STUDY ON THE DECISION PROCESS OF THE MOBILE TELECOMMUNICATIONS SERVICES' USERS

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Abstract: : The current research has as starting point the decision process model and innovation adoption process, applied on the specific of mobile telecommunications users, focusing on mobile telephones/ smartphones. The decision process model has the following steps: perception of need, expectations, looking for information, alternatives evaluation, creation of preferences, choice, purchase, consumption, assessment after purchase. On the other hand, the model of innovation adoption focus on the following stages: innovators (the first to adopt innovations), early adopters (become convinced by innovations and quickly buy), early majority (first expect the experience of others and then buy), late majority (wait for the popularization of innovations before buying) and latecomers (the last to buy innovations). The research was made during March 2013, using a questionnaire based survey, which was filled in by 165 mobile telephones owners. The sample was calculated with the help of the probabilistic method. The hypotheses derived from the objectives of this research and were formulated taking into consideration the final results of the research paper: more than half of the respondents are open to new technology and have a smartphone; the brand with the highest success among mobile telephones owners is Samsung; most frequently, mobile telephones owners bought this product very quickly after its launch; most frequently, mobile telephones owners accorded main attention to the following stages of the buying decision process: information search and choice; most frequently, the mobile telephones owners were influenced in their decision process by family, friends, colleagues and sales force. The final results were obtained using statistical functions, such as: descriptive statistics and factor analysis, with the help of the SPSS 16.0 software for Windows XP.

JEL classification: M31, H12

Key words: mobile telephones buyers; buying decision process; innovations' life cycle; mobile telecommunications; mobile telephone brand

1. Introduction

According to Price Water House Cooper (1998) "80% of consumption sector profile is made of 30% satisfied clients or 70% sales". It is all ready common knowledge that an unsatisfied client speaks about that with 10 more people, while a satisfied client speaks about this with only 3 persons. That's why, it is very important for a company to put into practice targeted marketing actions in order to form long term loyal clients.

This analysis has as starting point the decision process model developed by Van Laethem, Lebon, Durand-Megret (2007) with the following stages: perception of need, expectations, looking for information, alternatives evaluation, creation of preferences, choice, purchase, consumption, assessment after purchase. If we analyze the decision making behaviour of the consumer, we can say that the influence is higher from the "unconscious forces (thoughts and feelings), than those conscious ones, such as: images, sensations, stories". (Meghisan, 2010)

Mobile telecommunications industry is in a continuous change from a technological point of view. Eventhough at a worldwide level, fixed telephony lines continue to decrease, the trend regarding mobile telephones is ascendant. That's why, from the total number of the worldwide population (6.5 billion inhabitants at the beginning of the year 2007), there were 2.6 billion mobile telephones sold. (IDATE, 2007) Mobile telephones represent technical products that can be seen as innovations. Different authors described several stages in the process of the diffusion of an innovation. Rogers (1983) proposed a theory which became the base for a complementary approach developed by several authors. Jolibert (2001) takes into consideration the following stages regarding the adoption of an innovation: uninformed users, followed by potential adopters (users informed by advertising), rebuyers (users influenced by the innovations proposed by the competition that can readopt the innovation) and potential adopters (those that can choose the innovations proposed by the competition). At his turn, Moore (1991) developed a model of innovation adoption proposed by Bourne (1957), maintaining the following stages: innovators (the first to adopt innovations), early adopters (become convinced by innovations and quickly buy), early majority (first expect the experience of others and then buy), late majority (wait for the popularization of innovations before buying) and latecomers (the last to buy innovations)

The current research has as starting point the decision process model developed by Van Laethem, Lebon, Durand-Megret (2007) and innovation adoption process of Moore (1991), applied on the specific of mobile telecommunications users, focusing on mobile telephones/ smartphones.

2. Objectives

The research was made during March 2013, using a questionnaire based survey, which was filled in by 165 mobile telephones owners. The sample was calculated with the help of the probabilistic method:

$$n \geq \frac{t^2 * p(1-p)}{\varepsilon^2} \geq \frac{1.65^2 * 0.5(1-0.5)}{0.05^2} = 165 \, persons$$

where n (165 mobile telephones owners) represents the number of respondents, t (1,65) consists in the coefficient associated to the probability of the research results guarantee that is 95%, p (0.5) represents the weight in the sample of the components with the research characteristic, ε (5%) is the accepted error.

The final results were obtained using statistical functions, such as: descriptive statistics and factor analysis, with the help of the SPSS 16.0 software for Windows XP.

