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Understanding the Choiceboard Phenomenon: A Conceptual Model

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INTRODUCTION

The Internet is transforming the supplier-customer interaction drastically. The increasing popularity of e-businesses has resulted in the proliferation of internet-based self-services. Not only have e-businesses become a big enabler of self-service but customers have also embraced self-service (Kalakota and Robinson, 1999). Especially, we have witnessed the success of e-businesses like Dell online, where customers can design their own computers with Dell's on-line configurator. This phenomenon is not limited to the computer industry and is becoming more and more prevalent in other industries.

The innovation that is catalyzing this shift is what is called the Choiceboard. Choiceboards are interactive, on-line systems that allow individual customers to design their own products by choosing from a menu of attributes, components, prices, and delivery options. In different types of markets, customers will soon be able to describe exactly what they want, and suppliers will be able to deliver the desired product or service (Slywotzky, 2000).

This research endeavors to better understand the Choiceboard phenomenon. The focus of the research will be to understand how the buying intentions of Choiceboard users are impacted by Choiceboard systems. This system has the potential of being a disruptive technology as it drastically changes the relationship between the supplier and customer.

CHOICEBOARD AS A DISRUPTIVE INNOVATION

In the Choiceboard system, the customer's role shifts from a passive recipient to an active designer. For most of the twentieth century, customers were "product takers" and "price takers," accepting suppliers' goods at suppliers' prices. In a Choiceboard system the customers are no longer "product takers" (Slywotzky, 2000). Several powerful innovations like the Choiceboard have disrupted industries in the past. The statement "innovations that disrupted other industries did so by enabling a larger population of less-skilled people to do in a more convenient, less expensive setting things that historically could be performed only by expensive specialists …"(Christensen, Bohmer and Kenagy, 2000) holds true for Choiceboards.

The suppliers have tailored their products to suit the different segments of the customers but still the customers are forced to "settle for the best approximations of what they want". The Choiceboard system changes this and "customers are product takers no longer. They're product makers" (Slywotzky, 2000). Most of disruptive innovations in history have had a major impact. Bell's telephone let people communicate without the need for professional telegraph operators. On-line brokerages have made investing so inexpensive and convenient that even college students now actively manage their own portfolios (Christensen, Bohmer and Kenagy, 2000). The progress of disruptive innovations is shown in figure 1. It shows overtime how present technologies cannot meet majority of customers' performance requirements and, therefore, disruptive technologies capture that market.

DEVELOPING THE CONCEPTUAL MODEL

Choiceboards are already being used in several industries, although, they still involve less than 1% of the $30 trillion world economy. Dell's customers use the on-line configurator to "make" their own computers and Schwab's customers use the mutual-fund evaluator to design their own investment portfolios (Slywotzky, 2000). It is imperative to study how the buying intention of a user will differ when the on-line configurator is compared to another buying method. This research intends to explore this issue further by researching how Choiceboard systems would impact the buying intentions of Choiceboard users. In general, the contribution of information systems towards individual factors has been of great interest to information system practitioners, researchers and top corporate management.

The conceptual model (figure 2) shows how different factors of the Choiceboard system will impact buying intentions of Choiceboard users. System quality, information quality and user support of the Choiceboard will directly impact buying intentions of users. IT characteristics of users will also directly impact the buying intentions.

