Master Thesis Research Plan

Improving the e-sales dialog for complex products

Colophon

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Abstract

With the expanding of the internet, so did electronic commerce grow. Most sites operate via a menu-driven navigation and keyword search, which are hard to use. Customers are confronted with technical jargon which they are not able to understand, or are subjected to annoying or irrelevant questions. On-line customers want the same personalized advice and product offerings like their off-line counterparts.

Introduction

The type of customer that is the target group of the paper is the group that doesn't exactly know what they want to have, but they do have a need to fulfil. This can also be expressed as the so called visceral need level, which literally means: A vague sense of dissatisfaction, due to an actual, but unexpressed need for information (Taylor, 1968). Which in the context of this paper means, that the customer does have a need for a product, but they can't give a detailed description of the product that would fulfil that need. The ultimate goal of a sales dialog is to find a product for a customer such that his demands are fulfilled and he is willing to buy to product. However, many online e-sales sites do not provide interactive sales support. This is even more problematic when the product sold is complex, for example computers (Schmitt, 2002). A key role is to retrieve the requirements of the customer (Bergmann & Cunningham, 2002). The goal is to mimic real life sales processes via an online agent. The goal of the agent is to make a customer adaptive sales dialog. This can be done which techniques like Case Based Reasoning (Kohlmaier, Schmitt, & Bergmann, 2001). When a user is confronted with a static dialog, this dialog is unnecessary long, asks the wrong questions, and can annoy the user. The dialog should instead maximize its information gain with each question it asks, and find the product that satisfies the customer's demands in the least questions necessary. The CBR technique can be used to select questions influenced on their similarity.

Motivation

I am a frequent user of e-sales, because it's more efficient, cheaper and faster than the real life variant. But it always intrigued me why online sales dialogs are always so static, and usually nothing more than paper tables formatted into a webpage. This results that I only use online shopping for simple products e.g. books and movies or for complex products I have knowledge of e.g. computers. But for other complex products like digital cameras I have to find other resources of information to decide which product to buy. This for me results in that I will go to an offline store for information, and also buy the product there. This results in less commerce for e-businesses. I find it interesting to research how we can improve that, using computer science techniques. Also this subject relates to AI, which is also a field of interest for me. To see how well a virtual agent could emulate the real thing? And it also has a significant market aspect. If sites would be more user friendly, they would sell more and the right product to the right people. This can have serious effects on e-sales in the future. It addresses both the computer science and the management side, and is therefore well suited to start as a starting point for my paper.

Goal

The goal of the paper is to see how we can improve the e-sales dialog for complex products. To reach this goal, I will research in my paper what the demands would be for a successful e-sales dialog for complex products. This results in the following main question:

Main Question

- What are the demands a successful e-sales dialog for complex products should meet?

To be able to answer this question, we need to define certain elements. I define a e-sales dialog as the online dialog imitating the offline sales dialog. Since u cannot replace the offline dialog, the e-sales dialog works with premade questions, which retrieves information from the customer. This information eventually leads to the selection of the product the customer needs.
Successful can be defined in two ways, it has to be successful for the owner of the site, and for the customers that use it. A successful dialog should at least have the following properties:

- Cover the expenses
- Earlier market acceptance
- Higher market penetration
- Correct advises to customers
- Doesn't annoy customers
- Higher sales

I define complex products as products which internal properties cannot be easily translated to external properties. This means that the customer has problems assessing which internal properties will result in his desired external properties. E.g. which amount of memory (internal property) in a computer will result in a smooth operating (external property) computer.

To be able to answer the main question, I divided the paper in phases, each phase is dedicated to its own question.

Partial Questions

- What are the current techniques available for sales dialogs?
- Which are popular products to be sold in e-commerce?
- What client models are there?
- Which conditions are important to get customers to buy online?
- What makes a model economically feasible?

Management Aspect

The goal is to interweave the management aspect through the whole paper. That with each question, not only is looked at the technical properties, but also at the economical properties. The goal of this approach is to come up with answers, which are technically feasible, but also economically feasible.
Also there will be a casus about Dell, focussing in how Dell got such a large player in online computer sales. Secondly to find out why Dell has falling profit margins, and is even planning to open offline stores.
Next to the casus I will perform a limited market research. Since it is not feasible to do a large scale market research, I will try to limit mine, so it still fits within the scope of the paper. The market research will only focus on one group of customers, which will be researched via a number of questions relating to e-sales. The goal of this market research is to see if customers that currently still buy offline, can be persuaded to buy online. What their demands would be and to find out under which conditions customers would be willing to purchase the product online.

