Modeling Customer Behavior in Multichannel Service Distribution: A Rational Approach
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Appendix 4 Summary

Research question

Most organizations have innovated their distribution strategy and adopted a multi channel strategy. The success of this strategy depends to a large extent on the adoption of new channels by the consumer. This research aims to build a model that explains consumer multichannel behavior. It gives answers to the question which factors influence the use of a new ICT enabled channel. The central question in this thesis is:

- What factors explain consumer channel choice in an ICT enabled multichannel configuration, therewith finding an explanation for the trial, adoption and choice of a new channel?

This main question leads to three sub questions that will be answered in this thesis:

- Which theories can be used to find the factors that explain the trial, adoption and choice of an ICT enabled channel by customers in a multichannel configuration?
- Is it possible to arrive at a model based on these theories that explains the use of ICT enabled channels?
- Can this model be confirmed empirically?

The purpose of this thesis is to extend the level of the research towards general insight regarding the use of a (new) ICT enabled channel instead of researching every newly introduced channel apart, as if it is the first time an innovation is introduced. It should be possible to explain the use of the Internet, the use of Mobile Internet and the use of the channel that will be introduced in the next decennium within the same context. The aim of this thesis is to increase the insight in multichannel behavior by researching the way in which consumers choose between channels.

Through improving understanding of multichannel customer behavior the aim is to contribute to effective diffusion of channel configuration innovation by effective channel migration strategies. The results of this study are of relevance for organizations that have (or plan to have) multi channels to reach their customers. With the results of this study they gain further insights in the decision making process of their customers regarding the choice of the channel. Understanding how and why customers accept a channel will help to improve their channel management strategy. Channel management has received much attention since the introduction of the Internet, judging by the considerable amount of studies that have been published, but still the knowledge level of channel choice has been labeled relatively low.

The academic relevance of this study for the IS field is threefold. First this thesis provides insight in the relevant theories for explaining technology acceptance from a number of academic fields and combines results from social psychology research, IS research, behavior decision making research and marketing research to arrive at a model for explaining consumer behavior. Secondly the individual technology adoption research is expanded with insight in how and why consumers choose across different channels. As will become clear, IS research on technology adoption has focused on explaining trial and adoption, but explaining how consumers choose between alternative technologies is still lacking in the IS literature. This thesis leads to the addition of new constructs and it may lead to insight how consumers choose between competing alternatives. Thirdly the thesis will add a methodological approach to the IS field. In building the model step
by step several research methods are used, that have (hardly) been applied in IS research, but have relevance for this academic field.

The research is restricted to consumer behavior and the explanation of this behavior is restricted to the transaction stage. The transaction stage is limited to the purchase of services. The thesis consists of three parts: literature review, building the model and testing the model.

**Literature review**

The first part of the thesis addresses the first part of the research question: which theories can be used to explain multichannel behavior. The approach followed is the use of the large amount of literature on the use of Internet and eCommerce, that has appeared in the academic journals since 1995. The theories used in this research are evaluated on their relevance for multichannel behavior in an ICT context. The elements that have to be explained are trial, adoption (continuous use) and the choice between channels. The theories are from several academic fields. The review leads to the conclusion that the Technology Acceptance Model (TAM) and the Expectation Disconfirmation Theory (EDT) are most suitable for explaining trial and adoption of an ICT enabled channel. TAM and EDT explain on an abstract level why a new channel is tried and adopted; the theories provide no insight in the consumer decision making process. The next step is expanding the reviewed theories with other relevant academic fields. The most relevant academic disciplines studying consumer decision making are psychology, economics and marketing. Based on the analysis of the theories in the three academic fields, the adequacy importance model has been chosen to explain the choice between several channels. This model can be illustrated as follows. Assume a consumer makes a choice between three channels. These channels are, according to the adequacy importance model, compared on their characteristics (attributes) that are important for this choice. The channel that scores highest is the most preferred channel. The scores are not only based on the scores the channels get per attribute, but also on the importance scores of these attributes. The consumer scores the channels on the attributes and multiplies these scores with the importance scores, as can be seen in table 1.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Importance score</th>
<th>Channel 1</th>
<th>Channel 2</th>
<th>Channel 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>risk</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>advice</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>speed</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total score</td>
<td>15</td>
<td>12</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

*Table 1 The adequacy importance model*

**Building the model**

Based on the literature review the model has been built. The building of the model can be summarized in three steps as follows. First TAM is the start of the model. The Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) of the new channel explain the behavioral intention. The preferences are, conform TAM, based on the PU and PEOU per channel. The higher the PU and PEOU of a channel, the higher the preference for this channel. The preferred channel is the channel with the highest intention to use.
The second step is that consumers have to decide how to evaluate the alternatives. In this way the logic and constructs of TAM have been combined with the consideration set and multi attribute models of the marketing literature.

