Customer-perceived Values on Non-Voice Smartphone Services in Villages of Taipei: Suggestions for Future Research

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ABSTRACT

Due to the keen competition among mobile service providers, it is important to develop or improve non-voice services for them to overcome the competition. Hence, this study first propose a theoretical framework to explain the relationships among customers' expected benefits and perceived values. An extensive review of the current literatures reveals a number of non-voice services, especially new value-added services. For exploring people's perceptions of must-have non-voice services, the study suggests to explore the responses from the perspective of the respondents who use non-voice services within one week or not.

To do so, the study also proposes a research design and a research paradigm. The data Tables in the study are designed to illustrate the steps for analyzing survey data. These are made in the way for marketing practitioners can easily conduct the research and the data analysis in future so it may arouse the research interest among them. Hence, this study hopes to not only provide useful information for the academicians but benefit to mobile service providers, marketing channel partners, and mobile service users.

Keyword: Non-voice mobile service, mobile number portability, mobile service provider, services marketing mix, expected benefit, perceived value

INTRODUCTION

A variety of non-voice services (beyond voice services) including wireless Internet, mobile reading, mobile music, app store, short message service, ringtone download and other wireless information services have rolled out by mobile service operators together with their partners for a long time. Looking back, in 2005, M-Taiwan Program of Taiwan government was expected to enable Taiwan as one of the top 10 countries with the lowest online access fee in the world. It was expected to decrease the Internet access fee 30% to 80% (E-Taiwan, 2005). In December 2005, the entrance of a new pure 3G operator — VIBO — fuelled competition further because it had caused the price cuts announced by the larger mobile operators to attract 3G subscribers (Government Information Office, 2008). The newer companies derived some customers from the three biggest companies after the government permitted Mobile Number Portability (MNP) service in year 2005 (Graham Norris, 2005). At the end of 2006, the number of mobile service subscribers in Taiwan rose to 23.24 million, representing a penetration rate of 101.6% (Department of Investment Services, 2008); however, Taiwan consumers loyalty to mobile service providers (MSPs) in 2013 was 75%. The declining birth rates in Taiwan are likely to have a negative influence on the number of mobile service users (MSUs). After Taiwanese regulators allocated 4G licenses to MSPs, Chunghwa Telecom was the first one to launch 4G services in Taiwan (Capacity Media, 2014); however, at the end of 2016, Chunghwa Telecom only maintained its leading position with 37.3%
market share in mobile service subscribers in spite of the fact that the company established competitive marketing plans and developed optimized channel marketing activities to improve their customer retention (Chunghwa Telecom, 2017).

A consumer research identified that non-users of NV services are not aware of the benefits of mobile internet usage, lack of digital literacy skills, and have no confidence in internet security and privacy (GSMA, 2015). Marketers who gain a deeper understanding of what their customers response to will be able to build long-lasting relationships with those customers (Mary Kearl, 2016). Thus MSPs have to determine the non-voice (NV) services which can take less effort and time from users to find and use what they need, instead of increasing investment in training sales representatives to launch a lobbying effort to convince people who are not ready to use NV services. This means that the non-users will be more likely to use NV services next time. As a rise in overall NV service usage happens, more better quality or innovative NV services will be provided and ultimately result in increasing average revenue per user and customer retention rate.

Now the competitive mobile market in Taiwan is comprised of six MSPs and three of them, namely Chunghwa Telecom (CHT), Taiwan Mobile (TWM) and Far EasTone (FET), dominate the market (BuddeComm, 2017). Because the top 3 MSPs in Taiwan have not yet provided new must-have NV services to expand their market shares, the suggested research problem is “What the NV services rated by the top 3 MSPs’ MSUs for making the top 3 MSPs create unknown market scales in the future are.” For gauging the invisible influence levels of the major areas (such as product, price, place, promotion, people, process and physical evidence) on their MSUs' perceptions of must-have NV services, the study suggests to explore whether the NV services of the 7Ps are must-haves because the Ps need to be considered in service design processes.

