The Role Effect Loyalty of Internet: A Causal Model

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Abstract

The Internet can provide benefits obtained from changing the structure of a business, such as emphasizing the importance of different types of personnel. In addition, the Internet alters the process for business activity, both within and outside the organization.

Using structural equation modeling, I empirically test a number of hypothesized relationship based on a sample of 126 Internet Community users. The results are as follows: loyalty is significantly influenced by trust and relationship, repeat purchase is significantly influenced by e-loyalty. In addition, word of mouth is significantly influenced by e-loyalty.

Key Words: Structural Equation Modeling, e-loyalty, Trust, Relationship, Repeat Purchase, Word of Mouth

1. Introduction

The Internet, however, not only introduces opportunities for product changes, but for changes to the processes for conducting business activity. These changes are not limited to the facets of business that are visible to customers; the Internet may affect the basic process by which companies operate produce and distribute goods and services.

In the rush to build internet business, many executives concentrate all their attention on attracting customer rater than retaining them. That's a mistake. The unique economies of e-business make customer loyalty more important than ever (Reichheld and Schefter, 2000).

Businesses frequently use the concept of a value proposition to characterize the combination of end-result benefit and price to a prospective customer from purchasing a particular product. A customer will choose the competing product, or no product, that offers the best value, meaning the best combination of benefits and price. To examine Internet commerce, the notion of the value proposition must be expanded (Rayport and Sviokla, 1994; Laudon, Traver, 2002).

The values of prospective customers are a key element in essentially all of the major de-

cisions facing any organization involved in or considering being involved in Internet commerce. Kim and Mauborne (1997) refer to this process as value innovation. It involves improving performance on objectives that customer care a lot about and perhaps reducing performance on objectives of lesser concern. In blue ocean strategy article, Kim and Mauborne (2004) present the concept of blue ocean strategy and describe it defining characteristics. Blue oceans denote all the industries not in existence today-the unknown market space, untainted by competition. There is ample opportunity for growth that is both profitable and rapid.

Leading companies in e-business know that loyalty is a competitive necessity. Without the glue of loyalty, even the best-designed e-business model will collapse. Building superior customer loyalty is no longer just one of many ways to boost profits. Moreover, loyalty plays a key liaison role between trust and more profits. Internet companies understand that building trust leads to more enduring relationships while a quick sale may simply leave a customer feeling cheated.

Today loyalty is essential for survival. Therefore, in this paper, we examine the extent to which loyalty fosters value performance. Using structural equation modeling, I empirically investigate the relationships among on-line relationship, trust, loyalty, and financial performance. The set of fundamental objectives also provides the foundation for developing a quantitative model of customer values.

2. Theoretical background of e-loyalty

Today the Internet is fast becoming an important new channel for commerce in a range of business. The opportunities presented by the channel seem to be readily apparent: by allowing for direct, ubiquitous links to anyone anywhere, the internet lets companies build interactive relationships with customers and suppliers, and deliver new products and services at very low cost. Broadly speaking, the Internet presents four district types of opportunities (Ghosh, 1998). First, through the Internet companies can establish a direct link to customers. Second, the technology lets companies bypass others in the value chain. Third, companies can use the Internet to develop and deliver new products and service for new customers. And, fourth, a company could conceivably use the Internet to become the dominant player in the electronic channel of a specific industry or segment, controlling to customer and setting new business rule.

As for many successful on-line retailers, word of mouth is very important. And consider-

ing that it involves no direct costs, it's easy to see why the company views it as its most powerful source for acquiring now customers (Hoffman and Novak, 2000). Companies believe that customer loyalty is the key to long-term profitability, both in the business-to-business and business-to-consumer exchange relationship (Reichheld, 1996).

Engel et al. (1982) defined brand loyalty as "the preferential, attitudinal and behavioral response toward one or more brands in a product category expressed over a period of time by a consumer." Jacoby (1971) expressed the view that loyalty is a biased behavior purchase process that results from a psychological process. Other researchers have defined loyalty as "a favorable attitude toward a brand resulting in consistent purchase of the brand over time" (Assael, 1992; Keller, 1993). Keller suggested that loyalty is present when favorable attitudes for the brand are manifested in repeat buying behavior. Gremler (1995) suggested that both attitudinal and behavioral dimensions needed to incorporated in measuring loyalty. Therefore, for present research purpose, e-loyalty is defined as the customer's favorable attitude toward an electronic business resulting in repeat buying behavior.

