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# Personalization vs. Customization: Which Is More Effective in E-Services?

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# PERSONALIZATION VS. CUSTOMIZATION: WHICH IS MORE EFFECTIVE IN E-SERVICES?

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## Abstract

*This paper presents a research model that argues that personalization and customization influence customers' behavioral intention (intention to return) differently in an e-service context and these different effects can be explained via two perception factors – perceived control and perceived service quality.*

**Keywords:** Personalization, customization, e-services, perceived control, perceived ervice quality

## Introduction

Electronic commerce (e-commerce) facilitates providing information about products and brands, and enabling sales transactions to enhance the effectiveness of electronic markets (Bakos 1998). Electronic services (e-services) are becoming important for supplementing e-commerce functions as customers require a high quality of service in electronic markets (Ruyter et al. 2001). Based on the Internet, e-services are expected to help reduce customer service costs, tighten customer relationships, and personalize marketing strategies (Johnson 2002).

A recent survey report announced that Internet retailers lost about $6 billion in 1999 from transactions that were abandoned by customers because of poor customer service (Cox 2000). In addition, the growth of e-services has been enormous over the last few years (Gefen and Straub 2002). These current environments require firms to have new strategies about services such as how they will achieve competitive advantage against other competitors or how they will support customers to buy more products and services on the Internet.

Ives and Mason (1990) insist that information technology (IT) can provide firms with the ability to revitalize customer services. They propose the Customer Service Life Cycle (CSLC) model, which is similar to with the Customer Resources Life Cycle (CRLC) model (Ives and Learmonth 1984), to support capabilities such as identifying and tracking individual customers, monitoring service levels, and assisting customers in specifying, acquiring, fixing, and returning products. This CSLC model is gaining more attention in the e-services era because firms can get early mover advantages if they find new opportunities earlier through the activities of the CSLC, and it is relatively easier to implement customer services by using IT in electronic markets rather than in traditional markets.

Rust and Lemon (2001) emphasize the importance of new e-services opportunities. In order to fully appreciate the new characteristics of e-services, they argue that it is important to understand the impacts of new characteristics of e-services on consumer behavior and consumer expectations. They identify three specific areas such as *buying experience*, *customer control*, and *personalization* as new characteristics of e-services. Providing a unique and distinct buying experience is one of the key points to gain a competitive advantage in electronic marketplaces (Zemke and Collelan 2000). Thus, many researchers examine the customers' experience on the Web with a flow construct (Hoffman and Novak 1996, Novak et al. 2000). Regarding customer control, customers have the power to choose not only products but also shopping channels. Greater customer control leads to higher customers' expectations of ease and convenience throughout the entire CSLC. In addition, new IT can create opportunities of personalization for all activities of CSLC including communications, product offerings, and delivery options.

Traditionally, trust, risk, and reputations have been considered to be important factors for firms to adopt e-services in many studies (Ruyter et al. 2001, Featherman and Pavlou 2002, Gefen and Straub 2002). However, new characteristics of e-services such as

personalization and customization have not been examined empirically within the e-services adoption context. This paper investigates whether personalization strategies (personalization and customization) of e-services influence customers' beliefs and behaviors. Specifically, we distinguish personalization from customization and compare effects of personalization and customization towards customers' behaviors via perception factors (perceived control and perceived service quality).

## Theoretical Background

An e-service is defined as "a service available via the Internet that completes tasks, or conducts transactions and is accessible at a particular Uniform Resource Locator" (Sahai and Machiraju 2001, p.5). E-services are also referred to as "assets – information, business processes, computing resources, applications – made available via the Internet as a means of driving new revenue streams and creating efficiencies" (Hewlett-Packard 2002). Ruyter et al. (2001) indicate several reasons why e-services are getting critical. First, there is a service multiplier effect in e-commerce in which any e-commerce presence creates a demand for pre- and after-sales service activities. Furthermore, the implementation of e-services extends the range of options for customers, and the use of an enhanced service portfolio may improve the value of a relationship with a particular company for customers (Alsop, 1999). Finally, e-service applications may considerably decrease the cost of service and allow for service differentiation and segmentation in service contracts.