**THEORETICAL FRAMEWORK**

The increasing level of competition faced by MSPs often leads to requests for lower prices. Management is thus led to believe that it has a pricing problem. However, this view may be excessively narrow: perhaps the firm has a value problem or, more precisely, a perceived value problem (Noel Capon and James M. Hulbert, 2008).

Values provide standards or criteria to choose among alternatives (Ozmete, Emine, 2007). From the related literatures and studies, the study also agrees that MSPs must concern whether their NV services can provide values to their MSUs. When services are not differentiated, expectations become especially important because they are actually part of “wants” (Graham Lee, 2011). Customers' perceived values represents the benefit that they expect to obtain through the use of NV services (Aurora Harley, 2016) so MSPs need to examine MSUs' expected benefits to NV services. Word-of-mouth (WOM) recommendations from users can get people actively believe that the services deliver the expected benefits in their situations (George Silverman, 2011). For making NV services at least be able to be “better than before” and “better than expected”, the study sets expected benefit as an important input variable and “perceived customer value minus expected customer value = extra customer value >0”. If extra customer value is not greater than zero, maybe MSUs will shift to other MSPs or alternatives because they expect others as better than or equal to their expectations. Thus users will raise their expected values and then make themselves more likely to use the services (Aurora Harley, 2016).

In addition, from the related literatures and studies, the study discovers other important input variables including service display style, smartphone capability, secure internet transaction, government
intervention, new VAS, promotion, price, place, physical evidence, process, people and technology. The equation “perceived customer value minus expected customer value = extra customer value >0” can be changed into “expected customer value + extra customer value = perceived customer value”. In the theoretical framework, the estimated mobile service function becomes “(expected benefit × W1perception) + (the benefit of service display style × W2perception) + (the benefit of smartphone capability × W3perception) + (the benefit of secure internet transaction × W4perception) + (the benefit of government intervention × W5perception) + (the benefit of new VAS × W6perception) + (the benefit of promotion × W7perception) + (the benefit of price × W8perception) + (the benefit of place × W9perception) + (the benefit of physical evidence × W10perception) + (the benefit of process × W11perception) + (the benefit of people × W12perception) + (the benefit of technology W13perception) = MSUs’ perceived value of the expected benefit” defined by the study and extra customer value has to come from the remaining input variables.

RELATED LITERATURES AND STUDIES

The service marketing mix which consists of product, price, place, promotion, people, physical evidence and process is an integral part of a service blueprint (Hitesh Bhasin, 2017). From a product-based, technological, and economic perspective, StreamWIDE aims to offer mobile VAS solutions for overcoming the challenges that mobile business faces today (StreamWIDE, 2017). Price occupies a unique place among marketing mix elements as it affects both margin (price less cost) and volume (by virtue of demand elasticity). To the top 3 MSPs, fixed monthly NT$1399 is the common price for unlimited plans set by all of them. Because monthly NT$1399 is the lowest plan rate agreed by the top 3 MPSs to allow their MSUs unlimitedly using NV service at the speed of 4G so the study regards NT$1399 as the price to attract the majority of MSUs.

The amounts of discount rates (for the voice minutes in excess of plan's monthly inclusion) provided by the top 3 MSPs have no big difference (Chunghwa Telecom, 2017; Taiwan Mobile, 2017; Far EasTone, 2017), but in 2017 Chunghua Telecom has also been charged NT$3 per minute (after first 80 minutes) for mobile-to-landline voice calls; however, for avoiding price wars and winning more repeat-purchases, service providers have to offer higher quality services (Reeves Carol & Hoy Frank, 1993) so they have to look at their business and see where they may be able to offer better services for the same price (BusinessKnowledgeSource, 2010). According to average monthly data consumption, MSPs can identify different consumption clusters from low data usage to high data usage and then promote the right apps in the right clusters to boost ARPU (Impact Analytics, 2017). For finding out the people who seldom use and did not use NV services, this study suggests to divide MSUs into two segments, "nonuse within one month" and "use within one month".

