Case Study

Mobile Information Services:

Moving Toward a Ubiquitous Future

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Introduction

⋯⋯⋯⋯⋯*Looking out of the window of the Tsukuba Express, Sayuri is thinking that today she has to develop a research proposal which will predominantly focus on innovative methods of attracting clients for her firm. She works in a recruitment firm at the heart of Tokyo, but she lives in a nearby suburb close to Tokyo which is widely known as Tsukuba. Everyday her commutation takes about a couple of hours and she tries to utilize this time by browsing mobile internet. Still she recalls, just few years back, when mobile internet was not in its full bloom, she used to either sleep or read books in sleepy eyes while she was on commute.*

With the advent of her 3.5G enabled mobile phone, however, now she can do her most of the communication and day to day activities through her mobile phone. Being a recruitment consultant, most of the time she uses her mobile phone to exchange mails or SMS (short message services) with her clients as she has to meet a good number of job seekers everyday. She also uses it to get the contact address of her potential clients as she has to make cold calls frequently to find out whether any top class executive is interested in switching jobs. In addition, she also uses it to check the weather forecast, transportation schedule and her bank balance.

Today is Friday and she is feeling a little bit relief thinking of the upcoming holidays and enjoyments with her friend. She is planning to go for movies tonight with her friend in Roppongi hill. Last night when she was returning home by Tsukuba Express, she watched the trailer of the popular movie 'the pursuit of happiness' in her mobile TV. So in the lunchtime in McDonalds, she reserved two tickets for the movie and also two seats in nearby Indian restaurant Mira for their dinner. In the meantime, she received a direct mail from Yodobahsi camera saying that her ordered wrist watch is now in their collections; so decided to stop over at Akihabara as she will have to receive the watch for her friend as a present for his birthday.

This is an example of a typical mobile consumer in Japan. Taking into account their needs and excitement for this tiny stuff, APP Reasoning, a branch company of Anytime Anywhere and

Pleasure-bank Corp, the leading mobile operator in Japan, recently devoted their research efforts to come up with sophisticated mobile information services which will address the basic needs of customers by serving them with news, weather, music, learning, financial, health or TV services. APP Reasoning wants to build up a true ubiquitous society in order to satisfy the information needs at the robust pace. Thus, they built a partnership with the Mobile Innovation Lab of Tsukuba University to complete the research project with amazing findings from the market research. Accordingly, the Mobile Innovation Lab started researches and followed a standard market research procedure to finish the research. Meanwhile, Mobile Innovation Lab asked a market research firm, Mobile Research Inc. (MRI), to collect data on the research issues in Japan.

The Research Objectives

This study focuses on the factors which influence the marketing of information services through mobile phone in Japan. Thus, the purpose of this research is to determine the factors that influence the marketing of mobile information services in the Japanese market with the following specific objectives:

a. To determine a variety of information needs of the customers;
b. To determine the segment of the customers;
c. To determine the target of the customers;
d. To find factors that will trigger the adoption of mobile information services;

So the primary objective of the research is to determine the needs of customers with regard to various services and determine which dimensions of services are more attractive to them. APP Reasoning wants to use the data of *Mobile Innovation Lab* to identify the segments within the markets suitable for mobile information services provided via audio-visual cellular phone, APP P999TV, for the targeting purpose.

P999TV

APP Reasoning provides animated picture transmission services, "fantastic broadband Navi", for personal computer, in which seminar-related services are available. It also starts transmitting lecture services for qualifying examination purposes. In addition, it provides the contents for cellular telephone as well as the language study.

For the targeting task, APP Reasoning which creates broadband portal sites, e-learning services, and video communication services recognized that it needs to develop criteria for segment selection. Therefore, APP Reasoning identified two sets of key criteria:

1. Segment selection on *market needs & capacity to serve*, that is, the ability of mobile information services provided via the current (or future) P999TV to meet the existing market needs of mobile information services.

