On the role of value-focused interfaces for online shopping

Mitra Heravizadeh\textsuperscript{a, b} and David Edmond\textsuperscript{b}

\textsuperscript{a} GBST Holdings Pty Ltd  
G.P.O Box 1511, Milton, QLD, Australia, 4064  
Mitra.heravizadeh@gbst.com

\textsuperscript{b} Centre for Information Technology Innovation, Queensland University of Technology  
G.P.O Box 2434, Brisbane, QLD, Australia, 4001  
d.edmond@qut.edu.au

Abstract

This research aims at improving online shopping. In general, people have a range of motives for shopping. They also have a number of reasons for finding shopping disagreeable, and one of these is sales pressure. We argue that, contrary to normal prejudice, the role of the salesperson is important. If exercised properly, it encourages us to examine our objectives and values when contemplating a purchase. In this paper, we enquire into the ideas behind value-focused thinking and discuss how it may be applied to online shopping.

Keywords

Online shopping, value-focused thinking

1. Introduction

Shopping is a major part of our lives (Tauber 1972). According to his studies of consumer motivation, we shop for both personal and social reasons. Role playing, diversion, self-gratification, learning, and physical activity are examples of personal motives, while social interaction, pleasure in bargaining, status and authority are some examples of social motives. However, some of us dislike, or even hate, shopping because of the stress caused by crowds, parking, shortage of time, and sales pressure (Marcus 2001). People shop for a variety of reasons and it is very difficult to make generalisations.

There are two relatively recent events that have had ramifications for shoppers. Firstly, improvements in product technology have dramatically reduced the amount of time taken to develop a new product and to introduce it to the market. This has increased competition and has produced a large number of product choices in both consumer and business markets. Furthermore, new technology has expanded the capabilities of products, and made them richer in features and complexity. All channels of shopping (including mail order catalogues, phone orders, and television) have felt the impact of these movements in the marketplace and have been losing their effectiveness in reaching individual consumers (Rayport & Śvioka 1995). The second event is the web, which has had the effect of amplifying the problems of diversity and richness arising from the first. These are the forces that should oblige buyers to behave more deliberately and more rationally when making a purchase.
Under such circumstances, the web *should be* a logical alternative to traditional shopping, because it is able to provide a flow of detailed information that can reach out to individual consumers. However, there is a fine balance between providing sufficient information for the consumer to make a decision, on the one hand, and information overload on the other (Keller & Staelin 1987, Buchanan & Kock 2000). This raises the question of the kind of information that people *really need* when buying a product or service.

A recent survey found that of the millions of people connecting to more than 10,000 online retail stores, 97% left without making a purchase (Gotch 2001). This seems to indicate that only three percent are potential online buyers, which is not an acceptable ratio for online retailers. This raises the question of *what exactly is missing* in electronic shopping.

Perhaps we have to return to traditional in-store shopping for some ideas about how stores persuade people to buy. There, sales people are employed to help buyers to understand product choices and learn about comparative product benefits. These people know that to make a sale they have to reduce the buyer’s perception of risk and uncertainty. We believe that electronic shopping is no different from any other method of shopping in this respect. Buyers rely heavily on information to make a judgment and to minimise the risk of an unsatisfactory purchase. A buyer uses different perceptual processes, like touch and fit to get information (Zellweger 1997).

However, helping us to deal with the complexity of choice is not enough. A recent survey has shown that a sale on the web still is not able to compete with an in-store shopping experience (Rajgopal et al. 2001). Shopping is a personal experience, typically created by a salesperson and the ability to inspect the product by holding or touching it (Zellweger 1997). Using an electronic catalogue to make a purchase represents a more abstract exchange – one that does not have the same emotional feeling as in-store shopping.