After MSPs heavily promote their unlimited all-you-can-eat data plans that cover MSUs' favorite smartphones and limited free voice calls, smartphones (the fastest growing category amongst mobile devices) have helped to drive MSUs to consume more NV services (John Giere, 2010). It is true that MSUs' data usage can vary depending on mobile devices (Melanie Pinola, 2017). Mobile devices, especially smartphones, have filled a service usage need during MSUs' commutes that couldn't be served by personal computers or landlines. Because of limited screen size, the usage problem that MSUs experience is that they need to zoom in to hit small links. Moreover, there is a general tendency towards high-resolution screens of smartphones (Jens Berger, 2016). Therefore, screen size and screen resolution maybe influence whether MSUs think NV services as must-have or not because screen size, as has been
proven, has a significant effect on the efficiency of information seeking (Dimitrios Raptis et al., 2013). The another usage problem encountered by MSUs is that the security flaws of smartphones make it very dangerous to make online payments. A survey shows that 64% of MSU respondents worry about the problem of online banking fraud while making online tractions (Kaspersky, 2016).

Except price, the direct outlay of cash also includes out-of-pocket costs. For example, MSUs can use mobile devices such as smartphones and tablets as substitute or complementary so the costs of complementary and substitutive devices are the out-of-pocket expenses incurred by MSUs. Due to the emergence of MNP, the cost involving with switching to another MSP decreases (Monika Schnitzer, 2009). The MNP promotional offering that enables MSUs to easily switch to the exciting rate plans for enjoying great benefits with no processing fee was announced by a MSP, U Mobile, in Malaysia to improve MSUs' demands (Charickk, 2008). Now MNP service fee charged by Chunghwa Telecom is NT$240 much less than the estimated full cost of using a new phone number provided by another MSP. If MSUs switch to another MSP, they do not have to purchase a new SIM card and inform other people of their change of mobile operators. The benefits from MNP service include enjoying freedom and convenience and choosing the MSP who offers better quality of services (Communications Authority Of Kenya, 2017). Meaningful to say, the fee is appropriate for a successful port. To MSPs, the introduction of MNP makes them strive to enhance the intensity of price competition (Monika Schnitzer, 2009) or try to offer better quality or innovative NV services for attracting MSUs (Murali Krishna Medudula, Mahim Sagar, & Ravi Parkash Gandhi; 2016). Complicated hierarchical menus of NV services may affect MSUs' usage time or access frequency to NV services. According to the findings of a 2013 survey done by Compuware, 42% consumer-respondents expect the download speed of a mobile app is faster than a mobile website's loading speed. But, the speed of loading apps may be affected by processing powers of mobile devices (Jessica Dolcourt, 2012). Consumers thus want to find easy-to-use apps that adopt intuitive and entertaining user interfaces to deliver mobile services. The apps that allows consumers to easy access to product and store information, to plan and navigate trips, and to communicate in real time are most wanted (Compuware, 2013). Mobile viewing of video has been thus growing steadily around the world (Aditya Kishore, 2017). After comparing the value-added services (VASs) provided by the top 3 MSPs (Chunghwa Telecom, 2017; Taiwan Mobile, 2017; Far EasTone, 2017), they also provide the mobile video services that demand the biggest chunk of data in mobile networks. Social media management, note-taking, mobile office suite, password manager, virtual private network apps are the innovative apps never have provided by the top 3 MSPs after comparing their mobile apps and the must-have apps introduced by Max Eddyin 2016 and Kim Komando in 2017. Mobility has been changing the way that organizations work and manage. Companies do industrial automation app development to improve productivity, workflow, and customer relations and at the same time yield a reduced cost of ownership (Mobinius Admin, 2014). In 2015, more than 72% of total sales for best apps in Apple’s App Store came from the apps for the age category, toddler or preschool (Kathy Hirsh-Pasek, 2015); however, mobile services still steadily push their way into healthcare and education sectors (Hunter D Robot, 2017). Traditional voice emergency services are better to have a alternative communication method instead of placing an emergency call when emergency arises (Prashant Panigrahi, 2012). Possibly the next generation services such as industrial automation, robotics, and education will produce a completely different quality for end-users (PR Newswire, 2017). If consumers were dissatisfied with the performance of a mobile app, 48 percent of respondents would be less likely to use the app again and they would tell others about their poor experiences (Compuware, 2013). In most industries, there is a trend that is dramatically reducing government control of the competitive process in markets. Because public policy
traded off efficiency and equity considerations, both the process and results of regulation were controversial (Mark Hirschey and James L. Pappas, 1996). Although most government interventions had negative economic impacts, for preventing anti-competitive behavior in dominant telecommunications providers, MyNetFone has requested federal government to force to open up their respective networks to MNF's virtualized mobile number service for securing MSUs' online identities (Asha McLean, 2017). Therefore, possibility government intervention has an impact on the launch of new NV services in Taiwan.

