Web-Based Consumer Decision Tools: Motivations and Constraints

KIERAN MATHIESON, MUKESH BHARGAVA AND MOHAN TANNIRU

INTRODUCTION

The Web offers new ways for consumers and firms to interact. Much has been written about using the Internet for traditional persuasion-oriented marketing (e.g., Ellsworth and Ellsworth 1997), but there is less work on use of the Web to enhance relationships between individual consumers and individual firms. This paper examines the motivations for the construction of consumer decision tools (CDTs). CDTs are Web-based decision support systems aimed at improving the quality of consumer decisions. They are organized around the decisions themselves, rather than around the content being presented.

We will start by examining some important attributes of the consumer choice context. We then briefly describe a CDT that we built and tested. Finally, the main benefits of CDTs for consumers and firms are enumerated.

CONSUMER CHOICE CONTEXT

Several factors define relationships between consumers and firms in a modern economy. First, the net utility from a transaction is the total utility from the product, service or payment received, less the costs of the transaction. For consumers, transaction costs include information search time, travel to a distribution point, sales or consumption tax, and so on. For a firm, transaction costs most obviously include the costs of the supply chain, such as shipping and storage.

Marketing can also be seen as a transaction cost. Advertising and promotion try to attract and retain customers, that is, people who will engage in transactions with the firm. Marketing is not a trivial activity, with advertising and promotion costing $479 billion in the United States alone in 1997 (Cassino 1997).

Much of this expenditure is wasted. Every day, marketers in the US expose consumers to 12 billion display ads, three million radio ads and more than 300,000 television commercials (Hagel and Singer 1999). The average US consumer receives about a million marketing messages per year, across all media. Response rates are usually between 0.5% to 2%. Marketers drown consumers in a river of information, more than they can possibly handle.

A second issue is that consumers face more decision complexity than ever before. Some of this is because of greater choice. A consumer choosing a vacation, for instance, has options ranging from a rental cottage in Tuscany to a packaged tour in Disneyland. The choice set is huge.

Much of the effort consumers spend in selecting high-involvement products is not classical ‘decision making’, where they weigh informa-

A b s t r a c t

This paper examines the motivations for the construction of consumer decision tools (CDTs). CDTs are Web-based decision support systems aimed at improving the quality of consumer decisions. CDTs are useful for high involvement choices, such as car or university programme selection, where the consumer is strongly affected by the outcome. Firms will supply CDTs only when they desire informed, mutually beneficial exchanges with customers. Benefits to consumers include improved decisions and the reduced cost of future decision making. Benefits to firms include insight into consumer choice processes, customer loyalty and reduced marketing costs. We describe a CDT that we developed and tested. The results from our initial work suggest that CDTs are technically feasible, and have value for both consumers and firms.

Keywords: consumer behaviour, product choice, decision support

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tion about known alternatives. Instead, consumers spend time learning, about their own needs, available products, transaction costs and so on. Learning has received less attention than it deserves from consumer behaviour researchers (Hoch and Deighton 1989).

Third, choice processes are complicated. O’Keefe and McEachern (1998) present a simple consumer-choice model, but note that it is not followed in practice. Given variance in individual consumer knowledge, goals, motivation, expectations, available time and so on, it is not feasible to predict every mental operation a consumer engages in while selecting a product. In constructing a CDT, it might be more useful to provide a set of context-specific tools consumers can use as they wish, plus some decision guidance (cf. Silver 1991).

In considering the benefits that CDTs offer, we make two assumptions. First, we assume consumers are motivated to expend effort in making a good decision. Most consumers devote little effort to most decisions (Dickson and Sawyer 1990; Stewart et al. 1989). They would only seek Web-based support for decisions that are relatively important and non-routine, such as buying a house, selecting a university, or choosing a health plan. We limit ourselves to high involvement choices since (a) these are the decisions that have the greatest effects on consumers’ lives and (b) consumer interest could justify a firm’s investment in CDTs.

Second, we assume that the firm offering decision support wants to help consumers make decisions that are good from consumers’ perspectives. Some companies deliberately hide information about consumer choices that are not maximally profitable. This study is limited to situations where firms desire mutually beneficial exchanges, and are willing to support long-run profitability at the expense of short-term losses in sales.

This is not to say that a firm providing a CDT would, for example, recommend a competitor’s product. However, within the constraints of its own product line, the firm can help consumers make good choices, even when the choice that is best for a particular situation leads to lower short-term profits. This philosophy is key to building long-term relationships with customers (Glazer 1991). Current practices based on ‘persuasion’ are expensive. Replacing these with a model of exchange based on communication provides a basis for reducing marketing costs and developing a sustainable advantage (Weinberg 1996).

CONSUMER DECISION TOOLS

A CDT is a Web-based decision support system aimed at improving the quality of consumer decisions. CDTs can be developed by firms offering products, or by information intermediaries. CarPoint (http://www.carpoint.com) is an example of the latter. CDT designers should analyse the decision goals of consumers, and build systems to match. For instance, we constructed a CDT to help consumers select a manufactured home (Mathieson 1998). Focus groups and interviews identified the main challenges consumers face:

1. They don’t know what they want (ie, their requirements are unclear).
2. They don’t know what products are available.
3. They don’t know how to make a decision (ie, the method that will maximize their utility).
4. They don’t know how to handle the large amount of information that is available.

