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# BRINGING THE CORNER-STORE SERVICE ONLINE: CHALLENGES AND PROMISES OF ONLINE PERSONALIZATION

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## Abstract

*One salient feature of the Internet that distinguishes it from previous technologies for mass communication is its bi-directional nature: just as a myriad of firm and product information is available for consumers, so is an abundance of consumer information accessible to firms. This feature allows for firms to use consumer information to define and create value, thereby more accurately personalizing the customer service experience provided to a user, based on information acquired through user interaction. Online personalization mechanisms harness the information-richness of the Internet in order to provide automated customer service. Personalization is emerging as a promising alternative to traditional means of customer conversion, such as branding, telephone customer service, and price discounts. In this and other ways, the role that information technology (IT) plays in business is evolving. IT is becoming the single interface for sales, service, and post-sales support. Thus, the concept of customer acquisition and retention, which has traditionally fallen within the area of marketing, is permeating the realm of information systems design. How companies manage customer service is not highly reflected in their use of IT. However, the correct means through which to transform consumers into a contributing part of the evolution of products and shopping experiences is still largely unknown.*

## Introduction

While some companies harness online personalization to the advantage of themselves and their consumers, others miscalculate it to such a degree that it leads to their demise. Perhaps the site with the best known, and most highly rated,<sup>1</sup> online customer service is Amazon.com. Successful online vendors, such as Amazon.com, are characterized by high volume, low-margin transactions. Real-time customer service provided by telephone may, therefore, be too costly to implement. Amazon.com provides minimal, almost nonexistent, offline customer support. Yet, their customer satisfaction rating is outstanding. In fact, in the eyes of Jeff Bezos, CEO of Amazon.com, they no longer need to advertise (Hansel, 2003). Amazon.com has used online personalization as a means of improving customer service and retention such that offline advertising, a traditional form of customer acquisition, has become unnecessary. Thus, a key to succeeding online is providing excellent customer service through *online* mechanisms, such as personalization.

Online personalization mechanisms allow firms to target customers based on information collected about that customer, as well as information collected about the other members of their customer base, through *recommendations*. Several examples of types of recommendations can be found in various online websites (Table 1).

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<sup>1</sup>ACSI, the American Customer Satisfaction Index, recently scored Amazon.com as a 88 in customer satisfaction, the highest of any company in the survey, online or offline.

**Table 1. Personalization and User Contributions**

<i>Site</i>	<i>Personalization Features/Recommendations</i>	<i>User Contributions</i>
<a href="http://www.Amazon.com">www.Amazon.com</a>	<ul style="list-style-type: none"> <li>• General Product Recommendations</li> <li>• Area of Interest Recommendations</li> <li>• Alternative Products to Purchase Recommendations</li> <li>• Lists of Subject-Related Products</li> <li>• Name Identification</li> <li>• Order status checking</li> <li>• Save shopping cart</li> </ul>	<ul style="list-style-type: none"> <li>• Ratings of products</li> <li>• Ratings of Products Owned</li> <li>• Lists of Products</li> <li>• Ratings of Reviews</li> <li>• Writing Reviews</li> <li>• Edit History</li> <li>• Select Areas of Interest</li> <li>• Select Specific Categories/Items within Area of Interest</li> <li>• Ratings of Recommendations</li> </ul>
<a href="http://www.barnesandnoble.com">www.barnesandnoble.com</a>	<ul style="list-style-type: none"> <li>• General product recommendations</li> <li>• Writer alert</li> <li>• Reading club</li> <li>• Area of interest recommendations</li> <li>• Alternative products to purchase recommendations</li> <li>• Lists of subject-related products</li> <li>• Name identification</li> <li>• Order status checking</li> <li>• Save shopping cart</li> </ul>	<ul style="list-style-type: none"> <li>• Rating of products</li> <li>• Lists of products</li> <li>• Ratings of reviews</li> <li>• Writing reviews</li> <li>• Edit history</li> <li>• Select areas of interest</li> <li>• Select specific items within area of interest</li> <li>• Ratings of recommendations</li> </ul>
<a href="http://www.travelocity.com">www.travelocity.com</a>	<ul style="list-style-type: none"> <li>• Personalized fare watcher</li> <li>• Recommended Vacation package by interest</li> <li>• Flight status Alert</li> <li>• Trip reminder messaging</li> <li>• Urgent Reach messaging service</li> <li>• Schedule change messaging service</li> </ul>	<ul style="list-style-type: none"> <li>• Writing reviews</li> <li>• Create and edit travel preference profile</li> <li>• Set up my messaging service</li> </ul>
<a href="http://www.expedia.com">www.expedia.com</a>	<ul style="list-style-type: none"> <li>• Personalized fare tracker</li> <li>• Flight status message</li> <li>• Destination Weather Notification</li> <li>• Driving directions to destination</li> </ul>	<ul style="list-style-type: none"> <li>• Personalize fare tracker settings</li> </ul>