2. Segment selection on *segment size and growth expectations*, including both present users and potential users.
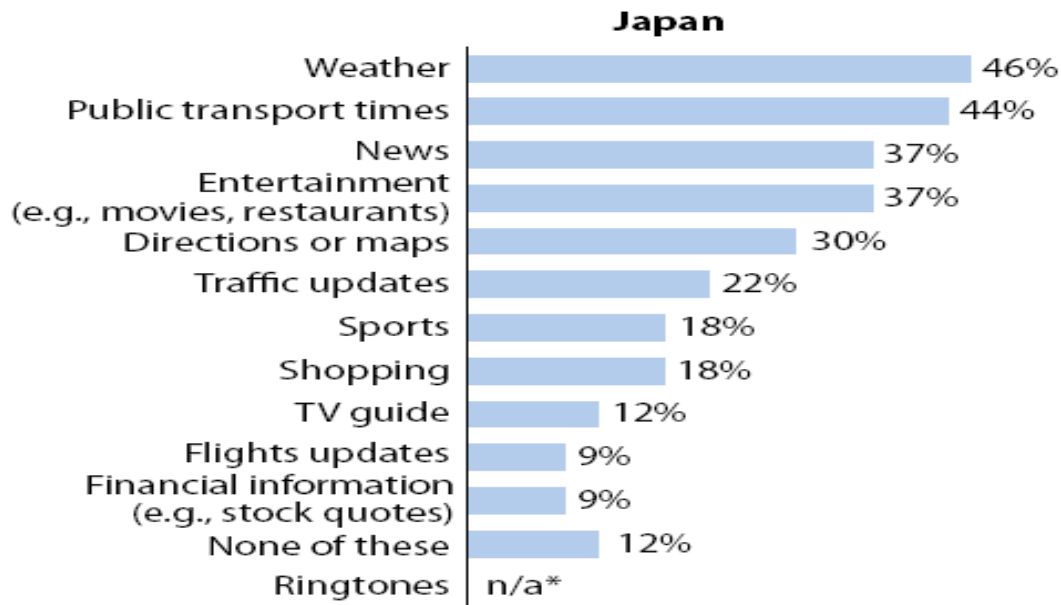
The History of Mobile Phone

A mobile phone or cellular phone is a long-range, electronic device used for mobile voice or data communication over a network of specialized base stations known as cell sites. In addition to the standard voice function of a mobile phone, telephone, current mobile phones may support many additional services (http://en.wikipedia.org/wiki/Mobile_phone#Market). The Cellular phone concept that currently supports a bulk of mobile communication was developed in 1947 at Bell Laboratories (Balasubramanian et al., 2002). The improvement in wireless technology involved a new era for information services marketing because of some distinctive features. The most unique feature is "*mobility*" which refers to the ability to communicate, inform, transact and entertain at any place anytime on the move without fixed Internet access (Clarke 2001). Another unique feature is that the mobile device is "*personal*", which is always available on a person and retains its user identity (Kannan Chang and Whinston 2001). These two technological features endow mobile information applications' compelling characteristics, which differentiate them from those of other wired application. Mobile users obtain 'mobile information value' created through the use of mobile internet applications (Anckar and D'Incau 2002).

Facts on Mobile Information Services in Japan

Mobile information service is defined as information services by using Internet via handheld devices (Francis 1997). The key elements of mobile information services are: it is location sensitive, time critical and user initiated (Balasubramanian et al. 2002).With the availability of mobile devices, it becomes easy to gain access to the tremendous amounts of information on the Internet anywhere and anytime. For example, we can read critical e-mail messages

instantaneously by using Internet-enabled cellular phones, or compare product information from shops around us while shopping with PDAs (Albers and Kim, 2000), or mobile-Internet cell phones. There are different types of mobile information services such as news, weather, horoscopes, video downloads, mobile TV, and stock trading.

