The Practical Study of Optimizing and Commercializing Mobile Value Added Service in China

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Abstract

As the fast development of mobile communication technology, mobile value added service (VAS) kept booming, the maturation of the mobile payment solutions also promoted the industry to become more consummate and profitable. As the cost of duplicating e-products is low while the return on investment is considerable high in this industry, many mobile VAS company are searching for bigger and challenging market such as China. The general aim of this thesis project is to provide practical solutions for these companies to successfully enter into the Chinese market. To fulfill this goal, the thesis studied behavior patterns of Chinese mobile VAS users by questionnaires, results indicated that variables and factors assessed in this study can significantly affect customers’ consume behaviours. Furthermore feasible business models and corresponding cooperative strategies were proposed and discussed in perspectives of value network, profitability and product control, which are tightly correlated to the commercialization of product. Moreover, this thesis introduced different marketing strategies to support the implementation of business models and introduced open and closed innovation conceptions for strategic development of mobile VAS companies’ growth in future.

Key words: mobile value added service, user behaviour, mobile payment, business model, marketing, profitability, value chain.
Acknowledgement

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Chapter 1

Introduction

Background  With the development of mobile internet technology, a new area that people using mobile devices to do most of their works and daily activities is coming. The mobile internet user amount will surpass the desktop’s in 2014 according to the prediction made by Morgan Stanly[15], and mobile internet will ramp faster than desktop internet did and will be bigger than most think. In 2010, 3G adoption reaches sweet spot with than 1,000MM global users with >21% mobile user penetration which is estimated to rise to around 2,800MM users with 43% mobile penetration by the end of 2014[15]. In this new and highly competitive industry, there is a trend of increasing popularity of mobile service and evidences showing that more users will likely to connect to the Internet via mobile devices rather than desktop PCs within 5 years. The Impressiveness of mobile devices’ design becomes more essential in competition. All these trends indicated an irreversible commercial demand to integrate various services in mobile concept. In another word, a huge opportunity exists for mobile VAS business to thrive world-widely.

There are promising opportunities for the growth for mobile VAS in Chinese market, since it has huge population, great amount of potential clients, strong effectiveness and reaching potency of network publication, and lots of government supported incubators for growing up mobile technology companies. This is just a beginning. The market capacity is keep increasing each year in area of mobile VAS. China has shown greatest potential (owing in Part to Tencent Success 2.2B in 2009E Revenue & $24 Annual ARPU)[15], undoubtedly the Chinese market is becoming more and more important and can be never neglected for companies with worldwide ambitions.

The aim of this thesis  In summary, the primary goal of this thesis is to provide information and assistance that helps international mobile VAS companies to successfully enter into the Chinese market. In order to achieve
CHAPTER 1. INTRODUCTION

it, the primary goal has been sub-divided into 4 secondary goals, which I will list as below:

- Study Chinese mobile VAS users’ demographic profile and purchasing behaviour by questionnaire studies, and empirically assess the determinants of the customers’ intention to use mobile VAS. Thus to provide hints for establishing proper marketing strategies.

- Propose practical business models and make discussion and analysis of them according to the results of questionnaire studies and possibilities that are available in Chinese industrial environment, study the value chain and make business solutions’ profitability, risk and opportunity assessments, provide advice of customized cooperative model according to practical conditions and demands of the company.

- Provide different mobile payment solutions for mobile content providers with purpose to find proper third parties that could incorporate mobile value-added service with billing solutions and target to local market.

- Provide practical cooperative strategies for international mobile VAS enterprises to optimize established businesses, propose future suggestions for company’s growth based on open innovation conception.

Business model must undergo the test of severe competition in order to thrive in local market. In the article, optimizing and Commercializing mobile VAS is considered a circulating process which begin with R&D step, adapt to the environment locally by proper customized business modality, distribute to customers, got feedback and ideas from users behaviour and transfer them to R&D stage again.

Utilize TAM (Technology Acceptance Model) to study the user behaviour. While it is clear that there is a need to understand the Chinese mobile VAS user behaviour in a group-level, little attempt has putted in to fill in such gap. To gain an understanding of user behaviours in mobile VAS in China, similar as prior researchers who had often embraced the technology acceptance model (TAM) as framework to explain consumer technology adoption, TAM was also introduced in this study for testifying the hypothesis of the relationship between different factors within the system relevant to Chinese mobile users’ purchasing behaviours.

The Technology Acceptance Model (TAM) was first proposed by Davis in 1989 based on the theory of reasonable action (TRA)[4]. TAM is now widely accepted as a framework for understanding user’s IT acceptance processes.
Indeed, TAM has proven to be a model with high explanatory power of the variance in users’ behavioural intention related to IT adoption and usage across a wide variety of contexts\[13\] In previous study, Devis presented two factors that determine mobile VAS user’s acceptance or rejection of information technology, namely perceived usefulness and perceived ease of use\[4\]. Users perceive higher ease of use of a certain system think the system is easy to access, generating a positive attitude on service adopting. If the perceived ease of use is low, then user attitudes are negative. We propose that, for Chinese customers, perceived ease of use can strengthen perceived usefulness and attitude and perceived usefulness may have significantly positive effects on customer satisfaction and behavioural intention\[4\]. In addition, different user groups may perceive mobile VAS advantages differently and adopt new payment technologies accordingly. In this paper, TAM is used to provide a conceptual model featuring a theoretic foundation to explain and predict the behavioural intention and practical behaviours of information technology users based on the acceptance and use of information technology. And the statistics from TAM in this study have showed interesting results which could be important for foreign practitioners and entrepreneurs in the mobile value added service sector for designing proper products specified for Chinese customers in the R&D stage, and formulating appropriate marketing strategies in the later phase.

**Convenience by mobile payment** The well-developed wireless communication system provided a higher wireless bandwidth and more diversified video and audio services to consumers than previously. Wireless devices can be used effectively to deliver value-added service transactions which have been frequently proclaimed as the new service frontier. Telecom service providers have released diverse and abundant mobile VAS to attract new subscribers. However, in spite of the growing number of mobile telecom users, the decline of the conventional voice services have gradually reduced ARPU (Average revenue per user), thus decreasing telecom service provider profits. So, facilitating the services that driving user intention to use mobile payment to pay for their subscription is an important way to increase ARPU in a future perspective, and that is closely related to the development of the mobile payment. In other words, the market growth of the VAS, to a certain extent, depends on multiple payment models that they can provide to the customers. Generally, mobile payment can be a convenient and reliable alternative payment method for goods, services, or invoices.

Mobile devices allow the users to connect to a server, perform authentication and authorization, make a mobile payment and subsequently confirm
CHAPTER 1. INTRODUCTION

the complete transaction. Mobile payment services involve certain parties which perform unique value-adding roles in the m-payment delivery chain. Payments fall broadly into two categories; payment for purchase and payment for bills/invoices. According to Juniper Research prediction, it is no doubt that there is a great future prospect for mobile payment. It will be more than 5 billion dollars revenue coming from mobile payment service to the service providers in global area by 2013. In the market of China, third-party online payment transactions reach 886 billion Yuan by 2010, and will be more than 6.68 trillion Yuan by 2015[20], According to the data from industry research organization.

In China large portion of mobile payment activities were through operators, in this case operators are not only responsible for providing the mobile internet, but also participated in the billing and profit sharing. The solution they propose for billing is called offline purchase, such as easy own card (published by CMCC, refilled as telephone fare of CMCC, then certain amount of the payments were transferred to many third parties’ payment accounts). The development of mobile payment aggregators promoted the differentiation in billing systems of value-added service providers. Just briefly look into the operating and profit sharing model between aggregators and CPs, such as Shenzhou Fu (https://www.shenzhoufu.com/) and Yeepay (http://www.yeepay.com/), which are 2 mature billing aggregators specialized at providing billing service for mobile value add service and online games, we can discover many economical advantages of the payment solutions they provide compared to operators (later paragraphs will explain it in detail).

In this study, different mobile payment suppliers are investigated for getting acquaintance of their technical solutions and business terms, so that it is able to give a reliable reference for selection of them as an implement of complete mobile VAS product launched in the Chinese market. The valuable aspect of this work is that it provides basic information and shortens the time for a foreign company who suppose to launch mobile VAS business in Chinese market.

Business models The first realistic step might be to propose the localized general business modality that adapted to the environment locally. It is also worth to notice that in mobile VAS industry, each part of the participants, such as developers, providers, and distributors, takes different roles, but they are procedurally dependent on each other. Because of this fact, analysis of the correspondent value chain is necessary in improving understanding of the properties and relationships of different parties in the industry. Apple’s operation strategies can serve as illustrations; many successful applications in
App store can generate considerable profit because they have smart ways to attract users to spend on their optional services and they have standardized easy business model for reaching the customers. Apple’s success is not limited in mobile hardware design, but also its innovative, delicate business model. As for now, Apple iPhone / iTouch have 4B+ App Downloads, achieved around 47 dowloaders per User[15].

In the article, Various business models were proposed and discussed, advantages and risks assessments of these models were conducted for giving references to generate an optimal solution for starting a mobile VAS in local market.

**Consumer intention behaviour**  This study also gives us insights on how to maximize consumer intention by influencing perceived factors. The characteristics of the easy accessibility for every potential user and driving user intention for impulsive purchase are thought to be crucially important. These points have been studied scientifically and discussed thoroughly in this paper. Specifically, user behaviour was identified and characterized using the TAM described above.

A foreign business model must undergo the test of severe competition in order to thrive in Chinese market. The first realistic step might be to introduce the localized general business modality that adapted to the environment locally.
Chapter 2

Research Methodology

In this chapter, different methodologies used in different parts of the study were described in detail in following sections.

2.1 Questionnaire study

In this study, two sets of questionnaires were designed based on related literatures. The first set of questionnaire (include 13 single-select questions shown in Appendix) was aimed to acquire basic information of the respondents as well as their propensity of mobile service usage. Questions in demographic profile of respondents was constructed based on previous research attempts[4 and 5]. All of the questions suppose to have a facilitative effect in understanding of Chinese mobile VAS user’s behaviour in a general point of view. At the beginning, 5 questions were introduced to register the general information of the respondents in terms of their gender, age, educational, social and economical statuses, followed by 3 questions to identify their social mobile network usage history and preferences. Finally, 5 additional questions was designed for acquire the attitudes of the respondents towards mobile internet login solutions, iphone applications, specific mobile application such as mobile dating tools and mobile payment solutions, because these factors are considered to be important for mobile VAS manufacturers to consider in the R&D stages of their products. The acquirement of demographic profiles of respondents increased the credibility of the data collected in the second survey.

The second questionnaire was constructed based on TAM to characterize behavioural manner of Chinese mobile VAS users and testify the hypothesis of constructed conceptual model seen from Figure 3.1. In detail, there are totally 7 factors, and each factor consisted 3 indications (shown in 2.1) designed based on former literatures. Totally the questionnaire consisted of 21 indications
that respondents were asked to rank the item in a 5-degree level from 1-strongly disagree to 5-extremely agree, one score was chosen by the respondents for each question as a representation that to what extent they are agreed with the indication. Then, point of each question was converted based on the question’s (positive or negative) reflect of the factor that used in the study. For the questions with positive contributions to the factor the points were remained as the same as respondents given. For the questions with negative contribution (such as PC1, BI2, BI3 and CL2), the answered points were reversed (5 became 1, 2 become 4, etc). Based on the factor, respondents were subsequently divided into two sub groups for each factor based on their answers. Respondents with the accumulation of converted score for each factor (3 answers ranging from 3 to 15) > 8 was considered to be a positive group (i.e. for factor of Perceived Usefulness, equals to PU+) and otherwise they fall into a negative group (i.e. for Perceived Usefulness, PU-). Then, the effect of that factor (i.e. PU) on another factor (i.e. SC) can be studied by comparing the average points that the positive/negative user groups of the first factor (i.e. PU+ or PU-) have given for another factor (i.e. CS).

Questionnaires were distributed via internet by professional online survey website: www.askform.cn. 164 respondents have accomplished questionnaire 1 and questionnaire 2 can be found in the Appendix section.

