

SURVEY OF CONSUMERS' DECISION MAKING PROCESS FOR ONLINE MUSIC SERVICE

Ayako Hiramatsu, Takahiro Yamasaki and Kazuo Nose
Osaka Sangyo University, 3-1-1 Nakagaito, Daito, Osaka 574-8530, Japan

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Abstract: This paper describes a survey of consumer behavior for online shopping, especially online music services, because they are the most popular online shopping service in Japan. Based on Howard's consumer decision model, questionnaires about decision making for online music services were given to 282 students. The questionnaire results show that almost 90% of these students have downloaded from online music services, and high school students use such services slightly more than university students.

1 INTRODUCTION

Internet penetration in Japan is remarkable. In 2006 its penetration rate was 68.5%, and the number of Internet users was estimated at 87.54 million (White paper, 2007). With the Internet's diffusion, the popularity of e-shopping continues to increase. 63.7% of all Internet users have been using e-shopping for more than two years (Internet Association Japan, 2005, 2006), and these numbers are still growing. For marketing, understanding the behavior of e-shopping users is crucial.

To understand consumer behavior, user models are often constructed by analyzing the behavior data of users. Concerning Internet users, there have been some researches about online game models (Hsu and Lu, 2004) and e-shopping users (Shih, 2004) based on the Technology Acceptance Model (TAM) (Liu, 2007). Farag et al. also researched a model that analyzed relationships between e-shops and real shops (Farag et al, 2007). Moreover, Watanabe and Iwasaki analyzed why consumers buy PCs through the Internet (Watanabe and Iwasaki, 2007). However, decision making processes based on various factors and the relationship between them have not been analyzed much, due to such difficulties as direct observation and analysis of subjective condition of users.

Our research aims to understand how consumers make e-shopping decisions. Consumer behaviors for real shops (Evans et al. 2006) were researched. Based on Howard's famous consumer decision model (Howard, 1989), we examined decision

making processes in online shopping. The target of this analysis was narrowed to online music services, which are the most popular online shopping service in Japan. Questionnaires about decision making for online music services were done with Japanese consumers.

2 DECISION MAKING PROCESS OF CONSUMERS

The Howard-Sheth buying behavior model presented in 1969 is one important model that explains consumer decision making. It explains the complexity of the consumer decision making process for incomplete information with an S-O-R paradigm that consists of three components: stimulus-organism-response. In this model, consumers are motivated by perceiving a stimulus, and then they shift to purchase after composing concepts to learn purchases. Furthermore, it is hypothesized that the problem is simplified as learning continues. As a result of experimental researches based on this model, Howard proposed the simple consumer decision model shown in Figure 1.

This simple consumer decision model is comprised of six interrelated components, as shown in Figure 1: information (F), brand recognition (B), attitude toward the brand (A), confidence in judging the brand (C), intention (I), and purchase (P). The three central components (B, A, and C) comprise the

buyer's brand image and the ABCs of consumer behavior.

“Information” (F) is what is received and stored. The perception is stored, not the stimulus. “Brand recognition” (B) reflects the extent to which the consumer knows enough about the brand to distinguish it from others. “Confidence” (C) is the consumer's degree of certainty that his/her evaluative judgment of a brand, whether favorable or unfavorable, is correct. “Attitude” (A), the second part of brand image, is the extent to which consumers expect the brand to satisfy their particular needs. “Intention” (I) is a mental state that reflects the consumer's plan to buy a specified number of units of a particular brand in a specified time period. “Purchase” (P) shows whether the consumer really does buy the brand. The influence from “information” (F) to “intention” (I) is connected by a dotted line. This arrow is added in routine problem solving cases when consumers repeatedly buy a low-price or a daily product.

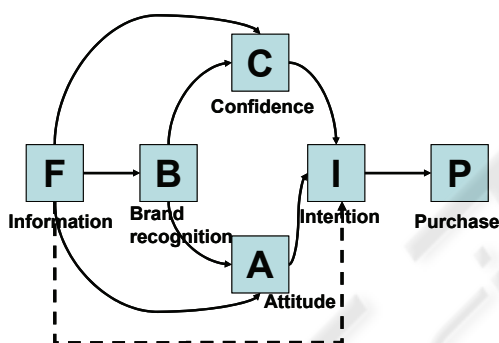


Figure 1: Howard's consumer decision model modified for routine problem solving.

