User Acceptance of the Next Generation Digital Signage: A Perspective of Perceived Value

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Abstract

The next generation digital signage (NGDS) has become extremely important as a new innovative information system that provides interactive information to users by capturing contextual information through the utilization of the state-of-the-art technologies. NGDS gets wide popularity from millions of people due to its advanced information services that fit in with the individual's digitizing life style. Despite the increasing importance, however, there is a significant gap of our understanding on the user acceptance of NGDS. Motivated thus, this paper aims to develop a research model to explore the factors influencing the user acceptance of NGDS from the perspective of perceived value. The four dimensions of perceived value are proposed as key antecedents: utilitarian value, hedonic value, social value, and epistemic value. In particular, our interest is on their impacts on users' satisfaction, continuance intention, and positive word-of-mouth (WOM). The pilot study results indicate that utilitarian value increases satisfaction, continuance intention, and positive WOM. Moreover, hedonic value increases satisfaction and positive WOM, while social value increases positive WOM only. Also, epistemic value increases satisfaction and positive WOM. This research is expected to advance the theoretical understanding on the user acceptance of NGDS and offer organizations useful insights to manage their NGDS.

Keywords: digital signage, perceived value, continuance intention, satisfaction, word-of-mouth

1   INTRODUCTION

The next generation digital signage (NGDS) refers to the new electronic medium that provides users with interactive information in their situation by capturing contextual information (e.g., user, place, object, and time) through the utilization of the state-of-the-art technologies (e.g., face recognition, motion sensor, and interlock with smart mobile handsets) (Figure 1). These unique features of NGDS make it clearly distinguished from the prior digital signage that simply displays pre-set messages only. Also, the advanced information services of NGDS fit in with the individual's digitizing life style, so it is rapidly becoming a part of many people's daily practices. Accordingly, various organizations have started to pay a lot of attention to NGDS such as commercial/public facilities, government offices, transportation services, schools, hospitals, banks, etc. The strong possibility of NGDS also leads to the hopeful market prospect that the worldwide market of digital signage will reach 4.5 billion dollars in 2016 (ABI Research 2011).

Despite the increasing importance of NGDS, however, there is a significant gap of our understanding on the user acceptance of NGDS. When a new information system (IS) such as NGDS is emerged, users may decide to adopt or resist it based on the evaluation associated with the technology. If the technology fails to be adopted, it will lose its value and disappear. For this reason, a question should be considered for successful diffusion of NGDS: what are the important considerations for the user acceptance of NGDS? We reviewed the previous literature with the aim of uncovering existing theoretical understanding about this issue. Surprisingly, the user aspect of digital signage has never been examined in previous studies so far, while most of them have been focused on the application of digital signage for various purposes such as advertising (Grewal et al. 2011), place branding (Dennis et al. 2010), communication (Krishna 2007), digital education (Görlitz & Schmidt 2008), technical interface of digital signage (Grobelny & Michalski 2011), and overall trend analysis (Want & Schilit 2012). As a result, a strong need is captured to study the user acceptance of NGDS.

Thus, the objective of this study is to explore and empirically test the factors influencing the user acceptance of NGDS. For this purpose, we adopted the perspective of perceived value as it would be more meaningful to examine various value dimensions as a preceding study rather than directly adopting other popular theoretical perspectives such as the technology acceptance model (TAM), the theory of planned behaviour (TPB), and the unified theory of acceptance and use of technology (UTAUT). In particular, our interest is on the impacts of the salient value dimensions toward users' satisfaction, continuance intention, and positive word-of-mouth. Then, the research model is derived by integrating the perspective of perceived value and those dependent variables. Next, a pilot study is conducted to validate the measurement model and pre-test the model. Lastly, conclusion and expected contributions are described. In this way, this research aims to advance the theoretical understanding on the user acceptance of NGDS as well as offer organizations useful insights to manage their NGDS.

| NGDS in shopping mall[1] | NGDS in subway station[2] | NGDS in bus station[3] |