Mobile internet and mobile data services are two forms of technological innovation (Scupola Ada, 2012). For using better quality or innovative NV services in future, the implementation of MSPs' new technology (such as wireless communication technologies or other wide area network) is important. When MSPs' 4G base transceiver stations are located in dense urban environments, the cells of the base stations (the most visible network components) are much smaller (Fabio Ricciato et al. 2015). Thus, only the adoptions of the technologies that automate service processes have been accepted by MSPs because of cost considerations (Tom Nolle, 2017). Due to the rise of technology and personal selling costs, well-designed virtual advisors which are added on service providers' websites pages could provide users with advices to limit search to the recommended services (Nuance, 2017) so the study thinks a virtual advisor can be used as a service of marketing promotion. Offering free WiFi in public venues is a much-sought service to young people, tourists, business people because it will attract them to come back again for benefiting from using the free Wi-Fi connections. Thus, the quantities of base stations, Wi-Fi hot spots of MSPs and customer service centers possibly affect MSUs' perceptions of their NV services (Monica Ferrari, 2017).

The physical evidence such as interior design of MSPs' customer service centers may offer a tangible and unique experience to MSPs' MSUs. The MSPs that regard customer centric as a way of doing business with customers have a 17% increase in customer satisfaction and a 21% decrease in the number of complaints over a one-year period (Jeremy Cowan, 2015). Hence, training staff to have superior customer service skills has become a top priority for many organizations today (Boundless, 2017). Physical evidences such as professional employee appearance, modernized office, comfortable office layout and up-to-date technology are the factors determining the customers' perceptions of service quality (A.N.V. Durga Anupama, Mamilla Rajasekhar, & Muddaraju Kiran Kumar, 2012). Apart from the top 3 MSPs' service centers, they have built their customer service apps for their own businesses to continually optimize their service processes (Taiwan Mobile, 2017). In the service process of delivering all service attributes, consistency implies achieving sameness, uniformity and fairness. This helps to create a competitive reputation (Rene T. Domingo, 2003). In a service process, the important thing is whether service staffs deliver consistent services to end users or not (Jacques Murphy, 2007).

SUGGESTIONS FOR FUTURE RESEARCH

At the heart of the research framework in the study is the input-process-output research paradigm (see Figure 1).
In the research paradigm, the input includes the rating data about the services of the input variables, whereas the process includes two proposed analysis steps for conducting the analysis. Output includes the analysis results. This means that MSU respondents will rate the services of the input variables based on their preferences regarding them. Then, the data shall be analyzed based on the average ratings and the ratings of “1” and “5” and which hopefully will reveal the must-have NV services.

Research Hypotheses

Based on the theoretical framework, the study assumes that the services of all input variables are MSUs’ must-have NV services.

Operational Definitions of Variables of the study

Because Taiwan’s penetration rate of mobile devices had been over 70 percent in the age group of 12 or over (CNA, 2014; eMarketer, 2016), it means that most of MSUs have common senses about NV services. Hence, the study simplifies the professional terms relating to NV services and makes the specific operational variables with the property of being measured.