Following Chaudhuri and Holbrook (2001), it is proposed that commitment in form of loyalty intention is a result of trust and relationship. Trust seems implicit in customer intention. Trust is the perception of confidence in the exchange partners' reliability and integrity, and it is a necessary ingredient for long-term orientation because it shifts the focus to future condition.

The relationships a firm has with its customers "contribute to its organizational capital" (Hunt, 1997) and comprise an important part of its shareholder value (Payne, Holt, and Frow, 2000). The value in these relationships therefore needs to be understood and managed carefully. Managers need to be able to understand the dimensions of this value to manage their portfolio of customer relationships effectively (Srivastava, Fahey, and Christensen, 2001) and to argue for a sufficient share of the firm's resources to develop these market-based assets for competitive advantage (Barney, 1991).

3. Conceptual framework and hypotheses

3.1 Research Model

The internet is an important tool for viral marketing. Research conducted in 2001 by Burson-Marseteller, a public relations firm, indicates that 10 percent of American Internet users are e-fluentials. E-fluentials are people who influence others' Internet-related behaviors. In off-line environment, word-of-mouth tends to be spread from on person to two other

people. E-fluentials disseminate information to an average of 14 people. In addition, people are four times more likely to seek the advice of e-fleuntials on business and technology issues than of average users. The internet ability to interact and build relationships of ongoing exchange contributes the value of the network. The size of the network also contributes to its value as a means of communication.

Figure 1 is the conceptual model that I test in this study. In this paper, I applied the general structure of the B-A-I model, Bagozzi's (1992) appraisal → emotional response → coping frame work. Day's Model (1994), as shown in Figure 1, which suggests that potentially important psychological constructs will fall into three broad domains: beliefs, attitudes, intentions. This belief → attitude → intention (B-A-I) model lies at the heart of many contemporary management theories (Davis et al., 1986). Day (1994) claims that organizations achieve customer satisfaction by building capabilities on a set of competencies. Our research model adapted Heskett et al. (1997) Concept of Service Profit Chains and Day's claim. The theoretical foundations for the relationships depicted in this figure are summarized below based on the preceding of relevant literature.

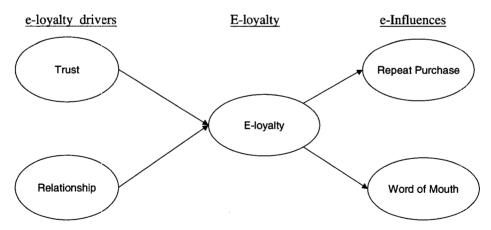


Figure 1. A proposed research model

3.2 Hypothesis

In this sense, these studies posit the following hypothesis.

3.2.1 Relationship between E-loyalty drivers and E-loyalty

Trust is the perception of confidence in the exchange partner's reliability and integrity, and it is a necessary ingredient for long-term orientation because it shifts the focus to future

condition. Trust affects loyalty intention directly (Chiou, 2004).

Since gaining new customers in the competitive market is becoming difficult and the profit gained from a loyal customer grows within the duration of the business relationship, companies are shifting their marketing focus from pure satisfaction generation to loyal cultivation (Reichheld, 1996). Youndahl and Kellogg (1997) discovered that customer satisfaction with relationship-building behavior and appear motivated to engage in behavior and appear motivated to engage in behaviors that move service encounters from mere transaction to relationship. These findings provide the theoretical basis for hypothesis.

H1: Trust positively affects E-loyalty.

H2: Relationship affects E-loyalty.

3.2.2 Relationship between E-loyalty and E-Influence

Customer loyalty is defined as a long-term commitment to repurchase involving both a favorable cognitive attitude toward the selling firm and repeated patronage. Thus, loyalty is demonstrated by the purchasing pattern over time (Dick and Basu, 1994). Although other psychological processes occurring in the minds of customers may be associated with customer loyalty, customer satisfaction with service firm capabilities has been shown to have significant and positive impact on cognitive attitude and repurchase intention (Cronin and Morris, 1989). Oliva et al. (1992) found that when satisfaction increased above a critical level, repeat purchases increased rapidly. These findings provide the theoretical basis for hypothesis.