Figure 1.   Examples of NGDS

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[1] Retrieved from "http://online.wsj.com/article/SB10000872396390444897304578044322254166986.html"
[2] Retrieved from "http://news.naver.com/main/read.nhn?mode=LSD&mid=sec&sid1=105&oid=015&aid=0002197891"
[3] Retrieved from "http://biz.chosun.com/site/data/html_dir/2012/09/20/2012092001971.html"

2 THEORETICAL BACKGROUND

2.1 Perceived value

Perceived value has been an important concept in marketing research to understand the individual's purchasing behavior of a product and service (Yu 2013). Recently, perceived value has started to get the wide attention of IS scholars since the process that people choose and adopt a new technology is similar with that of goods purchase (Kim et al. 2007; Turel et al. 2010; Verhagen et al. 2011). Perceived value is commonly defined as "the consumers' overall assessment of the utility of a product based on perceptions of what is received and what is given" (Zeithaml 1988, p. 14) though the perceptions of what is received and what is given vary across consumers. According to Zeithaml (1988), the benefit components of value include salient intrinsic attributes, extrinsic attributes, perceived quality, and other relevant high abstractions. On the other hand, the sacrifice components of value include monetary prices and non-monetary prices (e.g., time, energy, effort).

Previous studies have conceptualized perceived value in two major approaches: one-dimensional and multi-dimensional. First, the one-dimensional approach has been focused on economic feasibility, practicality, and utility. Thus, scholars in this approach defined perceived value as the economics that compare perceived benefits and perceived sacrifices (Monroe 1990; Woodruff 1997). However, some scholars argued that perceived value can be better understood by handling it as a multi-dimensional construct that reflects various psychological, emotional, and complex features of value compositions. As a result, the second approach, the multi-dimensional approach, has emerged and scholars in this approach have focused on the various factors that consist of perceived value (Babin et al. 1994; Sheth et al. 1991; Sweeney & Soutar 2001). Thus, this second approach helps researchers overcome several problems of the first approach, particularly its excessive concentration on economic utility (Sánchez et al. 2006). In IS literature, both one-dimensional and multi-dimensional approaches have been adopted by scholars. Some studies examined users' perceived value as the economics of perceived benefits and perceived sacrifices (Kim et al. 2007; Kim & Kankanhalli 2009), while other studies conceptualized users' perceived value as a multi-dimensional construct (Turel et al. 2010).

This study employs the multi-dimensional approach as our research objective is to comprehensively explore the various value dimensions that may influence the user acceptance of NGDS. In particular, we adopted the theory of consumption value by Sheth et al. (1991) as our research basis because it can cover most of the value compositions discussed in prior studies. Table 1 shows the five dimensions of perceived value proposed by Sheth et al. (1991). Among the five dimensions, however, conditional value is not considered in this study since it is a specific case of other types of value. This indicates that conditional value may moderate the effects of other values rather than an independent value composition. Thus, conditional value may not be salient to develop a general value measure (Sweeney & Soutar 2001). Moreover, the monetary aspect is not considered since NGDS is free of charge and voluntary to use for an individual's convenience. Thus, the value dimensions that may be salient for the user acceptance of NGDS are suggested as follows: utilitarian value, hedonic value, social value, and epistemic value.

Perceived value	Definition
Functional value	The perceived utility acquired from an alternative's capacity for functional, utilitarian, or physical performance
Emotional value	The perceived utility acquired from an alternative's capacity to arouse feelings or affective states
Social value	The perceived utility acquired from an alternative's association with one or more specific social groups
Epistemic value	The perceived utility acquired from an alternative's capacity to arouse curiosity, provide novelty, and/or satisfy a desire for knowledge
Conditional value	The perceived utility acquired by an alternative as the result of the specific situation or set of circumstances facing the choice maker

Table 1.   Sheth et al. (1991)'s five dimensions of perceived value

2.2   Satisfaction, continuance intention, and word-of-mouth

Satisfaction is a post-consumption evaluation based on the comparison between the expected pre-consumption value and the post-consumption value after the purchase or use of a product or service (Oliver 1981). There are two factors for satisfaction decision: performance-specific expectation and expectancy disconfirmation (Oliver 1981). Before adopting a product or service, customers expect the degree of its performance. Then, customers confirm their expectancy from the actual use. Finally, a positive disconfirmation can exist if users' perception exceeds pre-consumption expectation, implying high satisfaction. As highly satisfied users tend to behave toward the product or service in a positive way, satisfaction has been the important antecedent of future behavioral intention (Oliver 1981). Due to such an important role in service use, satisfaction is expected to be a salient measure for the user acceptance of NGDS. Thus, satisfaction is adopted as a dependent variable.