Table 2.1: Questionnaire 2--Analysis of Chinese user behaviours in mobile VAS

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceived ease of use</strong></td>
<td><strong>PEU1</strong> Learning to use the mobile VAS is easy for me</td>
<td>Kim et al. (2010)</td>
</tr>
<tr>
<td></td>
<td><strong>PEU2</strong> My interaction with mobile VAS procedure would be clear and understandable</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>PEU3</strong> I would find a mobile VAS to be flexible to interact with</td>
<td></td>
</tr>
<tr>
<td><strong>Perceived usefulness</strong></td>
<td><strong>PU1</strong> Using mobile VAS can bring happiness and efficiency for my life</td>
<td>Kuo et al. (2009)</td>
</tr>
<tr>
<td></td>
<td><strong>PU2</strong> Using mobile VAS can help me accomplish working task easier and faster.</td>
<td>Hung et al. (2003)</td>
</tr>
<tr>
<td></td>
<td><strong>PU3</strong> Mobile VAS can provide me useful information and reference about my life and work</td>
<td>Karahanna et al. (1999)</td>
</tr>
</tbody>
</table>

**Perceived Cost**
Table 2.1: Questionnaire 2—Analysis of Chinese user behaviours in mobile VAS (continued)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC1</td>
<td>I think it is better if operators reduce the charging for mobile VAS, but I will continue using no matter how much cost.</td>
<td>Luarn et al. (2005)</td>
</tr>
<tr>
<td>PC2</td>
<td>For me the current cost for mobile VAS is high, I will not be addictive on mobile VAS</td>
<td>Wu et al. (2005)</td>
</tr>
<tr>
<td>PC3</td>
<td>Generally speaking, I cannot accept the current tariff of mobile VAS, and I can’t afford them</td>
<td></td>
</tr>
<tr>
<td><strong>Switching Cost</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC1</td>
<td>Switching to other mobile VAS may cause losing virtual friends</td>
<td>Gefen et al. (2002)</td>
</tr>
<tr>
<td>SC2</td>
<td>Switching to new mobile VAS will cost new expenditure</td>
<td></td>
</tr>
<tr>
<td>SC3</td>
<td>Switching to other mobile VAS would require too much learning</td>
<td></td>
</tr>
<tr>
<td><strong>Customer Satisfaction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS1</td>
<td>My choice to purchase current using mobile service was a wise one</td>
<td>Croinin et al. (2000)</td>
</tr>
<tr>
<td>CS2</td>
<td>I think I did right thing when I purchased the service</td>
<td></td>
</tr>
<tr>
<td>CS3</td>
<td>The facility is exactly what is needed for the service</td>
<td></td>
</tr>
<tr>
<td><strong>Behavioural intention</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BI1</td>
<td>I am eager to use mobile VAS in the future</td>
<td>Taylorand et al. (1995)</td>
</tr>
<tr>
<td>BI2</td>
<td>Maybe I will try to use mobile VAS but not now</td>
<td>Karahanna et al. (1999)</td>
</tr>
<tr>
<td>BI3</td>
<td>I will not use mobile VAS unless it is necessary for life and work.</td>
<td></td>
</tr>
<tr>
<td><strong>Customer loyalty</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CL1</td>
<td>I will keep using current mobile VAS</td>
<td>Lin et al. (2006)</td>
</tr>
<tr>
<td>CL2</td>
<td>I would like to try different and new products all the time</td>
<td></td>
</tr>
<tr>
<td>CL3</td>
<td>Even if friends recommended another mobile VAS strongly, I will not change my mind or preference for some service</td>
<td></td>
</tr>
</tbody>
</table>
Table 2.1: Questionnaire 2--Analysis of Chinese user behaviours in mobile VAS (continued)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item</th>
<th>Source</th>
</tr>
</thead>
</table>

Data were registered in Exell software (Microsoft, USA), statistics were performed using Statview software (Adept Scientific, UK), and results were plotted using GraphPad Prism software (Graphpad Software, USA).

2.2 Construction and analysis of business models and analysis of mobile payment solutions

For the constructions of business models and analysis of the mobile payment solutions, various online searching engines and materials were utilized, including Google (www.google.com), Baidu (www.baidu.com), Sohu (www.sohu.com) and Sina (www.sina.com). For downloading published literatures, multiple sites of state library in Stockholm (Sweden) are used. Then online materials and downloaded publications are studied and summarized.

In addition, I have personally consulted a manager in international department of Chinese instant messenger provider QQ (Tencent, China) for the discussion of construction of suitable business models for foreign start-up mobile companies, and communicated with professional software engineers of 91.net (China) and Alipay (Hangzhou, China) for the discussion of the mobile payment solutions. These communications are through email (Hotmail, Microsoft, USA), instant messenger (MSN, Microsoft, USA) and video conference system (Skype, USA).

Finally, detail results of constructed business models and descriptions of mobile payment solutions were drawn in graphs using Word and Powerpoint software (Microsoft, USA).

2.3 Establishment of marketing strategies

Marketing strategies were constructed based on the results from questionnaires and practical business negotiations, previous research literatures (listed in Reference) and conversations with local service providers and mobile payments parties. Besides, all managers and employees of mobile contents provider...
2.3. ESTABLISHMENT OF MARKETING STRATEGIES

Mobile Life (Stockholm, Sweden) had provided important and continuous consultancies for the successful establishment of marketing strategies.
Chapter 3

Questionnaire Study of mobile VAS

Two questionnaires were designed to study user behaviour in mobile VAS in China. In questionnaire 1, the Chinese mobile VAS users’ demographic profiles were collected and implemented with several questions which investigated mobile applications’ popularity in China. In questionnaire 2, a research model is introduced based on TAM to study the factors affecting consumer’s behavioural intention to adopt mobile VAS and to analyze the relationships among these factors. The cost perspective was also added to examine consumer’s behavioural intention to consume these services. This chapter will start from the introduction of the importance of studying demographic profiles of the Chinese respondents, then going to the hypothesis development based on TAM to assess the determinants of the Chinese customers’ intention to purchase mobile VAS, and finally arrives to the results acquired from the two questionnaires.

3.1 Background of the mobile VAS user population in China

Questionnaire 1 was used to register the geometric profile of the respondents. The results of such profile can be compared with the general profile of Chinese mobile VAS users for controlling that the investigated user group not varies largely from entire mobile VAS user group in China, as well as providing further detail information such as their history in using mobile VAS and preferences in several kinds of services that international companies are always seeking to publish.
For WAP users in China, most of WAP consumers are located in developed provinces and cities such as Guangdong Province, Zhejiang Province, Beijing and Shanghai. The region has biggest number of WAP users is Guangdong which consists of 1/4 of the total national WAP users (9,700,000). There are 1,700,000 and 1,300,000 for Beijing and Shanghai respectively. (According to the statistics CNNIC published in Jan 2009)\[10\]. These WAP users are concentrated in manufactures, companies and schools. In addition, they are mainly middle or low end users. The reason for that is large proportion of these users is migrant workers who are working for locally restricted companies. Poor living conditions and boring life style make WAP become popular among them as an easy entertainment, as a result, WAP services targeted to this user group should be simple and easy to access. Male WAP users take up 80% while female users take up 20% (however, females are showing an increasing trend towards males). The male users still have predominant higher percentage which probably could be explained by their higher interest in novel technologies and positivity in trying new things\[20\]. One thing worth to mention is that ‘after 80 born’ users take up 73.2% of the total. From which we can assume that the core WAP users are aged 16-30\[20\]. In terms of different levels of income, highest percentage of 29.5% is achieved by people with income between 1000RMB and 2000RMB, following by 16.2% contributed by people who have income from 2000RMB to 3000RMB. Students without income take up 21.1%, while low income WAP users (below 3000RMB) take up 78.1\%\[20\].

Regarding smart phone users in China, iphone, android phones are the most successful mainstream smart phones in local market. BlackBerry and other type of smartphone users are mostly middle-aged who are between the ages of 37-55, and highly dependent on their mobile phone’s business functions\[10\]. 54% of the smart phone users are male, 57% of applications users are between 18 to 29 year-old and 39% of them have university degrees\[10\], indicating smart phone users generally receives better education.

Social networking service becomes more accessible, which has also been proved by the feedback getting from questionnaire 1’ respondents, so that here provide a brief introduction and comparisons of social networking service in the local market.

The following table 3.1 is a comparison between several most popular mobile based social value added services in China:

In terms of purchasing abilities, according to the 2009’s annual report of mobile VAS in China, the monthly purchase of mobile VAS for majority of mobile internet users (56.8%) in China varies between 5RMB-25RMB\[2\], such purchase ability is crucial to consider about when providing pricing strategies. In detail, 1/5 of the WAP users spend 6-10RMB per month, more than 1/4 users pay 11-20RMB per month for WAP services and subscribers who spend
3.2 Hypothesis development for behaviour study of Chinese mobile VAS users

In questionnaire 2, I first identified important factors that relevant to Chinese mobile VAS customer’s purchasing behaviours. These factors were proposed based on my personal experiences in marketing of mobile VAS in China. Because, when we going to market a certain product, various factors were always need to be evaluated before we launch the service, so that we know exactly which user group we were targeted at, and we could then make a marketing plan based on that. After several times, I discovered some factors always played more important roles than others, so, I extracted these factors as the factors I studied in this article, which were perceived usefulness (PU), perceived ease of use (PEOU), perceived cost (PC), customer satisfaction (CS), switching cost (SC), behavioural intention to consume (BI) and customer loyalty. Then, I wanted to identify the relationships between each other and study how these factors can act together to give rise to a general function. So, I did the hypothesis development by studying various literatures that also investigated at these factors, and logically formulated a conceptual model accordingly.
Perceived usefulness perceived ease of use and customer satisfaction

In previous studies perceived usefulness had a significantly positive effects on customer satisfaction and behavioural intention\cite{13}. The studies of mobile commerce based on TAM produced similar findings. For instance, a user who perceives a higher usefulness of mobile commerce has a higher extent of satisfaction and a stronger attitude for adoption\cite{9}. Similarly, a user who perceives a higher ease of use of mobile services also shows a stronger preference for adoption because of service satisfaction\cite{9}. In user adoption of mobile VAS, the perceived usefulness implies the how well user perceive the service functionally and perceived ease of use mainly related to user convenience and to what degree the service is conceptionally fascinated. Here, based on what had already discovered, we can simply propose two hypothesizes:

- H1: Perceived usefulness may positively influence customer satisfaction.
- H2: Perceived ease of use may positively influence customer satisfaction.

Perceived cost and customer satisfaction

Among the issues related to information technologies, many scholars considered cost as an important factor affecting user’s behavioural intention\cite{9}\cite{14}. Constantinides\cite{6} argued that in the process of transferring e-commerce has various costs, namely equipment cost, access cost and conversion cost. However, these costs may increase usage fee of wireless mobile commerce to the level higher than that of wired e-commerce. In a study of personal adoption of mobile banking, Lau and Lin\cite{8} pointed out that perceived financial cost has significantly negative effects on user’s satisfaction and behavioural intention. Wu and Wang\cite{14} also discovered that perceived cost has significantly negative effects on user adoption of mobile commerce. Huang et.al\cite{9} probed into the relationship between costs of value-added services negatively influences consumer attitudes towards the use of WAP services. The main cost of a mobile VAS can be separated into two parts; the mobile network usage fee for signal transduction and optional subscription fee. Transduction fee is an irreducible cost. However subscription or other related fee for using the VAS is manipulative. Our perspective is that perceived cost (mainly subscription and service related fee) will negatively affect customer satisfaction. Then subsequently influence the behavioural intention on individual basis. The hypothesis is:

- H3: Perceived cost negatively influences the customer satisfaction.
Customer satisfaction, intention of use and loyalty

Customer satisfaction which refers to “the summary psychological” state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer’s prior feelings about the consumption experience (Oliver, 1981), is often considered as an important determinant of repurchase intention and customer loyalty[7]. Previous literature theorized that customer satisfaction can be classified into two types: transaction-specific satisfaction and general overall satisfaction[11]. Transaction-specific customer satisfaction and refers to the assessment customers make after a specific purchase experience, and overall satisfaction means the customer’s rating of the brand based on their experiences[11]. Since customer satisfaction reflects the degree of a customer’s positive feeling for a service provider in mobile VAS experience, it is important for service providers to understand the customer’s basic requirements and further demands to increase their degree of satisfaction after using the service. On the other hand, a high level of customer satisfaction may have a positive impact on-reserving old customers as well as attracting new customers. The following hypothesis is developed:

- H4: Customer satisfaction has a positive effect on intention of use.
- H5: Customer satisfaction has a positive effect on customer loyalty.

Customer loyalty and switching cost

Switching cost is the costs that consumer incurs by changing one service provider to another.

Specifically, increasing a customer’s perceptions of the risks in switching to other providers, the trouble in building a new contact relationship, and the difficulty in using an alternative service will increase the likelihood that he/she keeps the relationship with current service provider. In the specific case of mobile VAS, based on precious experiences which indicated that the service characteristic is to a great extent similar to general value-added services, we can form the following hypothesis:

- H6: Perceived switching cost has a positive effect on customer loyalty.