The hypotheses derived from the objectives of this research and were formulated taking into consideration the final results of the research paper:

Hypothesis no 1. More than half of the respondents are open to new technology and have a smartphone.

Hypothesis no 2. The brand with the highest success among mobile telephones owners is Samsung.

Hypothesis no 3. Most frequently, mobile telephones owners bought this product very quickly after its launch.

Hypothesis no 4. Most frequently, mobile telephones owners accorded the main attention to the following stages of buying decision process: information search and choice.

Hypothesis no 5. Most frequently, mobile telephones owners were influenced in their decision process by family, friends, colleagues and sales force.

3. METHODOLOGY

At this stage, hypotheses were tested for validation of invalidation.

Hypothesis no 1. More than half of the respondents are open to new technology and have a smartphone.

Table no 1 Last telephone/ smartphone bought

The last time I bought:				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	a mobile telephone	110	66.7	66.7	66.7
	a smartphone	55	33.3	33.3	100.0
	Total	165	100.0	100.0	

Source: SPSS 16.0 software for Windows XP

Hypothesis no 1 is not verified. Most of the mobile telephony owners bought a mobile telephone (66.7%), while only 33.3% of them have a smartphone. This can be explained by the fact that smartphones market has not reached its maturity yet, it is still a growing market with high potential for smartphones producing companies. (Table no 1) Another reason consists in the price of these products that usually exceeds the average salary of Romanian employees (around1500 lei).

Hypothesis no 2. The brand with the highest success among mobile telephones owners is Samsung.

Table no 2 Telephone/ smartphone brand

					Cumulative
My last telephone/smartphone brand is:					
		Frequency	Percent	Valid Percent	Percent
Valid	Samsung	64	38.8	38.8	38.8
	Apple	9	5.5	5.5	44.2
	LG	11	6.7	6.7	50.9
	Nokia	58	35.2	35.2	86.1
	Blackberry	5	3.0	3.0	89.1
	Sony Ericsson	5	3.0	3.0	92.1
	Other	13	7.9	7.9	100.0
	Total	165	100.0	100.0	

Source: SPSS 16.0 software for Windows XP

Hypothesis no 2 is validated. Samsung is the most appreciated brand. This considers 38.8% of the respondents. Nokia has lost its popularity, taking the second place, with a percentage of 35.2%, followed by LG (6.7%) and Apple (5.5%). (Table no 2) Price has also an influence on smartphones' brand choice, due to significant differences between prices set up by the two main competitors on this segment: Samsung and Apple.

Hypothesis no 3. Most frequently, mobile telephones owners bought this product very quickly after its launch.

Table no 3 Innovation adoption

					Cumulative
I bought my last telephone/smartphone:					
		Frequency	Percent	Valid Percent	Percent
Valid	once it appeared	10	6.1	6.1	6.1
	I quickly buy it	69	41.8	41.8	47.9
	I waited for the first experiences linked to the product, before buying	48	29.1	29.1	77.0
	I waited for it to become popular and spread before buying	31	18.8	18.8	95.8
	after it reached the decline	7	4.2	4.2	100.0
	Total	165	100.0	100.0	

Source: SPSS 16.0 software for Windows XP

Hypothesis no 3 is validated. A percentage of 42.4 of respondents wait for the first experiences regarding the product, before buying.

According to the model proposed by Moore (1991), the adoption life cycle for new products consists in: innovators (3%), early adopters (13%), early majority (34%), late majority (34%) and latecomers (16%).

Our analysis shows that if new products are mobile telephones, the adoption life cycle has the following shape: innovators (6.1%), early adopters (42.4%), early majority (29.1%), late majority (18.8%) and latecomers (4.2%). (Table no 3)

These differences can be explained by the fact that life cycle of mobile telephones is very dynamic.

Hypothesis no 4. Most frequently, mobile telephones owners accorded the main attention to the following stages of the buying decision process: information search and choice.

Factor analysis was used to verify this hypothesis. Factors took into consideration in making the response options are part of the decision process model developed by Van Laethem, Lebon, Durand-Megret (2007): perception of need, expectations, looking for information, alternatives evaluation, creation of preferences, choice, purchase, consumption, assessment after purchase.