Continuance intention is users' will to continue to use a particular service. Continuance intention gets a lot of attention from IS scholars since it may be more important than one-shot use (Bhattacherjee 2001). Some scholars showed its importance in terms of cost saving by showing that acquiring a new customer costs five times more than retaining a customer within the context of online service use (Parthasarathy & Bhattacherjee 1998). Other scholars stressed its importance in terms of sustainability by arguing that the expected value of an IS can be realized only if there are sufficient users engaging in the IS (Zhou et al. 2011). For the same reason, continuance intention is salient for NGDS since it may lose its value and disappear soon if there are not enough of users who continuously use NGDS. As a result, continuance intention is expected to be a critical measure for the user acceptance of NGDS. Thus, continuance intention is adopted as another dependent variable.

Word-of-mouth (WOM) is an activity which may require consumers to engage in attribution analysis, recall, and interpretations of events as well as communication and information sharing with others (Weiner 1985). WOM is a consequence of emotional responses to the actual usage of a product or service (Swan & Oliver 1989), so it could be positive, neutral, or negative (Anderson 1998). As peer recommendation is found to have a high impact on their friends' behavior (Smith et al. 2005), WOM has become highly important in the related studies. Moreover, the recent emergence of social network services further increases the salience of WOM. Due to its crucial impact on other people's behavior, positive WOM is expected to be critical for NGDS to be successfully diffused. Thus, positive WOM is adopted as the last dependent variable in this study.

3   RESEARCH MODEL AND HYPOTHESES

This study proposes that the four dimensions of perceived value have a positive influence on users' satisfaction, continuance intention, and positive WOM. Figure 2 shows the proposed research model.
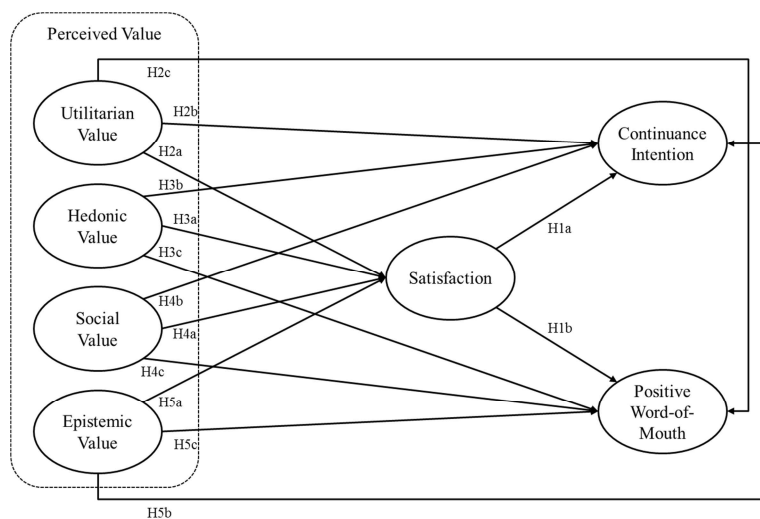

Figure 2.   Research model

3.1 The relationship among satisfaction, continuance intention, and positive WOM

Satisfaction refers to overall contentment with the usage experience. When individuals are satisfied with the use of an IS, they are more likely to have a positive intention for continued usage and WOM (Bhattacherjee 2001; Brown et al. 2005). Thus, it is expected that the more users are satisfied with NGDS use, the more they will have a continuance intention and positive WOM.

H1a: Satisfaction has a positive effect on continuance intention of NGDS.
H1b: Satisfaction has a positive effect on positive WOM of NGDS.