As an illustration, consider a consumer who wants to buy a car and who has little technical knowledge of cars, especially the extra features such as antilock braking systems (ABS). She does not have any preferred make and model, but high performance and safety are top priority. She is also keen to learn more about other car features which may affect her selection criteria. She goes to a web site that provides online solutions for buying and selling brand new and used cars, and proceeds to browse the new car pages. The first page, which asks a consumer for a preferred make and model, is hopeless for this case. Even a more advanced search facility which goes in to more details (such as body shape, manufacturing year, extra features, etc) cannot be helpful in this case, because it is hard for a consumer who has little knowledge of cars to select from a list of features such as *anti-lock braking*, *driver-side bag*, *traction control* etc. The problem is that even if she knows about basic safety features, she does not know which combination of the features makes a car safe. At this stage she is frustrated and confused, and it would not be too surprising if she decided to stop her online shopping and call a friend who knows a salesman in one of the big car yards. Obviously it is more convenient for her to talk to a sales professional and let her find the most suitable car which meets her values (high performance and safety).
A typical online shopping interface or catalogue presents consumers with choices from the retailer’s perspective. However, to shop effectively, people need to be able to express and consider their objectives (the reasons they are making this purchase) and their values (the things that are of essential importance) before making the purchase. We need to be encouraged or somehow led to an exploration of our values - since these are not always obvious to us, when we commence a shopping expedition.

We are interested in how people make choices, particularly in the motivation behind such choices. We want to bring this motivation out into the open, to make it more explicit, and make people more reflective in this regard. We believe that a value-focused shopping interface will benefit decision making process for online shopping (both for products and for services).

2. Value-focused thinking

The consumer decision-making process (Howard & Sheth 1969, Mitchell & Boustani 1994) involves five stages of problem recognition, information search, evaluation of alternatives, purchase decision and purchase. According to this model, the purchase process begins several stages before the actual purchase. Purchase decision making can be a very complex process for consumers, as with many other decision making situations. In decision-making, especially when high stakes are involved, there is quite often a high degree of fuzziness and uncertainty. This may be due to the imperfection and complication of human information processing (Zadeh 1976).

Multi-objective decision making is one of the most important models in the field of decision making (Keeney & Raiffa 1999). It was developed to model situations where decision makers are faced with problems that have more than one objective and where they have to make tradeoffs between several attributes of the alternatives. Under such circumstances, the extra steps that a decision-maker should go through in order to make a decision are: formulating the objectives, realising the consequences, making tradeoffs between objectives under certainty and uncertainty conditions and attitude toward risks.

There are three fundamental components of any such decision-making: alternatives are the courses of action which can be pursued and which will have outcomes measured in terms of the criteria; values are the factors by which the alternatives should be discriminated (thus enabling tradeoffs between objectives); and attributes are ways of measuring alternatives with respects to values (Zimmerman et al. 1984, Corner et al. 2001).
Keeney (1992) provides a way of thinking known as value-focused thinking (VFT), whereby values (criteria) are identified first in the decision-making process, then alternatives are creatively determined with respect to values and then a choice is made. VFT also provides a method for decision makers to systematically think about their objectives and elaborate them to a level which the objectives could guide the process of searching or developing new alternatives. Alternative-focused thinking (AFT) is on the other hand a way of thinking whereby alternatives are specified first in the problem structuring process, and then value and preference information are applied to alternatives to make a choice (Corner et al. 2001).

Corner et al. (2001) argue that it is difficult to determine which does or should come first (values or alternatives) since both are crucial to the decision problem structuring process. The starting point is not the issue, what is important is that the decision-maker learns about one by working with the other. Consideration of values and alternatives should generate each other interactively. This dynamic and interactive approach implies that thinking about alternatives helps generate values and vice versa.

Neither of these two elements can be thought of alone, independently of the other. If such interaction is allowed to occur, divergent thinking and creativity is incorporated into the decision-making process, which is more desirable for effective decision-making compared to convergent thinking which might be more efficient.
According to Keeney’s model of decision making, value-focused thinking always leads to a smarter choice. In many situations, identifying and structuring values first forces decision makers to more clearly define the problem. Decision makers cannot easily identify and clarify values, however, without adequate understanding of the problem. The process of defining the problem and identifying values is usually iterative. Keeney argues that value-focused thinking expands options and improves the likelihood of selecting the optimal outcome because decision makers can use the values as guides for alternative generation and evaluation. Investigating options without this type of guidance restricts the decision maker’s ability to generate alternatives, and hence alternative-focused thinking constrains the decision making process (Keeney & Raiffa 1999, Hammond et al. 1999).