Expected benefit – This refers to the WOM according to MSUs’ usage experiences, commute time, and the budget such as the costs of complementary and substitutive devices to using NV service.

Service Display Style – This consists of the menu and content styles of convenience, enjoyment and beauty.

Smartphone Capability – This consists of screen size, screen resolution, and processing power.

Secure Internet Transaction – This is about avoiding leakage on their purchase transaction information such as bank account secret during the transmission processes through NV services.

Government Intervention – This includes Taipei government and its agencies’ various regulations on NV service license.

New value-added service – This composes of new must-have apps (related to social media management, note-taking, mobile office suite, password manager and virtual private network) and next
generation apps (related to virtual mobile number, emergency, industrial automation, robotics, and education).

Promotion – This includes a contract covering a cut-price smartphone, discounted rates for extra data, discounted rates for extra mobile-to-mobile call minutes, discounted rates for extra mobile-to-landline call minutes, MNP service fee, and a virtual adviser to suggest MSUs the non-voice services according to their preferences.

Price – This refers to fixed monthly rate of NT$1399 for unlimited NV service usage.

Place – This is about the quantities of base stations, customer service centers, and Wi-Fi hot spots.

Physical Evidence – This refers to service center layouts of modern and comfort.

Process – This refers to the service process of consistence and continuous improvement.

People – This refers to professional employee dress and appearance.

Technology – This refers to the technologies used for NV services.

Must-have NV services – This covers the services of the above-mentioned input variables rated by MSU respondents as “5” and “1” according to their responses. “5” and “1” show, respectively, highly positive or negative influence.

Research Design

The study suggests to make a descriptive analysis for the survey data about NV services. Because survey researches always try to balance the amount of sampling error with the cost of the sampling (Pew Research Center, 2017) prior to conducting a questionnaire survey, the study suggests to adopt a conveniently random sampling in certain areas of Taipei. Taipei 101 tower locates in Xicun village of Xinyi district that is Taipei City’s most iconic modern commercial district (Taipei City Government, 2016). The oldest district of Taipei City is Wanhua that is well-known for its national historical site Longshan Temple at Fumin village. Hutian village of Beitou district is Taipei’s highest-elevation village that offers a mix of city life and mountain life (Agoda, 2017). The living environment characteristics may influence residents' perceptions of NV services. For ensuring a minimum number of respondents from the mountain area in Taipei, the conveniently random sampling method is recommended. Table 1 shows the sampling framework that includes Taipei MSUs’ house numbers in Xicun, Fumin, and Hutian villages.

<table>
<thead>
<tr>
<th>The names of the villages</th>
<th>The numbers of households (sampling unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xicun</td>
<td>2,952</td>
</tr>
<tr>
<td>Fumin</td>
<td>2,247</td>
</tr>
<tr>
<td>Hutian</td>
<td>383</td>
</tr>
<tr>
<td>Total</td>
<td>5,582</td>
</tr>
</tbody>
</table>

Note: Adapted from Household Registration Offices, Taipei city (2016)

In Table 1, there are 5,582 sampling units (5,582 households). The sample size of any descriptive research is governed by the extent of precision and confidence desired (Uma Sekaran, 2010). Too big sample size, for example, greater than 500, could become a problem inasmuch as studies would be easy to making Type II errors (Salah Ahmed Mohamed Elmoselhy, 2015). That is, studies would accept the findings of their research, when in fact they should reject. The process of determining the sample size was greatly simplified by providing a table that ensures a good decision model (Krejcie and Morgan, 1970; Uma Sekaran, 2010; Kenya projects organization, 2012). It said that the sample size is 357 when the population size is 5,000. And the sample size is 361 when the population size is 6,000.

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For comparing the top 3 MSPs’ MSUs’ perceptions of NV services, because CHT, TWM and FET have approximately 39.6%, 27.1% and 25.7% of the market respectively in 2016 (eMarketer, 2016), the separate MSU respondents for CHT, TWM and FET are 361 x 39.6% = 143, 361 x 27.1% = 98 and 361 x 25.7% = 93. The total MSU respondents are 334.