3 ANALYSIS TARGET

3.1 Online Music Service

With annual growth of about 2% since 2003, the size of the visual contents market was estimated in 2005 at approximately 11.3 trillion yen (about \$ 0.1 trillion), broken down as follows: visual contents/5.3 trillion yen, audio contents/1.0 trillion, and text contents/5.0 trillion (White paper, 2007). Moreover, the music or game contents market has especially expanded. The usage rate of musical contents is 10.9%, which is the highest among such various contents as visual contents, audio contents, and text contents, of contents by Internet with PCs. Even using contents through mobile Internet, the usage rate of musical ring tones is the highest with 15.6%

and the rate of downloading songs is 14.0%, which is second. Based on this present condition, we chose online music services as our research subject for online shopping through Internet.

3.2 Survey Items

To adapt Howard's model to online music services, we considered the following survey items. Channels for acquiring information about online music services are considered communication among friends and families, information from such media as television, radio, and magazines, and such Internet sources as e-mails and web pages. “Brand recognition” corresponds to musicians and online music service providers. For “Confidence”, we considered confidence in artists and providers. “Attitude” items include sound quality, price, payment methods, data size, and outtakes or live versions. “Intention” included consumer's income, popularity, season, and advertising campaign. “Purchase” shows whether consumers really buy the music. This experiment examined the degree of experience with online music services.

4 QUESTIONNAIRE SURVEY

4.1 Survey Condition

The questionnaires asked participants to indicate their degree of agreement with the above items based on a five-point scale: 5-strongly agree, 4-agree, 3-neutral, 2-disagree, and 1-strongly disagree. The question details are shown in the appendix. 282 consumers (164 university students, 106 high school students, and 12 others) answered the questionnaires.

Table 1: Results of download medium.

	All	High school students	University students
Mobile phone	44.0%	64.2%	29.3%
PC	22.0%	9.4%	29.9%
Both	23.8%	19.8%	27.4%
Others	10.3%	6.6%	13.4%

Table 1 shows the ratios of download media. Many respondents use mobile phones. From Table 1, more than 80% of high school students and over 50% of university students use mobile phones, including respondents who use both PCs and mobile phones. Table 2 shows the numbers of download

experiences from online music services. Almost 90% of students have downloaded music.

Table 2: Number of download experiences.

	All	High school students	University students
51~	37.9%	38.7%	37.8%
11 ~ 50	25.2%	28.3%	23.8%
2~10	23.8%	25.5%	23.2%
1	2.5%	0.9%	1.2%
0	10.6%	6.6%	14.0%

4.2 Questionnaire Results

The questionnaire results are shown in Table 3. The symbols on the left row correspond to the number of the questions shown in the appendix.

The results of Information questions reveal that many students don’t think information by e-mail is very important. Furthermore, information by radio is not important because students do not usually listen to radio. Such information from Internet as web logs and web pages is relatively important. Direct word-of-mouth is more important than word-of-mouth by Internet. The most important information comes from TV; clearly, students are greatly influenced by TV.

As the results of “Brand recognition” questions, students pay much more attention to the musicians than delivery providers. Since consumers cannot directly examine the products of online shopping, it is often asserted that the reliability of the online stores is very important. However, with online music services, consumers can listen to trial songs as products, providing them a change to examine products almost directly. Therefore, consumers care about songs as products, but they have little concern about the reliability of providers.

The “Confidence” results for indirect purchases suggest that consumers do not have confidence that they will be satisfied with products and providers. Therefore, many respondents answered “Neutral.”

Regarding questions about “Attitude,” consumers are naturally interested in price. Trial services, sound quality, and data size are clearly important. Opinions are divided about accounting systems.

For questions about “Intention,” consumers want to repeatedly download and buy songs. Many consumers also want to download new releases or hit songs. Because the price of one song is cheap or because they can be billed for their purchases, the

opportunity of income does not equal the opportunity of downloading.