In total, the conceptual model is shown as in Figure.3.1. We propose in hypothesis that perceived usefulness (PU) and Perceived ease of use (PEOU) have a positive effect on customer satisfaction (CS) while perceived cost (PC) is negatively relevant to CS (H1, H2 & H3). A higher CS will promote customer’s behavioural intention to consume (BI) and loyalty (CL) (H4 & H5). Switch cost (SC) also can give a positive effect on customer loyalty (H6). The
scientific hypothesis was then tested by the analysis of the data acquired in questionnaire 2.

![Conceptual Model][1]

**Figure 3.1: conceptual model**

### 3.3 Result Analysis

**Demographic profile of respondents**

In this online distributed survey, totally 164 subjects are fully participated in questionnaire 3.2. Following table shows the demographic profile of the respondents.

<table>
<thead>
<tr>
<th>Division</th>
<th>Item</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>96</td>
<td>58.5%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>68</td>
<td>41.5%</td>
</tr>
<tr>
<td>Age</td>
<td>Under 16</td>
<td>16</td>
<td>9.8%</td>
</tr>
<tr>
<td></td>
<td>16–24</td>
<td>98</td>
<td>59.8%</td>
</tr>
<tr>
<td></td>
<td>24–30</td>
<td>21</td>
<td>12.8%</td>
</tr>
<tr>
<td></td>
<td>30–40</td>
<td>24</td>
<td>14.6%</td>
</tr>
<tr>
<td></td>
<td>40–50</td>
<td>5</td>
<td>3%</td>
</tr>
<tr>
<td>Education</td>
<td>High school &amp; under high school</td>
<td>17</td>
<td>10.4%</td>
</tr>
<tr>
<td></td>
<td>University Student</td>
<td>59</td>
<td>36%</td>
</tr>
<tr>
<td></td>
<td>University graduate</td>
<td>64</td>
<td>39%</td>
</tr>
<tr>
<td></td>
<td>Postgraduate</td>
<td>24</td>
<td>14.6%</td>
</tr>
<tr>
<td>Occupation</td>
<td>Student</td>
<td>103</td>
<td>62.8%</td>
</tr>
<tr>
<td></td>
<td>Entrepreneur</td>
<td>3</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

[1]: #/content/figure3.1.png
### 3.3. RESULT ANALYSIS

Table 3.2: Demographic profile of respondents (continued)

<table>
<thead>
<tr>
<th>Division</th>
<th>Item</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public servant</td>
<td>7</td>
<td>4.3%</td>
</tr>
<tr>
<td></td>
<td>Company salaried employee</td>
<td>11</td>
<td>6.7%</td>
</tr>
<tr>
<td></td>
<td>Waged workers</td>
<td>4</td>
<td>2.4%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>36</td>
<td>22%</td>
</tr>
<tr>
<td>Monthly income</td>
<td>&lt;1000 Yuan</td>
<td>84</td>
<td>51.2%</td>
</tr>
<tr>
<td></td>
<td>1000–2000 Yuan</td>
<td>10</td>
<td>6.1%</td>
</tr>
<tr>
<td></td>
<td>2000–4000 Yuan</td>
<td>31</td>
<td>18.9%</td>
</tr>
<tr>
<td></td>
<td>4000–8000 Yuan</td>
<td>23</td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td>&gt;8000 Yuan</td>
<td>16</td>
<td>9.8%</td>
</tr>
<tr>
<td>Years using VAS</td>
<td>&lt;1 year (new customers)</td>
<td>47</td>
<td>28.7%</td>
</tr>
<tr>
<td></td>
<td>1–2 years</td>
<td>25</td>
<td>15.3%</td>
</tr>
<tr>
<td></td>
<td>2–3 years</td>
<td>59</td>
<td>36%</td>
</tr>
<tr>
<td></td>
<td>3 years or more</td>
<td>33</td>
<td>20%</td>
</tr>
<tr>
<td>Most active Social life</td>
<td>Life and work related friends</td>
<td>83</td>
<td>50.6%</td>
</tr>
<tr>
<td></td>
<td>School friends</td>
<td>42</td>
<td>25.6%</td>
</tr>
<tr>
<td></td>
<td>Friends in the virtual world</td>
<td>20</td>
<td>12.2%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>19</td>
<td>11.6%</td>
</tr>
<tr>
<td>Favourite used VAS</td>
<td>Facebook</td>
<td>16</td>
<td>9.8%</td>
</tr>
<tr>
<td></td>
<td>Qzone</td>
<td>48</td>
<td>29.3%</td>
</tr>
<tr>
<td></td>
<td>Myspace</td>
<td>32</td>
<td>19.5%</td>
</tr>
<tr>
<td></td>
<td>Renren</td>
<td>56</td>
<td>34.1%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>12</td>
<td>7.3%</td>
</tr>
<tr>
<td>Attitude of trying new product</td>
<td>Willing to try new product</td>
<td>32</td>
<td>19.5%</td>
</tr>
<tr>
<td></td>
<td>Insist to use the one familiar with</td>
<td>21</td>
<td>12.8%</td>
</tr>
<tr>
<td></td>
<td>Will try if someone recommends</td>
<td>45</td>
<td>27.5%</td>
</tr>
<tr>
<td></td>
<td>Not interested</td>
<td>66</td>
<td>40.2%</td>
</tr>
<tr>
<td>login Solutions</td>
<td>Login through portal</td>
<td>41</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>Download client-end</td>
<td>5</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>Purchase App</td>
<td>36</td>
<td>24.7%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>54</td>
<td>33%</td>
</tr>
<tr>
<td>User preferences in</td>
<td>Games</td>
<td>70</td>
<td>42.7%</td>
</tr>
<tr>
<td>Mobile services</td>
<td>Fashion news</td>
<td>9</td>
<td>5.5%</td>
</tr>
<tr>
<td></td>
<td>Reference and knowledge</td>
<td>12</td>
<td>7.3%</td>
</tr>
<tr>
<td></td>
<td>Social networking service</td>
<td>73</td>
<td>44.5%</td>
</tr>
<tr>
<td>Most concerned</td>
<td>Interface and design</td>
<td>36</td>
<td>22%</td>
</tr>
</tbody>
</table>
Table 3.2: Demographic profile of respondents (continued)

<table>
<thead>
<tr>
<th>Division</th>
<th>Item</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>functions and tools</td>
<td>User interactions and functionality</td>
<td>74</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td>Easy to use, practically designed tools</td>
<td>36</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>Convenient way to pay for items</td>
<td>11</td>
<td>6.7%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>7</td>
<td>4.3%</td>
</tr>
<tr>
<td>Choice of reliable</td>
<td>Deducted from mobile account</td>
<td>36</td>
<td>22%</td>
</tr>
<tr>
<td>mobile-payment</td>
<td>By recharging cards (Shenzhouxing)</td>
<td>10</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td>Use Alipay</td>
<td>47</td>
<td>28.7%</td>
</tr>
<tr>
<td></td>
<td>Use bank-transfer or credit-card payment</td>
<td>8</td>
<td>4.9%</td>
</tr>
<tr>
<td></td>
<td>Not using as long as it charges</td>
<td>63</td>
<td>38.4%</td>
</tr>
</tbody>
</table>

From demographic profile of respondents, male respondents were participated slightly more than females, but it will not affect the credibility of our data because the difference between two sexes is not significant, and the factor of gender on the population’s willingness of participation in a certain research is not the issue of our interest. Most of the respondents are between 16-24 years old, such age span indicating that they probably still doing studies as students. And such hypothesis was proved by the fact that their occupations were dominated by students (62.8%). In addition, half of the respondents receive a monthly income lower than 1000 Yuan suggests that most of them have relatively low level financial support for purchase mobile VAS products including entertainment. Before attending this survey, the majority of the respondents usually have 2 to 3 years’ user experience using mobile and internet based VAS, indicates majority of the are not beginners with mobile VAS, they could have developed their own taste in choosing such type of services.

In addition, most of the respondents reported that their active social life is with daily-life and work related friends, but not friends they made only via internet, suggests their social life are not dominated by mobile and computer based internet. Their current favorite SNS is Renren (which is extremely popular among the student groups as reported previously). It makes sense since most of the respondents are students. Their attitude towards trying a new SNS tool is relatively conservative, 12.8% of the respondents prefer to
stick to old ones that they are familiar with, may be because of their familiarity and dependency with the existing system—the high switching cost. Regarding login into internet with mobile devices, most of the respondents login through wap portal (47%). Objects also showed greater interests both on mobile games and mobile social networking services. For functions in dating tools, they have largest concern in user interaction and functions.

Regarding mobile-payment, most responders think it is acceptable to pay for VAS if the service is worth enough. Meanwhile the billing solution need to be convenient and secure, by so far, customers prefer operators 22%, and Alipay 28.7%, transaction directly through bank-transfer or credit-card takes 4.9%, buying recharging cards takes 6%. Choosing proper payment can encourage impulsive purchases.

In the following paragraphs study results of questionnaire 2 will be discussed:

Factors on Satisfaction

Figure 3.2 is result of the comparison of PU+ (perceived usefulness+ subjects who perceive PU with more than 8 in accumulated score) with PU- subjects (who perceive PU with less than 8 in accumulated score), and using the same definition paradigm, PEOU+ (perceived ease of use) with PEOU- and PC+ (perceived cost) with PC- subjects on the degree of customer satisfaction. Results showed there is a significant difference between PU+ and PU- groups on perceived customer satisfaction, and revealed that users perceive higher PU also have higher degree of satisfaction and vice versa. Such tendency holds also true for PEOU. Subjects in PEOU+ group perceived significantly higher customer satisfaction than PEOU- group. Oppositely, in terms of PC, higher users perceived higher cost (PC+) was less satisfactory than users with smaller cost (PC-). This result suggests that PU and PEOU are positively correlated with customer satisfaction, whereas, perceived cost has a negative relationship with customer satisfaction.

Customer satisfaction on intention to use

Figure 3.3 is the result of the comparison study of CS+ (customer satisfaction+, subjects who perceive CS with more than 8 in accumulated score) with CS- (subjects who perceive CS with less than 8 in accumulated score), on the degree of user’s intention to use. Results have revealed that Users perceive higher CS also have higher degree of intention to use the mobile VAS, and vice versa. Besides, there is a statistical significance between CS+ and CS- groups with respect to user’s intention to use, revealed by Mann-Whitney U test.
CHAPTER 3. QUESTIONNAIRE STUDY OF MOBILE VAS

Figure 3.2: Factors on Satisfaction

This result suggests that CS is positively correlated with user’s behavioural intention (BI).

Factors on Customer loyalty

Figure 3.4 is result of the comparison study of CS+ (customer satisfaction+, subjects who perceive CS with more than 8 in accumulated score) with CS- (subjects who perceive CS with less than 8 in accumulated score) and SC+ (switching cost+, using the same paradigm) and SC- on the degree of customer loyalty. Results have revealed that users perceive higher CS also have higher degree of satisfaction and vice versa. Besides, CS+ has statistical significantly higher customer loyalty level than CS- groups. Such observation holds true for SC. Customers perceived large switching cost (SC+) showed more customer loyalty on used mobile VAS compared to customers perceived less switching cost (SC-). In total, this result suggests that CS as well as SC is positively correlated with customer loyalty (CL). All in all, the results of the final model are shown in Figure 3.5. Firm lines indicated the positive relationship and dash lines indicated of negative relationship. The results indicated that both perceived ease of use (PEOU) and perceived usefulness (PU) exerted significant positive effect, but perceived cost (PC) exerted negative effect on customer’s satisfaction. These effects subsequently influenced user’s intention to consume a certain mobile VAS, since that customer satisfaction (SC) was
3.3. RESULT ANALYSIS

**Figure 3.3:** Customer satisfaction on user intention to use

Subjects that achieved accumulated score \( \geq 8 \) became CS+, which have accumulated score \( < 8 \) became CS-. Data are plotted as Mean+/SD. Two groups are compared with Mann–Whitney U test \( ** p<0.01 \).

**Figure 3.4:** Factors on Customer Loyalty

Subjects that achieved accumulated score \( \geq 8 \) became SC+ and CS+, which have accumulated score \( < 8 \) became SC- and CS-. Data are plotted as Mean+/SD. Two groups are compared with Mann–Whitney U test \( ** p<0.01 \).
positively correlated with behavioural intention to purchase (BI). In addition, customer satisfaction (CS) and switching cost (SC) are positively correlated with customer loyalty (CL).
Chapter 4

Establish Business models

Following are brief introduction of different parties in the business model. CP (content provider) are genuine developers who create mobile VAS and implement them. They play as R&D (research and development) role in the whole industrial chain. SP (service provider) can distribute products to the end users directly. Previously, most of SP they have to keep close cooperation with operators and quite relied on them, however, recently there are many new SP having their own portals, operating without operators in the market. They are normally responsible for advertising, marketing and distributing value added contents as well as providing customer support. Aggregators provide billing solutions for CP or SP, technically making implementation of mobile VAS and mobile payment.

