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## The Effect of Customer Service and Content Management on Online Retail Sales Performance: The Mediating Role of Customer Satisfaction

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## THCI

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## Abstract

This paper analyzes the mediating role of customer satisfaction by studying the relationship between IT-enabled customer service and content management efforts and online sales performance. Using data on the top performing Web retailers in the U.S. based on their online annual sales, we show that the extent of retailers' efforts in online customer service and content management is positively linked to customer satisfaction, which in turn is positively related to the retailers' online sales performance. In addition to directly increasing the revenue, our results indicate that customer service and content management features can also indirectly improve the retailers' financial performance. Specifically, customer service management impacts the sales performance via the average ticket amount, while content management affects the sales via the repeat visit.

**Keywords**: Online retailing, electronic commerce, web site design

# INTRODUCTION

Since the collapse of many IT start-up companies in the late 1990s, online retailers have realized that consumers are not merely bargain hunters who perpetually seek out the website that offers the lowest price possible (Anderson and Srinivasan, 2003). Retaining online customers and providing online services to convert a website visitor into a paying customer have become critical to the financial well-being of online retailers (Coltman et al., 2007; Venkatesh and Agarwal, 2006). The premise of this contemporary approach to online retailing is to build a long-term relationship with customers, which presumably leads to an increased possibility of actual sales and repeat visits (Coltman et al., 2007). However, unlike in-store shopping where customers can directly experience the products and interact with customer service personnel, online retailers depend almost exclusively on their website interfaces in order to present product information as well as to manage customer relationships. As a result, modern retail websites are often built around IT-enabled services such as information content (Ranganathan and Ganapathy, 2002), search mechanisms (Koufaris et al., 2001), service quality of online stores (Chu et al., 2007), and website interactivity (Collier and Bienstock, 2006).

According to past studies (e.g., Jiang and Benbasat, 2004; Kumar and Benbasat, 2002; Jarvenpaa and Todd, 1996), para-social presence (i.e., the 'distance' between customers and retailers) and product presentation are among the most critical obstacles that online retailers need to overcome in order to build a long-term relationship with their customers. In order to deal with these two issues, some online retailers have invested in implementing content management (CM) systems on their websites to enhance product presentation. Additionally, because online customers usually do not interact in person with store employees, many retailers have added website features that allow customers to communicate and interact with them virtually, hence reducing the para-social 'distance' from their customers. In particular, many Web retailers implement a customer service management (CSM) system with service features such as live chats, online forums, and social networking to enhance the shopping experience of customers and strengthen long-term relationships with them (see, for example, Kivetz and Simonson, 2003; Kumar and Shah, 2004; Piccoli et al., 2004). These CM and CSM systems are intended to help motivate the consumers to make purchases and return to the retail sites in the future. This contemporary approach is primarily based on the premise that improvements in content and customer service management will increase customer satisfaction and loyalty, ultimately leading to an increase in sales and the improvement of other financial outcomes (Babakus et al., 2004; Doong et al., 2008; Wang and Head, 2007).

Because of the reasons mentioned above, retailers create their online stores as a place to sell products as well as to provide service and enhance long-term customer relationships (Ba and Johansson, 2008; Wang and Head, 2007). This strategic shift to focusing on long-term relationships with customers has been shown to positively affect revenue, cash flow, and profitability (Kamakura et al., 2002; Morgan and Rego, 2006). Although retailers recognize that customer satisfaction plays a key role in a successful business strategy, whether or not their efforts to increase satisfaction actually lead to higher sales are not very clear (G'omeza et al., 2004). In practice, many online retailers invest heavily in the implementation of IT-enabled tools to enhance their online service and website interactivity in hopes that these features will lead to increased customer satisfaction, which will eventually result in increased profits (Bansal et al., 2004).

In the current study, we focus on website features implemented by online retailers in order to overcome the problems of para-social presence and product presentation. We aim to provide empirical evidence that describes the direct and indirect effects of the content management (CM) and customer service management (CSM) features on online retail sales performance. We examine the mediating effects of customer satisfaction by analyzing the impact that customer service and content management features have on consumer decision to purchase and repeat their visit to retail websites. Specifically, we examine these proposed linkages in an Internet retailing setting using data from the top online retailers in the U.S., ranked based on their 2006 annual online sales provided by Vertical Web Media (Internet Retailer, 2007). Based on existing literature on online retailing as well as industry guides to retail website design and usability, we identify and categorize several online service features into the two essential IT-enabled retail services (i.e., content management [CM] and customer service management [CSM]). We then analyze the mediating role of customer satisfaction in studying the relationship between these two broad retail service categories and online sales performance.

