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# EXPLORING THE IMPACT OF HEDONIC AND UTILITARIAN VALUE OF INFORMATION SYSTEMS ON USER LOYALTY AND WORD-OF-MOUTH

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## ABSTRACT

Users strive for a more complete experience with software products, an experience that not only achieves well-defined goals, but also involves the senses and generates affective response (Bly, Cook, Bickmore, Churchill and Sullivan, 1998). Yet, producers of Information Systems have focused largely on utilitarian aspects of IS rather than the hedonic. The reason may lie in the computing disciplines' origins in disciplines that emphasize hard science, efficiency, and utility (Tractinsky, 2006). However, there is mounting evidence in support of the importance of Hedonic considerations in design of IS products. Investigations in this study reveal distinctive but complementary impacts of Hedonic and Utilitarian value provided by IS on its user base. While the Utilitarian value was found to positively impact User Loyalty, thereby enhancing the capacity to retain existing user base, the Hedonic value was found to favorably impact positive Word-of-Mouth of users, thereby increasing the ability to attract new users.

## Keywords

Hedonic Value, Utilitarian Value, User Loyalty, Word-of-Mouth

## INTRODUCTION

Products are multifaceted and can provide value in many ways. While theoretically, one could probably break down value into many very specific types, a very useful value typology can be developed using only two types – the utilitarian value (UV) and hedonic value (HV) (Holbrook and Hirschman, 1982). Product development literature has provided empirical support for the notion that both “utilitarian”/ “functional” and “hedonic”/“aesthetic” dimensions capture distinct and critical aspects of product differences (e.g., Batra and Ahtola, 1990; Block 1995; Dhar and Wertenbroch, 2000; Mano and Oliver, 1993; Schmitt and Simonson, 1997; Strahilevitz and Myers, 1998; Veryzer, 1995).

Thus to produce an IS, it may not only be important to identify those features that serve the basic product function but also those that make the product attractive. This study examines the impacts of Hedonic and Utilitarian value of IS on key business outcomes such as User Loyalty and WOM (Word-Of-Mouth). Although the proposed hypotheses were not fully supported, the results of the study provide useful insights to practitioners and offers potential for new avenues of research in the area of IS feature selection.

## LITERATURE REVIEW

### Utilitarian and Hedonic Dimensions

Utilitarian product attributes are “useful, practical, functional, something that helps you achieve a goal” (Strahilevitz and Myers, 1998), while Hedonic product attributes are “Pleasant and fun, something that is enjoyable and appeals to your senses” (Holbrook and Hirschman, 1982). A review of literature shows that there are distinct differences between Hedonic and Utilitarian features. Utilitarian features represent “shoulds” while Hedonic features represent “wants” (Bazerman Tenbrunsel, and Wade-Benzoni, 1998). Utilitarian Value is associated with pain avoidance goals of the user, while Hedonic Value is associated with pleasure-seeking (Higgins, (1997, 2001), Chernev, 2004). The Utilitarian value of IS can be objectively appraised while the Hedonic value is subjective and experiential (Chitturi, 2009).

### Consumer Loyalty and WOM

User Loyalty and positive WOM (Word-Of-Mouth) are key business outcomes pursued by producers of products and service (Casaló, Flavián and Guinaliú, 2008). User loyalty is defined as a deeply held commitment to repurchase or re-patronize a preferred product/service consistently in the future, thereby causing repetitive same-brand purchasing or use, despite situational influences and marketing efforts having the potential to cause switching behavior (Oliver, 1999). WOM

communication refers to “person-to-person communication between a receiver and a communicator whom the receiver perceives as noncommercial, regarding a brand, a product or a service” (Arndt, 1967).

Together user loyalty and positive WOM provides tremendous business benefits. While user loyalty is important for retaining existing users, WOM exerts a strong influence on user choice. Consumers value WOM because it is seen as more reliable and trustworthy than other information sources (Day, 1971). Thus companies have a good opportunity to increase their user base by developing positive WOM among customers (Chung and Darke, 2006).