H4: E-loyalty positively affects repeat purchase.

H5: E-loyalty positively affects word of mouth.

4. Research Methodology

4.1 Survey instrument

The items tapping the theoretical constructs were developed based on an extensive literature review. They were measured on a five-point Likert's scale with anchors ranging from strongly disagree (1) to strongly agree (5) in order to ensure high statistical variability among the survey response.

Prior to data collection, the survey instrument was pre-tested for content validity in two stages. In the first stage, four master students were asked to critique the questionnaire for

ambiguity, clarity, and appropriateness of the items used to operationalize each construct. Based on feedback received from these students, the instrument was modified to enhance clarity and appropriateness of the measures purporting to tap the constructs. In the second stage, the survey instrument was mailed to 12 web page managers. The final survey instrument incorporated feedback received from internet heavy users, which enhanced the clarity of the instrument. This process yielded a survey instrument that was judged to exhibit high content validity.

Table 1. Construct Measurement

Constructs	Variables	Supporting literature		
Trust	I believe that this company is honest. I feel that this company is responsible. I feel that this company is understands consumers. I feel that this company cares about me.	Doney and Cannon (1997)		
Relationship	The relationship that this company has with customer is something we are very committed to The relationship that this company has with customer is something we intend to maintain indefinitely. The relationship that this company has with this customer. Maintaining a long-term relationship with this customer is very important to customer.	Cronin and Morris (1989), Morgan, Hunt (1994)		
E-loyalty	If I have to do it over again, I would choose this brand. I try to use this brand because it is the best choice for me. I consider myself to be a loyal patron of this brand. I would recommend this company to other users.	Cronin and Morris (1989), Morgan, Hunt (1994)		
Repeat purchase	Other things being equal (price, product, quality, etc.), I intend to continue buying from this company because of their product. Other things being equal (price, product, quality, etc.), I intend to continue buying from this company because of their service. Other things being equal (price, product, quality, etc.), I intend to continue buying from this company because of their trust. I usually search this company's web.	Cronin and Morris (1989), Morgan, Hunt (1994)		
Word of mouth	Word of mouth I would recommend that friends and relatives continue using this company. I would recommend others this company's product. I would recommend others this company's service. I would recommend others this company's excellence.			

4.2 Data collection

As spoken before, once the initial set of items for each construct was specified (through review of the literature and discussion with managers), pre-testing and pilot-testing took place to ensure that the initial measurement scales were as reliable and as valid as can be determined. Pre-testing and pilot testing are important steps in the scale development process.

Responses were collected from web community users. Cases with missing value were subsequently dropped form the analysis, resulting in a useable database of 126 response, or 26.2% of those originally contacted.

4.3 Data Analysis procedure

A three-stage continues improvement cycle was used to develop measure that satisfied all the requirements for reliability, validity, and unidimensionality (Chen and Paulraj, 2004). To assess the reliability of the study constructs, I used the average correlation among items in a scale. As can be seen the following, the Cronbach's alpha values (α) for the variables were above the cut-off of 0.60 (Chronbach, 1951; Nunnally, 1978) and range from "0.681" to 0.888.

Initially, construct validity was assessed via exploratory factor analysis (EFA) using principal component analysis with varimax rotation (Loehlin, 1998). Since the number of factors to be extracted was provided in this analysis. Items that cross-loaded on two or more factors were discarded. Then, a confirmatory factor analysis (CFA) was used to to assess construct validity and unidimensionality. CFA provides a stricter and more precise test of unimensionality of latent constructs (Gerbing and Anderson, 1988). As all the constructs were more than one indicator item, the constructs were made scale-variant by fixing one of the loadings in each construct to a value of 1.0 (Joreskog and Sorbom, 1999).