For randomly selecting MSU respondents from the sampling framework in Table 1, the study suggests to assign a number (from 1 to 5,582) to each household of the three villages. Each household’s assigned number has to be written on a separate card, then the cards have to be put into a bag. After mixing them, 304 cards are chosen (Russell T. Hurlburt & Christopher L. Heavey, 2006). For making every card has the same chance to be drawn, the drawn card is returned into the bag before another one is taken. Although the sample size is 334, the effective samples maybe will be less than 334 because some of them maybe will refuse to answer or not answer all the questions in the questionnaires.

Instrument for Gathering Data and Validation

For easily accepting and answering the questionnaire by MSU respondents, the questionnaire is suggested to make in limited questions which are deduced from the related literatures and studies based on their importance levels. The sub-questions which have relationships among each other will be integrated into one main question and the questions relating to the same input variables will be put together. For allowing MSU respondents to answer “no change” to the questions and enabling elder MSU respondents to easily rate the questions, the study suggests to adopt a 1-to-5 rating scale for measuring their perceptions of NV services. Based on the definition of must-have from Oxford dictionaries, must-have NV services are highly desirable NV services. Hence, the measurement scales of 5 and 1 in the questionnaire are defined by the study as, respectively, the highly positive or negative influence level that is the influence level of the services of the input variables on MSUs' must-have NV services.

To confirm whether the questionnaire measures what it intends to measure, the study suggests to includes at least one MSP customer service staff’s validation in the questionnaire development process and then asks some MSU respondents to give feedbacks about their understandings to the questionnaire prior to a formal questionnaire survey. In the formal questionnaire survey, the study suggests to require the persons (in each selected household) who open the door to answer the questions based on the principle of random sampling. The questionnaire survey has to be completed within one month because new and improved NV services may will be offered next month.

Statistics for Analyzing Data

After entering the data into SPSS, the study suggests to adopt the following analysis steps of Descriptive Statistics. For getting the responses of the MSU respondents who seldom use NV services, the study divides MSU respondents into 'Use' and 'Nonuse' segments depending on whether they use NV services within one month or not. Separate summary tables (see Figure 2 and Figure 3) for each of the two MSU respondent segments are suggested to make.

Figure 2 shows Example Table A that presents the average ratings (given by the MSU respondents who does not use the NV services of CHT, TWM, or FET within one month) and their arithmetic means to each survey questions. Thus, the top 3 MSPs may take any one or more of the following actions.

If the existing services relating to the variables are rated lower by the MSU respondents who does not use their NV services within one month, the top 3 MSPs may consider to improve the existing services in order to prevent the MSUs from switching to their competitors or increase the MSUs' usage amounts of data and/or call minutes and/or make them buy at least one package of existing value-added
services. This means that it may make 3 MSPs maintain their market share or increase their service revenues.

If the new services relating to the variables are rated higher by the MSU respondents, the top 3 MSPs may consider to provide the new services in order to increase the MSUs' usage amounts of data and/or make them buy at least one package that includes the new value-added services. This means that it may make 3 MSPs maintain their market share and increase their service revenues.

**Example Table A: The MSUs' Average Ratings (Nonuse on NV Service within One Month)**

<table>
<thead>
<tr>
<th>Input Variables</th>
<th>Average Ratings</th>
<th>The MSUs of CHT</th>
<th>The MSUs of TWM</th>
<th>The MSUs of FET</th>
<th>Their mean to questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected benefit</td>
<td>Question 1</td>
<td>3.8</td>
<td>3.6</td>
<td>2.4</td>
<td>(3.8+3.6+2.4)/3=3.267</td>
</tr>
<tr>
<td></td>
<td>Question 2</td>
<td>2.4</td>
<td>2.2</td>
<td>3.1</td>
<td>2.567</td>
</tr>
<tr>
<td>People</td>
<td>Question 16</td>
<td>2.6</td>
<td>2.2</td>
<td>1.8</td>
<td>2.2</td>
</tr>
</tbody>
</table>

**Figure 2: Example Table Presenting the Average Ratings Given by the Respondents in 'Nonuse' Segment**

The following Figure 3 shows the Example Table B that presents the average ratings (given by the MSU respondents who use the NV services of CHT, TWM, or FET within one month) and their arithmetic means to each survey questions. Thus, the top 3 MSPs may take any one or more of the following actions.