According to above customer behavioural analysis, the business attempts in the field of mobile VAS should be undergone modifications in order to be localized. However, one of the most important issue should never be overlooked— that is business should be realized in desirable commercial environments and should be investigated in terms of the feasibilities regarding realistic profitability and cost-effectiveness.

Based on analysis of current industry, various practical approaches were generated in this paper. Each approach composed of different parties in mobile VAS’s industrial chain and their relationship in generating revenues and leveraging each other’s utilities, shown as following:

1. CP→Operator→End Users

2. CP→SP→End Users (Independent SP model, CP+SP+Operator→end users for Dependent SP model.)

3. CP→Aggregator→End Users
4. CP→Agent Service Companies→Operators→End Users

5. App Store/MM-market

Following literature will study each model and related value chain, then make an overall analysis of these proposed models in terms of profitability.

4.1 CP-Operator-End Users

Basically, the more directly the way to the users, the higher profit the developer can get from the value chain. This model is shown in Figure 4.1. So if service provider could cooperate directly with operators such as China Mobile or China Unicom, CP can get maximum of the revenue share. The objective of the collaboration is to integrate mobile VAS in operators WAP portals or bind them to their primary services.

![Figure 4.1: CP-Operator-End Users](image)

There are two advantages: First, it allows the maximum profit by skipping the intermediate dealers. Second, the direct integration enabled high accessibility for individual subscribers. However, great effort is required in persuading these operators to cooperate with small content providers. For CMCC payout is 85%, while for China Unicom it is 80%, but bad debt is around 10%.

For launching Mobile VAS in the operator’s portal, CP should hand in online application on SPOA platform (http://hqspdx.uni-wise.com/), after service examination and assessment, they can be public in operator’s portal while charged through operator’s billing gateway.

Another solution is joining BOSS which is billing systems owned by China Mobile with many applications like data collection, billing solutions, financial settlement, customer services, business relationship management, system control and integrated accounting functions.

The condition for cooperation with operators directly is that they need to acquire PRC Mobile value-added business license, which requires company have big assets investment, own technical group and specific business team. In order to realize this, following requirements are listed out as reference for analysing the feasibility for this business model.
4.2. CP-SP-END USERS

Following is about the eligibilities that required for ICP license application:

1. The service provider should be a legally registered corporation.

2. obtained corresponding financial and human resources for operation and development.

3. corresponding reputation and competency to offer sustained services for users.

4. a qualitative business plan and corresponding technical solutions.

5. a complete set of security controlling systems including site security management system, information security management system and user information security management system.

6. acquired corresponding certifications for the information service contents that subject to pre-approval procedures according to ICP regulations.

7. fulfilled other regulations stipulated by government.

8. ICP license requires 1million RMB registered capital at least.

In this model, contents developers provide their services through mobile operators to users. Operators can charge 15%–20% of the total revenue and rest of income goes to the developers. The advantage is by collaborating with operators, developers get easy access to thousands of users that using the specific operator. However, the drawbacks are it usually takes long time before a settlement can be reached and there is bad debt between operators and customers.

For a substantially long period, due to the strict evaluation of each product and high capital demand (minimum 1,000,000 RMB), there are few chances for a small-middle enterprise to cooperate with operators. To solve this problem and promoting CP to develop more good products, they are making effort in many ways, for example in the future, China Mobile (CMCC) will introduce a direct cooperation system to CP to offer them the opportunity to get higher revenue share in the value chain, anyway it is a long-term propose strategy which may take long time until before carrying out.

4.2 CP-SP-End Users

Service provider in this model is considered as multiple media platform which possesses market place directly reaching the customers with good business
environment and they have the capability of diversifying applications. SPs get replenishment from developers, and then these contents are pushed forward to individual customers. The relationship between developers, SPs and end-users forms an open value chain, with a self amplification loop by positive feedback (showed by Figure 4.2).

Service providers are always strong in capital and have well established development team and sophisticated billing systems. They also cooperate with outside developers, integrate external applications and then share revenue based on the popularity and profitability of the value added services.

SP usually have intense cooperation with operators. As a result, some of the businesses may go through them. SP could also initiate collaborations with aggregators for using their billing service. In terms of how to divide the profit, after subtracted intermediate cost, the net profit is split with developers according to the ratio in the agreement. Normally SP charge higher than operators but lower than special agent business partners.

Cooperating with SP who are integrative service providers that have the qualification to offer mobile contents with established payment protocols (for both subscriber and operator) is a easy and immediate way to gain users in large quantities. Following the process of revenue sharing, the total income of the proposed downloading contents and services are allocated to contents provider, SP (including aggregator) and operator in a predefined ratio (by SP). In addition, SP will take the management of operation as well.

Following is an introduction of Chinese major SP and how they split revenue in real case:

**Kong.net** Kong has 200M daily PV, Ko.cn is like its game store and it has 70M daily PV, has dominative position of WAP games in local market. Their cooperation model with individual CP is like subtracted 10% transaction fee and 3.3% tax from revenue, divide only 40% of the remained income to
4.2. **CP-SP-END USERS**

CP. And for tx.com.cn, the transaction fee has different conversion methods according to different payment (from bank transfer, charging card, bill charging etc.), after deducted transaction fee from revenue, CP can just get 60% of the rest.

Kong does not like to initiate collaborations with company that have already bound with aggregators. There are two reasons for that. First, they expect to take the initiative in financial settlements. Second, big companies always have their own strategies and schedules. They will not like to break their rules for sake of CP’s preference.

**Tencent**  Tencent possesses most successful IM-QQ, in terms of external connected VAS, if charged by CMCC WAP, after deducting 15% of the operator’s distributive cost., Tencent will share 30% of the profit to the developers, if charged by virtual goods Q Credits, 40% of the revenue will delivered to service developers.

**Channelsoft**  Another famous SP in China is Channelsoft. As for cost of billing channels with Channelsoft, the cooperative revenue sharing model between SP and Developers is from 60:40 to 50:50(5.5% of tax rate should be deducted).

**SNS (TX, RenRen)**  They comprise the biggest mobile Social network service community in china, the concept of it is more like Facebook, it has 24M registered mobile user, 10M active users and 40M daily PV. By corporation with TX.cn, Eternal CP will normally get 70% of the revenue with maximum of 80% on rare occasions. If take account into the profit goes to the payment providers, CP can get 50% for total revenue at least. The ratio of profit sharing between CP and TX is commonly set at 6:4.

RenRen is most popular social network in desktop users, their WAP version is booming as well. TX and RenRen have open source platform which is public to all interested developers, for the purpose to get more great apps from public to improve user addictive. Those apps based on REST architecture are suitable for integration into their open source platform, and it is quite popular recently. The ratio of profit sharing between CP and TX is commonly set at 7:3.

**MSN**  Compare with Kong which doesn’t want to lose control in their management of apps, Mobile MSN is quite opposite because they prefer those CP who have their own operation partners, so that they don’t need to charge users by MSN itself, CP get settlement from aggregators then share certain revenue with them for utilizing Mobile MSN’s mobile network. The evaluation of apps
is necessary step before integrated. Getting reply from MSN to be sure for constructing the cooperation relationship costs basic fee 400,000RMB for CPs, the ratio of revenue share was set at 5:5.

**91 mobile assistant** 91 mobile assistant is targeted at iPhone, android and high-end smart phone users. It provides information regarding ranking, recommendation, marketing and statistics of applications for iPhone and android. 91 mobile assistant is also used as itune for jailbreak iPhones in china. 91 users can download applications which cannot be found in App store or cheaper than that in App store. The software is designed according to local users’ using habits. As a result, they have accumulated users resource-3M users for iPhone and 1M for android.

By utilizing the 91 PC management tool, users find suitable applications and categorize them in an easy way, as well as put ranking and recommendation in the WAP portals. Particular marketing plans are customized for special applications. 91 mobile assistant has big influence on Chinese iPhone users as long as it satisfies the market demand, although lacks original innovations. Directly speaking, users of 91 can basically represent the total amount of iPhone users in China.

Developers can choose use different billing services including 91’s as well. They suggest 91s’ payment because in that condition the revenue share will be 70:30, if use other’s, the ratio will fall down to 50:50 (both are after deducting the cost for payment). Specifically, split details for profit distributions are 70% to developers, and 30% to 91 for using 91’s own system, 5% of the total transaction for internet banking cost, 50% for SMS billing cost and 5.55% is the tax rate. So gross revenue from internet bank transferring=internet bank purchasing \( \times (1 - 5\%) \times (1 - 5.55\%) \). Gross revenue from SMS billing SMS purchasing \( \times (1 - 50\%) \times (1 - 5.55\%) \). Practical revenue for develop A = (gross revenue of bank transferring+ gross revenue from SMS billing) \( \times 70\% \).

**Cooperation strategies** By collaborating with SPs, even though CP cannot get the very high revenue proportion, low investment could compensate the reduced income by avoiding application for license and setting up local company. In addition, CP can launch one product by choosing different aggregators to facilitate market intake. Generally, there are two cooperation strategies:

Strategy 1 is that external mobile CPs can convert their applications to re-brand embedded products, gather and integrate them in a new application or WAP community then publish to customers. All the services or in-app items are charged by virtual credits or standard billing system. The services and
application community are mutual-benefit and can consolidate and potentiate market shares of each other.

Strategy 2 is that external CP can cooperate with SP which has direct access to Chinese three main operators’ application stores or WAP portals. In this solution, two billing methods are provided. First is directly charging through operators, normally how to distribute revenue is predetermined, i.e. if the total revenue is below 100000 RMB, the revenue share between operator and CP will be 50:50, if the revenue reach to 500000 RMB, then it will become 30:70, and if there is long term cooperation, the distribution ratio can be around 20:80 15:80. Another channel is billing through mobile payment aggregators, on average the deducting fee is around 5% of the total revenue.

The strategies above could be launched at the same time.

CP-SP-End Users method is extremely suitable for the small sized companies lacking the financial resources to apply for ICP licenses, but they sacrificing publishing capabilities by cooperate with SP at the same time.

The strategies above could be launched at the same time.

4.3 CP-Aggregator-End Users

Aggregator refers to a web site that aggregates online information from multiple available sources. By cooperating with them, a developer can provide services and contents to aggregator and then aggregator will aggregate such contents and publish them on website or other sorts of media or bring them directly to end-users through operators. Financially, aggregators are responsible for providing various payment choices for users, and deliver a pre-decided portion of the income to the developers. The settlements with aggregators are much easier to reach than that with operators. Figure 4.3 is an illustration of cooperation with aggregators. Briefly, CPs collaborate with aggregators to have their payment system imbedded in Web/WAP, Media or Operators’ web portals, the service will be subsequently pushed to end-users as a mature products for them to purchase. Figure 4.3 shows this model. For mobile VAS billing, aggregators usually provide multiple solutions. First way is that the payment go through bank transfer, the intermediate service fee deducted is lowest, usually 1%. Second method is using virtual currency, for instance, by purchasing prepaid card doing WAP payment. The third solution is using premium SMS billing.

Mobile payment is developing in a fast speed, so cooperation with those aggregators who support mobile payment may provide flexible payment channels to the users, and also make the company have multiple business models instead of relying on one operator to survive. Cooperating with aggregators
CHAPTER 4. ESTABLISH BUSINESS MODELS

compared with directly dealing with operators, developers get higher revenue share, but, while they don’t need to engage in any marketing. Normally the aggregators use their certain refilling channels instead of after billing invoice, so that the bad debt can be reduced to the minimum extent.

Alipay is biggest and reputable aggregator in China. By 15th march, 2010, Alipay has more than 300M users, which takes 62.5% of the whole internet users. Undoubtedly it is a great promotion of mobile VAS using Alipay as billing platform. 6% of revenue is charged for payment platform. For cooperation, the conditions are the service should have independent WAP portal and CPs should have legal bank account in the mainland. Abroad user can have bank account with passport, but if they want to active the internet banking, owner has to go to counter and take it personally (shown in Fig. 9; Oversea users£ºpassport + guarantor ID + signature letter of guarantee +bank account in mainland). The Alipay account can be registered directly from the Alibaba website Figure 4.4 shows authentication for abroad content providers. Other aggregators such as Yeepay and Shenzhoufu are good at billing for mobile service and online games. Shenzhoufu support 3 kinds of prepay card which published by the 3 operators, 10% deduct if user pay thought refilling ways and 1% if pay by bank transferring. Beside prepay cards of 3 operators, Yeepay supports popular online games cards like Q-card ( from Tencent), Jcard, SNDA card. Subscribers can refill their skype account.
via Yeepay. For value-added service providers, if they get paid by prepay, yeepay will get 20-25\% of revenue share, otherwise if they receive their revenue through bank transfer, only 1\% of the revenue share will be subtracted.