Several studies have been conducted in the area of e-services adoption. Ruyter et al. (2001) investigate the impact of organizational reputation, relative advantage, and perceived risk on perceived service quality, trust, and behavioral intentions of customers towards adopting e-services. The results show that three independent variables (organizational reputation, relative advantage, and perceived risk) have a significant main effect on the three dependent variables (perceived service quality, trust, and behavioral intentions of customers). Featherman and Pavlou (2002) examined a perceived risk factor thoroughly in the context of e-service adoption. They argue that it is important to distinguish the difference between conducting basic purchase transactions and adopting e-services. Furthermore, they discuss that the e-service adoption is essentially different from most typical e-commerce purchases, as they create a longer-term relationship between the consumer and service provider. Therefore, they consider that perceived risk is one of key factors to explain the adoption of e-services in the TAM (Technology Acceptance Model, Davis 1989) context. The results indicate that e-service adoption is adversely influenced by performance-based risk perceptions, while perceived ease of use (PEOU) of e-service reduces risk perceptions. Gefen and Straub (2002) focus on the effect of a social presence on consumer trust in e-service. They insist that one of major differences between B2C e-services and the traditional types of customer service is the level of the social presence of the physical services. The results show that social presence affects trust, and subsequently trust has a stronger effect on purchase intentions than TAM beliefs.

The concern of these studies is that they more focus on the basic aspects of e-commerce fulfillment such as trust, perceived risk, organizational reputation, relative advantage, etc. Although these elements are significant for studying the adoption of e-services, they do not focus on the new characteristics of e-services such as personalization and customer control (Rust and Lemon 2001). Since the IT environment of e-services provides capabilities to facilitate the activities in the CSLC, it is necessary for researchers to concentrate on the emerging potential of e-services when they investigate the explanatory factors of the adoption behavior for e-services. This paper explores the influence of personalization and customization towards the usage of e-services (intention-to-return) via two perception factors, perceived control and perceived service quality.

### *Personalization and Customization*

Personalization is considered to be one of the key characteristics of e-services (Rust and Lemon 2001). The technological enhancements provide firms with capabilities to identify customers' needs and tailor their services to meet customers' requirements. Thus, customers expect to be truly known by firms, and firms can offer customized products and personalized services throughout the phases of CSLC.

Surprenant and Solomon (1987) propose two kinds of personalization in the service market, *option personalization* and *process personalization*. Option personalization allows the customer to choose from a set of service possibilities. Firms can create a number of service outcomes by providing a menu of alternatives from which the customer can choose the option best suited to his/her needs. Examples of option personalization include Burger King's license to "have it your way" and GM's "build your own Saturn". While option personalization emphasizes outcomes of services, process personalization focuses on service procedures. Process personalization can be divided into *programmed personalization* which is "accomplished by the embellishment of routinized actions with personal referents" (Surprenant and Solomon 1987, p.89) such as small talks, using customer's name, etc.

and *customized personalization* which helps customers with the best possible form of service offering. One of the typical examples of process personalization is Amazon.com's "Your Recommendations".

Even though the general concept of personalization includes customization, we distinguish personalization from customization to come up with simpler and clearer definitions in this paper. Customization allows website users to explicitly specify their own preferences. "My Yahoo" is a good example for customization. If users indicate the zip code for their town and their favorite stocks code for tracking, the website could display automatically local news, weather, and stock prices (Nunes and Kambil 2001). The concept of customization is closely related to that of option personalization. Personalization in this paper does not require users' explicit preferences. It employs data mining techniques to discover users' behavioral patterns automatically. This concept is similar to that of process personalization.

A recent survey shows that only 6% of respondents prefer to use personalized websites whereas 50% of users prefer to use the customized websites (Nunes and Kambil 2001). This result indicates that customization is more effective than personalization to Web users. This study will look for a theoretical support to explain this phenomenon.

### *Perceived Control*

Control is closely related to one's competence, superiority, and mastery over the environment. The concept of control has been identified in three different ways: behavioral control, cognitive control, and decisional control. Behavioral control refers to the ease or difficulty of carrying out the behavior. Cognitive control can be broken down into predictability and cognitive reinterpretation of a situation. Finally, decisional control refers to choice in the selection of outcomes or goals (Hui and Bateson 1991).

In the research area of flow, perceived control has been defined as the level of one's control over the environment and one's actions. Novak et al. (2000) has used dominance to measure perceived control in their research. The concept of perceived control is compatible with Bandura's self-efficacy and Ajzen's perceived behavioral control (PBC), which indicates that the individual's behavior is strongly influenced in his or her ability to perform that behavior (Koufaris 2001).