The preferences are conform TAM and based on the PU and PEOU scores per channel. The higher a channel scores on these attributes, the higher the preference for this channel. The third step is explaining the dynamics of the channel choice set, which is the main focus of the model. This is done by the actual use of a channel and here EDT is integrated into the model. EDT can be seen as a two-stage model, where the expectation and attitude after the use of the channel is caused by the expectation and attitude in the initial stage and the disconfirmation and satisfaction after use.

The use of a channel will depend on the intention to use this channel, conform the TAM. However, as the choice is between the use of several channels, the behavioral intention has been expanded to the channel choice set, in which for every channel an intention is formed, leading to preferences for the channels, according to the definition of preferences as “attitudes toward one object in relation to another” (Blackwell et al., 2001; p. 289). The actual use of a channel will result in the evaluation of the performance of the channel according to the EDT, where the performance of a channel is evaluated especially on those attributes on which the channel was chosen. This leads to (possible) new scores for a channel on the attributes. This will result in (in line with TAM) new Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) scores that might lead to a change in attitude towards the channel, resulting in a change in the positions in the channel choice set. It might influence the weighting factors of the channels which is conform the adequacy importance model and has also been demonstrated in TAM research. In this way TAM has been expanded to the multichannel environment with the use of concepts from the behavioral economics and marketing fields.
APPENDIX 4

The model can be explained with an example. Let us assume a consumer wants to buy (for the first time in her life) a life insurance. Her channel set is caused by her experience with channels in former service settings or as a result of external factors like social influence of her family or marketing campaigns. Her channel set might consist of for instance three channels: telephone, Internet, branch office. She might use the Internet to gather information and might go to a branch office for closing the contract. After evaluation of her experience, her (presumably quite subconscious) expectations will be confirmed or disconfirmed. This will have impact on the preferences of the three channels within the channel set, which will determine the channel choice during the next purchase of an insurance.

The model is translated into a questionnaire that can be used in a pilot study. The first step is to define the attributes as they have a central role in the model. The TAM constructs PU and PEOU are less suitable as attributes to explain the use of an ICT enabled channel in a consumer behavior context then was expected. These constructs have been developed for using or not using an IS in a working environment. In the literature there is however no consensus on the most important attributes in multichannel research and it becomes clear that the mentioned attributes in the literature are measured on different levels. Although in numerous Internet related studies the attributes are based on existing research, this approach is not followed in this study. The attributes are defined by qualitative research, using the laddering method. This means a deviation from the original idea behind TAM: defining the relevant attributes for once and for all. Based on the laddering interviews eight attributes are selected and are used in a pilot study:

1. Information quality (well informed)
2. Quality of the decision making (making the right choice; more certainty)
3. Quality of process (less mistakes)
4. Efficiency (saving time; faster acting)
5. Availability (flexible/whenever I want)
6. Ease of communication (easier communication)
7. Control (knowing the state of affairs; control)
8. Privacy (misuse personal information; privacy)

These attributes have been translated into a questionnaire that has been tested in a pilot survey. Based on the results of this survey a (limited) number of adjustments has been made. Now it possible to answer the third question: can this model be verified empirically?
Summary

The results

As has been mentioned the main topic of this thesis is the purchase of services. The concept of services is too broad and therefore in the laddering interviews financial services have been used to generate the relevant attributes. Given the fact, that there are several financial services that differ from each other on a number of criteria (cf. Black et al., 2002; Durkin et al., 2008; Cortinas et al., 2010), it is necessary that the field research should focus on one specific service. As a subject for this research the buying of a travel insurance has been chosen.

The interviews have been conducted face-to-face. In total the fieldwork has resulted in 296 usable interviews. The questionnaire follows the usual sequence in this kind of research: importance of the attributes, channel preference, evaluation of channels per attribute. After these steps respondents are asked to use the mobile phone to simulate the buying of travel insurance via the mobile Internet. On this site respondents pretend they are buying travel insurance with their mobile phone. Illustration 1 shows some screenshots.