If online payment methods have been established, developers could further negotiate with mobile device manufacturers and preinstall WAP service and applications in their systems. Not only can this method generate revenue by selling big amount of apps, but also enlarge the using group. One example in local market is Tencent who pre-install QQ (Open source IM) in Nokia cell phones, charging 1 RMB for each. Collaborating with cell phone makers and sign contracts with them is considered a good solution, worth to assess its efficiency.

4.4 CP-Agent service companies-Operators-end users

Considering the obstacles for gaining license, CP can cooperate with agents who have PRC mobile VAS License.

The agent service companies are the business entities that usually handling hundreds of thousands of applications such as ringtones, photo SMS and WAP games, and dealing them using a centralized system. What agent service companies do is sort of Information Technology Outsourcing (ITO)\cite{18}, they outsource mobile VAS to agents regularly, agents categorize all kinds of services and launch them with proper clients, they can be in charge for client-end service integration and even service management. Value chain is restructured in this way and it optimizes the allocation of resources, reduces costs, enhancing the core competitiveness of each parties. So that CP can concentrate their energy in development and the mobile VAS industry will be further improved to achieve its high-speed growth.

Mobile VAS agents can push big amount applications to clients, however they are insufficient in marketing efforts and lack the specific market strategies for some items with special traits and they cannot market the product in a customized way. In this model (Figure 4.5), developers first get in touch with agent service companies and they push the application together with thousands of other services from other developers to the SPs, operators and other big clients, then, reach end-users in an indirect way. Agent service companies charge at least 1/3 of the total revenue and its collaborators such as operators take another 1/3, as a result the net profit going into developers is quite low compare to other models. It leads the small middle CP to a passive control in the value chain.
There are other two strategies that could also be applied for mobile value added services commercialization in China, which has been shown as following:

Create iPhone version and publish items in app store

Creating iPhone version and publish items in app store is one direct way to reach customers in this special smart phone segment (Figure 4.6). Since app store has standard interface and sophisticated billing system. What is more, its revenue share is quite attractive. As long as developers give a certain amount of subscription fee per year, 70% of revenue gained from the worldwide customers will delivered to the developers and just 30% to the apple store. Developers, App store and end-users formed an open innovation value chain, in which App store sufficiently leveraged external technologies and creations. Meanwhile the unified marketing channel, mature purchasing system and clearly defined user groups, significantly facilitated and optimized the profit back-flow and distribution.
Sell the applications on MM-market

CP could also run its VAS on Mobile Market which belong to the biggest operator CMCC in China, the operation strategy of which is to a large extent resembles Apple’s app store. CP could upload the proposed contents without limitation of license requirements. Finally, 70% of the revenue will be delivered to the contents provider.
Chapter 5

Mobile payment for billing VAS

This chapter will provide practical mobile payment solutions which are considered to be suitable for charging mobile VAS in local market (which are Alipay, Shenzhou Fu, Yeepay and Ericsson IPX) and their cooperating procedures.

Mobile payment solutions are used by SP/CP for getting their services directly charged from the customers. Regarding to the operation procedures leveraging mobile payment (shown in Fig.12, which simplifies the operation procedures of utilizing mobile payments compared with the traditional way to cooperate with Operators), and compared with cooperation model with Operators, it shortens the progress by removing App testing, content verifying, and gives the right to the SP/CP to control their applications. In addition, it skips the process of settlement with operators which normally the takes 2 months.

Figure 5.1 shows the benefit of utilizing mobile payment.

Know mobile payment user habit first  Regarding the foreign competitors in mobile payment field in China, they are not equally competitive as in global level, such as Paypal. There are many reasons for that. “The problem of Paypal is its unawareness of the real demands of The Chinese Network-payment Market” As an American online payment platform, Paypal benefited from the mature American financial credit system initially, the most important function it carries out is to make personal or commercial payment and charging transactions going smoothly and immediately with high security through E-mail. Even today, Paypal is still considered as an expert performer for substitutive payment services. However, in Chinese market, the most priority of need is not online payment itself, but the mutual trust ought to be established between different parties in online payment solutions.

Shown by results from respondents of questionnaire 1, 28.7% choosed Alipay as their first priority to purchase service, compared with using bank-transfer or
credit-card payment only got 4%. A common B to C e-business process this, if A purchase service from B utilizing Alipay (A and B are both third party payment platform), B will distribute service after Alipay get the money from buyer A, then as a dealing process, Alipay will keep the money until buyer A confirm that purchase succeed and A is satisfy with the service. Alipay’s protocol to a great extent protected the interests of both the buyer and the seller, thus promoted mobile consumption. From this aspect, CP should be more concern about the local users’ consuming habit.

With our preliminary knowledge and experience in China, those aggregators discussed which will be discussed as following are optimal choices for foreign mobile VAS companies to establish cooperative relationships with in China. Besides, we propose that most of the responders will choose reputable payment with guarantee, if the service is interesting enough to attract them. Moreover, the convenience and safety, are the important things that users may concern about, a reasonable design reliable mobile payment may promote more customers to buy for the service, and stimulate impulse purchase. Taking consideration of these factors, following literature illustrated the operation models as well as made comparisons of those aggregators for selecting proper mobile payment solutions for CP/SP to launch mobile VAS according to their intrinsic interests.

**Alipay** Alipay is the biggest independent third party payment in Asia. It has more than 300M registered users by March 2010. A consumer’s decision to use it and adopt the network is significantly affected by the amount of
merchants using it. Customized solutions are provided to SP/CP according to practical requirements. Following Figure 5.2 is a brief description of its billing solutions.

With shortcut Payment, all the applications which have independent WAP portal can be integrated in to Alipay’s billing system as shown in the Figure 5.3 below, for exclusively WAP billing. There are also alternatives in Alipay’s billing system, such as SMS billing shown by Figure 5.4) by utilizing plug-in payment solutions. In which Alipay’s server is always functioned as transaction station for all payments that CP/SP receiving from their mobile clients.
Plug-in payment supports mobile operation systems such as J2ME, Windows Mobile, Android, Symbian and MTK OS. Alipay’s new SMS billing also involved a relatively new technology-IVR (Interactive Voice Response) payment, in which customer can confirm their payment only by their voice message.

As for Alipay’s revenue model, 6.0% revenue is shared with the mobile payment service provider during the period of validity, which is highest payout among the third-party competitors, and is attractive to almost all the developers.

Its Cooperation procedure is shown as following Figure 5.5:

The person who signs the contract with Aliypay must have Real Name Authentication, which means that SP/CP or agent of SP/CP in contract must be approved as client (person or company) who has the Alipay account, and the legal owner of the bank account. Otherwise the agreement will lose legal binding in 15 days. And then cooperation can be initiated and the launching time is very short after debugging.

One supplementation is that Alipay needs authentication for abroad customers/collaborators. Oversea customers/collaborators need passport + guar-
antor ID + signature letter of guarantee + bank account in mainland to initiate cooperation (the bank should be one of followings: China Merchants Bank, China Construction Bank, Agricultural Bank of China, Industrial and Commercial Bank of China, Bank of communications, China Minsheng Banking Corp. LTD, Industrial Bank and Shanghai Pudong Development Bank). Then customers/collaborators can transfer money from Alipay account to their bank account, all the trades will be shown in the Alipay account.

**Shenzhou Fu** Another big aggregator worth to mention here is Shenzhou Fu, its operation models are shown in the Figure 5.6 below:

Mobile users can buy prepay cards of the 3 biggest operators from any selling area, using these cards to refill into Shenzhou Fu’s account by sending premium SMS (those cards can also be refilled as telephone fare), another way of refilling is through bank account. For the game providers, if the users pay by prepay card, they will give 10% share to Shenzhou Fu, if they pay by bank account, game providers get 99% revenue share.
Yeepay  Compared with Shenzhou Fu, Yeepay seems to be more diversified in processing transactions, since it supports more parties. They provide 2 kinds of cooperation abilities between Yeepay and CPs, one is called E-protocol cooperation, Figure 5.7 shows model of E-protocol, in which Yeepay offers specified standardize revenue sharing, content providers can be registered for E-cooperation from Yeepay’s websites.

Beside prepay cards of 3 operators, Yeepay also support popular online games cards like Q card (from Tencent), Jcard, SNDA card. Skype subscribers can refill their account via Yeepay. Users can also use Yeepay to pay debt of their credit cards, mobile telephone fee and other fees such as test registration fee. For value-added service providers, if they charge prepaid payment through Yeepay, Yeepay will get 20-25% of revenue share, otherwise if they receive their revenue through bank transfer, only 1% of the revenue share will be subtracted.

Models above are only base on E-protocol, another kind of cooperation is called paper protocol cooperation, which means Yeepay and providers get a common agreement about the revenue share according to the provider’s scalability, objectives, profits, negotiations between 2 parties and so on. I.e., Kong is Yeepay’s paper protocol cooperation sample, as the staff from Kong said, Yeepay share 6% of revenue with them. Paper protocol cooperation is more customized and more attractive in revenue sharing.
**Ericsson IPX** Although is not a native Chinese aggregator, Ericsson IPX is also a possible and relatively simple solution for mobile payment for foreign mobile SNS providers in China, because it have plenty experiences in collaborating with western mobile VAS companies. Terms below exemplifies the specific requirements and issues to be noticed according to Ericsson IPX:

- IPX connection fee is 5000 RMB
- IPX monthly fee is 3000 RMB
- IPX revenue share model takes 25% of telecom payout. This higher is higher in China than other countries due to higher legal, commercial and technical costs to run premium business (China Mobile payout is 85%, China Unicom payout is 80%).
- IPX is unable to help The CPs do advertising in China but can introduce partners who specialize in these areas.
- It would be advisable for CPs to wait until after mid Apr 2011, before starting any new businesses in China as it is a sensitive period in China at the moment.
Chapter 6
Marketing strategy

Normally, marketing strategies are designed separately for each company according to its unique condition, but in this chapter, the general practical marketing strategies are introduced for various kinds of international start-ups of mobile VAS in China, regardless of the size and the strength of the company. Because these strategies including a better deployment of open source, WAP-push, sub-brand strategy, high-end user strategy and proper charging strategies, are thought to be vitally important and universally applicable. As a conclusion in the end, we also introduced a SWOT analysis to study the situation of mobile VAS business in China in general. Detailed proposed strategies are instructed as below:

6.1 Social network advertising

According to questionnaire study 1, social networking services and mobile games are easier to access local market. eMarketer predicts that $2 Billion will be spent this year (2008) on social network advertising worldwide and that this market will continue to grow - reaching $3.8 billion in spending by 2011[19] Seen from questionnaire 1, it is noticeable that most local mobile VAS users are actively engaged in social networking. That has also been proved by TNS, Latin America, the Middle East and China, users spend more time using the social network, not email, cell phone coverage promoted the use of the Internet[16]. Social networking can be considered as an advertising tool. CP can release mobile application on social networking community, let the users make comments, like or dislike their products, such as advertise mobile VAS by blog/facebook/renren/weibo/youku, and let users spread them by themselves, so that each product can target larger user group in a cost effective way but with high efficiency, because normally it can be considerable cheaper.
than provide an advertisement on TV or newspaper. Besides, through that way, users’ feedback can be collected quickly back to the developers as well.

6.2 Utilize Open Resource as much as possible

With the development of open source mobile internet technologies, using searching engines to search keywords and enjoy applications for minimum or no monetary expense is becoming a new trend for users. And for content providers, there are a few ways to leverage open web resources:

- Share links and authorized content with hot WAP portals. Certain percentage of profit should be paid to them.
- Pay and utilize resource recommending websites, navigation websites, searching engines, ranking and recommendation websites, so as to provide services to internal recommended users as many as possible.
- Users resource exchange: Link WAP portals with each other to enable interactive publicizing. For instance, import application A’s users into application B. In such condition, when the amount of application users reaches a certain level, the synergic effect will take place and dramatically bring in more and more users. Thus, it is considered to be efficient and cost effective.

Open source solution can be combined with user interactive spread solution. There are critical processes for user interactive spread program (cannot be discussed here) and it can be utilized for the advertisement for users in a certain social network. Utilizing open resources has three advantages. First of all, it will reduce cost. Secondly, a product that using open source can be more acceptable by the customers that already used to that kind of open source technologies. Thirdly, using open source will decrease the time for mobile service producers to detect bugs and get their product updated. So, we suggest that the mobile VAS start-ups in China should utilize open resources as much as possible.
6.3. WAP-PUSH & SUB-BRAND STRATEGIES

WAP-Push & Sub-brand Strategies

WAP-Push seen from Figure 6.1 is an efficient way to introduce services to a large number of users in a short time. However, the assistance from SP is required in order to do so. The concept of it is really simple, which is just let one user recommend the service for another user when he/she started to use the service or in order to get some advantages in using the service as compensation/reward, such as getting premiere functions.