In the theory of planned behavior (TPB) context, PBC is correlated with actual behavior, and a higher PBC leads to stronger behavioral intention (Ajzen 1991). In addition, PBC is a function of control belief and perceived facilitation over the controls. Control beliefs refer to how an individual feels about the availability of skill, resource, or opportunity, and perceived facilitation refers to importance of skill, resource, or opportunity in determining stage (Ajzen 1991).

### *Perceived Service Quality*

Pitt et al. (1995) argue that the IS function now includes a significant service component, however commonly used measures of IS effectiveness (Delone and Mclean 1992) focus on the products, rather than the services of the IS function. Pitt et al. (1995) adopted the measures for service quality from the marketing area (Parasuraman et al. 1988) and modified the measures to evaluate IS service quality (SERVQUAL). Additionally, Kettinger and Lee (1994) recognize the need to improve existing MIS measures of user satisfaction with the information services function, and they adopt SERVQUAL to measure user satisfaction.

Generally, SERVQUAL includes five constructs: Tangibles (the appearance of physical facilities, equipment, and personnel), Reliability (the ability to perform the promised service dependably and accurately), Responsiveness (the willingness to help customers and provide prompt service), Assurance (the knowledge and courtesy of employees and their ability to inspire trust and confidence), and Empathy (Providing caring and individualized attention to customers) (Pitt et al. 1995).

Van Dyke et al. (1997) argue some of the problems of measuring service quality in the information systems context in both perspectives – conceptual and empirical. The main conceptual problem of SERVQUAL is whether a gap score (G), the difference between corresponding perception of delivered service (P) and expectation of service (E), really measures service quality. They insist that perception-only method of scoring is more appropriate for measuring service quality rather than gap (G = P – E) score. Pitt et al. (1997) respond to the research note by Van Dyke et al. (1997) concerning the use of SERVQUAL, an instrument to measure quality, and its use in the IS domain. They argue that the measurement of service quality (P – E) in SERVQUAL is far more rigorously grounded than Van Dyke et al. (1997) suggest. The expectation construct is generally a vector in the case of an IS department and the dimensions of service quality seem to be as applicable to the IS department as to any other organizational setting. Kettinger and Lee (1997) compare SERVQUAL and SERVPERF. Even though SERVQUAL is less reliable and valid

than SERVPERF in terms of psychometric concerns, SERVQUAL provides richer information for management than SERVPERF. Recently, Carr (2002) indicates that the IS-adapted SERVQUAL and SERVPERF seem to have psychometric shortcomings. However, the constructs in the IS-adapted SERVQUAL and SERVPERF can be a basis to measure the perceptual value of service quality in the e-services context.

### *Customer Intention to Return*

Customer return is one of the key goals for most electronic retailers. However, statistics show that B2C e-commerce stores get less than 10% of orders from repeat customers (Koufarious et al. 2001). Lower information search costs, due to the development of information technology (IT), have been expected to induce electronic markets to be more efficient (Bakos 1998). Customers have more power to gather information and choose a retailer that meets their needs easily in the Internet electronic marketplaces than in the traditional brick-and-mortar marketplaces. Therefore, it is hard for electronic retailers to gain loyalty from customers.

Generally, intention to use is considered as dependent variable in the context of TAM (Davis 1989). However, in order to emphasize the longer relationship between customers and companies, intention to return (website loyalty) is a more appropriate dependent measure in e-service sector (Koufarious et al. 2001, Koufarious 2002), as Featherman and Pavlou (2002) insist e-services create a longer-term relationship between the consumer and service provider.

## Research Model and Hypotheses

Figure 1 presents the proposed research model of this study. The model shows how personalization and customization affect intention to return (e-service website loyalty) via perceptual factors. Perceived control and perceived service quality are considered as significant factors to link personalization strategies (personalization and customization) and the loyalty for e-service websites (intention to return).