Japan

Service	Percentage
Weather	46%
Public transport times	44%
News	37%
Entertainment (e.g., movies, restaurants)	37%
Directions or maps	30%
Traffic updates	22%
Sports	18%
Shopping	18%
TV guide	12%
Flights updates	9%
Financial information (e.g., stock quotes)	9%
None of these	12%
Ringtones	n/a*

Source: Forrester's APCTAS Q1 2006 Survey and Forrester's ECTAS Q4 2006 Devices, Access, and Telco Survey

Japan is arguably the world's most advanced mobile market as 40% of mobile data revenues worldwide are being generated here, three quarters of the population are using the mobile web, and 4 in 5 users are on 3G devices (Billich, Scuka and Ishii, 2007).Most of the operators in Japan have success with Mobile Internet user adoption. Fifty two percent of the Japanese mobile consumers use the mobile Internet (Forrester Research, 2007). Besides, in Japan, all operators (DOCOMO, KDDI, SOFTBANK MOBILE Corp., etc) have already moved far beyond basic browser-like services such as mobile email and mobile portals. DOCOMO offers a wide range of advanced mobile services like i-channel which pushes information directly to a phone's idle screen. It is based on Adobe's FlashCast technology and already has more than 8 million subscribers. Another 17.4 million people use Osaifu Keitai phones that come standard with DOCOMO's mobile wallet services and run on Sony's Near Field Communication (NFC) standard FeliCa (Forrester Research, 2007). Interestingly, Japan didn't have ubiquitously

available SMS when the mobile internet was born. Therefore, DOCOMO's mobile Internet application i-mail quickly became the de facto short messaging standard. Today, 94% of Japanese mobile users use mobile email and only 37% use SMS. I-mail is not only sold as a mobile Internet application but is also fully integrated with it, whereas SMS is neither. As an enabler for buying ring tones and wallpapers, Japanese operators didn't use SMS either, turning straight to the mobile internet instead.

The Survey

Research Process of Mobile Innovation Lab:

The four members' research team of *Mobile Innovation Lab* contains a group of mobile enthusiasts who are doing research day in day out to monitor consumer behavior in response to information needs. The team followed mixed methods studies combining qualitative and quantitative research to execute the research and undertook the following steps of research process:

Step 1: The team has conducted systematic review of secondary studies to track the global trends in mobile information services marketing all around the world. At this stage, it also developed the conceptual model comprising all the constructs and measures relating to the research issue.

Step 2: The team conducted qualitative research in the form of focus group discussion, depth interview and pilot survey to develop the instrument containing adequate constructs and items.

Step 3: Data collection via on-line survey by MRI was conducted.

Step4: After data collection, statistical analysis by using cluster analysis, factor analysis, and discriminant analysis were conducted.

The best outcome of all research depends on a sequential move with solid foundation at each research step: *problem definition, research design, data collection, data analysis and reporting.*

MRI surveyed the market, looking at a range of demographics, etc. The survey included screening items that asked respondents if they had or would consider using mobile information services. Only those respondents who answered affirmatively to these questions were retained for further analysis.

Questionnaire:

PartⅠ. Questions for determining segmentation-bases or needs variables:

Intention to use Mobile Information Services

For respondents who have used the corresponding services (current customers):
Do you have the intention to use the following mobile information services on a continuous basis?

For respondents who have never used the corresponding services (potential customers):
Do you have the intention to use the following mobile information services in a near future?

Please select one applicable category by checking (√).

Type of Mobile Services	Definitely won't 1	Probably won't 2	Don't know 3	Probably will 4	Definitely will 5
1. Mobile email					
2. SMS					
3. MMS					
4. TV phone					
5. Radio					
6. Internet					
7. 1seg TV(mobile terrestrial digital audio/video and data broadcasting service)					
8. Music					
9. Ring tones					

10. Video streaming					
11. Games					
12. Learning(dictionary, translation, encyclopedia)					
13. Health					
14. Infotainment content (Ex. Film festival or, dance party or love affairs of celebrities.)					
15. Mobile chat (push talk)					
16. Stock trading					
17. Shopping services					
18. Coupon or Advertising information services					
19. Online storage services(data storage services on internet)					
20. Reservation or booking(Ex. Hotel rooms or Air line seats)					
21. Location based services (GPS or Map)					

Part Ⅱ. Questions for determining descriptor variables:

Service Attributes

Do you agree with the following statements on attributes of mobile information services?