3.2 Utilitarian value

Utilitarian value refers to the perceived utility gained by achieving functional objectives. Thus, it is relevant for task-specific use of NGDS (e.g., information seeking in a certain location). As one of the main motivations of IS use, utilitarian value has been considered as a salient antecedent for better satisfaction and continuance intention (Bhattacherjee 2001; Davis 1989). Also, it is positively related to WOM by enhancing users' loyalty toward an IS (Kim & Son 2009). Thus, it is expected that utilitarian value may have a positive impact on users' satisfaction, continuance intention, and positive WOM in NGDS use as well.

H2a: Utilitarian value has a positive effect on satisfaction of NGDS.
H2b: Utilitarian value has a positive effect on continuance intention of NGDS.
H2c: Utilitarian value has a positive effect on positive WOM of NGDS.

3.3 Hedonic value

Hedonic value refers to the experiential feeling aroused while using an IS such as entertainment and escapism. Individuals often use NGDS for their pleasure, excitement, and fun rather than simply for task completion (e.g. playing a game and taking a fun picture). Previous studies indicate that hedonic value positively influences users' attitude and behavioral intention to use (Ahn et al. 2007). Moreover, it is found that users who have an enjoyable experience are more motivated to share their experiences with others (Babin et al. 2005). Thus, it is expected that hedonic value may have a positive impact on users' satisfaction, continuance intention, and positive WOM in NGDS use as well.

H3a: Hedonic value has a positive effect on satisfaction of NGDS.
H3b: Hedonic value has a positive effect on continuance intention of NGDS.
H3c: Hedonic value has a positive effect on positive WOM of NGDS.

3.4 Social value

Social value refers to the enhancement of self-image among other individuals from the use of an IS (Venkatesh et al. 2003). People are often driven by social value of a product or service rather than its utilitarian or hedonic value (Sheth et al. 1991). For instance, a particular brand may be chosen for better social image. In line with this, previous studies found that social image is positively associated with satisfaction, continuance intention, and positive WOM within the context of IS use (Lee et al. 2002; Lu et al. 2005; Pihlström & Brush 2008). Thus, it is expected that social value may have a positive impact on users' satisfaction, continuance intention, and positive WOM in NGDS use as well.

H4a: Social value has a positive effect on satisfaction of NGDS.
H4b: Social value has a positive effect on continuance intention of NGDS.
H4c: Social value has a positive effect on positive WOM of NGDS.

3.5 Epistemic value

Epistemic value is "the perceived utility acquired from an alternative's capacity to arouse curiosity, provide novelty, and/or satisfy a desire for knowledge" (Sheth et al. 1991, p. 162). Thus, epistemic value may be more important for the service that is entirely new to most people such as NGDS (Sheth et al. 1991). Previous studies indicate that epistemic value is a salient factor for technology adoption

since some users are more focused on the potential for exploration and discovery rather than on what the artefact could do (Hedman & Gimpel 2010). Moreover, the positive impacts of epistemic value on satisfaction, continuance intention, and positive WOM were identified by prior empirical analyses (Goetzinger et al. 2007; Pihlström & Brush 2008). Thus, it is expected that epistemic value may have a positive impact on users' satisfaction, continuance intention, and positive WOM in NGDS use as well.

H5a: Epistemic value has a positive effect on satisfaction of NGDS.
H5b: Epistemic value has a positive effect on continuance intention of NGDS.
H5c: Epistemic value has a positive effect on positive WOM of NGDS.

4   METHODOLOGY

4.1   Instrument development

All 7 constructs in the research model were measured using multiple item scales. In order to ensure the validity of measurement items, pre-validated items from previous studies were adopted with minor refinements to fit the research context. Finally, all items used a seven-point Likert type scale (strongly disagree = 1 to strongly agree = 7). Table 2 shows the measurement items.

4.2   Data collection

A mobile survey methodology was adopted to collect empirical data, which is a new effective tool to analyse users' perception as smart devices have come into wide use. This new method has become popular not only because it ensures high reliability by allowing researchers to monitor the survey process in real-time but because it prevents multiple responses by the same user. Also, it offers faster