If the existing services relating to the variables are rated lower by the MSU respondents who use their NV services within one month, the top 3 MSPs may consider to improve the existing services in order to enhance the MSUs' usage amounts of data and/or call minutes and/or make them buy one more package of existing value-added services. This means that it may make 3 MSPs enhance their service revenues and decrease their market share if they only target to the MSUs who use their NV services within one month.

If the new services relating to the variables are rated higher by the MSU respondents, the top 3 MSPs may consider to provide the new services in order to enhance the MSUs' usage amounts of data and/or make them buy at least one package that includes the new value-added services. This means that it may make 3 MSPs enhance their service revenues and decrease their market share if they only target to the MSUs who use their NV services within one month.

**Example Table B: The MSUs’ Ratings (Use on Non-voice Service within One Month)**

<table>
<thead>
<tr>
<th>Input Variables</th>
<th>Average Ratings</th>
<th>The MSUs of CHT</th>
<th>The MSUs of TWM</th>
<th>The MSUs of FET</th>
<th>Their mean to questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected benefit</td>
<td>Question 1</td>
<td>3.2</td>
<td>3.0</td>
<td>2.1</td>
<td>2.77</td>
</tr>
<tr>
<td></td>
<td>Question 2</td>
<td>2.1</td>
<td>2.1</td>
<td>3.1</td>
<td>2.43</td>
</tr>
<tr>
<td>People</td>
<td>Question 16</td>
<td>2.5</td>
<td>2.0</td>
<td>1.8</td>
<td>2.1</td>
</tr>
</tbody>
</table>

**Figure 3: Example Table Presenting the Average Ratings Given by the Respondents in 'Use' Segment**

The following Figure 4 shows the Example Table C that presents the average ratings (given by all MSU respondents of CHT, TWM, or FET) and their arithmetic means to each survey questions. Thus, the top 3 MSPs may take any one or more of the following actions.

If the existing services relating to the variables are rated lower by all MSU respondents, the top 3 MSPs may consider to improve the existing services in order to decrease the number of the MSUs who
plan to switch to their competitors or increase all MSUs' usage amounts of data and/or call minutes and/or make them buy at least one package of existing value-added services. This means that it may still make 3 MSPs increase service revenues and decrease the loss of their market share although the problems encountered by the MSUs who do not use MSPs' NV services within one month are not solved.

If the new services relating to the variables are rated higher by all MSU respondents, the top 3 MSPs may consider to provide the new services in order to increase all MSUs' usage amounts of data and/or make them buy at least one package that includes the new value-added services. This means that it may still make 3 MSPs increase service revenues and decrease the loss of their market share although the problems encountered by the MSUs who do not use MSPs' NV services within one month are not solved.

**Example Table C: The MSUs' Rating (Use and Nonuse on Non-voice service within One Month)**

<table>
<thead>
<tr>
<th>Input Variables</th>
<th>Questions</th>
<th>Average Ratings</th>
<th>All MSUs of CHT</th>
<th>All MSUs of TWM</th>
<th>All MSUs of FET</th>
<th>Their mean to questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected benefit</td>
<td>Question 1</td>
<td>(3.8+3.2)/2=3.50</td>
<td>(3.6+3.0)/2=3.30</td>
<td>(2.4+2.1)/2=2.25</td>
<td>(3.5+3.3+2.2)/3=2.98</td>
<td></td>
</tr>
<tr>
<td>:</td>
<td>Question 2</td>
<td>2.25</td>
<td>2.15</td>
<td>3.10</td>
<td>2.50</td>
<td></td>
</tr>
<tr>
<td>People</td>
<td>Question 16</td>
<td>2.05</td>
<td>2.1</td>
<td>1.8</td>
<td>1.983</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 4: Example Table Presenting the Average Ratings Given by the Respondents in 'Nonuse' and 'Use' Segments**