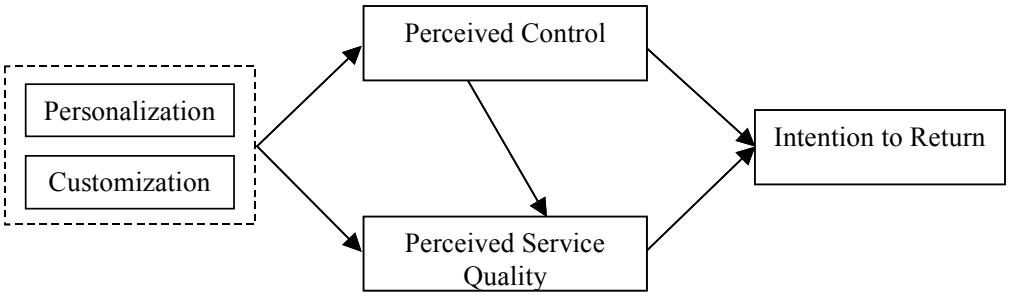


**Figure 1. Proposed Research Model**

### *Impacts of Personalization and Customization*

As we discussed earlier, personalization is one of key strategies for e-services. Most e-service providers attempt to implement personalization strategies (personalization and customization). However, the ineffective personalization strategies cause painful results such as poor customer retention, lower margins, and lost sales (Hagen et al. 1999).

According to Surprenant and Soloman (1987), perceived personalization may increase as the number of ways the service increases because the higher level of personalization gives the consumer greater control over the final form of the offering. In other words, if firms provide customers with various personalization mechanisms to meet customers' requirements, customers would perceive that they have more control over the service processes.

In this paper, we define two different kinds of personalization: personalization and customization. Personalization does not require users' inputs (preferences) to provide personalized services. The website automatically recognizes users' pattern based on the previous behavior and offers services. This kind of automatic personalization does not match users' needs frequently, so users do not prefer to use this type of personalization (Nunes and Kambil 2001). On the other hand, customization allows users to

specify their preferences and the website produces tailored services based on the specified preferences. In this case, users may feel more control because the website responds to what users indicate exactly. Thus, we hypothesize that:

*H1a: Personalization will negatively affect perceived control.*
*H1b: Customization will positively affect perceived control.*

Furthermore, providing general personalization functionalities (personalization and customization) are likely to be perceived as tangibles of good service, which is one element of SERVQUAL. Thus, we can expect that greater personalization will cause a higher level of perceived service quality. Based on these arguments, we hypothesize that:

*H2a: Personalization will positively affect perceived service quality.*
*H2b: Customization will positively affect perceived service quality.*

### *Impacts of Perceived Control*

In the IS adoption literature, TPB and TAM have been widely used to predict users' behavioral intention to use IS. Specifically, in the TPB, perceived behavioral control (PBC) is theorized as a factor to explain behavioral intention (Ajzen 1991). In addition, if customers have more control over the service processes, it would be likely for them to feel that the services are more reliable and secure. Therefore, we posit these arguments:

*H3: Perceived control will positively affect intention to return.*
*H4: Perceived control will positively affect perceived service quality.*

### *Impact of Perceived Service Quality*

According to Pitt et al. (1995), not only system quality and information quality but also service quality influences usage level of IS and user satisfaction. Since then, service quality is one of the significant factors to predict IS effectiveness. Thus, we expect that perceived service quality affects behavioral intention to return in the e-services context. We hypothesize that:

*H5: Perceived service quality will positively affect intention to return.*

## Implications

This study has several implications to researchers and practitioners. For researchers, first, we propose a difference between personalization and customization through a literature review. In addition, we provide theoretical support and an empirical evaluation to explain why Web users respond differently to customization and personalization strategies by looking at perceived control and perceived service quality.

For practitioners, we provide theoretical and empirical support for how they could implement personalization and customization strategies to retain their customers in the e-service context.

### *References*

Ajzen, I., "The Theory of Planned Behavior," *Organizational Behavior and Human Decision Processes* (50:2), 1991, pp. 179-211.
Alsop, S., "The dawn of E-service," *Fortune*, (9:138), 1999.
Ardissono, L., Goy, A., Petrone, G., and Segnan, M., "Personalization in Business-to-Customer Interaction," *Communications of the ACM* (45:5), 2002, pp. 52-53.
Bakos, Y., "Towards Friction-Free Markets: The Emerging Role of Electronic Marketplaces on the Internet," *Communications of the ACM* (41:8), 1998, pp. 35-42.
Carr, C. L., "A Psychometric Evaluation of the Expectations, Perceptions, and Difference-Scores Generated by the IS-Adapted SERVQUAL Instrument," *Decision Sciences* (33:2), 2002, pp. 281-296.