Construct	Item	Source
Utilitarian value	I can accomplish just what I want from NGDS. NGDS helps me to acquire the information I am looking for. NGDS is a convenient service to do what I am interested in. NGDS provides monetary benefits to me. Overall, NGDS is useful to me.	Babin et al. (1994), Rintamäki et al. (2006)
Hedonic value	Using NGDS is truly fun. I use NGDS, not because I have to, but because I want to enjoy. I have a good time while using NGDS. I feel excitement while using NGDS.	Babin et al. (1994)
Social value	NGDS use improves the way I am perceived. NGDS use makes other people have a good impression for me. Using NGDS will add to my personal uniqueness. I can get a good reputation when I am good at using NGDS.	Moore and Benbasat (1991), Turel et al. (2007)
Epistemic value	NGDS is new service for me. NGDS arouses my curiosity. NGDS use is new experience for me. NGDS helps me to learn new service.	Sheth et al. (1991)
Satisfaction	I am satisfied with NGDS. My choice to use NGDS is a wise one. I am happy with my earlier decision to use NGDS	Bhattacherjee (2001)
Continuance intention	I want to continue using NGDS rather than discontinue its use. My intention is to continue using NGDS rather than alternatives. I will frequently use NGDS in the future.	Bhattacherjee (2001), Roca et al. (2006)
Positive word-of-mouth	I will highly recommend NGDS to others. I will say positive things about NGDS to others. I will encourage using NGDS to people seeking a new service.	Zeithaml et al. (1996)

Table 2.   Measurement model

response time and lower costs than other alternatives. The survey was distributed through a mobile application on December 2012 by OVEY, the largest mobile survey company in Korea. The survey only targeted people who experienced NGDS by including a screening question as a first question. Finally, a total of 70 responses were collected. After removing insincere responses based on the two marker variables, 57 valid samples were obtained.

5 PILOT STUDY RESULTS

A pilot study was conducted to evaluate the proposed research model. SPSS 18 and SmartPLS 2.0 were adopted as the analysis software.

5.1 Instrument validation

First, the internal consistency of each item was checked by calculating Cronbach's alpha. All values exceed the cut-off value (0.7) with the minimum value of 0.815. Second, the convergent validity was assessed by checking factor loadings, composite reliability (CR), and the average variance extracted (AVE). The results show most figures are above the recommended values (0.7 for factor loadings and CR, and 0.5 for AVE) except the first item of utilitarian value that was dropped due to its low factor loading score. Lastly, discriminant validity was assessed by analysing the overall correlations among the constructs and the squared root of AVE, which of each construct must exceed the correlations between it and all other constructs. The results show that satisfactory discriminant validity is ensured.

5.2 Hypotheses testing

The preliminary hypotheses test (one-tailed test) was conducted with 57 samples. Figure 3 shows the results. The model explains 66.68% of variance for satisfaction, 67.75% of variance for continuance intention, and 83.38% of variance for positive WOM. As assumed, satisfaction significantly affects continuance intention (β=0.469, p<0.01) and positive WOM (β=0.407, p<0.001). Also, utilitarian value significantly influences all dependent variables that include satisfaction (β=0.302, p<0.001), continuance intention (β=0.303, p<0.05), and positive WOM (β=0.169, p<0.01). Meanwhile, the impact of hedonic value is only significant on satisfaction (β=0.425, p<0.001) and positive WOM (β=0.201, p<0.01) except continuance intention (β=0.156). Similarly, the impact of social value is only significant on positive WOM (β=0.162, p<0.05) except satisfaction (β=0.056) and continuance intention (β=0.106). Lastly, epistemic value significantly influences satisfaction (β=0.232, p<0.05) and positive WOM (β=0.213, p<0.01) but its impact on continuance intention is not significant (β= -0.05). These results support most of the hypotheses except H3b, H4a, H4b, and H5b.
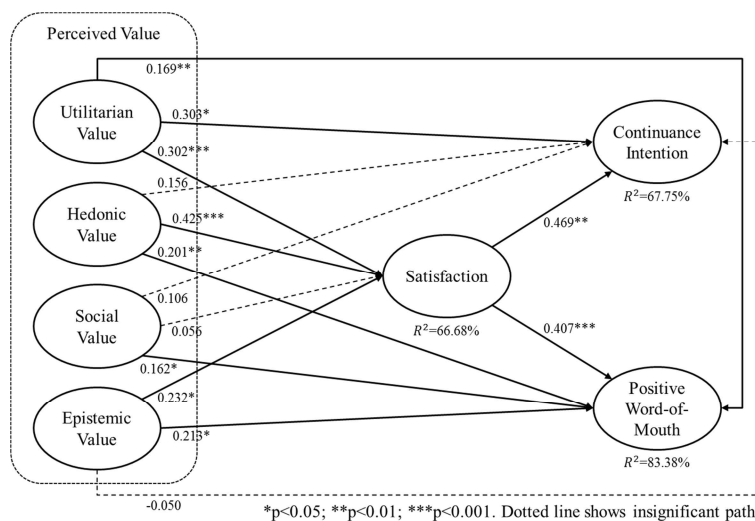