Illustration 1 Screenshots: the purchase of travel insurance

The second part of the interview evaluates the satisfaction with the used channel, based on scoring the previous mentioned attributes. Next the channel preference is asked, which can be seen as one of the key questions, because this answers the question whether the channel choice set changes because of the (unexpected) use of a channel. Followed by another crucial set of questions: the importance of the attributes to provide information about the dynamic character of multichannel behavior.

The general results make clear that the basic assumptions on which the model is based are met: the importance scores of the attributes show that the for this research chosen attributes are important,
respondents have a preference ranking for channels and therewith have a channel choice set and respondents are able to evaluate the channels on the attributes. The Internet is the most popular channel. Conducting the experiment with the mobile Internet channel leads to a satisfaction score of 4.75 (on a scale from 1, very bad, to 7, very good) and two third of the respondents evaluates the channel as better than expected. An analysis based on the (according to the literature) relevant background variables shows some interesting differences between different groups:

- In evaluating channels women are more outcome oriented; men are more convenience oriented.
- The evaluation of the channels shows that men are more positive about the Internet; women more positive about the mobile Internet.
- Although for all groups the Internet is the most popular channel, the face-to-face channel is most popular among the lowest educated, the telephone among the highest educated.
- The middle educated score highest on the satisfaction scores with the experiment; the highest educated score lowest. The higher educated might be more critical in general or they might be more critical because they have more experience with buying travel insurance.

The model is only partly confirmed. The adequacy importance predicts the choice correctly in more than 40% of the cases; the first choice is predicted in 2/3 of the cases. The Expectation Disconfirmation Theory is confirmed. A more positive or negative experience with the use of the mobile Internet leads to a change in the channel preference choice set, in the expected direction; a neutral experience results in no changes in preferences. These results confirm the expectation disconfirmation theory. However, the dynamics that lead to a different preference has not become clear from the experiment. This is caused by the failure of the decision making model. Another unclarified issue is the importance of the external variable experience with the mobile Internet.

It cannot be concluded from the results what decision making model is valid. This implies that other decision making strategies have to be evaluated. A number of alternative explanations for the findings have been discussed. The used methodology, face-to-face interviewing, is not an explanation: an online conducted research shows the same results. The same applies for another alternative explanation: respondents change their attitudes because of the fact that they are asked the same questions twice. The control group – that has not conducted the mobile Internet experiment - shows no significant changes, therewith indicating that the changes in the ranking of the channels are caused by the experiment. This means that alternative explanations for the findings have to be found. These alternatives are based on the consumer decision making process. An analysis of the results shows that the Elimination By Aspects (EBA) strategy is the most likely used strategy. Using this strategy means that the channels are first evaluated on the most important attribute, but in this strategy a cutoff is used (alternatives must meet the cutoffs). If two alternatives meet the cutoff on the most important attribute, they are evaluated on the second most important attribute and it is decided which channels meet the cutoffs. This continues until only one channel remains. This strategy explains the dynamics of the multichannel behavior as has been found in the survey. The results show that for 75% of the respondents this strategy might be applicable. An alternative explanation for the results is the attraction effect. This effect can be explained as follows. In figure 6 there is a situation in which channels A and B are compared. Channel A scores better on attribute 1; channel B scores better on attribute 2. A certain percentage of the consumers will have a preference for channel A and a certain percentage will have a preference for channel B.
SUMMARY

Now a new channel, F, is introduced. This channel scores, like channel B, better on attribute 2 than channel A and worse, again like B, on attribute 1. It scores worse than channel B on both attributes. When choosing among these three channels, F will hardly be chosen (B is the better option), but the shares of channel A and channel B will change. The attraction effect assumes that channel B will win market share. An analysis of the scores of the channels on the most important attributes before and after the experiment shows that the attraction effect is also a possible explanation for the channel preference.

Conclusion

Parts of the developed model have been confirmed in the survey. The Expectation Disconfirmation Theory explains the process of the change in attitude before and after the experiment. Respondents with a negative experience react differently (and according to the theory) than respondents with a neutral experience, who on their turn react differently than the respondents with a positive experience. The way this attitude change occurs is not clear, because the decision making theory included in the model has not been confirmed. The adequacy importance model (either the simple or the weighted additive) cannot provide the necessary insight in how the attitude change occurs. The research has made it clear that consumers use different decision making strategies. A combination of the Elimination By Aspects and the attraction effect seems the best possible explanation. Respondents probably have only two channels they use regularly. These channels are chosen on their scores on the two or three most important attributes conform the EBA strategy. As a new channel is introduced, as happened with the experiment, the importance scores change. This results in a change in the most important attributes and therewith new positions for the channels on these now most importance attributes.