### **Self Efficacy**

Self-efficacy (Bandura, 1986) represents an individual’s perception of his or her ability to successfully execute some specific task, in this case, using the software. It has been used to measure computer skill (e.g., Harrison and Rainer 1992, Rainer and Harrison 1993). It is expected that users with higher self-efficacy will be able to extract greater utilitarian value for the product than users with lower self-efficacy. Therefore self-efficacy will be used as a control variable in measuring the effects of utilitarian and hedonic value on user loyalty and WOM.

### **HYPOTHESES DEVELOPMENT**

Loyalty is the result of the individual’s belief that the value received from consuming a product or service is greater than the value of non-consuming (Hallowell, 1996). In response to this greater value obtained, the individual is motivated to remain loyal to the firm and to promote it by, for instance, positive WOM behaviors (Luis, Carlos and Migue, 2008). The extent of utilitarian value that the consumer receives from the utilitarian features in a product is the degree to which it helps her achieve functional and practical goals. The extent of hedonic value the consumer receives from hedonic features in a product is the degree to which it gives them pleasure, enjoyment or fun. Hence both Utilitarian value and Hedonic value will directly and positively impact consumer loyalty and positive WOM.

But do Utilitarian and Hedonic value have only a direct impact on Loyalty and WOM? From another perspective, functional criteria involve evaluation of concrete attributes that meet utilitarian or practical needs, not unlike Maslow’s (1970) lower-level needs (Sack, Singh and Paolo, 2009). Hedonic needs represent higher level needs of the user in the Maslow’s hierarchy of needs (Vlašić, Janković and Kramo-Čaluk, 2011). Maslow (1970) suggests that the basic needs must be met before an individual is motivated to pursue higher level needs. If the lower level functional needs are not met the individual remains focused on its fulfillment first before desiring to move up the needs hierarchy. Thus fulfilling Hedonic needs alone will not impact user delight. The user will remain dissatisfied if his practical and functional needs utilitarian needs remain unfilled (Chitturi et al., 2007).

Thus, the utilitarian “shoulds” should be satisfied first before addressing the hedonic “wants”. But once the “shoulds” are addressed it is fulfilling the “wants” that will delight the users (Chitturi, 2003). Creating a pleasurable experience for your customers first requires knowing and eliminating their points of pain, and then listening to their desires (Keiningham and Vavra (2001).

Hypothesis 1: Change in Utilitarian product value due to implementing user feature requests will impact both User Loyalty and WOM when the Utilitarian value of the current version of the IS product is low but will have no impact on User loyalty and WOM when the Utilitarian value of the current version of IS product is high

Hypothesis 2: Change in Hedonic product value due to implementing user feature requests will impact both User Loyalty and WOM when the Hedonic value of the current version of the IS product is low but will have no impact on User loyalty and WOM when the Hedonic value of the current version of IS product is high

### **Method**

A paper based survey method was used in the study.

### **Participants**

The participants were 122 young men and women aged between 18-24 year who are users of Gmail.

### **Variables used in the study**

The independent variables are the change in Utilitarian Value (UV) and Hedonic Value (HV) due to incorporating feature set requested by Gmail users in the current version of Gmail and dependent variables are the change in User Loyalty and WOM. To control for other source of variation in results obtained, user efficacy was included as a control variable

## Measures

The Utilitarian value was measured using the Venkatesh and Davis (2000) scale. A sample item from this scale is: "Using Gmail increases my productivity". Hedonic Value was measured using the Babin, Darden and Griffin (1994) scale. A sample item from this scale is: "While using Gmail I feel happy". User Loyalty was measured using the Casaló, Flavián and Guinalíu (2008) scale. A sample item from this scale is: "I have intention to continue to use Gmail". WOM was measured using the Casaló, Flavián and Guinalíu (2008) scale. A sample item from this scale is: "I will recommend Gmail to other potential users". Efficacy was measured using the Marcolin, Compeau, Munro and Huff (2001) scale. A sample item from this scale is: "I can use Gmail and its advanced feature if someone showed me how to use it first".