The core step of decision making is the realisation of objectives and values. This is not trivial. Keeney argues that decision makers often focus too narrowly. Their list of objectives remains brief and cursory, omitting important considerations that become apparent after they have made a decision. He believes that we often concentrate on the tangible and quantitative (e.g., cost and availability) over the intangible and subjective (e.g., features, ease of use). This occurs for two main reasons. First, people spend too little time and effort on the task of specifying objectives. They feel they already know what they want and need. Without further reflection, they pick an alternative that seems to solve their problem and they move on. Only later, when things turn out less well than anticipated, do they realise that they did not really understand their objectives after all. Secondly, getting it right is not easy; the realisation of objectives is not trivial. While we might think we know what we want, our real desires may actually be hidden beneath our everyday concerns. A self-reflective effort is required to uncover those hidden objectives. Objectives are personal and different objectives will suit different decision problems.

3. Value-focused shopping

The VFT framework was intended to be a general framework that can be applied to any decision situation. In this research work, our goal is to apply it to online shopping. We aim to develop a way of helping online consumers in identifying their values and objectives in order to improve their decision making behaviour.

Electronic catalogues are, by definition, alternative oriented. Their very purpose is to present options in the form of candidate products or services. Most such interfaces have no ability to differentiate between two or more products of the same type from a value point of view and how important that difference is to a consumer as shown in figure 1.

We propose to develop a value-focused shopping interface that will facilitate the realisation of objectives and values. It should also provide an appropriate mapping from consumers’ objectives and values to the concrete attributes of the products or services. We previously looked at the problems a consumer faced in buying a car using an online car catalogue. Let us now consider how a value-focused shopping interface could help a consumer to make an informed decision by realising her fundamental objectives and values. One possible solution
is to engage the consumer in a dialogue that will help her to realise her objectives in buying a car. Instead of presenting a consumer with a form listing product properties, like many available interfaces, she is presented with a sequence of questions. For example, the following questions have been designed to ascertain the importance of safety to the consumer. Each question will help to determine a specific car’s required attributes:

- How important is it to you to have extra protection against skidding when braking hard?
- How important is it to you to have extra protection against head injuries in the event of an accident?
- How important is it to you to have protection against possible head injuries (e.g., whiplash) in the event of an accident?

The customer’s answer to the first question will determine the extent of her need for ABS, her answer to the second and third would determine the need for airbag and headrest.

The role of an interface generator would be to derive a questionnaire from the objectives hierarchy and present it to the user via a dialogue. Figure 2 represents a hierarchy of objectives and values for buying a car, and this hierarchy will be used for building the objectives model. It is intended to represent the consumer’s objectives – her reasons for buying a car. The consumer’s values will be determined from these objectives. For example a question like “What is your primary reason for buying a car?” could help a consumer to realise her most fundamental objectives. One such objective might be “commuting”, and this could determine values such as “reliability”, “economy” and “safety”.

As shown in figure 1, each value is linked to one or more attributes. For example safety is determined by an airbag, a headrest, and anti-lock braking systems (ABS). A weight is assigned to each attribute in relation to the linked value. The system then retrieves a set of alternatives by generating a query based on the consumer’s expressed need, and sends it to the car catalogue (i.e., database).

Now it is up to the consumer to select a car from this list. It is not a trivial task to pick a car from a possibly long list. The system should be able to help the consumer at this stage and allow her to compare available alternatives. One possible way is to help her to compare cars (alternatives) based on their value difference (i.e., values that were not evident to her at the time of answering the questionnaire). This will help the consumer to consider other values (such as security, performance, etc), while refining and improving her list of objectives. It will consequently help her to make a more informed decision.
4. Conclusion

We believe that a value-focused interface can assist the decision making required for satisfactory online shopping. In this paper, we have examined the importance of shopping in our lives, and have discussed two main categories of motivation for shopping – personal and social. We also have highlighted the forces that should oblige buyers to behave more deliberately and more rationally when making a purchase, and how the web should be a logical alternative to traditional shopping because of its ability to provide detailed information to individual consumers. We also have illustrated through an example how a salesperson-like role could make online shopping a much more satisfactory experience. We have suggested applying a value-focused approach in the context of online shopping, and discussed how such an interface could help consumers to make an informed decision by realising their fundamental objectives and values.
References