My research has addressed emerging technologies, such as personalization, that offer a promising online alternative to traditional means of providing customer service, such as branding, in-person recommendations, “expert” advice, and price discounts. I have addressed the promises and challenges of online customer service in four chapters of my dissertation, three of which have been made into working papers that are currently under review. The following is a discussion of these papers:

***The Economic Value of Online Customer Service***

The breadth of online shopping has improved a consumer’s ability to compare prices; it has also brought otherwise distant firms into local competition. Under these conditions, we might expect prices to decline and converge near marginal cost; the anticipated result is both decreased price dispersion and diminished profits. Empirically, however, this prediction does not necessarily hold. My research has shown that through online personalization, the shopping *experience* becomes the product being consumed; the disparity across *experiences* leads to price dispersion. I have analytically modeled how personalization can alter a product space and was invited to present the work at the *Association for Computer Machinery (ACM) Conference on Electronic Commerce* and the *Workshop on Information Systems Economics (WISE)*. Through comprehensive use of an analytic framework, sources of market power, such as consumer profiling and personalized product offerings, are explored. Within this framework, the rationale for a firm’s investment in IT is examined. I find that investment in online personalization increases as transportation cost increases, but firm profits decrease due to the increase in dis-utility to the consumer of partaking in an online experience unlike their ideal experience. This result is contrary to the classic Hotelling model, in which increased transportation costs leads to less

product differentiation, as firms are able to create local monopolies based on proximity alone. In addition, I find that there exists a point such that the return on investing against a competitor's IT personalization are greater than the return on investing in one's own IT personalization; an example of this strategy was seen by Seekbooks.com. When Seekbooks.com entered the market, they initially chose to invest in similar interactivity features to Amazon.com, such as reviews and ratings of products. However, towards the end of SeekBooks.com's tenure, they chose to invest against Amazon.com with negative targeted advertising, rather than attempting to invest in improving their own online shopping experience. While this example is one of targeted advertising rather than personalization, it reveals the future potential for firms to actually invest negatively in others personalization, as is often seen with advertising and political campaigns. The paper was accepted at the *Workshop on Information Systems Economics (WISE)*, and is currently under review at *Information Systems Research*.

### ***An Empirical Assessment of Online Price Dispersion and the Role of Information, Interaction, and Personalization***

Firms implement technologies on their websites to encourage consumer interaction. Such interactive features attempt to provide consumers with personalized service. I have empirically examined the impact of a firm's online features in creating consumer value. At the time of the study, no accepted standard metrics for assessing technology-driven service factors for e-businesses existed. In response, I have created such a set of metrics, grounded in information economics based search cost theory and psychology-based consumer choice theory. I've used these constructs to collect information for e-businesses across various product-categories. The resultant paper is a field-study across 79 e-tailers for 17 products including books, compact discs (CDs), and personal digital assistants (PDAs). Our results indicate that while raw information is negatively associated with an e-tailer's price premium, increased personalization is positively associated with price premiums for books and PDAs, but not CDs. Thus, through strategic utilization of user-interaction, product and transaction information, and personalization, companies may be able to improve the consumer service experience and increase firm price premiums. The paper was accepted at the *Workshop on Information Systems Economics (WISE)*. In addition, I was interviewed by *InformationWeek* and *National Public Radio (NPR)* on my findings. This portion of my research is also currently under review at *Information Systems Research*.