For all items in the measures a 9-point Likert scale with anchors of 1 (strongly disagree) and 9 (strongly agree) was used. The scale items were summed and then averaged to create an overall value for each construct. Responses were coded such that high levels of the constructs are represented by high values.

## Design

A repeated measure design was used in the study. Subjects answered a paper-based survey that captures data on the independent, dependent and control variables based on the measures described in the section above. The data on dependent and independent variables were captured both for the current version of Gmail and when new features are added to it. The repeated measure design is extremely sensitive to finding statistically significant differences between conditions. In addition fewer participants are needed for the study. The UV and HV of Gmail after implementing the feature requests were captured a week after data for other variables were captured. Sharma et al. (2009) had observed that the temporal separation between measures can reduce the effect of Common Method Variance.

## Control Procedures

A number of control procedures were used to eliminate extraneous variables. The participants were a homogeneous group of 18-24 year olds. The feature requests in the survey instrument were randomly selected from actual pending feature requests of users of Gmail. They were re-worded in a simple and standard style to avoid bias (see Table 3). Shifts in structure, content and format may introduce unwanted sources of variability that may confound participant response.

## Test Instrument

The test instrument included 10 user feature requests for Gmail taken from the company web site and discussion forums. A sample user request included in the test instrument was "Threaded conversations should be made optional to users. Presently it is a mandatory feature".

## Analysis

Analyses regarding construct validity and regression were done using IBM® SPSS® Statistics Version 19. Hierarchical Moderated Regression Analysis (HMRA) was conducted to first test the direct effects and interaction effects between HV and UV after controlling for user self efficacy and change in user Loyalty. HV and UV of both the current version of the Gmail and the perceived change in HV and UV due to implementation of feature set requested by the users were included while testing for main and interaction effects. Change in user loyalty was controlled for to control for the likely effect of change in user loyalty on change in WOM. The direct effects and interaction between HV and UV of the IS product on user Loyalty after controlling for self efficacy and user WOM were then tested. HMRA tests for the significance of the increment in criterion variance explained by the main effects after extracting the variance due to control variables and then increment in criterion variance explained by interaction term beyond that attributed to the main effects.

## RESULTS AND ANALYSES

The results of Factor analysis using Varimax rotation with data for the current version of Gmail showed convergent and discriminant validity between scales as evident by the high loadings within factors, and no cross loadings between factors. We then estimated the internal reliabilities of the scales used in the study: self efficacy, hedonic value, utilitarian value, user loyalty and WOM. As can be seen from the Table 1 below the alpha reliabilities are all greater than .70. Table 1 also provides the means, standard deviations, and correlation matrix for the variables in this study. From Table 1 it is clear that none of the correlations are too high ( $> 0.65$ ) demonstrating that each scale is adding something new.

Variable	N of items	Cronbach's Alpha	Mean	Std Dev	1	2	3	4	5
1. Self Efficacy	8	.956	4.451	2.549	1				
2. Utilitarian Value	5	.941	4.962	2.049	0.023	1			
3. Hedonic Value	5	.889	5.072	1.939	0.009	0.305**	1		
4. User Loyalty	3	.862	5.735	1.927	0.025	0.382**	0.163	1	
5. User WOM	4	.884	5.133	2.039	0.030	0.220	0.311**	0.389**	1

\* p < .05 \*\* P < .01 \*\*\*p<.001, N=122

Table 1. Means, Standard Deviations, and Correlations

The results of HRMA in Table 2a below shows that a change in HV of Gmail, due to implementing the feature set suggested by the users, after controlling for user self-efficacy and change in user loyalty, and extracting variance due to HV and UV of the current version of Gmail, explained 5.5% of variance in the dependent variable, change in WOM. The other variables such as HV and UV of current version of Gmail, change in UV due to feature set and the interaction terms were not significantly associated with change in WOM. Gmail is primarily a Utilitarian product. This could possibly explain why we observed a small, only 5.9 %, though significant variance in WOM due to change in HV. Perhaps a higher variance would be observed for a predominantly Hedonic product such as Facebook.