The home CDT included features designed to address each problem. Figure 1 shows part of a home worksheet that helped structure the choice (problem 3), and provided a decisions record for the consumer (problem 4). The worksheet emphasized the importance of defining requirements (problem 1). Advice and consumer scenarios helped with requirements’ definition (problem 1). A catalogue Figure 2 showed the products (problem 2), with links to a grid that made direct problem comparisons easier (problem 3 – see Figure 3). Figure 4 shows the payment calculator (problem 1) and Figure 5 the mortgage calculator (problem 2). The home CDT also let consumers add a personal note to any page in the site, and then summarized those notes in a single location (problem 4 – see Figure 6).

Two themes are evident in the design of the home CDT. The first is consumer learning, about goals (Figure 1), decision methods (Figure 1), and products (Figure 2). The page notes (Figure 6) and worksheet (Figure 1) help consumers remember what they have learned. The second theme is choice, supported by the grid (Figure 3), later stages of the worksheet, and tools that help select home options, like appliances and carpets. We classify the calculators as learning tools. The payment calculator (Figure 4) helps consumers learn about their financial situation, while the mortgage calculator (Figure 5) translates a relatively meaningless product attribute (home price) to a

<table>
<thead>
<tr>
<th>Model</th>
<th>Size (Sq Ft)</th>
<th>Bedrooms</th>
<th>Base Price</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpine</td>
<td>1,120</td>
<td>3</td>
<td>$37,795</td>
<td>A basic home with a basic price.</td>
</tr>
<tr>
<td>Aspen</td>
<td>1,280</td>
<td>3</td>
<td>$38,995</td>
<td>Popular with singles, couples and retirees.</td>
</tr>
</tbody>
</table>

Figure 1. The home worksheet

Figure 2. Floor plan catalogue
Forty subjects used the CDT to choose a home. Pre- and post-test surveys showed that using the CDT dramatically improved subjects’ product knowledge. They also believed they knew more about manufactured homes, and were more confident about their (a) ability to make a good decision and (b) knowledge of their housing requirements.

Analysis of system logs showed that the system’s decision support features were used heavily. Subjects spent an average of 2.25 hours using the CDT, 46% of it on either the home worksheet or payments calculator pages. Qualitative analysis of the log files yielded some interesting insights into consumer decision processes. For instance, we provided advice and consumer scenario pages to help with relatively meaningful one (monthly payment).

BENEFITS FROM CDTs

Benefits to Consumers

1. Improved decision making:
   The utility generated by a product depends on its fit with consumer needs. CDTs help consumers understand their requirements, understand products, and fit the two together.

2. Reduced cost of future decision making:
   CDTs help consumers learn about (a) their needs, (b) product attributes and (c) choice processes. Even if a consumer never buys a manufactured home again, the home CDT will have shown them how to go about making a good choice. They can apply that lesson to other decisions they make.

Benefits to Firms

1. Insight into consumer choice processes:
   Using the Internet for a shopfront does not by itself provide a sustainable advantage to the firm, since these innovations are easily imitated. However, knowing how customers make decisions (Glazer 1991) can supply a competitive advantage. Most consumer behaviour research uses artificial product evaluation situations (eg, focus groups) that provide equivocal information. What a consumer says in a focus group often does not match what they do in the marketplace. CDTs let firms peek inside real decisions by real custo-
mers as they are being made, offering deeper insights into decision processes. This information is captured on the firm’s Web servers and, unlike a normal Web site, is not visible to competitors. CDTs can provide a sustainable competitive advantage (Barney 1991).

2. Customer loyalty:
With traditional advertising or personal selling, firms tightly control information flow. CDTs reverse this situation, creating a qualitatively different type of interaction with consumers. CDTs let customers explore a company’s claims about its products for themselves, and tailor their exploration to their own requirements. Tailoring information to individual consumers increases persuasion (Cassell et al. 1998).

CDTs help consumers become more confident about their own decisions, and about the good faith of the firm. As their trust grows, they are more likely to accept the firm’s product recommendations, and will tell their friends about their good experiences.

3. Reduced marketing costs:
CDTs can reduce marketing costs in several ways. First, increased customer loyalty from CDT use could reduce customer turnover. This can result in significant savings, since on average it costs 5 times as much to get a new customer than to retain an existing one (Kotler and Armstrong 1997: 16). Second, positive word-of-mouth has a powerful effect on persuasion, yet costs the firm little. Third, CDTs allow message tailoring at a reasonable cost, potentially resulting in greater persuasion.

CONCLUSIONS

CDTs are quite different from traditional Web sites. They are active decision-support systems. They focus on specific problems consumers have in making decisions, providing tools for both learning and choice. CDTs help consumers make good decisions, and help firms learn about consumer choice processes.

The main barrier to CDT adoption will be the relationships firms want with their customers. The customer-as-cow is a familiar metaphor is sales meetings, where a docile herd beast is lead to the barn for milking – or perhaps to the abattoir for butchering. Sales representatives are taught to ‘overcome objections’ (see Kimball 1994, for example), rather than truly listen to customers. Such firms will want to avoid CDTs, not embrace them.

It is possible that this short-term approach leads to greater profits, though Wenerfelt (1996) argues otherwise. However, it will not maximize the utility generated by the billions of transactions that make up an economy. Further, it will not build the trust that is part of a sound, long-term relationship. Nor is it sustainable in industries such as healthcare, where society demands positive consumer outcomes from private companies.

The results from our initial work have been encouraging. CDTs have proved technically feasible, and have value for both consumers and firms.

References


Dickison, P.R. and Sawyer, A.G. (1990) ‘The Price Knowledge and Search of