Cox, B., "Poor Customer Service Cost E-tailers $6 Billion in 1999," *Internetnews.com*, July 7, 2000, available at **http://www.internetnews.com/ec-news/article.php/4_410081**.
Davis, F., "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *MIS Quarterly* (13:3), 1989, pp. 319-340.
Delone, W.H., and McLean E.R., "Information System Success: The Quest for the Dependent Variable," *Information Systems Research* (3:1), 1992, pp. 60-95.
Featherman, M.S., and Pavlou, P.A., "Predicting E-Services Adoption: A Perceived Risk Facets Perspective," *Proceedings of the 8th AMCIS*, 2002, Dallas, TX.
Gefen, D., and Straub, D., "Managing User Trust in B2C e-Services," *e-Service Journal*, Forthcoming, 2002.
Hagen, P.R., Manning, H., and Souza, R., "Smart Personalization," *The Forrester Report*, 1999.
Hewlett-Packard, "e-services," 2002, available **http://www.hp.com/solutions1/e-services/**.
Hoffman, D. L. and Novak, T. P., "Marketing in Hypermedia Computer-Mediated Environments: Conceptual Foundations," *Journal of Marketing* (60), July 1996, pp. 50-68.
Hui, M.K., and Bateson, J.E.G., "Perceived Control and the Effects of Crowding and Consumer Choice on the Service Experience," *Journal of Consumer Research* (18:3), 1991, pp. 174-184.
Ives, B., and Learmonth, G.P., "The Information System as a Competitive Weapon," *Communications of the ACM* (27:12), 1984, pp. 1193-1201.
Ives, B., and Mason, R.O., "Can Information Technology Revitalize Your Customer Service," *Academy of Management Executive* (4:4), 1990, pp. 52-69.
Johnson, L. K, "New Views on Digital CRM," *Sloan Management Review* (44:1), 2002, p. 10.
Kettinger, W.J., and Lee, C.C., "Perceived Service Quality and User Satisfaction with the Information Services Function," *Decision Sciences* (25:5/6), 1994, pp. 223-240.
Kettinger, W.J., and Lee, C.C., "Pragmatic Perspectives on the Measurement of Information Systems Service Quality," *MIS Quarterly* (21:2), 1997, pp. 223-240.
Koufaris, M., Kambil, A., and LaBarbera, P.A., "Consumer Behavior in Web-Based Commerce: An Empirical Study," *International Journal of Electronic Commerce* (6:2), 2001/2002, pp. 115-138.
Koufaris, M., "Applying the Technology Acceptance Model and Flow Theory to Online Consumer Behavior," *Information Systems Research* (13:2), 2002, pp. 205-223.
Novak, T. P., Hoffman, D. L., and Yung, Y., "Measuring the Customer Experience in Online Environments: A Structural Modeling Approach," *Marketing Science* (19:1), 2000, pp. 22-42.
Nunes, P. F., and Kambil, A., "Personalization? No Thanks." *Harvard Business Review* (79:4), 2001, pp. 32-33.
Parasuraman, A., Zeithaml, V. A., and Berry, L. L., "SERVQUAL: A Multiple-item Scale for Measuring Consumer Perceptions of Service Quality," *Journal of Retailing* (64:1), 1988, pp.12-40.
Pitt, L.F., Watson, R.T., and Kavan, C.B., "Service Quality: A Measure of Information Systems Effectiveness," *MIS Quarterly* (19:2), 1995, pp. 173-187.
Pitt, L.F., Watson, R.T., and Kavan, C.B., "Measuring Information Systems Service Quality: Concerns for a Complete Canvas," *MIS Quarterly* (21:2), 1997, pp. 209-221.
Rust, R.T., and Lemon, K.N., "E-Service and the Customer," *International Journal of Electronic Commerce* (5:3), 2001, pp. 85-101.
Ruyter, K., Wetzels, M., and Kleijnen, M., "Customer Adoption of E-Service: An Experimental Study," *International Journal of Service Industry Management* (12:2), 2001, pp. 184-207.
Sahai, A. and Machiraju, V., "Enabling of the Ubiquitous e-Service Vision on the Internet," *e-Service Journal* (1:1), 2001, pp. 5-19.
Surprenant, C.F., and Solomon, M.R., "Predictability and Personalization in the Service Encounter," *Journal of marketing* (51:1), 1987, pp. 86-96.
Van Dyke, T.P., Kappelman, L.A., and Prybutok, V.R., "Measuring Information Service Quality: Concerns on the Use of the SERVQUAL Questionnaire," *MIS Quarterly* (21:2), 1997, pp. 195-208.
Zemke, R., and Connellan, T.K., *E-Service: 24 Ways to Keep Your Customers-When the Competition Is Just a Click Away*, AMACOM, 2000.