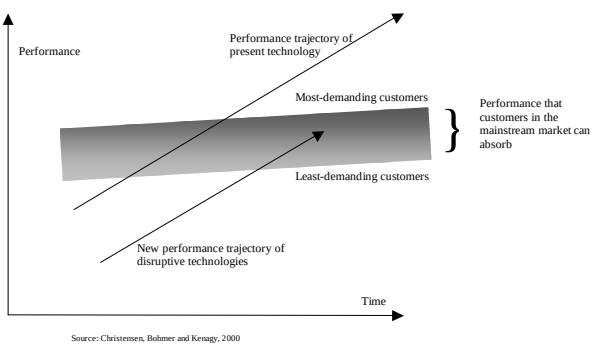

Figure 1: The Progress of Disruptive Innovation

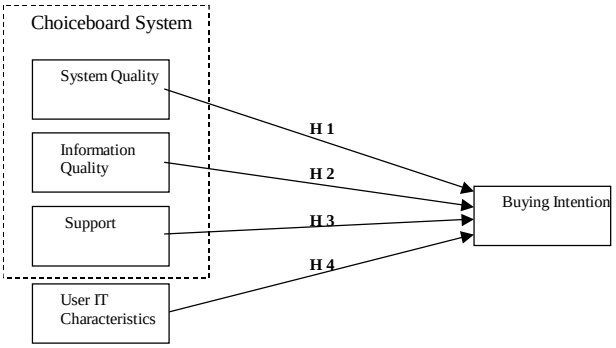

Figure 2: Conceptual Model

The conceptual model is based on previous research done to study the impact of information technology on individual and organizational factors (Bharati and Berg, 1999). This research is partially based on DeLone and McLean's (1992) taxonomy of information system success. DeLone and McLean's taxonomy was based on the pioneering work done by Shannon and Weaver (1949) in the area of communications and the subsequent refinements of their work done by Mason (1978).

Buying intention

Buying intention is the likelihood of the user actually purchasing the product or service. In this model, buying intention of user is the dependent variable. Several studies have used buying intention to measure the chances of purchasing the product in different retail environments (Sharma and Stafford, 2000). The buying intention will be customized using measures used in other previous studies (Grewal, Marmorstein and Sharma, 1996). Since the customer is influenced by the atmospherics in which s/he operates, it will be used as the basis to study how the virtual atmospherics created by the Choiceboard system impacts the buying intentions.

System Quality

System quality represents the quality of the information system itself. This quality is a function, broadly speaking, of hardware and software of the Choiceboard system. The quality of the system is manifested in the system's overall performance, which will be measured using user's perceptions. Perceptual measures such as ease of use (Belardo, Karwan and Wallace, 1982), and system reliability (Srinivasan, 1985) will be used.

Hypothesis 1: System quality of the Choiceboard system is directly and positively related to the buying intention of users.

Information Quality

The information provided by the Choiceboard system is important. The quality of information has been discussed a lot in the IS literature. Gallagher (1974) has used user's perception of the value of information system to find the information quality of the system. In some studies, information quality has not been considered separately but as an integral part of User Satisfaction (Bailey and Pearson, 1983) or User Information Satisfaction (Iivari, 1987). In another study (Larcker and Lessig, 1980), the perceived importance and usableness of information is emphasized. Some researchers have proposed multiple information attributes, which reflect information system value (King and Epstein, 1983). Information quality has also been emphasized in studies on service quality (Berry and Parasuraman, 1997; Bharati and Berg, 1999). In most of the studies the user estimates the value of an information system. The measures of information quality that will be used are information importance, information usableness, and information relevance.

Hypothesis 2: Information quality of the Choiceboard system is directly and positively related to the buying intention of users.

Support

The support section of Choiceboard system is also a provider of service to the users, namely technical support. This service is an integral part of the complete set of IS product and service provided by the Choiceboard system. Irrespective of how a user interacts with the Choiceboard system, the quality of technical support can influence the buying intentions. Technical support is of importance to the user, the potential customer. Since support is an integral part of the Choiceboard system, therefore, it should impact the user's purchasing intentions. Support responsiveness and reliability have been used to measure quality of support (Pitt, Watson and Kavan, 1995). These measures will be used for support of the Choiceboard system.

Hypothesis 3: Support provided by the Choiceboard system is directly and positively related to the buying intention of users.

User IT Characteristics

User's perception of the Choiceboard system is a key factor in determining their purchasing behavior. IT attitudes of the users, the feeling they have towards Choiceboards (Goodhue, 1986; Bailey and Pearson, 1983), the experience they have had in the information technology, the training they have had in information technology will constitute the factor User IT Characteristics.

Hypothesis 4: IT characteristics of the Choiceboard system user is directly and positively related to the buying intention of users.

FUTURE RESEARCH

Currently, research is being done to operationalize the conceptual model. Using the theories that have been presented in the paper, a survey instrument will be developed to test the model. Thereafter, the plan is to set up an experiment in which two groups of users would be purchasing using two alternative buying methods one of which will be the Choiceboard. The data collected will used to validate the hypotheses.

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