Table 4 presents the Kaiser-Meyer-Olkin measurement in order to determine the proportion in which the retained variables form a coherent assembly and measure the concept. Due to its value of 0.683, the results of factor analysis can be accepted. (Table no 4)

Table no 4 KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.683
Bartlett's Test of Sphericity	Approx. Chi-Square	179.856
	df	6.000
	Sig.	.000

Source: SPSS 16.0 software for Windows XP

The percentage that explains the variance is 58.499 (Table no 5), while the main elements that are taken into consideration in decision making process are (Table no 6):
- expectations regarding the searched product;
- acquisition stage;
- consumption stage;
- evaluation after consumption stage;

Table no 5 Explanation of total variance

Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.340	58.499	58.499	2.340	58.499	58.499
2	.714	17.847	76.347			
3	.637	15.917	92.264			
4	.309	7.736	100.000			
Extraction Method: Principal Component Analysis.						

Source: SPSS 16.0 software for Windows XP

Table no 6 Component Matrix

Component Matrixa	
	Component
	1
In the decision process, I took into consideration the expectations regarding the searched product	.683
In the decision process, I took into consideration the acquisition stage	.789
In the decision process, I took into consideration the consumption stage	.860
In the decision process, I took into consideration the evaluation after consumption stage	.716
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Source: SPSS 16.0 software for Windows XP

This scale has a viability of acceptable internal coherence (Alpha = 0.760). So, we can not improve the value of Cronbach's Alpha, by eliminating one or several items from the question. (Table no 7)

Table no 7 Reliability statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.760	4

Source: SPSS 16.0 software for Windows XP

Hypothesis no 4 is not validated. The main elements that are taken into consideration in decision making process of mobile telephones/ smartphones are: expectations regarding the searched product, acquisition stage, consumption stage and evaluation after consumption stage.

Hypothesis no 5. Most frequently, the mobile telephones owners were influenced in their decision process by family, friends, colleagues and sales force.

The factors took into consideration in analyzing this question are: family, friends, work/school colleagues and sales force. KMO and Bartlett's test have the value of 0.639, which means the fact that results can be accepted. (Table no 8)

Table no 8 KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.639
Bartlett's Test of Sphericity	Approx. Chi-Square	110.842
	df	3.000
	Sig.	.000

Source: SPSS 16.0 software for Windows XP

Within the current case, variation can be explained in a percentage of 64.559. (Table no 9)

Table no 9 Total variance explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.937	64.559	64.559	1.937	64.559	64.559
2	.680	22.659	87.218			
3	.383	12.782	100.000			
Extraction Method: Principal Component Analysis.						

Source: SPSS 16.0 software for Windows XP

As we can see from the table 10, sales force has not an important influence on mobile telephones buying decision. However, mobile telephones owners took into consideration the following persons when they bought these products: family, friends, school/ work colleagues. (Table no 10) The value of Cronbach's Alfa of 0.715 presents a viability of acceptable internal coherence. (Table no 11)

Table no 10 Component matrix

Component Matrix[a]	
	Component
	1
In choosing the mobile telephone/smartphone brand was influenced by family	.702
In choosing the mobile telephone/smartphone brand was influenced by friends	.850
In choosing the mobile telephone/smartphone brand was influenced by school/ work colleagues	.849
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Source: SPSS 16.0 software for Windows XP

Table no 11 Reliability statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.715	3

Source: SPSS 16.0 software for Windows XP

Hypothesis no 5 is not validated. Mobile telephones owners take into consideration the following persons when they buy these products: family, friends and school/ work colleagues.

5. CONCLUSIONS

Most of mobile telephony owners bought a mobile telephone (66.7%), while only 33.3% of them have a smartphone. This can be explained by the fact that smartphones market has not reached its maturity yet, it is still a growing market with high potential for smartphones producing companies. Another reason consists in the price of these products that usually exceeds the average salary of Romanian employees (around 1500 lei).

Samsung is the most appreciated brand. This considers 38.8% of the respondents. Nokia has lost its popularity, taking the second place, with a percentage of 35.2%, followed by LG (6.7%) and Apple (5.5%). Price has also an influence on smartphones' brand choice, due to the significant difference between prices set up by the two main competitors on this segment: Samsung and Apple.

However, a percentage of 42.4 of respondents wait for the first experiences regarding the product, before buying. Our analysis shows that if the new products are mobile telephones, the adoption life cycle has the following shape: innovators (6.1%), early adopters (42.4%), early majority (29.1%), late majority (18.8%) and latecomers (4.2%).

The main elements that are taken into consideration in decision making process of mobile telephones/ smartphones are: expectations regarding the searched product, acquisition stage, consumption stage and evaluation after consumption stage. Moreover, mobile telephones owners take into consideration the following persons when they buy these products: family, friends and school/ work colleagues.

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