with the changes of the world. Sina Weibo Corporation changed its name to Sina, then completed its initial public offering (IPO) and listed on the NASDAQ Global Select Market in April 2014. There were 2,915 employees in Beijing, Shanghai, Chengdu and Hangzhou. The monthly active users reached to 175.7 million in December 2014. Weibo Hong Kong Limited, Weibo Internet Technology (China) Co. Ltd., Beijing Weimeng Technology Co. Ltd and Beijing Weibo Interactive Internet Technology Co. Ltd are the totally subsidiaries of Weibo Corporation. The total revenue of Weibo Corporation is 334.464 million USD in December 2014, which increased two times compared to that of the corresponding period of last year.

**Appendices III**

**Table of Global Main LBSNs**

| Name | **Main Services** |
|---|---|
| MOMO | Nearby stranger communication and virtual local community |
| Weibo | Check-in and virtualized social network |
| Wechat | Nearby stranger communication |
| Jiepang | Check-in and location sharing |
| Dianping | Life services+O2O |
| Foursquare | Check-in and location sharing (original), Local POI recommendation (Now) |
| Skout | Global stranger communication |

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