Table 3: Questionnaire results.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
F101	17.4%	34.0%	27.0%	9.9%	11.7%
F102	7.1%	28.0%	35.8%	12.4%	16.7%
F201	8.2%	24.1%	31.2%	17.4%	19.1%
F202	2.5%	15.6%	36.2%	19.1%	26.6%
F301	4.6%	5.3%	24.1%	18.1%	47.9%
F302	2.8%	13.5%	27.3%	20.9%	35.5%
F303	6.4%	14.2%	24.5%	17.0%	37.9%
F401	14.9%	35.1%	24.1%	13.5%	12.4%
F402	24.5%	25.2%	20.9%	14.2%	15.2%
F403	24.8%	29.8%	23.4%	8.2%	13.8%
F404	17.4%	32.6%	26.6%	12.4%	11.0%
F501	8.5%	27.7%	33.3%	13.1%	17.4%
F502	15.2%	20.9%	34.0%	14.2%	15.6%
F601	9.2%	14.5%	27.0%	17.4%	31.9%
F602	11.7%	17.4%	26.2%	14.2%	30.5%
F603	11.3%	13.1%	29.1%	14.2%	32.3%
F701	17.0%	29.4%	22.7%	13.5%	17.4%
F702	11.0%	27.3%	31.9%	16.0%	13.8%
F703	18.1%	22.7%	26.6%	13.1%	19.5%
B101	6.0%	16.0%	24.5%	21.3%	32.3%
B102	27.7%	29.4%	23.4%	9.2%	10.3%
C101	4.3%	13.1%	42.6%	21.3%	18.8%
C102	13.5%	22.3%	41.1%	13.8%	9.2%
A101	48.6%	23.0%	14.2%	5.7%	8.5%
A102	44.3%	17.7%	14.9%	8.9%	14.2%
A201	58.5%	22.0%	11.7%	4.3%	3.5%
A202	21.6%	19.1%	27.0%	17.4%	14.9%
A203	12.1%	13.1%	18.4%	23.8%	32.6%
A301	56.7%	19.5%	13.5%	4.3%	6.0%
A302	16.0%	12.4%	30.9%	16.0%	24.8%
A303	19.9%	21.3%	27.0%	11.3%	20.6%
A401	41.5%	19.1%	20.6%	8.5%	10.3%
I101	47.2%	25.5%	14.5%	7.1%	5.7%
I102	39.4%	23.0%	25.5%	5.3%	6.7%
I201	7.1%	6.4%	18.8%	23.4%	44.3%
I202	5.3%	5.3%	21.3%	19.5%	48.6%
I301	19.9%	18.8%	24.1%	14.2%	23.0%
I302	31.2%	25.5%	19.1%	9.9%	14.2%
I303	27.7%	22.7%	22.3%	10.3%	17.0%
I304	17.0%	18.1%	28.7%	14.9%	21.3%
I401	14.5%	14.9%	24.5%	18.4%	27.7%
I402	31.9%	19.9%	20.6%	9.6%	18.1%

4.3 Result Comparisons by Attributes

The questionnaire results were analyzed and compared based on respondent attributes.

(a) Download medium

We compared the results by three types of download medium attributes: mobile phones, PCs, and both. Significance of the compared results was found in "Information," as shown in Table 4. Here, "positive" means the rate of respondents who answered "strongly agree" or "agree," and "negative" means the rate of respondents who answered "disagree" or "strongly disagree."

Consumers who use both mobile phones and PCs tend to consider word-of-mouth information from friends important. PC users tend to consider such word-of-mouth information from Internet as web logs important. However, although information by Internet is identical to web logs, such differences between mediums do not consist in information from web pages provided by corporations etc. Mobile phone users regard information from magazines and TV as important. Furthermore, no users obtained significant information from radio. Particularly, PC users regarded information from radio as unimportant.

Table 4: Comparison by download medium.

	Positive			Negative		
	Mobile phone	PC	Both	Mobile phone	PC	Both
F101	53.2%	40.3%	61.2%	21.0%	27.4%	14.9%
F201	25.0%	43.5%	38.8%	37.9%	33.9%	31.3%
F402	53.2%	46.8%	50.7%	25.8%	32.3%	28.4%
F403	62.9%	43.5%	53.7%	15.3%	32.3%	16.4%
F501	46.8%	21.0%	31.3%	22.6%	50.0%	19.4%
F502	41.1%	25.8%	34.3%	22.6%	40.3%	29.9%
F601	26.6%	14.5%	26.9%	41.1%	62.9%	49.3%
F602	32.3%	16.1%	37.3%	38.7%	58.1%	41.8%
F603	29.0%	16.1%	26.9%	38.7%	59.7%	46.3%
F701	48.4%	40.3%	53.7%	25.8%	32.3%	28.4%
F702	33.9%	41.9%	50.7%	30.6%	17.7%	26.9%

(b) Generation

Table 5 shows the compared results with high school and university students. For "Information" questions, high school students are clearly more influenced by TV. Many university students gave negative opinions about magazines. On questions about radio, although answers from high school students equally included both positive and negative opinions, most university students had negative

opinions about radio. Regarding questions about motivation in "Intention," high school students gave many positive answers about downloading new releases or hit songs.

Table 5: Comparison between high school and university students.

	Positive		Negative	
	High school	University	High school	University
F402	60.4%	41.5%	16.0%	38.4%
F403	70.8%	43.3%	10.4%	29.3%
F501	50.0%	28.7%	15.1%	40.9%
F502	50.0%	28.7%	16.0%	38.4%
F601	30.2%	19.5%	33.0%	60.4%
F602	36.8%	25.0%	34.0%	52.4%
F603	37.7%	15.9%	32.1%	56.1%
I301	55.7%	25.6%	25.5%	47.0%
I302	73.6%	45.1%	11.3%	32.9%
I303	65.1%	38.4%	16.0%	36.0%
I304	55.7%	21.3%	19.8%	49.4%

Table 6: Comparison by experience.