The rest of the paper is organized as follows. The next section describes our conceptual framework and the research hypotheses. Section 3 summarizes the data set and the variables used in this paper. Section 4 presents our model and the analysis of results. Section 5 provides discussions on our conceptual contribution, managerial implications, and limitations and suggestions for further research. Finally, the last section provides concluding remarks.

# CONCEPTUAL FRAMEWORK AND RESEARCH HYPOTHESES

As mentioned above, CM and CSM systems can be implemented to help overcome the two crucial obstacles faced by online retailers: para-social presence and product presentation. One of the primary purposes of implementing these systems is to convert website visitors into loyal customers, and hence to establish a long term relationship with these customers. Ultimately, the goal of these IT-enabled systems is to increase customer satisfaction and the likelihood that customers will return to the website for future business (Arora et al., 2008; Burke, 2002). However, according to Liang and Lai (2002), there is little empirical research that substantiates how these online features impact consumer decisions and whether or not these features lead to actual purchases. This current study contributes to the existing body of knowledge by providing empirical evidence demonstrating the effects of content management (CM) and customer service management (CSM) features on online retail sales performance. In this section, we provide an overview of related literature and describe our conceptual framework and research hypotheses.

## Content Management and Customer Service Management Systems

To overcome the issues of para-social presence and product presentation, online retailers have implemented various features on their websites. These features are often categorized into Content Management (CM) and Customer Service Management (CSM) systems. Literature in the Human Computer Interaction (HCI) and Information Systems (IS) disciplines has examined various aspects of CM and CSM systems (e.g., Treiblmaier and Pinterits, 2010; Wang et al., 2010; Cappel and Huang, 2007). In addition, many features of retail websites that have been the focus of past research (e.g., Cenfetelli, et al., 2008; Chu et al., 2007; Koufaris et al., 2001; Rice, 1997; Swaminathan et al., 1999) can also be classified into these two online service categories.

Content management (CM) is a combination of technology and business processes that allow businesses to effectively manage and deliver large amounts of diverse information to different media (Forsyth, 2004). For example, because online customers cannot directly 'touch and feel' the products that they see on an online retail website, many online retailers invest significantly in building a content management system to improve product presentation and to better communicate product information to consumers. Features of a CM system usually range from basic tools such as online catalogs to more sophisticated features such as rich multimedia visualizations and navigational tools designed to present detailed information about retail products. These online features also include interactive catalogs, customization, and personalization options on the retail websites.

Past research has also described how content management features on websites can enhance user interactivity and searches (see, for example, Fu and Pirolli, 2007, and Newman, et al., 2003). Typically, content management systems also include website features that enhance both usability, as defined by Nielsen (1994), and usefulness, as defined by Swaminathan et al. (1999). These features determine the structure of a site, the appearance of the published Web pages, and the website navigation provided to the users. In general, content management involves a holistic approach to building a website in order to match what businesses possess to what their business partners and customers want by providing the creation, management, distribution, and publishing of information on their sites (Boiko, 2001 and Newman et al., 2003). The overall goal of deploying a CM system is to improve the customer's satisfaction by providing an enhanced online shopping experience (Jun et al., 2004).

In addition, many Web retailers implement online features such as live chats, online forums, and social networking as part of a customer service management (CSM) system to enhance the shopping experience of customers and to strengthen their long-term customer relationships (Kivetz and Simonson, 2003; Kumar and Shah, 2004; Piccoli et al., 2004). According to existing literature (e.g., Collier and Bienstock, 2006), customer service is often identified as one of the key criteria for measuring the quality of websites. Academic research on website quality has also identified content and customer service as important dimensions in defining a service quality scale for online retailers (Wolfinbarger and Gilly, 2003). Similar results were confirmed by Kim and Ahn (2007) in their empirical study of electronic marketplaces.

## Customer Satisfaction and Retailer's Financial Performance

When shopping online, customers are not necessarily interested in the website technologies for their own sake, but technologies can play an important role in enhancing the shopping experience (Burke, 2002). With increasing competition in the online retail market, e-commerce companies have shifted their focus beyond "the technological factors of conducting business" to a more comprehensive approach to better understand the customer's online experience and behavior (Anderson and Srinivasan, 2003). As a result, one of the goals of implementing IT-enabled features is to create value for customers that will lead to what Anderson and Srinivasan (2003) called "e-satisfaction," which is defined as the "contentment of the customer with respect to his or her prior purchasing experience with a given electronic commerce firm" (p. 125).Based on this definition, we focus on consumer satisfaction with online

retailers that is transaction-specific as defined by Shankar et al. (2003), and is derived from attributes of online services such as product information, visualization, and search tools.