There are some advantages by utilizing WAP-Push solutions:

- No need for users to enter the URL of the phone which is not convenient.
- Suitable for targeted promotion and advertisement by pushing certain product directly to end-user’s mobile phone.
- Receive compulsorily, 100% acceptance rate.

For user’s open rate distribution after receipt of WAP-PUSH, according to Internet research[12], when the user have received WAP-PUSH, 16.6% of Internet users would like to open, open rate after seeing the explanatory text increased to 53.6%, while not-open or direct deletion rates were 11.4% and 18.6%. It has been found that WAP-PUSH service acceptance is quite high, WAP-PUSH text and clear description may influence user’s decision on whether to open it or not.

Sub-brand product is another strategy worth to try. In which, we can launch service as third party’s WAP brand product and sharing the user resources. For example, WAP A’s login user can log in application B with
one username and pin code, so that to completely bring A’s user-group to B without any effort for the customers. In this kind of cooperation model, revenue sharing method is usually used. The sub-brand strategy makes it possible to incorporate all of the company’s products or even other company’s products (if there is a collaboration), into the same account that a user could use at the same time.

6.4 Strategy for high-end users

High-end user who pursue high quality and convenience user experience, usually have higher education and higher purchase ability, can accept new products quickly. It will be highly rewarding and profitable if developer could successfully market their products towards this user group.

For current market, one strategy for catching the high-end user market is to create iphone application, iphone user has taken 15% market share of the high-end user according recent statistic. [1] Developing iPhone app becomes a popular trend which may bring huge revenue in short period, this is also because its unique success of AppStore/itune’ business model. But there are some difficulties as well, for example, how to market and promote the product in crowded-looking App store marketplace? Only 25 rankings in each category can be seen by most of customers, how to make them to be distinguished? Then Delicate charging model and suitable marketing strategies undoubtedly become crucial when developers want to launch the application.

Recent study has shown a clear interesting tendency that there are more people getting free version then update them to the full version or do in-app purchasing rather than purchasing the full version directly.

We concluded detailed strategies for international start-ups targeting high-end users according the answers from questionnaire objects and feedback from local companies, and are listed as follow:

- Language (clearly description and multiple languages supported).
- Publishing little functions and items in simple free edition, paid versions at the same time is promoted. With in-app purchase, more charging models such as by subscriptions, selling add-on content and services, and unlocking premium features can be constructed and modified by the developers and publishers.
- Testing usability to get more reviews to make better adjustment of the program.
- Encouraging customers to give grade and provide more feedback
• Well designed screenshot and icons; icons are the first visual elements to the customers.

• Choose the right category, avoid those with high competition.

• Sharing links in social networking services and spread it as much as possible; twitter, facebook, youtube, youku, renren, weibo, etc.

• Make upgrading plan and inform the customers more frequently.

• Interacting with users as much as possible, such as in the official BBS.

• Providing ranking for active/popular users.

• Enable users to import contact list into application.

• Provide in-app purchase/upgrade in the free version.

• Creating compatible versions supported by different systems.

6.5 Charging models for Mobile VAS

Mobile VAS charging model develops and shifts as period is changing, and in comparison with others, there are some charging models are becoming the main trend in currently Chinese VAS market and extremely suitable according to mobile VAS features. Following are the suggested charging solutions, which was discussed detailly in Figure 6.2

• Charging by client-end downloading is traditional basic billing model for mobile VAS, it suits for offline games, e-books, dictionaries, maps, etc. Customers usually don’t know exactly how the applications are when they purchase them, but usually the price is comparatively low. In this case, the feedback and rating from customers play an important role in the sales.

• Time charging model let customers have more flexibility to switch on or to stop the service, time charging model varies from hourly paid, weekly paid and monthly paid. But the problem is customers don’t have chance to experience the service before they purchase it.

• Charging by special properties or premium functions is a comparatively mature model developed from the previous ones, it enable users having an experience of trying the product then consider whether it is worth to pay or not. It is extremely popular recently especially in majority of social networking communities and WAP games.
Figure 6.2: Charging models for mobile VAS
Chapter 7

Discussion & Analysis

In the following paragraphs, we will discuss the study results of user behaviour of Chinese mobile VAS users, business models and entry solutions for international enterprise, mobile payment solutions and proposed marketing strategies in detail.

7.1 User behaviour of Chinese mobile VAS users and its implications

Questionnaire 1  The main objective of this empirical study is to determine the customer targets of mobile VAS and study the factors that affecting the usage of mobile VAS in China. The result of this questionnaire study can provide a lot of important information that is very helpful for international mobile VAS suppliers, such as to provide useful implications for the R&D and service refinement in mobile VAS industry. In questionnaire 1, the majority of the objects are students from 14/24 year old. They usually have 2 to 3 years experience of using mobile VAS and highly depending on social net work services such as Renren, most of the objects choose Alipay as a reliable and convenient mobile payment. Known by Statistics, Mobile Users for Social Networking has exceeded Email in 2009[15], this tendency has also been proved by Questionnaire 1, Result also implicated that mobile games and social networking services are most popular categories by this user group, such kind of mobile VAS could be easier to be accepted by local users. Besides, the Result also shows that small percentage user will purchase service through bank—transfer or credit—card payment, it is one reason of that Paypal has few users than Alipay in local market.
CHAPTER 7. DISCUSSION & ANALYSIS

**Questionnaire 2** we have elucidated the factors such as perceived ease of use, perceived usefulness, perceived cost, switching cost and how they affect customer satisfaction, customer loyalty. The results indicated that all of these factors are correlated and interacting with each other in reality. This Questionnaire study proposed that how to promote consumer behaviour intention and how to increase the customer loyalty is a challenging task that a mobile VAS supplier faces. Because for mobile VAS enterprise, the profit are determined by new customers’ intentions to purchase and how long did the existed customers continued their subscription. In order to understand the behavioural mechanisms for mobile VAS users in China, we quantitatively analysed the relationships between perceived ease of use, perceived usefulness, perceived cost and customer satisfaction. The results were perceived ease of use, perceived usefulness had a positive effect on customer satisfaction, while oppositely, perceived cost had a negative effect on customer satisfaction. In addition, we performed a similar quantitative analysis on the relationships between customer satisfaction, consumer behaviour intention and customer loyalty. We found out that customer satisfaction significantly facilitated consumer behaviour intention and increased customer loyalty. What is more, using the same method, we discovered that switching cost also had a positive effect on customer loyalty.

**Switching cost** has a significant effect on customer loyalty, which is in accord with prior customer loyalty research[5]. Our results imply that the higher the switching cost, the greater likelihood it will drive consumers to stay with their current provider. At the same time, if providers want to attract news users from another previous service, cut down the switching cost might be a good strategy. The relationship between switching cost and customer loyalty is stronger for longer-time usage customers than new customers of mobile VAS. It seems to be reasonable that the longer customers use mobile VAS, the more they are familiar with the current service interface and function, and the harder it will take for them to switch to other similar services.

Besides, the limitation of the present study also provided useful implication in future studies. For example, we did not incorporate actual usage behaviour into the proposed model. Nevertheless, substantial empirical reports supported the causal link between intention and usage behaviour[17], and in future study, this relationship will be justified with more variables being introduced. In addition, the relationship of intention to use and impulsive purchasing could be assessed, and the different degree of the contribution of each factor on other factors could be studied with more sophisticated statistical approach. Moreover, future research may focus more on adequate and acceptable classifications of
mobile VAS users. For instance, users could be classified into early responders and late responders, their sex and gender differences in behavioural intention could also be identified and well characterized.

Furthermore, value has been defined as the customer perceived trade-off between the cost and benefits. Value literature often distinguishes between hedonic and utilitarian value in relation to both offline and online retail services. Mobile commerce and transactions are driven particularly by utilitarian value (Nysveen et al., 2005). However, there is a relatively paucity of knowledge about the specific costs and benefits associated with innovative mobile value added services and how they determine consumer’s value perceptions. Our speculation is both hedonic and utilitarian values are important in user’s intention in using mobile VAS. This issue is revealed by some extent that perceived usefulness and perceived ease of use can contribute to user satisfaction. User perception of different types of values can also be further understood by the future study approach.

In conclusion, the major contributions of the questionnaire study are as follows: firstly, it successfully identified the demographic profiles of the targeted user group. Secondly, this study successfully extended the TAM in mobile VAS context, which is quite different from the context of other systems. Thirdly, the results of the empirical study indicates that perceived ease of use and perceived usefulness have a positive impact on customer satisfaction, while perceived cost has a negative impact on it. In addition, customer satisfaction could facilitate the intention to use and promote loyalty of the customers, while switching cost will impede the customers to change their preference from one mobile VAS to another. Finally, it provided the lead for future studies.

Despite the above mentioned limitations, we believe that this questionnaire study furthers our understanding of the intention to use mobile VAS, and will provide a useful set of guidelines for the onset of new mobile VAS in China.

### 7.2 Business model analysis

We have established various business models for establishment of mobile VAS in China. Their pros and cons as well as fitness to each situation are discussed in detail in following literature.

**CP-Operator-End Users model**

we can say it is a traditional cooperation model. Every party in the value chain strongly relies on each other, especially with a dependency on operators. Those requirements are quite difficult for small-middle scale VAS developing
companies, because it takes long time for each application to go through registration and examination, furthermore, it requires big input capitals which may bring high financial risk for those companies who don’t have such budget. On the other hand, if the VAS developing companies have good financial condition, can generate revenue in long term or propose to have good cooperation relationship with operator, going to operator directly can be the first priority model for them.

**CP-SP-End Users model**

Because CP normally does not participate in the VAS operation and service management, they can’t get the feedbacks from customers directly. In addition, for the consideration of commercial confidentiality, SP rarely provides whole user database or detail information to CP. Such facts made problem for CP because it is difficult for them to develop products targeting specific customers. As a result of that, CP produced large quantity of contents, but only small part of them were chosen by SP, just for that CP does not understand what their customer really want. For CP, the value of utility is only realized when the transaction is taking place, if products can’t be sold to customers, they will be worthless.

In the cooperation model of CP-SP-End Users, customer’s data were managed by SP and CP don’t have the independent channel for transaction, which lead them a passive position. What is more, for that mobile VAS are informational products, the marginal cost of them is nearly zero comparing the cost of reproducing one more copy of mobile VAS to the cost of developing a brand new mobile service, former one can be neglected. What is more, the marginal cost is zero means that the price of mobile VAS in the whole industry chain is very low and the evaluation of CPs is determined by how many services they finally pushed to the end users. If their online sell was too low, even turnover the developing cost can be difficult.

As a conclusion, both advantage and risk existed: Advantage: as SP is an entire flexible entity, this model is more flexible and easier to survive in the industry, because the SP can work with both operators and aggregators practically according to occasions. For example, last year, due to the strict control of sensitive application and SAP services, government forced operators stop WAP billing service for nearly one year, it leaded to a disaster for some SPs who only work with operators while some SPs who have cooperators with mobile aggregators were not affected so much. Risk: financial delayed from SP settlement, lack of feedback from end users, low control of service management, risk of substitute products. It is difficult for CP to get the user database or detail customer information.
CP-Aggregator-End Users

Aggregators offered a lot practical strengths which operators do not possess, especially in operation aspects and charging flexibility. This method serves as a supplementary one, when CP has the power to go across SPs to push their products and set up their own mobile payment solutions.

CP-Agent service companies-Operators-end users

Several risks existed in this cooperation strategy, such as delay of the feedback from customers, lack of specific marketing to target users, passive control from CP in the value chain. Albeit, the advantage of cooperation with agent third party is that they have more customer resources from different operators and big clients while they are good at doing large-scale outsourcing, push lots of applications to users in a short time, and enable the developers to reach to the customers without struggling for a license, or going through any other complicated procedures. In addition, they have standard settlement and fewer bad debt problems.