Approach

To be able to research this topic, I have divided the research in different phases. In each phase a part of the problem is assessed and worked out. These phases can also be found in the planning.

An overview of the current technology

I will start to make an overview of the current techniques. This chapter will discuss techniques from literature compared to real life examples currently used on the internet. One of the techniques I will be focusing on will be Case Based Reasoning. There are examples in literature of the technique successfully used to create adaptive sales dialogs (Kohlmaier, Schmitt, & Bergmann, 2001). But there are no commercial applications of this technique as it is today. Also the applied techniques currently in use, are more used for simple products than complex products. So there is a technological gap between techniques currently used and techniques mentioned in papers. The goal of the paper is also to see how to cross this gap.

Complex product sales in an digital environment

In this chapter I will discuss the more complex products. Focussing on the digital environment, the goal is to see if it's possible to adapt a solution from the simple products to the more complex products. Complex products would be personal computers, digital SLR camera's, products where users have a hard time rating certain features. For example, take a computer, how does a user judge if he needs 1024 MB of memory, or 2048 MB if he doesn't have a close understanding of the workings of a computer. This is much more complex then when a user judges if he wants to read a horror or sci-fi book.

This paper will focus on computer as a complex product, cause of the commonness of the product, and the high technical properties. Digital SLR camera's are less common than computers in the average household. Also not all complex products seem to be destined to be sold via the Internet, for cars there doesn't seem to be any online market. This could have something to do with the price involved. Many high investment products, e.g. cars, houses, boats, show a low market for online sales. Whereas medium priced products like computers, laptops, cameras show a much larger market online.

Also the computer is successfully sold via different distribution channels, and direct sales towards the end-user via the Internet is getting increasing popular (Dedrick & Kraemer, 2007). Dell is a good example of an online computer vendor with huge success. I will look closely what are the strong and weak points of Dell's strategy, and use them to define my own model.

This model will use techniques used in papers, like Case Based Reasoning to develop an adaptive sales dialog, that is able of delivering an interactive approach to selling complex technological products, e.g. computers.

Market Research

This phase focuses on the customers, instead of the products itself. Important questions in this phase are how to customers "prepare" themselves when buying products. For example, do customers take the advice of the salesmen, or do they have a fixed product in mind? Would it give problems if we try to take that online? And does an offline store have a certain added value over an online store? And how can we use the possibilities of an online store to make added value over an offline store? Does this have influence on when the clients will switch? These questions are important when looking at the economic feasibility of online sales. The limited market research will help to get insight into these questions. The findings of the market research then can be compared with findings from the literature, which then can be used in forming the economic model.

Since a full market research is out of the scope of this paper, I will perform a limited market research. The target group used in the research will be the offline computer customer, the customers that buy

computers and accessories in offline computer stores. To approach this group I will go to a computer store. There I will ask them to fill in a list of questions, which will address aspects about online and offline sales behaviour, and what properties they prefer, and what properties they would like to see on online sales.

I am aware that the target group is limited, but it will none the less give insight in why people don't buy a complex product (the computer) online, and how we can improve this.
Also the target group is very specific, its only the group of customers which go to a certain store. I assume that the results would be the same for every offline computer store, so I won't address other computer stores in this market research, and the geological difference is negligible.

Validation of the model

The model defined in the previous phases needs to be validated, this has to be done in two ways. It has to be proven that the model covers the real life examples adequately. This validation will be done by testing it on a small user base, to see if the model can perform as described above. Secondly it also has to be economically validated.
The goal of the model is to increase the number of e-sales for complex products. To see if the model can accomplish this, I will do a limited market research, like stated above.
What is also important is to measure the satisfaction of users (Giese & Cote, 2000). Since there is no real-life feedback, other ways of feedback should be used.

Time Schedule

Weeks	Phase	Result
30-37	Research Approach	Having a finished research approach, come up with a research question. Have a good structure of writing the paper.
37-41	Overview of current technology	Having a good idea which technology is currently used, and which technology is most promising to improve the current dialogs.
41-44	Complex products in a digital environment	See what the difference is between normal and complex products. Which complex products would be viable for online sale.
44-47	Customer Research	Knowing which kind of customers to target, and how to approach them. Knowing when customers will be willing to buy online.
47-51	Model validation	Validated the model, also economically.
51-02	Ending Paper, Presentation	Finishing the paper, presenting the thesis

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