Many researchers in both IS and HCI have studied the impact of IT-enabled content and customer service management features on retailers' performance. For example, good online service quality is thought to improve customer satisfaction, which in turn leads to improved store traffic and revenue performance (Babakus et al., 2004; Wang and Head, 2007). Reichheld and Schefter (2000) provided empirical evidence that retail customers who are satisfied with their online experience tend to frequent the same preferred website, instead of constantly searching different sites for the lowest price. This result is in alignment with evidence presented by Brynjolfsson and Smith (2000), showing that many consumers frequent a website that they have had a positive shopping experience and are willing to pay a premium price on products on the preferred website. The positive relationship between customer satisfaction and repeat sales has been extensively studied by scholars, especially those in the Marketing discipline. An oft-cited work by Oliver (1980) established a theoretical framework and showed that the direct relationship between customer satisfaction and repeat purchases is generally positive. Since then, many researchers have observed and confirmed this strong relationship between the two constructs (see, for example, Fornell, et al., 1996; Anderson and Sullivan, 1993; Boulding et al., 1993; Fornell, 1992; and LaBarbera and Mazursky, 1983). Other, more recent studies have also empirically verified this direct, positive relationship (e.g., Shankar et al., 2003; Mittal and Kamakura, 2001; Szymanski and Henard, 2001; and Zeithaml, 2000).

Past research (e.g., Kumar and Shah, 2004; Srinivasan et al., 2002; Szymanski and Hise, 2000) has investigated customer satisfaction as a means to increase profitability for retail businesses. In studying customer satisfaction in online retailing, researchers and practitioners frequently use the number of "visits per visitor" as a measure to estimate the website's ability to attract and retain customers (Moe and Fader, 2004). According to Anderson and Srinivasan (2003), dissatisfied customers are less likely to repeat their visit to the website with which they had an unpleasant experience and more likely to search for alternative retailers. However, repeat visits are not the only indicator of customer satisfaction; customers who make infrequent visits to a retail website may make large purchases during their visits, implying their satisfaction with their shopping experience (Joia and Sanz, 2005). In this study, we measure customer satisfaction using the number of visits (i.e., repeat visit) to the same retail website by a consumer as well as the average purchase amount they make (i.e., average ticket) as proxy variables. Our underlying assumption is that the customer's willingness to revisit a retail website and generate a higher ticket value indicates a positive shopping experience and satisfaction.

Rice (1997) and Jun et al. (2004) argued that the most important factors that convince customers to return to a retail website are valuable and readily accessible contents and well-organized layout, both of which are an integral building block of a content management system. Furthermore, a retailer's customer service has been shown to lead to customer satisfaction, and increase purchase intentions, word-of-mouth recommendations, and share-of-wallet (Sirdeshmukh et al., 2002). A study by Griffith and Krampf (1998) indicated that improvement in online customer service management systems is crucial to the financial success of online retailers. In particular, they pointed out that the responsiveness of online customer services was among the most important aspects of services valued by consumers.

Based on the foregoing review, in this study we provide a research contribution by examining the direct relationships between customer service and content management features and online sales performance, as well as their indirect impact on sales via customer satisfaction in the Internet retailing setting. The conceptual framework linking the variables used in this study is presented in Figure 1. As shown, we first examine the direct effects of customer service and content management features on the satisfaction (mediating) variables as well as on sales performance. Second, we examine the mediating role of customer satisfaction in the relationship between customer service and content management and online sales performance. Based on this direct and mediating effects model, we test the following hypotheses:

- H1: The extent of content management features is positively related to customer satisfaction - (a) average ticket and (b) repeat visit.

- H2: The extent of customer service features is positively related to customer satisfaction - (a) average ticket and (b) repeat visit.

- H3: The extent of content management features is positively related to online sales performance.

- H4: The extent of customer service features is positively related to online sales performance.

- H5: Customer satisfaction (average ticket) will mediate the effects of customer service and content management features on online sales performance.

- H6: Customer satisfaction (repeat visit) will mediate the effects of customer service and content management features on online sales performance.
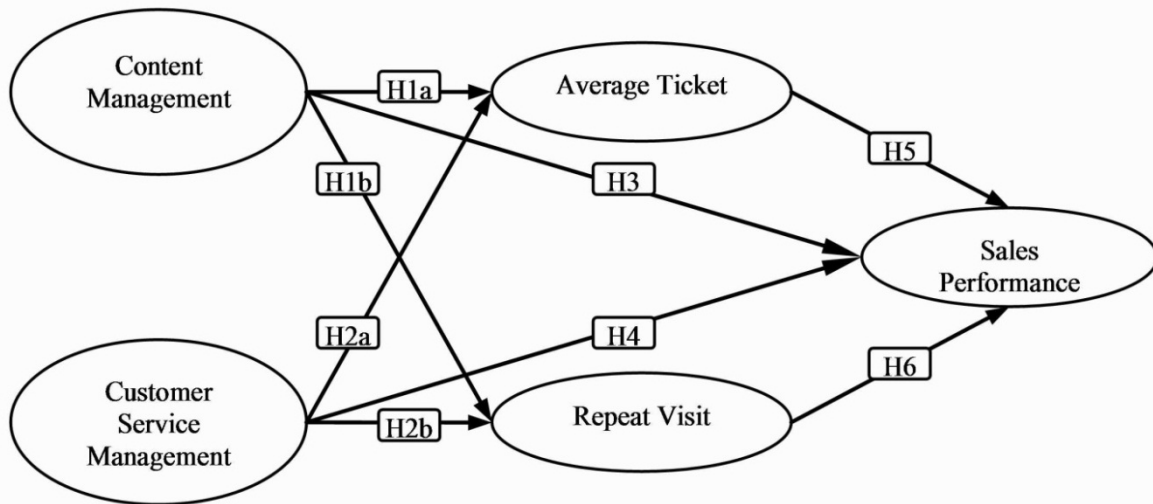
**Figure 1: Hypothesized Direct and Mediating Effects Model**