To test for convergent validity, we investigated the extent to which each individual item's coefficient is greater than twice its standard error (Anderson and Gerbing, 1988). The larger the t-values, the stronger the evidence that the individual items represent the underlying factors. Furthermore, the proportion of variance (R^2) in the observed variables accounted for by the theoretical construct influencing them can be used to estimate the reliability of an indicator. In the previous studies, R^2 -values above 0.30 were considered acceptable (e.g. Carr and Pearson, 1999). As shown in Table 2, the CFA results indicate that all of these conditions are met, suggesting that all indicators are significantly related to their underlying theoretical constructs.

To establish dicriminant validity, we constructed model for all possible pairs of latent

constructs. These models were tested on each selected pair by: (a) allowing for correlation between the two constructs; and (b) fixing the correlation between the constructs at 1.0. A significant difference in chi-square value for the fixed and free solutions indicates the distinctiveness of the two constructs (Bagozzi et al., 1991). The chi-square difference was tested for statistical significance at P < 0.001 confidence level. For the five constructs, a total of 15 different discriminant validity checks were conducted. All the differences (given in χ^2) between the fixed and free solutions are significant, providing strong evidence of discriminant validity among the theoretical constructs.

Unidimensionality-the extent to which a set of indicators reflect a single underlying construct-was assessed by fulfilling two conditions (Gerbing and Anderson, 1988; Hair et al., 1995). First, an item must be significantly associated with the empirical indicators of a construct and, only one construct. Unidimensionality was established by many reserachs, multiple fit criteria were utilized to assess model fit (Bentler, 1986; Bentler and Bonett, 1980; Hair et al., 1985; Joreskog and Sorbom, 1999). Base on several fit indices(χ^2 /degree of freedom =3.2; goodness of fit (GFI) = 0.943, adjusted goodness fit [AGFI] = 0.921; Bentler and Bonett non-normed fit index [NNFI] = 0.887; Bentler comparative fit index [CFI] = 0.895; root mean square error of approximation [RMSEA] = 0.043), I can confidently conclude that constructs exhibit unidimensionality.

The summary statistics and the correlation matrix for the constructs used in the model are presented in Table 3. The model parameters were estimated using the method of maximum likelihood (Joreskog and Sorbom, 1999). The summed item score for these variables were used as measures of their latent constructs.

Constructs	Initial Items	Final Items	α	GFI	AGFI	RMSR	γ^2	χ^2	р
Trust	4	4	0.766	0.98	0.90	0.036	0.46	4.91	0.08
Relationship	4	4	0.681	0.99	0.95	0.033	0.41	2.65	0.27
E-loyalty	4	4	0.812	0.97	0.86	0.038	0.55	7.40	0.06
Repeat purchase	4	4	0.875	1	0.98	0.011	0.66	1.22	0.55
Word of mouth	4	4	0.888	0.95	0.94	0.037	0.67	13.47	0.01

Table 3. Result of Confirmatory Factor Analysis

4.4 Correlation Analysis

On the basis of these results, This study summed the scores on the items of each

construct. The mean, standard deviations, and correlation matrix are shown in Table 3.

	1	2	3	4	5
Trust (#1)	1				
Relationship (#2)	0.376*	1			
E-loyalty (#3)	0.325*	0.282*	1		
Repeat purchase (#4)	0.100	0.003	0.461*	1	
Word of mouth (#5)	0.186	0.291*	0.585*	0.413*	1
Mean	3.36	3.23	3.16	2.67	3.24
Std. Deviation	0.609	0.599	0.679	0.858	0.696

Table 3. Means (Standard Deviation) and Correlation Matrix

5. Result

5.1 Overall model fit

Data analysis involved two major steps: the data reduction process and the structural relationship analysis using structural equation modeling (SEM) method. The data reduction process aimed to reduce the number of variables and parameters in the research model to a manageable number in terms of the ratio between sample size and parameters estimator in the research model (Hair et al., 1998). All SEM analysis were conducted using LISREL with the correlation matrix as input and maximum likelihood method.

The fit indices used in this study to estimate measurement models are the ratio of χ^2 to degree of freedom, GFI (Goodness Fit Index; greater than the 0.9 cut off), AGFI (Goodness Fit Index; greater than the 0.9 cut off), Adjusted Root Mean Square Error of Approximation (RESEA; < 0.05), Comparative Fit Index(CFI; > 0.9). These fit indices were chosen because of their abilities to adjust for model complexity and degree of freedom.