Before the top 3 MSPs make decisions for their actions, they may also need to know about the quantity of the MSUs who does not use their NV services within one month. Their competitors' MSUs may not soon be able to switch to them soon even if they launch better services because the MSUs might still be on their existing contract plans. If they would like to leave before the contracts are up, they will be charged early termination fee.

Figure 5 shows Example Table D presenting the questionnaire questions with MSU respondents’ ratings 5 and 1 are the must-have services perceived by all MSU respondents.

**Example Table D: MSU respondents’ ratings 1 and 5**

<table>
<thead>
<tr>
<th>Input Variables</th>
<th>Questions</th>
<th>Rating</th>
<th>Rating 5</th>
<th>Rating 1</th>
<th>MSU respondents’ must-haves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected benefit</td>
<td>Question 2</td>
<td>5</td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>New VAS</td>
<td>Question 9.1</td>
<td>5</td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Price</td>
<td>Question 11</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

**Figure 5: Example Table Presenting the Ratings 5 and 1 Given by the Respondents in 'Nonuse' and 'Use' Segments**

Therefore, they may just improve or/and provide the existing or new services getting the largest quantity of rating '1' or '5', no matter if the MSU respondents use or does not use their NV services within one month. The top 3 MSPs may take any one or more of the following actions.

If the top 3 MSPs only improve the existing services having the largest quantity of rating '1', the existing services may become necessary for some of their MSUs because their existing services are rated only by their MSUs, not by other MSPs' MSUs; however, if the top 3 MSPs only provide the new services having the largest quantity of rating '5', their new services may also help other MSPs' MSUs with a specific need or want. Meaning to say, if they provide the new services, they may attract more MSUs.
Depending on the top 3 MSPs' costs and capabilities, they may choose the services listed in the Example Table D to service customers for gaining market shares and enhancing sales revenues.

**CONCLUSION**

Based on relevant findings from past theories and studies, the theoretical framework implicates important dimensions and describes their relationship with must-have NV services. Except making meaningful contributions to the body of knowledge in the industry, the competition among the top 3 MSPs may also help to motivate themselves to make new VASs. For increasing their sales revenues, they might have been trying to improve the quality of their existing services in the past, and this has continued up to the present.

If the quality problem of services does not be solved, MSPs might need to examine the approaches used for improving their NV services. If they could successfully improve the quality of their existing services, they might have a decline in marketing costs. In other words, what they should do is to market profitable services. To the tops 3 MSPs, if they made a smart use or a new way of using technologies, they may develop new VASs that have distinctive features and/or benefits to overcome unprofitable price wars for having higher profits and more customers.

For increasing the top 3 MSPs' profits, a market-focused research paradigm processes the input data from the MSUs outside their companies for having useful output, must-have NV services which include the improved services and the new services fitting to individual MSUs' desires. Thus, for increasing the quantity and/or their monthly usage amounts of MSUs, future research may take into account whether the distinctive features and benefits associated with new VASs are desired by MSUs.

After conducting a questionnaire survey, a analysis on MSUs’ responses will be carried out by academic marketing researchers or market research practitioners, especially those MSPs who are working hard for servicing their MSUs. Maybe they need to think again if they still dream to increase their profits only from their existing MSUs because the money spent by MSPs on their channels such as service centers for only servicing and pushing their MSUs to use their NV services are not low. The simple ways of conducting data analysis will help them ease their work or have no more talk of complaints regarding usefulness of academic studies. Therefore, the study believes that the suggestions are useful for the future study of must-have NV services.

**REFERENCES**


George Silverman (2011). *Secrets of word-of-mouth marketing: How to trigger exponential sales through runaway word of mouth*. AMACOM