	Positive			Negative		
	Heavy	Middle	Light	Heavy	Middle	Light
F101	58.9%	57.7%	39.4%	17.8%	15.5%	29.8%
F201	37.4%	36.6%	24.0%	29.0%	33.8%	46.2%
F202	21.5%	16.9%	15.4%	39.3%	43.7%	53.8%
A101	64.5%	81.7%	72.1%	19.6%	5.6%	14.4%
A102	57.9%	67.6%	62.5%	29.0%	18.3%	20.2%
A401	69.2%	59.2%	52.9%	14.0%	18.3%	24.0%
I301	48.6%	40.8%	26.9%	30.8%	33.8%	46.2%

(c) Experiences

The compared results by experiences are shown in Table 6. "Heavy" shows the rate of users who have downloaded more than 51 times. In the same way, "Middle" is between 11 and 50 times and "Light" is less than 10 times. Experienced users believe that information from web logs, BBS, and word-of-mouth from friends are important. "Trial service" is regarded as important by all category users. But middle experienced users only consider it relatively important. The more experienced users also care more about data size. For questions about motivation in "Intention," only reasonable songs are important for heavy users, though the other questions show no differences by experiences.

5 CONCLUSIONS

This paper described a survey of consumer decision making process for online shopping, especially online music services, the most popular service in Japan. Based on Howard's consumer decision model, questionnaires about decision making for online music services were done with Japanese 282 students. Differences between generations download mediums, and experiences were analyzed. As future work, we need more examinations with improving questionnaires etc.

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APPENDIX

[Questions]

"Information"

- Direct word-of-mouth
 - F101:** Do you think word-of-mouth information from your friends is important?

- F102:** Do you think word-of-mouth information from your family is important?
- Word-of mouth by Internet
 - F201:** Do you think the information from web logs or BBS without registration systems is important?
 - F202:** Do you think the information from BBS with registration systems is important?
- E-mail
 - F301:** Do you think direct mail is important?
 - F302:** Do you think the information from e-mails for members only is important?
 - F303:** Do you think the information from fan clubs is important?
- TV
 - F401:** Do you think the information from TV commercials is important?
 - F402:** Do you want to get TV programs theme songs?
 - F403:** Do you think the information in musical TV programs is important?
 - F404:** Do you want to get movie theme songs?
- Magazines
 - F501:** Do you think the advertisements in magazines are important?
 - F502:** Do you think articles about musicians in magazines are important?
- Radio
 - F601:** Do you think the information from radio commercials is important?
 - F602:** Do you think the information from radio music programs is important?
 - F603:** Do you think information about musicians from special radio programs is important?
- Web pages
 - F701:** Do you think the information of hit charts on web pages is important?
 - F702:** Do you think the information from video delivery web sites is important?
 - F703:** Do you think the information in musician web sites is important?
- "Brand recognition"
 - B101:** Do you try to learn a lot about music delivery providers?
 - B102:** Do you try to learn a lot about the musicians whose songs you are downloading?
- "Confidence"
 - C101:** Do you have confidence in the reliability of delivery providers before purchasing?
 - C102:** Do you have confidence that you will be satisfied with a particular musician's songs before downloading?

“Attitude”

- Trial
 - A101:** Do you think a trial service in delivery sites is important?
 - A102:** Even if you know the song, do you listen to a trial of it?
- Sound quality
 - A201:** Do you pay attention to sound quality?
 - A202:** Do you think such alternative versions as live recordings and outtakes are important?
 - A203:** Are you satisfied with the sound quality by which you can judge the song?
- Accounting system
 - A301:** Do you think price is important?
 - A302:** Do you think a monthly fee is a better accounting system?
 - A303:** Do you prefer payment per song as an accounting system?
- Data size
 - A401:** Do you consider the data size of songs?

“Intention”

- Service
 - I101:** Do you think the possibility of re-download is important?
 - I102:** Do you think the payment method is important?
- Money
 - I201:** When you have extra money, do you want to download a song soon?
 - I202:** On payday, do you want to download a song soon?
- Motivation
 - I301:** Do you want to download seasonable songs?
 - I302:** Do you want to download new releases?
 - I303:** Do you want to download hit songs?
 - I304:** Do you want to download award-winning songs?
- Campaign
 - I401:** If you can get one free song by purchasing of ten as part of a special campaign, do you want to download?
 - I402:** If you can get unlimited songs much for 300 yen (about \$2.7) for a limited time, do you want to download?