Attributes of Mobile Services	Strongly disagree 1	2	Neutral 3	4	Strongly agree 5
1. *Affordability* is important for mobile information services					
2. Mobile information services should be *available* 24 hours a day.					

3. All information should be available to everyone without the limit of age or charge.					
4. The carrier should provide their customers as much information as possible about their information services.					
5. Mobile information services should be *reliable*.					
6. The carrier should resolve problems experienced by customers in a timely fashion					
7. Every information provided by carriers must be *up-to-date*.					
8. All information provided by carriers should be *accurate*.					
9. Provided information should be adequate and specific to your needs.					
10. Information should be *comprehensiv*e and understandable.					
11. Information should be *customized* according to the needs of customers.					
12. Some information (for example, banking information) should be *secured*					
13. Information should be provided without intruding on customers' privacy.					
14. Information should be *easily accessed* by customers.					
15. Location based information services such as GPS and Map should be accessible to customers.					

X1. Whenever a new technology emerges in the market, I am among the first to adopt it.

☐ Strongly disagree   ☐ Disagree   ☐ Neutral   ☐ Agree   ☐ Strongly Agree

X2. Do you know about mobile information services (such as weather, sports information , shopping) provided by your carrier?

☐ Yes   ☐ No

X3. Do you use a mobile information service or services provided by your carrier?

☐ Yes   ☐ No

X4. If you answered "No" to **X3** (previous question) please answer this question: Are you willing to use a mobile information service or services?

☐ Yes ☐ No

X5. Do you have your own personal computer?

☐ Yes ☐ No

X6. Do you have a desktop/notebook computer that you can use at work or at school?

☐ Yes ☐ No

X7. Do you own a cellular phone?

☐ Yes ☐ No

X8. How many years have you been using a cellular phone?

☐ less than1 year - 2 years ☐ less than 2 years - 3 years ☐ less than 3years - 5 years

☐ less than 5 years - 10 years ☐ less than 10 years - 2 years ☐10 years or more

Z1. Age

☐ Click a button which shows your age (16 – 69, 70 or over)

Z2. Gender

☐ Male ☐ Female

Z3. Are you student?

☐ yes ☐ no

Z4. Are you married?

☐ yes ☐ no

Z5. Do you have a job?

☐ yes ☐ no

Z6. Commutation hours

☐No commutation ☐Less than 30minutes ☐From 30 minutes to less than 1 hour ☐From 1 hour to less than 1.5 hours

☐From 1.5 hours to less than 2 hours ☐From 2.5 hours to less than 3 hours ☐3 hours or more

Z7. Education (graduated from)

☐ Non-student ☐Junior high school ☐High school ☐Vocational school ☐4 years university/2 years college ☐Graduate school

Z8. Whether you have stayed in abroad from 1 month to less than 1 year?

□None □Within past 1 year □One year ago to 2 years ago □2 years ago to 3 years ago □3 years ago or more

EXERCISES

1. Run **segmentation by using SPSS** on the data (name all_enq.sav) in 2008 and try to identify the number of distinct segments present in this market. Consider both the distances separating the segments and the characteristics of the resulting segments.

   ● Conduct factor analysis (or principal component analysis) on the variables of Intention to use and summarize the results. By doing this, we can determine the needs of mobile information services.

   ● By using the extracted factors on Intention to use in the above, conduct cluster analysis to do segmentation.

2. Identify and profile (name) the clusters that you select. Given the attributes of services provided via P999TV, which clusters would you target for your marketing campaign?

3. Rerun the analysis in Exercise 1 with Discrimination. How would you go about targeting the segments you picked in question 2? Namely, determine the segments for services provided via P999TV.

4. How has this analysis helped you to segment the market for services provided via P999TV?

5. What concerns do you have with the approach (data collection, analysis, etc.) so far?

6. By using data for the customers who participated the both survey in 2008 and in 2009, repeat the process of 1 and 2, and compare the results and comment on them. Try to find factors on information services that will trigger its adoption in a near future.

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