# DATA

In order to conduct our analyses, we obtained data from Vertical Web Media (Internet Retailer, 2007), a company that collects sales and Web activity information from the 500 largest online retailers in the U.S. The data include the retailers' background information, sales performance, and other Web activity variables (e.g., number of monthly visits, number of monthly visitors, and average tickets). These retail websites together accounted for $83.6 billion of the nation's $136.2 billion online sales (or about 61.38%) for the year 2006. We retained data for 331 Web retailers after excluding missing data cases. The average size of these remaining retailers was approximately $204 million in sales. Merchandizing categories include: specialty/non-apparel (representing 15.41% of the retailers in our data set), computer/electronics (12.99%), apparel and accessories (12.69%), housewares/home furnishings (12.39%), hardware/home improvement (7.55%), mass merchants (6.65%), books/CDs/DVDs (5.44%), health/beauty (5.44%), sporting goods (5.14%), food/drug (3.92%), flowers/gifts (3.32%), toys/hobbies (3.02%), office supplies (3.02%), and jewelry (3.02%). For example, the top 10 online retailers in our data set are Amazon.com, Staples, Office Depot, Dell, HP, OfficeMax, Sears, CDW, SonyStyle, and NewEgg, respectively. Table 1 summarizes the variables used and their descriptions in this study.

**Table 1: Variables and Descriptions**

| Variable | Description |
|---|---|
| 2006 Sales | Online Annual Sales for the year 2006 |
| Year Launched | The year that online retail websites were launched |
| SKUs | The number of stock keeping units |
| Web Only | Whether or not the retailer is a Web-only business (no other channel) |
| Monthly Average Ticket | The average dollar amount of an online merchant's typical sale, calculated by dividing the total sales volume by the total number of sales |
| Visits Per Visitor (Repeat Visit) | The total number of visits to a website divided by the total number of unique visitors (Moe and Fader 2004) |
| Website features | 16 different retail website features that are related to customer service and content management. |

A total of 16 website features that are provided on the top Web retailers' sites were identified from the data set. The actual number of features varied among the Web retailers. These features were defined as indicator variables by showing the presence or absence of each feature/functionality on each retailer's site. To categorize website features into content management (CM) and customer service management (CSM) categories, we referred to existing literature (e.g., Ranganathan and Ganapathy, 2002; Collier and Bienstock, 2006) as well as practitioner-oriented guides to retail website design and usability (e.g., Internet Retailer, 2008). Moreover, we investigated how major vendors of content and customer management software for online retailers (e.g., Omniture/Mercado, Endeca, MICROS-Retail, EasyAsk, and Autonomy) defined and included specific features of their products. As a result, nine

online features in our data set were found to be related to the CM component (i.e., Advance Search, Daily/Seasonal Specials, Enlarged Product View, Keyword Search, Product Comparisons, Rich Media, Top Sellers, Video casts, and What's New). Seven other features were categorized as CSM components (i.e., Alternative Payment, Coupons/Rebates, Customer Reviews, Live Chat, Personalized Online Circular, Online Gift Certificate, and Social Networking). These 16 online features and their descriptions are listed in Table 2.