The followings are the overall model fit and the tests of each research hypotheses. As shown, the results of the full model (structural and measurement models) indicated fit indices: $\chi^2 \approx 15.067$, degree of freedom = 5, provability level = 0.010, RMR = 0.036, GFI = 0.958, AGFI = 0.874, NFI = 0.889, CFI = 0.920. These fit indexes dose not satisfy the criteria for good model fit, So there is much room for improvement in the structural equation. In

^{*} Correlation coefficients are significant at $\alpha = 0.05$ level.

this research, Modification indices are used in the process of model improvement. Associated with each modification index (M.I) is an expected parameter change value (Joreskog, Sorbom, 1989). This measure how much the parameter is an expected to change, in the positive or negative direction, if it is set free.

In order to obtain better confidence in the validity of the model, modification indicies provided by Lisrel procedure have also been considered. According to M.I., I found new path (Repeat purchase \leftrightarrow Word of Mouth) and model improvement in the modification model. As shown, the results of the full model (structural and measurement models) indicated fit indices: $\chi^2 = 9.921$, degree of freedom = 4, provability level = 0.042, RMR = 0.029, GFI = 0.970, AGFI = 0.888, NFI = 0.927, CFI = 0.953. Significance can be assessed (p = 0.023 < α = 0.05) on the basis of the χ^2 -difference (5.146 = 15.067-9.921) between the two models (initial model, proposed model) with the use of a χ^2 distribution with one degree of freedom (1 = 5-4). The critical value at the 0.05 level is 3.84.

5.2 Hypothesis testing

Next, we evaluated the individual paths of the model. These results are summarized in Table 4.

Paths	Estimate	t-values	p	Assessment($p \le 0.05$)
H1 Trust → E-loyalty	0.284	2.846	0.004	H1 was supported
H2 Relationship → E-loyalty	0.211	2.080	0.038	H2 was supported
H3 E-loyalty → Repeat purchase	0.582	5.825	0.000	H3 was supported
H4 E-loyalty → Word of mouth	0.599	8.093	0.000	H4 was supported
H5 Repeat purchase ↔ Word of mouth	0.137	2.202	0.028	New path was supported

Table 4. Path model results

The effect of trust on e-loyalty was significant (r = 0.284, p < 0.05). Therefore, H1 was supported by the data. The effect of relationship on e-loyalty was significant (r = 0.211, p < 0.05). Therefore, H2 was supported by the data. The effect of e-loyalty on repeat purchase was significant (r = 0.582, p < 0.05). Therefore, H3 was supported by the data. The effect of e-loyalty on word of mouth was significant (r = 0.599, p < 0.05). Therefore, H4 was supported by the data. Finally, The new path (repeat purchase \leftrightarrow word of mouth) was significant at

p < 0.05 (covariance = 0.137).

The result of this study indicate that Trust, Relationship affected e-loyalty of the e-commerce. As suggested by the service profit chain (Heskett et al., 1994) and Bagozzi's Study (1992), e-loyalty affects repeat purchase and word of mouth.

6. Conclusion and Limitations

The values of prospective customers are a key element in essentially all of the major decisions facing any organization involved in or considering being involved in Internet commerce.

Using structural equation modeling, I empirically test a number of hypothesized relationship based on a sample of 126 Internet Community users. The results are as follows: loyalty is significantly influenced by trust and relationship, repeat purchase is significantly influenced by e-loyalty. In addition, word of mouth is significantly influenced by e-loyalty. The customer interviews conducted as part of the research revealed that true benefit of establishing e-loyalty is able to gain regarding customer needs and wants. Upon learning of these needs and wants, e-community operator can focus on operational means of meeting the needs and wants. The firms that can position themselves strategically through customized capabilities understand that sustainable advantage comes from the ability to tailor operational offerings to the needs of each customer.

There are several limitations of this study. The first is the cross-sectional design employed. To provide stronger inference, the model developed and tested could benefit from being tested in a longitudinal design. The Second, the model was empirically tested in a Korean sample.

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