Harnessing user-related information to customize a consumer's service experience is valuable; however, it also unearths a myriad of privacy issues. Thus, for firms to successfully create a positive online shopping experience, they must also understand how to encourage consumers to share information. This notion led me to pursue my third working-paper in this series:

### ***Information Knowledge and the Willingness to be Profiled Online for Personalization***

As information increasingly becomes a critical success factor for firms, privacy is of strategic importance. In order to encourage consumers to participate in information-sharing activities, we must understand what technology-enabled factors affect a consumer's willingness to share personal data. Theory suggests that central elements of privacy are knowledge and control; I argue, therefore, that, based on the Expectancy theory of motivation, firms can use knowledge to increase a consumer's perceived control of the online experience, and therefore encourage consumers to partake in personalization. In my research, a survey-driven empirical study analyzed across over 500 consumers, I have found that firm-implemented information features are associated with an increased consumer-willingness to partake in online personalized service and advertising. However, I have also found that the success of these features depends upon the consumer-perceived value of such personalization.

Consumers perceive personalized *service* to be of greater benefit to them than personalized *advertising*. Hence, for personalized service, information features are effective in increasing consumer-willingness to share information. The benefits of personalized *advertising*, however, are less apparent; instead, the risk of an intrusion, such as email spam, looms large. As a result, other factors, such as previous privacy invasions, affect the success of IT knowledge features in the case of online advertising. The results of this research will provide companies with insight on mitigating a consumer's perceived risk through various IT features. This paper is currently under review at *Management Information Systems Quarterly*.

### ***Converting Visitors to Buyers via Online Service: An Analytical and Empirical Examination***

The proliferation of online personalization features is already changing firm behavior in subtle but important ways. Empirical evidence suggests that firms with greater levels of personalization are also able to charge higher prices for commodity goods (Farag and Krishnan, 2002). Price dispersion, or the spread of prices, is an important phenomenon to study as it can significantly affect consumer and producer behavior; indeed, it may imply potential gains to firms through decreased consumer search. However, price dispersion does not directly capture consumer acceptance of online customer service features, as there are various elements involved in price dispersion, including: Incomplete information (Stigler, 1961), staggered price setting, (Fishman, 1992), demand uncertainty Dana (2001), and unmeasured heterogeneity in seller attributes (Brynjolfsson and Smith 2000, Sorenson 2000). Therefore, in this last chapter of my dissertation, I turn to customer retention, measured through conversion rate, in order to more accurately grasp the impact of online customer service. Conversion rate assess the propensity of a consumer to buy from a firm that he or she has visited. If a consumer reaps positive value from an online shopping experience their propensity to buy from that firm should be higher. Conversion Rate is calculated as the number of unique consumers that purchase from a given firm divided by the total number of unique consumers that visit that online retailer. Based on data gathered for 140 e-tailers across 10 industries, initial results suggest that personalization plays a more significant role in consumer conversion than privacy features across commodity good retailers, such as book retailers, but not across over-the-counter drug retailers, such as online drugstores. Initial results of the corresponding analytical model confirm that careful implementation of online service factors may potentially allow firms to turn their online retail ventures into entities of significant market power. Thus, despite the perceived extinction of the dot-com boom, profitability may exist around the corner. However, firms must be careful not push the online service features at the cost of consumer privacy, as customer loyalty may suffer.

### **Conclusion**

Personalized service is increasingly becoming a source of value for consumers and firms online. As a result, online information is used to enhance customer service in a variety of ways. When detailed consumer-information is collected, firms are able to engage in relationship marketing and offer a service experience more accurately based on a customer's specific interests. However, managerial investments in personalization must be done correctly to avoid the cost of compromised consumer privacy. In order to provide consumer-driven customized service, firms must compel consumers to provide them information without raising a user's privacy concerns. My research contributes to the literature on the economics of information systems, by examining, analytically and empirically, the value and tradeoffs introduced by online personalization, to both the firm and the consumer. For managers, my research covers important aspects of online customer service, including features that increase consumer information-sharing and improve customer experience. As economic success becomes increasingly dependent on the proper use of information, my research will help firms define their IT service strategy and tailor online service offerings to maximize information collection, consumer loyalty, and ultimately, firm profits.

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