**Table 2: Features and Descriptions (Internet Retailer, 2008)**

| Feature | Description |
|---|---|
| **Content Management System Features** | |
| Advanced Search | Helps a shopper narrow query to specific criteria such as price or brand. |
| Daily/Seasonal Specials | Refers to daily deals or other time-sensitive promotions. |
| Enlarged Product View | A feature enhanced by rich media that allows shoppers to click and see merchandise in greater detail. |
| Keyword Search | A set of words typed into a search engine query or a set of words and phrases that accurately describes the contents of a single web page or website. |
| Product Comparisons | A combination of text and images that enables shoppers to see merchandise and product details compared side by side on the same web page. |
| Rich Media | A broad range of advanced interactive technologies commonly used on web pages for streaming video, product rotation and zoom, and viewing color swatches. |
| Top Sellers | A list of the most frequently purchased items posted on a website home page and inside on product pages. |
| Videocasts | Videos featuring merchandise and other content archived on category and product pages. |
| What's New | A list of new merchandise posted on the home page and inside on product pages. |
| **Customer Service Management System Features** | |
| Alternative Payments | Different ways to pay for an online purchase other than using a credit card. |
| Coupons/Rebates | Digital coupons and rebate forms that customers can apply toward a purchase online or download and redeem in stores. |
| Customer Reviews | Comments, suggestions and complaints posted by visitors on category or product pages. |
| Live Chat | A customer service application that allows a retailer to communicate in real time, or "chat" with visitors to their e-commerce site. |
| Personalized Online Circular | A digital version of a retailer's current newspaper or magazine ad inserts. |
| Online Gift Certificates | A certificate that entitles the recipient to select merchandise of an indicated cash value; can be redeemed online or downloaded and used in the store. |
| Social Networking | Enables users to create personalized web pages or profiles then voluntarily link with other users on sites dedicated solely to social networking such as MySpace.com and Facebook.com. |

In order to further validate this categorization of the 16 website features into CM and CSM systems, we followed the two-step procedure recommended by Anderson and Gerbing (1988). First, we used exploratory factor analysis (EFA) to assess the features individually for each component. Given the dichotomous nature of these variables, we conducted EFA using tetrachoric (rather than Pearson) correlations as inputs as suggested by Knol and Berger (1991). As shown in Table 3, except for the Live Chat and Videocasts features, the rest of the features showed proper and significant factor loadings with their respective components (i.e., higher than 0.40), with no cross-loadings. To further verify that the remaining fourteen features did not provide the two-factor model fit randomly, we also ran a confirmatory factor analysis (CFA) and found that all 14 features yielded factor loadings higher than 0.40, normalized residuals of less than 2.58, and modification indices of less than 3.84 (Anderson and Gerbing, 1988). Consequently, no additional features needed to be removed in order to improve the two-factor model fit.

After we had confirmed the categorization of the 14 remaining features, we then measured CM and CSM components of each online retailer based on the composition of the website features/functionalities. To obtain the score for each component, we divided the number of features offered by a Web retailer in a category by the total number of features in the corresponding category. For example, Nordstrom Inc. (who offers seven of eight CM features and four of six CSM features) scored 0.88 out of maximum 1.0 on the content management dimension and 0.67 out of 1.0 on the customer service management dimension. Barnes & Noble Inc., on the other hand, receives a full score of 1.0 for

content management (offering all eight CM related features) and a higher CSM score of 0.83 (providing five of six CSM related features).

In addition to using repeat visits and average ticket value as proxy variables for customer satisfaction in our hypothesized model, we also made use of the following three control variables: the size of the online retailer, the retailer's age, and the type of retail business. First, we controlled for the product variety offered by a retailer using the number of stock keeping units (SKUs; log transformed variable). Second, we controlled for the retailer's age using the year it was launched (i.e., YearLaunched). Because a retailer's reputation and the trust developed over time between consumers and retailers can play an important role in purchasing decisions (Brynjolfsson and Smith, 2000), we used the year launched to control for possible confounding effects. Third, we controlled for the type of retailer based on information about whether a particular retailer was Web only or not (i.e., WebOnly).

In Table 4, we provide the measures employed in this study along with their descriptive statistics and inter-correlations. Log transformations were performed on 2006 Annual Sales, SKUs, and Average Ticket variables. The actual maximum, minimum, and average are: $10.7 billion, $5.5 million, and $167.4 million, respectively, for 2006 annual sales; 1 billion units, 20 units, and 3.8 million units, respectively, for the number of SKUs; and $5,225, $9.25, and $197.82, respectively, for the average ticket amount.

**Table 3: Factor Loadings of Sixteen Website Features onto Content Management (CM)
and Customer Service Management (CSM) Systems**

| Feature | CM | CSM |
|---|---|---|
| Advanced Search | .593 | .241 |
| Daily/Seasonal Specials | .732 | .249 |
| Enlarged Product View | .751 | .082 |
| Keyword Search | .760 | .319 |
| Product Comparisons | .806 | .098 |
| Rich Media | .738 | .355 |
| Top Sellers | .687 | .279 |
| Videocasts* | .587 | .405 |
| What's New | .711 | .164 |
| Alternative Payments | .301 | .773 |
| Coupons/Rebates | .244 | .787 |
| Customer Reviews | .276 | .820 |
| Live Chat* | .136 | .394 |
| Personalized Online Circular | .244 | .782 |
| Online Gift Certificates | .136 | .614 |
| Social Networking | .201 | .749 |