Create iPhone version and publish items in App store

App store sufficiently utilized crowd sourcing business model. So, release the Chinese version in app store may arouse high extent of attention from the users who regularly purchase such applications. Albeit drawbacks still exist. First, because that App store only list their recommendation for best ranked 25 applications, a great amount of worthy applications is limited to be promoted even more than thousands of fancy applications is buried without getting noticed by demanding users. Second, although there are lots of free applications, however, most successful applications must be purchased only through paying by credit card without any alternative methods. Considering Chinese users’ traditional conservative purchasing habit, it may make them feel complicated or even troublesome to buy applications from app store. Meanwhile, the insufficiency of copyright protection in China may also lead to users’ preference of free applications. Forming the habit of purchasing mobile contents in a proper way seems to be difficult for Chinese users before long. These reasons limited App store’s expansion in china. For selling the applications on MM-market, this strategy can be implemented on condition that the provider is citizen in PRC, so that if abroad developers want to utilize Mobile Market platform, they have to find proxy to deal with business as his/her name.
### Profitability Assessment

Table 7.1: Profitability Assessment of different business models

<table>
<thead>
<tr>
<th></th>
<th>Investment</th>
<th>Revenue get from Channel I</th>
<th>Revenue get from Channel II</th>
<th>Revenue Share CP: Provider</th>
<th>Risk</th>
<th>Time takes</th>
</tr>
</thead>
<tbody>
<tr>
<td>China Mobile</td>
<td>100,0000</td>
<td>85%</td>
<td>N/A</td>
<td>8.5:1.5(I)</td>
<td>High</td>
<td>3 4M</td>
</tr>
<tr>
<td>China Unicom</td>
<td>100,0000</td>
<td>80%</td>
<td>N/A</td>
<td>8:2(I)</td>
<td>High</td>
<td>3 4M</td>
</tr>
<tr>
<td>Tencent</td>
<td>0</td>
<td>N/A</td>
<td>36%</td>
<td>4:6(II)</td>
<td>Low</td>
<td>1 2W</td>
</tr>
<tr>
<td>Tencent</td>
<td>0</td>
<td>27%</td>
<td>34%</td>
<td>3:7(I)</td>
<td>Low</td>
<td>1 M</td>
</tr>
<tr>
<td>MSN</td>
<td>40,0000</td>
<td>50%</td>
<td>N/A</td>
<td>5.5 (I)</td>
<td>Medium</td>
<td>1 M</td>
</tr>
<tr>
<td>91 Mobile</td>
<td>0</td>
<td>47.5%</td>
<td>66.5%</td>
<td>5.5(II)</td>
<td>Low</td>
<td>1 2W</td>
</tr>
<tr>
<td>SNS TX</td>
<td>0</td>
<td>N/A</td>
<td>63%</td>
<td>7.3(II)</td>
<td>Low</td>
<td>1 2W</td>
</tr>
<tr>
<td>SNS Renren</td>
<td>0</td>
<td>N/A</td>
<td>48%</td>
<td>6:4(II)</td>
<td>Low</td>
<td>1 2W</td>
</tr>
<tr>
<td>Manufactures</td>
<td>0</td>
<td>N/A</td>
<td>N/A</td>
<td>Charge for each pre-install</td>
<td>Low</td>
<td>4 6M</td>
</tr>
<tr>
<td>Channelsoft</td>
<td>0</td>
<td>N/A</td>
<td>33%</td>
<td>4:6</td>
<td>Low</td>
<td>1 2W</td>
</tr>
<tr>
<td>App Store</td>
<td>0</td>
<td>70%</td>
<td>N/A</td>
<td>7:3(I)</td>
<td>Low</td>
<td>1 2W</td>
</tr>
<tr>
<td>Mobile Market</td>
<td>0</td>
<td>70%</td>
<td>N/A</td>
<td>7:3(I)</td>
<td>Low</td>
<td>1 2W</td>
</tr>
</tbody>
</table>

Detailed profitability analysis of different models is shown in Table 7.1. In all above solutions, for all above data, tax is not included, however should be paid by the each party themselves finally. Channel 1 is the traditional operators billing gateway, while Channel 2 means charging users from mobile aggregators. Operation tax varies from 3.3% to 5.55%, it could be considered as irreducible basic cost. What is more, the degree of cooperation, the degree of amelioration, PV impact and pay-back ratio, are important factors should be taken into consideration.

Detailed profitability analysis of different models is shown in Table 4. In all above solutions, for all above data, tax is not included, however should
be paid by the each party themselves finally. Channel 1 is the traditional operators billing gateway, while Channel 2 means charging users from mobile aggregators. Operation tax varies from 3.3% to 5.55%, it could be considered as irreducible basic cost. What is more, the degree of cooperation, the degree of amelioration, PV impact and pay-back ratio, are important factors should be taken into consideration.

7.3 Customized solutions

In mobile internet industry, value-add-service developers are the entities investing on the development and of the services and management of the database. However, in the value chain, those content suppliers do not belong to the hierarchy that gains largest profit. In fact, they are reliant on mediators such as Service Providers (SP), operators and aggregators who can directly bring customers, such dependency allowed large amount of profit go into the intermediate processes.

**For those with stronger finance** In business solution’s profitability assessment, it is operator who put service in their portal to be more easily to reach thousands of users, by their WAP publishing strategies and promotion of the services combination. ARPU (average revenue per user) is largely increased for mobile services, however it is an essential issue to know how long time it takes to pay the investment off. Seeing from the profitability chart, it is obvious that cooperating with operator is the most direct way to reach huge amount of Chinese mobile users and the solution that has highest probability to achieve greatest profit. However, the capital requirement for the license is quite high, taken together with long settlement time and other unpredictable uncertainties, the overall risk is substantially alleviated as a result. This solution is suitable for those enterprises which have big capital and require long term cooperation, long term revenue and self control of the products.

**Traditional SP to independent SP** Noticeably, the evolution of SP had exerted a large impact on the industry chain during recent years. SP are mainly evolved into two broad categories—traditional SP and independent SP, with respect to the closeness of the collaborating relationships between SPs and operators. Traditional SP are dependent on operators to push forward their services to end-users, however independent SP form a loose relationship with operators and operating relatively independently. Typical feature of the traditional SP is that they need to apply to mobile operators for approval for
launching their new services, thus costs longer time. Payment channel of SPs must also go through mobile operators, such as charging by SMS, CRBT or IVR services. Which leads to a weak bargaining power and even negative financial flow for SP with operators, i.e. in January to May 2010, there is a movement of rectification of the internet culture initiated by operators. During the period, they halted WAP billing, and resulted in a sharp decline in profits of those traditional SP. In contrast, typical characteristic of independent SP is that they provide services based on mobile internet, business can proceeds without approval of mobile operators, and their payment channel is not integrated with these operators. Thus operators have lower influence on independent SP. All in all, choosing proper distributors to reach the end users is considered to be vitally important for a foreign entry company and the result of that is closely relevant to the company’s profit output.

**Pre-install**  some mobile phone manufactures buy service from CP, preinstall them in their phone models, CP can negotiate the price for each preinstall, for example, the biggest instant messageing QQ sell 1 RMB to nokia for each phone

**Lower cost but no customer resource**  From even only through the comparison between traditional mobile charging model through operators and later flourished different kinds of mobile transaction models, a clear trend is seen that the position of operators is no more dominated after the later ones emerging and becoming accepted. Furthermore, according to the statistics fulfilled by practical negotiation with many local companies, it is noticeable that CP can get a higher revenue share with SP when the transaction go through mobile aggregators, but not operators, which means the cost of mobile payment transaction with aggregators is considerably lower than that with operators.

**Payback time**  Another factor to be considered is the payback time, seen from the table, the first 2 strategies with operators take at least 3−4 month and letting the manufactures to preinstall applications taking longest time for nearly half year before the product reaching users, however normally implementing VAS with SP only take 1−2 weeks and shortly after that CP can get first payback from these end-users. If consider about ROI (return of investment) there is no doubt CP who carry on service in the first 2 models have a considerable low ROI in the first half year, but may increase dramatically later. Those CP who carry on service with SP have a continuous increasing ratio nearly in the beginning of the service.
7.4. COMPARATIVE ADVANTAGES AND DRAWBACKS OF MOBILE PAYMENT

Specific virtual shops  Although more and more users are started to accustomed with SPs right now, the superior solution for the start level enterprise with minor human resource judged by this study small could be cooperate with App store/ MM-market, for its ease to publish, high pay-off, 70% of the total avenue, and great amount of user groups. So we can expect there are more services published through this route rather than cooperation with Operators, but certainly those platforms such as App Store and MM-Market are limited in market by specific phone models users.

In summary, as exemplified in the figure of profitability of different business models, each business model has its advantages and disadvantages. Within each business model, every party in a value chain has specific division of work. As for final product, every process that is engaged is contributed to the value addition and commercialization. With respect to profit and interest, every process has correspondent revenue share, which is within the extent that internal balance is maintained. Only at the circumstance that every party gain the reasonable distribution of profit, the function and utility of the product can be optimized, which is extremely important in every business solutions we have been discussed. For different applications, in short, if the international start-up has firm and long-term financial security but do not have strong executive personal resources, it is better for them to cooperate with operators otherwise, it will be more profitable for the company to publish their own services which have integrated with aggregators for payment solutions. If the start-up lacking the long-term financial security but have strong executive ability, it is better for it to find SP, otherwise the way of Agent Service Companies-Operators-End Users, App store or MM-market may be good solutions.

7.4  Comparative advantages and drawbacks of mobile payment

For comparison of mobile payment with other traditional operation solutions such as cooperate with operators, several considerations are crucial. Firstly, mobile-payment suppliers are advantageous, because the cost is substantially lower than operators and without bad debt problems. For example, according to the report of a software company-QingniuTM in Beijing, mobile VAS charging through operators the transaction fee will reach the amount equals to 20% to 25% of the total profit, whereas, by utilizing mobile transaction methods it will be reduced to about 5%. Secondly, they have multiple capital refill channels and it can interact with 36 major banks in China. Thirdly, they enlarge the consumers group indirectly and increase the value of the network
for all the consumers and cooperative parties. These are advantages for mobile payment solutions.

From a general point of view, interactive users interface, creative games and especially convenient payment solutions are the key points of success for mobile value added applications. Based on open innovation theory, CP cannot do marketing or providing charging systems themselves, for that it costs too much investment, especially in China with such a big market. Alternatively it will be optimized to allocate services according to market, target user’s average paying abilities, as well as choosing a correct Aggregator. Several companies offering mobile payment solutions such as Alipay are reputable and have gained big quantity of users already which then produces higher payout, shorter settlement.

In reality, various challenges are existed for those companies which want incorporate mobile payment modules. The biggest challenge is that there are few marketing resources can be provided by aggregators, CP should find media to do marketing by themselves which will increase the cost for launching mobile VAS. However, the development of mobile payment technologies has bring providers with possibilities for a higher profitability and usage of mobile payment solutions will be more and more common for these mobile VAS companies.

As a conclusion, our work has important implications for marketing practice. The comprehensive analysis of the mobile payment solutions, combined with the customer’s psychological and behavioural patterns gives in-depth interpretations and suggestions for foreign companies regarding their further attempt of starting the business in China. A number of enterprises in mobile commerce are also potentially benefiting from this research, such as mobile operators, investment banks, mobile payment providers.

7.5 Adopting proper strategies

Recent industrial chain of the mobile applications starts form developers, transferred thorough publishers, operators, online service providers, platform providers, device makers, and then finally reach the end-users. Because so many companies are involved, the revenue model and profit distribution inevitably become disordered and unpredictable. In addition, there is evidence that culture difference leads to obstacles for acceptance. In China, the situation for foreign VAS is not optimal. For example, Youtube cannot fully utilize its advantages in sharing local video resources such as Youku and Tudou Net. What is more, Twitter is unofficially blocked by Chinese government after “July fifth affair”, its user amount are around 80000. For foreign
start-up mobile VAS companies, many difficulties exists, such as the difficulty in acquiring license, relatively strong political influence on network-culture and the uniqueness of the social conceptions and language imposes difficulties and risks on converted applications.

On the other hand, successful Chinese Companies in mobile VAS not only have good general service quality but also have marketing strength specifically targeted Chinese customers. For example, Renren by a large extent resembles facebook, but it has unique strength in the group of high-school and college students, for they use their true name in the website and easy to find previous friends and classmates. It is just like a country-wide alumni association. QQ (Chinese MSN) are more popular because it supports free games and applications that quite addictive especially for Chinese teenagers. Because penetration of new social networking application takes time to accumulate users, these companies already get the antibody for outside invaders.

Therefore, the difference between Chinese and international companies in the field of mobile internet contents and VAS were made mainly because they have different marketing strategies and native companies doing much more better than international ones. Although challenges for foreign companies are huge, however the situation for them can be improved if they can follow the points relevant to the marketing strategies described as following: Firstly, increasing the suitability with the Chinese business environment and familiarity with the traits of proposed consumers. Secondly, launching unique products targeted specified user groups in China and maintaining the persistent effort on localization of the existed product. Thirdly, marketing and localization for abroad service should have a long-term plan. Additionally, product updating and proliferation are preferred to be in a faster pace, what gives better brand image to be “alive”. Overall, the crucial factors for a (mobile) VAS to be successes in a local market are determined by if its ability to provide interactive user experiences and create addictive customized services, according to specified user groups.