Step	Variables added in each step	Adj R-Square	Change in R- Square	F Change
1	Control: Self Efficacy and Change in User Loyalty due to feature set	-0.011	0.006	0.358
2	Main Effect: Utilitarian Value of current version and Hedonic Value of current version	-0.020	0.008	0.448
3	Main Effect: Change in Utilitarian Value due to feature set	-0.027	0.002	0.201
4	Main Effect: Change in Hedonic Value due to feature set	0.021	0.055	6.748*
5	Interaction: Hedonic Value of current version * Change in Utilitarian Value due to feature set, Hedonic Value of current version * Change in hedonic Value due to feature set, Utilitarian Value of current version * Change in Hedonic Value due to feature set, Utilitarian Value of current version * Change in Utilitarian Value due to feature set	0.035	0.100	1.422

\* p < .05 \*\* P < .01 \*\*\*p<.001, N=122

Table 2a: Hierarchical Moderated Regression results for change in User WOM after feature enhancements

The results of HRMA in Table 2b shows that a change in UV of Gmail, due to implementing the feature set suggested by the users, after controlling for user self-efficacy and change in user WOM, and extracting variance due to HV and UV of the current version of Gmail, explained 51.9% of variance in the dependent variable, change in user loyalty. The other variables such as HV and UV of the current version of Gmail, change in HV due to feature set and the interaction terms were not significantly associated with change in user loyalty.

We included the Variance Inflation Factor (VIF) option in our regression analyses to explore the extent of multicollinearity in our results. VIF is the degree to which the standard error has been increased because of multicollinearity. The higher the score, the more difficult it is to show that the coefficient is significantly different from zero. All of the VIF values were less than 1.5 indicating a lack of multicollinearity in our results (Hair et al., 2006).

Step	Variables added in each step	Adj R-Square	Change in R- Square	F Change
1	control: Self Efficacy and Change in User WOM due to feature set	-0.013	0.004	0.231
2	main effect: Utilitarian Value of current version and Hedonic Value of current version	-0.024	0.006	0.342
3	main effect: Change in Utilitarian Value due to feature set	0.509	0.519	127.864 ***
4	main effect: Change in Hedonic Value due to feature set	0.507	0.003	0.629
5	Interaction: Hedonic Value of current version * Change in Utilitarian Value due to feature set, Hedonic Value of current version * Change in hedonic Value due to feature set, Utilitarian Value of current version * Change in Hedonic Value due to feature set, Utilitarian Value of current version * Change in Utilitarian Value due to feature set	0.507	0.017	1.015
* p < .05 ** P < .01 ***p<.001, N=122				

**Table 2b: Hierarchical Moderated Regression results for change in User Loyalty after feature enhancements**

#### Conclusion

Features are the building blocks of IS products. The results of this study indicate that Utilitarian and Hedonic value provided by the features implemented in an IS have their own characteristic impact on User loyalty and WOM. While the UV positively impact user loyalty, HV significantly and positively impact WOM of the user. Although the hypotheses proposed in the study are not fully supported, the results are useful for practitioners as they indicate that different goals are served by providing Hedonic value and Utilitarian value in an IS product. If the goal is to retain existing users, producers of IS should focus on providing utilitarian values to promote user loyalty. However if the goal is to attract new customers by influencing user choice through positive WOM then producers of IS should focus on providing hedonic value.

The participants chosen for the empirical study were youth between 18-24 years of age. The rationale behind this approach is to get as homogenous a group of sample as possible as the objective of the study is to focus on the internal validity of the relationships proposed in the three studies. This limits the generalizability of the results. Future research may consider testing the results of the study for other user segments and other IS products.

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