*Excluded due to low or cross loading

**Table 4: Descriptive Statistics and Inter-correlations (n = 312)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 1. Ln 2006 Sales | 1.00 | | | | | | | |
| 2. Year Launched | -0.24** | 1.00 | | | | | | |
| 3. Ln SKUs | 0.23** | -0.03 | 1.00 | | | | | |
| 4. Web Only | -0.29** | 0.23** | 0.07 | 1.00 | | | | |
| 5. Content Management | 0.44** | -0.20** | 0.23** | -0.28** | 1.00 | | | |
| 6.Customer Service Management | 0.40** | -0.14* | 0.09 | -0.18** | 0.65** | 1.00 | | |
| 7. Ln Average Ticket | 0.10 | 0.07 | -0.07 | 0.02 | 0.03 | 0.14* | 1.00 | |
| 8. Repeat Visit | 0.35** | -0.10 | 0.22** | -0.06 | 0.22** | 0.16* | -0.09 | 1.00 |
| Mean | 17.50 | 1998.67 | 9.88 | 0.53 | 0.51 | 0.44 | 4.96 | 1.63 |
| Standard deviation | 1.47 | 2.27 | 2.44 | 0.50 | 0.25 | 0.26 | 0.86 | 0.53 |
| Minimum | 15.52 | 1991 | 3.22 | 0.00 | 0.00 | 0.00 | 2.22 | 1.00 |
| Maximum | 23.09 | 2006 | 20.72 | 1.00 | 1.00 | 1.00 | 8.56 | 3.78 |

**p < .01; *p < .05

# ANALYSIS AND RESULTS

Since our structural models required the estimation of a large number of parameters, we employed the technique of path analysis to test the hypothesized relationships (Maruyama, 1998). Specifically, we estimated the goodness-of-fit statistics, model parsimony measures, and path coefficients of the three relationship structures. First, we explored the direct relationships between content and customer service management and three dependent variables: average ticket, repeat visit, and sales. Second, we investigated the mediating effects of customer satisfaction through average ticket and repeat visits. Third, as depicted in Figure 1, we examined our hypothesized model including both the direct and mediated effects of content and customer service management on sales performance. It is worth noting that during the three-step testing mentioned above, the correlation matrix and the modification indices suggested that better model fit was achieved with the inclusion of the inter-correlation between CM and CSM components. To properly specify our model and to better explain the relationships within the model, we subsequently incorporated the inter-correlation between CM and CSM into the hypothesized model.

In order to assess the goodness of fit between the structural model and the data, we utilized multiple indices of the overall fit: chi-square, goodness-of-fit index (GFI), comparative fit index (CFI), Tucker-Lewis index (TLI), and root mean square error of approximation (RMSEA). The following four parsimony measures were employed: parsimonious normed fit index (PNFI), Akaike information criterion (AIC), expected cross-validation index (ECVI), and consistent Akaike information criterion (CAIC). As noted by Jöreskog and Sörbom (2001), a greater PNFI value indicates a better fit and a more parsimonious model. On the contrary, for the measures of AIC, CAIC, ECVI, lower values indicate a better fit and a more parsimonious model. All goodness-of-fit indices for our hypothesized direct and mediated effects model (Figure 1) surpassed satisfactory threshold levels: $\chi 2(10) = 21.42$, $p < 0.01$; GFI = 0.98, CFI = 0.97, TLI = 0.88, RMSEA = 0.06, AIC = 81.42, ECVI = 0.26, CAIC = 223.71, PNFI = 0.25. In terms of parsimony, the hypothesized model also indicates relatively lower AIC and CAIC values and a higher PNFI value than the other two alternative models. In addition, the variances explained (R-Squared values) for sales performance, repeat visit, and average ticket are 0.36, 0.17, and 0.21 respectively.

**Table 5: Results of the Path Analysis for the Hypothesized Model**

| Paths From | To | Hypothesis | Path Coefficient | t-value | |
|---|---|---|---|---|---|
| **Direct Paths** | | | | | |
| Content Management | Average Ticket | H1a (Not Supported) | -0.061 | -0.824 | |
| Content Management | Repeat Visit | H1b (Supported) | 0.133 | 1.830 | ** |
| Customer Service Management | Average Ticket | H2a (Supported) | 0.200 | 2.798 | *** |
| Customer Service Management | Repeat Visit | H2b (Not Supported) | 0.043 | 0.610 | |
| Content Management | Sales Performance | H3 (Supported) | 0.177 | 2.817 | *** |
| Customer Service Management | Sales Performance | H4 (Supported) | 0.168 | 2.759 | *** |
| **Mediating Paths** | | | | | |
| Average Ticket | Sales Performance | H5 (Supported) | 0.122 | 2.568 | *** |
| Repeat Visit | Sales Performance | H6 (Supported) | 0.240 | 4.957 | *** |
| **Control Paths** | | | | | |
| Year Launched | Average Ticket | | 0.083 | 1.445 | |
| Web Only | Average Ticket | | 0.022 | 0.374 | |
| SKUs | Average Ticket | | -0.073 | -1.288 | |
| Year Launched | Repeat Visit | | -0.054 | -0.966 | |
| Web Only | Repeat Visit | | -0.019 | -0.325 | |
| SKUs | Repeat Visit | | 0.190 | 3.407 | *** |
| Year Launched | Sales Performance | | -0.127 | -2.635 | *** |
| Web Only | Sales Performance | | -0.179 | -3.639 | *** |
| SKUs | Sales Performance | | 0.148 | 3.037 | *** |