7.6 Pricing strategy

According to the analysis result from questionnaire 2, perceived cost have a negative effect on customer satisfaction, so that it will negative affect the customer intention of purchase, so that reduce the perceived cost and replace them by in app purchase or virtual items can be a proper strategy to create profit but still keep Consumer behaviour intention. “Virtual Goods” does have big business market for the emerging new world and will account for more avenues and profits. seen from Figure 6.2 the third charging model, this conception has also
been proven by many practical success, and in app purchase/virtual items has become a popular tendency in local market recently. China has shown greatest potential (owing in Part to Tencent’s Success¡°2.2Bin2009ERevenue&24 Annual ARPU) [15]

Sudden huge profits lead to many developers blindly design thousands of items for the purpose of making higher profit and put little effort in updating technologies and improving product qualities, Such practice encouraged users to spend more and more on items to be stronger in virtual life, which subsequently lead to the unfairness of the game and even the whole industry. Thus, pricing scheme by selling items is also a double-edged sword, and making excessive profit inappropriately is possibly encourage negative user habit

7.7 Open innovation and closed innovation

In the chapter of Marketing strategies we discussed utilize open resources and its advantages. It is relevant to the discussion about the closed innovation and open innovation strategies in which an entry company must choose from, in such a background that mobile VAS industry in China is on the way of transforming from closed innovation to open innovation.

The essence of closed innovation is the combination of closed money supply loop and limited power of R&D, the purpose is to ensure technological security, uniqueness and monopolization. However, the nature of open innovation business model is to acquire excessive income and competency by more swift adaptation and lower cost. That is, companies are not only making self-innovations but also fully utilize the innovations which happened outside. According to open innovation concept, a company does not only realize its own value of innovation but also fully exemplify its innovation value in “by product”, which is mainly accomplished by leaking mechanism (including setting up a new enterprise by original employees, external patency enfranchisement and internal personnel left). In academic Theory, open innovation leverage external resource, while closed innovation focus more on technology and security in development.

For an entry enterprise in Chinese mobile VAS market, open innovation is required in business development and cooperation described previously. Because in the closed innovation model, the technical and market opportunities are realized from the inside, it is very likely to result in a bias between supply and demand. However, in open innovation model, technical and market opportunities are realized from the outside, which makes the “effective supply” possible.
Value Network: Creating and appropriating value also involves third parties outside the immediate value chain. The value network created around a given business shapes the role that suppliers, customers, and third parties play in influencing the value captured from the commercialization of an innovation. Besides increasing the supply of complementary goods on the supply side, the value network can increase the network effects among consumers on the demand side. Building strong connections to a value network can leverage the value of a technology. Failure to construct such a value network can diminish a technology’s potential value, particularly if that technology competes with rival technology that does enjoy a strong value network. [3] Mobile VAS’s industrial chain is such value network, it is unrealistic for one mobile VAS company to invest huge amount of money to keep monopolization on all relevant technologies by R&D, at the same time transform these technologies to market acceptable products and directly charge from users. Only one mobile payment platform requires large financial and human resources to accomplish, not even mention other technologies. In open innovation model, a company makes use of various successful media and already existed payment technologies, and gets feedbacks from customers in a continuous manner. Thus, the quality of service and the central value of the company will keep improving.

The key point of closed innovation for mobile VAS enterprises is to develop and improve products or services exclusively within the company. The company should analyse the behaviour of their specific user group comprehensively and design most proper products according to it. Particularly for local market, strategies based on closed innovation should include the process of understanding the relationships of most important factors themselves, such as perceived usefulness, perceived ease of use, perceived cost, purchasing behavioural intention and customer loyalty by quantitatively analysis. And then design products not necessarily to be perfect but could meet the customer-expected standard at greatest extent.

However, open innovation emphasizes on utilizing successful technologies, products and models from outside, rather than doing everything from product designing to distribution by oneself, and it require huge investment, probably lead to big waste of resource, which will exhaust company’s financial resource and cause a disaster. Thus, for mobile VAS companies who want to launch services in a huge market as China, it is better to leverage technologies and resources from outside as much as possible. For that it is almost impossible for a start-up mobile VAS company to develop billing system with bank authentication by itself, or to get an efficient channel to reach thousands of potential customers immediately. Usually, what can they do are choosing the cooperation models that mostly suitable for their businesses and fully exploiting external mobile payment technologies and user resource of big SP.
and operators.

So, the conclusion is that combining these two kinds of innovations in commercialization of the mobile VAS and investing the precious resource in the right place, will contribute highly to a successful business.

**Strengths, weaknesses, opportunities and threats** Finally, in the SWOT analysis, we analysed strengths, weaknesses, opportunities and threats of the whole Chinese mobile VAS industry in general. Although, for a start-ups international company there are many weaknesses such as not familiar with the market and thus hardness to get rid of “middle man”, and threats such as the long settlement cycle with ease to fall into the bad debt trap, as the Chinese market for mobile VAS is already huge and continues to bloom at a high speed, opportunities out-scored these negative aspects. And it is positive prospect that these foreign entry companies in Chinese mobile VAS market could make great successes by exploit their strength.

### 7.8 SWOT analysis

Table 7.2 shows SWOT analysis

<table>
<thead>
<tr>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Big population and great market potential</td>
<td>• Too much competitive resembled applications</td>
</tr>
<tr>
<td>• Good ARPU from existed products</td>
<td>• Large capital requirement for getting a license</td>
</tr>
<tr>
<td>• Fast development of mobile communication technology</td>
<td>• Locally applied strict control of network culture</td>
</tr>
<tr>
<td>• Various cooperative strategies for launching services</td>
<td>• Hard to get rid of the “middle man” whenever making a deal.</td>
</tr>
<tr>
<td>• Profound marketing experiences in various Asian countries</td>
<td>• Revenue can only be generated after getting settlements with all other parties.</td>
</tr>
<tr>
<td>• Many successful SPs for choosing for that launch business</td>
<td>• Big bad debt risk and a long settlement cycle with operators</td>
</tr>
<tr>
<td>• Low investment</td>
<td>• Low brand control if bounded with other SPs.</td>
</tr>
<tr>
<td></td>
<td>• It is hard for CPs to get feedback from end users.</td>
</tr>
</tbody>
</table>
Table 7.2: SWOT analysis for mobile VAS business in China

<table>
<thead>
<tr>
<th><strong>Opportunity</strong></th>
<th><strong>Threat</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• The cost of launching a service by utilizing other parity may be effective and minimized</td>
<td>• SPs have low motivation in marketing the services and pushing them to the end-users.</td>
</tr>
<tr>
<td>• Mobile VAS is keeping booming and there are multiple models for generating revenues in this industry</td>
<td>• Long settlement cycle may cause financial problems.</td>
</tr>
<tr>
<td>• Can get high percentage of profit if deploying aggregators to provide billing service, and also there are various mature alternative billing solutions that are available.</td>
<td>• There is a risk that database and business secret can be stolen or copied by someone else.</td>
</tr>
<tr>
<td>• Low bad debt if choosing prepaid mobile payment(except using operator’s billing platform)</td>
<td>• Noxious or illegal information may lead to bad reputation of the service or even make it forbidden to be published.</td>
</tr>
<tr>
<td><strong>Opportunity</strong></td>
<td><strong>Threat</strong></td>
</tr>
<tr>
<td>• The marketing will rely quite much on third parties’ strategies</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 8

Conclusion

This thesis provided relevant companies and researchers with a colorful snapshot of Chinese mobile VAS industry, by charactering local customer’s purchasing behaviours and providing various entry solutions and strategies for foreign companies.

The article clarified the relationships between perceived cost, perceived usefulness, perceived ease of use and behavioural intentions. It is necessary to measure all these variables because the direct and indirect effect of these variables on consumer behavioural intentions is both comprehensive and complex. By utilizing the questionnaires, we have also identified and characterized the user behavioural tendencies and analyzed factors that contributing to purchase intention. Based on what we discovered, applicable marketing strategies were provided to support the business conduction.

As a main part, feasible business models and corresponding cooperative strategies were created. Mobile VAS companies can choose various models listed in this study to apply according to their requirements and practical conditions. Furthermore, risk and opportunities of those business solutions has been discussed in the article, comparison is made based on profitability and cost-effectiveness. Based on the study results, the article also provided advice on applicable charging models.

Additionally, different mobile payment solutions were introduced and their commercial characteristics and suitability were described in detail for foreign mobile VAS companies, so that they can incorporate their contents&service with billing solutions and begin to generate revenue without operators.

The study suggested that commercialization of mobile VAS is a circulating process, which starts with analyzing user behaviour in the R&D stage, then goes into the step of generating revenue by utilizing proper business model, apply appropriate strategies for product distribution and marketing, eventually transfer customers’ feedback and demands back to the next R&D stage again,
so that mobile service can be optimized and value is added in the value network. In summary, this article bears a high reference value for international mobile content suppliers who want to enter into the Chinese market. In addition, by dwelling deep into the social, economical and user behavioural facets, it putted forward many new questions that motivate future studies to answer.
Chapter 9

Appendix

9.1 Cover letter

Social Networking Survey Dear Users: Hello! This is a study conducted by Swedish mobile contents supplier-The Mobile Life co.,ltd. Welcome your participation in this survey, your responds will help The Mobile Life to introduce more new products for Chinese users and continuously improve the quality of existing services. At the same time, your participation in will provide valuable information for my master’s thesis. Any personal information that you have provided in this questionnaire will never leak. Let us get started now!

9.2 Geometric characteristics of users:

1. What is your gender:
   Male
   Female

2. Please select your age:
   Below 16 years old
   16 to 24 years old
   24 to 30 years old
   30 to 40 years old
   40 to 50 years old
   Above 50 years old

3. What is your highest level of education:
   High school and under high school University Student University graduate Postgraduate
4. What is your occupation: Student Entrepreneur Public servant Company salaried employee Waged workers Other

5. How much is your monthly income: <1000 Yuan 1000-2000 Yuan 2000-4000 Yuan 4000-8000 Yuan >8000 Yuan

6. How long have you been using mobile service: <1 year (new customers) 1-2 years 2-3 years 3 years or more

7. Your most active social life is: Life and work related friends Friends made in the virtual world School friends Other

8. Which are your most currently used mobile social networking service: Facebook Qzone Myspace Renren Other

9. Themobielife is developing new iphone, and other types of cell phone applications, what kind of mobile services are you most expected: Games Fashion news Reference and knowledge Social networking Other

10. If there is a new mobile dating tool that allows you to make more new friends, helps you to find someone that you can fall in love with, are you interested in trying it? Willing to try Insist to use the one familiar with Will try if someone recommends Not interested

11. Regarding when you login into the internet using your mobile device: Log in through WAP portal Download client-end Purchase app Other

12. If you try a phone dating tool, you are most concerned about what kinds of functions: Interface and design User interactions and functionality Easy to use, practically designed tools Convenient way to pay for items Other

13. In the phone business or online games, when there is a need to purchase point card or items, by which way do you think is most convenient and reliable? Deducted from the mobile account Buy Shenzhouxing or other recharge cards Use Alipay Use bank transfer or credit card payment Not using as long as it charges

9.3 Survey items for characteristics of Chinese customers to use mobile SNS

Please rank the following description in 1 to 5 scale; 1=strongly disagree, 5=strongly agree
9.3. SURVEY ITEMS FOR CHARACTERISTICS OF CHINESE CUSTOMERS TO USE MOBILE SNS

1. Learning to use the mobile VAS is easy for me.
2. My interaction with mobile VAS procedure would be clear and understandable.
3. I would find a mobile VAS to be flexible to interact with.
4. Using mobile VAS can bring happiness and efficiency for my life.
5. Using mobile VAS can help me accomplish working task easier and faster.
6. Mobile VAS can provide me useful information and reference about my life and work.
7. I think it is better if operators reduce the charging for mobile VAS, but I will continue using no matter how much cost.
8. For me the current cost for mobile VAS is high, I will not be addictive on mobile VAS.
9. Generally speaking, I cannot accept the current tariff of mobile VAS, and I can’t afford them.
10. Switching to other mobile VAS may cause losing virtual friends.
11. Switching to new mobile VAS will cost new expenditure.
12. Switching to other mobile VAS would require too much learning.
13. My choice to purchase current using mobile service was a wise one.
14. I think I did right thing when I purchased the service.
15. The facility is exactly what is needed for the service.
16. I am eager to use mobile VAS in the future.
17. Maybe I will try to use mobile VAS but not now.
18. I will not use mobile VAS unless it is necessary for life and work.
19. I will keep using current mobile VAS.
20. I would like to try different and new products all the time
21. Even if friends recommended another mobile VAS strongly, I will not change my mind or preference for some service.
Bibliography