Note: ***$p \leq 0.01$; **$p \leq 0.05$; *$p \leq 0.10$ (One-tailed test for hypothesized relationship and two-tailed for controls).

Table 5 reports the results, including standardized estimates and t-values, for the structural relationships among all the variables in the hypothesized model. Contrary to our expectation, our findings indicate that while the CSM component of online retailers was positively related to the average ticket amount (H2a is supported with = 0.200, p ≤ 0.01), there was no significant relationship in the case of content management (H1a is not supported). On the contrary, whereas the CM component positively influenced the repeat visits (H1b is supported with = 0.133, p ≤ 0.05), the customer service management did not (H2b is not supported). In addition, both the CM and CSM components had a positive and significant direct effect on sales performance (i.e., H3 is supported with = 0.177, p ≤ 0.01 and H4 is supported with = 0.168, p ≤ 0.01). With respect to the mediating paths, the results suggest positive significant relationships between the two mediators (i.e., repeat visits and average ticket amount) and sales performance. In other words, both H5 ( = 0.122, p ≤ 0.01) and H6 ( = 0.240, p ≤ 0.01) are supported.

Regarding the control variables, the results show that the retailers' year of launch was negatively related to their level of sales performance ( = -0.127, p ≤ 0.01); that is, all else being equal, younger retailers were outperformed by their older counterparts. Furthermore, the results support our intuition that retailers that run Web-only operations enjoy a lower level of sales performance than other merchant types ( = -0.179, p ≤ .01). In addition, the number of SKUs was positively associated with the level of sales ( = 0.148, p ≤ 0.01) and repeat visits ( = 0.190, p ≤ 0.01). Intuitively, retailers with high SKUs would tend to perform better with respect to attracting visitors and sales.

# DISCUSSION AND CONCLUDING REMARKS

In this research, we have followed the lead supplied by past studies on online retailing to examine the impact that customer service and content management features have on online retail sales performance. Past studies have argued that two of the most critical challenges faced by contemporary online retailers are para-social presence (i.e., the 'distance' between customers and retailers) and product presentation (e.g., Jiang and Benbasat, 2004). The current study examines how retailers implement content and customer service management features on their websites to overcome the difficulties of product presentation and para-social presence. In particular, this research contributes to the online retailing literature by providing empirical evidence that explains the mediating role of customer satisfaction in analyzing the relationship between IT-enabled online customer service and content management efforts and retailers' sales performance. Derived from the actual sales data, our analysis and results provide insights into the real impact of website features on a retailer's financial performance.

On retail websites, content management tools allow retailers to provide customers with product information that is complete and up-to-date. These content management features such as enlarged product views, product rotation and zoom, and color swatches also enable potential customers to obtain more accurate product information. The online retailers included in our study strive to improve their ability to personalize and deliver online content dynamically. Their sites provide effective navigation and product presentation and comparison tools, allowing potential customers to quickly find the products they want. The presence of such features also means that customers do not have to waste valuable time looking for necessary information during each visit. As shown in our study, these tools are among the factors that help retailers maintain their customer base and potentially attract newcomers to their stores. It is, therefore, critical for retailers to invest in implementing and improving these online features to help customers locate products as well as to provide other relevant information such as detailed product descriptions augmented with navigational and multimedia features. Our results show that the presence of such content management features increases a website's ability to retain customers, which in turn leads to increased sales performance.

In addition, since online customers usually do not interact in person with retail employees, the retailer's website is the primary channel for delivering customer service. With ever-increasing competition, retailers need to maintain a productive relationship with their customers. The para-social distance and lack of face-to-face interaction are often mentioned as major shortcomings for delivering customer service in the online environment (e.g., Jiang and Benbasat, 2004). However, retailers can mitigate this problem through the use of online features such as live chat and social networking tools. These online features allow retailers to create a satisfying shopping environment for customers and increase the likelihood of an actual purchase. As our results show, the use of these online customer service features helps increase a retailer's average ticket value and, as a result, the overall sales performance.

Furthermore, our research empirically confirms the proposition put forth by past studies that increased customer satisfaction can in fact lead to improved sales performance (see, for example, Kamakura et al., 2002; Morgan and Rego, 2006). Specifically, our empirical results show that retailers' effort in online customer service management is positively related to the average ticket amount and the retailers' effort in content management positively influences repeat visits. Moreover, the extent of retailers' effort in both customer service and content management has a significant positive effect on online sales performance. By establishing a positive relationship between these online features and tangible financial outcomes, this study represents an important step forward toward a better understanding of the overall impact of information technologies on retail websites.

## Managerial Implications

The current research also has practical implications for practitioners in the online retail business. First, as our study establishes a positive relationship between IT implementation and tangible financial outcomes, our results can help IT managers of retail companies justify the investment in IT-enabled technologies on their websites. While the retailers included in our study have all adopted CM and CSM programs, they vary by the number of features that are available on their websites. Our results suggest that the presence of IT-enabled customer service and content management features and functionalities on the retail websites creates a positive shopping environment for customers, as reflected in their decision to spend more money and visit more frequently. Our empirical results further suggest that customer satisfaction can in fact lead to an actual increase in the sales performance. In particular, these CM and CSM features impact the sales performance by helping online retailers increase the website traffic (via an increase in repeat visits) and the revenue per transaction (i.e., an increase in the average ticket amount). As shown in past studies, an increase in repeat visits is often regarded as a key indicator of customer satisfaction and long-term loyalty (e.g., Moe and Fader, 2004). Therefore, our results further emphasize that in order to build and strengthen long term relationships with its customers, it is imperative for a retailer to invest in the implementation of these online features.

As online customers interact with retailers primarily via online features and not in person, it can be difficult for retailers to detect and rectify customer service related problems. Therefore, a retailer may not be fully aware of the level of consumer satisfaction or dissatisfaction with its online storefront. As a result, in addition to tangible, financial benefits from implementing CM and CSM features, online retailers should also consider intangible ramifications of inadequately implementing these features on their websites. For example, not only would dissatisfied customers be unlikely to return, but they may also dissuade other potential customers through negative word of mouth. Moreover, dissatisfied customers may further take up the retailer's time and resources by complaining about the problems they encountered.

Even though we cannot offer retail managers a formulaic prescription that guarantees success, our research provides a unique perspective for retailers, given that our analysis is based on real data on a large number of top performing online retailers in the U.S. As we highlighted in the description of our data set, the retailers in our study together accounted for $83.6 billion of the nation's $136.2 billion online sales (or about 61.38%) for the year 2006. Furthermore, we examine customer satisfaction using objective measures in our data, namely, customers' average purchase amount and repeat visits. Considering this, we expect that the findings will provide useful managerial insights for the Web retailing industry as a whole.

## Limitations

Our results and conclusions are not without limitations. First, our data set includes only online retailers based in the United States. Although the CM and CSM features are quite common among retailers across geographical locations, future research is needed to verify and extend the results of our study to non-U.S. retailers. In addition, even though our analysis is designed to include control variables such as product variety and the number of years in business, there are other possible control variables that are not readily available, but could be useful in future research and analysis.

Another limitation of our results has to do with our approach to measuring customer service and content management based on the availability of website features on the retailers' site. This approach may not perfectly indicate the service quality expected of these features. Our justification, however, is based on the expectation that many online retailers invest in IT-enabled features in order to continually enhance their online services and website interactivity for their customers. These investments and continuous improvement efforts rest on the premise that website features will result in improved service quality for the customer. We believe that the presence (or absence) of these features is adequately indicative of the retailer's effort in managing online customer service and content management. Past studies (see, for example, Lightner, 2004) have also employed a similar approach. Although we are confident that our methodology is reasonable and valid, we invite future studies to explicitly examine this assumption.

In addition, our data set includes many online retailers that are part of larger business enterprises that do not report operational and financial performances of their subsidiaries. Therefore, we were not able to complement this data set with other sources to allow a more comprehensive analysis. We also recognize that the specific features that are provided by the top Web retailers in our data may not represent an exhaustive list of online features implemented by all Web retailers. There certainly are other online features that are designed to improve customer service management (CSM) and content management (CM). In addition, for other online features, the classification of the website features into the two service categories may not be achieved easily. As described earlier, this classification process must be done with great care; we consulted several sources such as relevant past research, practitioner guides, and documentation provided by software vendors related to online customer service and content management. We believe that our conceptual framework can be extended to incorporate and evaluate these other online features in future research.

Finally, our study focuses on large online retailers. Some small, yet very successful, online retailers maintain their websites less elaborately with only essential service features. We do not dispute their success or doubt the appropriateness of their simplified service strategies. However, we believe that these simplified strategies are generally consistent with our research findings as they also emphasize the importance of the content and customer service management of retail websites.

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