Figure 3.   Results of preliminary hypotheses testing

5.3 Discussion

There are several significant findings from the pilot study. First, utilitarian value increases satisfaction, continuance intention, and positive WOM in NGDS use. The result indicates the salience of utilitarian value that comes from the achievement of users' functional objectives of NGDS use (e.g., information seeking in a certain location). This is also consistent with previous studies that argued the salience of perceived utility (Bhattacherjee 2001; Davis 1989). Second, hedonic value increases satisfaction and positive WOM in NGDS use. The result indicates the salience of hedonic value of NGDS that has the aspect of hedonic IS by providing enjoyable contents and fun experience (e.g. playing a simple game, taking a picture, and augmented reality experience). This is in line with the much attention of previous studies on perceived enjoyment in hedonic IS context (Van der Heijden 2004). Third, social value increases positive WOM in NGDS use. This result is meaningful since it may be a first trial that examine social value in a public IS consumed in public places. The finding may indicate that people want to share or boast their good experience of NGDS to their friends. Lastly, epistemic value increases satisfaction and positive WOM in NGDS use. This result extends previous studies, mostly limited to examine the utilitarian-hedonic-social trichotomy of perceived value, since epistemic value was found to greatly contribute in encouraging users to be satisfied and to spread the service to others.

However, the model has four insignificant relationships. First, hedonic value and social value have no direct impact on continuance intention. We would like to withhold judgment since their t-values were very near to the significance cut-off (1.645). The future completed paper may prove their significance with more samples. Second, social value has no direct impact on satisfaction. This could be due to the higher significance of other value compositions that may offset the potential relationship. From the survey results, we found that the main purposes of NGDS use are ranked as follows: to gain utility, to experience a new service, and to feel enjoyment. As satisfaction mainly comes from what individuals want and need, social value may not affect satisfaction. Lastly, epistemic value has no direct impact on continuance intention. This could be due to the wear-out effect of epistemic value as time goes by, which means the novelty effect is difficult to last for a long time.

6 CONCLUSION AND EXPECTED CONTRIBUTIONS

This research attempted to investigate the user acceptance of NGDS from the perspective of perceived value. Going beyond previous research, this study developed a research model by including not only utilitarian-hedonic-social trichotomy of perceived value but also epistemic value. Then, their impacts on the three salient measures of the user acceptance of NGDS: satisfaction, continuance intention, and positive WOM. The pilot study result showed that utilitarian value increases satisfaction, continuance intention, and positive WOM. Also, hedonic value increases satisfaction and positive WOM, while social value increases positive WOM only. Lastly, epistemic value increases satisfaction and positive WOM. In this way, the future completed paper is expected to make contributions to both theories and practices. In terms of theoretical contributions, a primary contribution is that this study will be the first study that examines the user acceptance of NGDS. Thus, this study is expected to serve as a basis for the future related studies by providing holistic understanding on the user aspect of NGDS, who are actual evaluators of the service. Second, this study will contribute by empirically examining epistemic value beyond previous studies, which are mostly limited to the utilitarian-hedonic-social trichotomy of perceived value. By doing so, an extended perspective can be obtained from the empirical evidence that epistemic value is highly associated with users' satisfaction and positive WOM for the adoption of a novel IS such as NGDS. Furthermore, in terms of practical contributions, this study will provide useful insights on which value dimensions are salient for satisfaction, continuance intention, and positive WOM. Based on the findings, management can manage their NGDS services better and more effectively.

7 ACKNOWLEDGEMENT

References

ABI Research. (2011). Digital Signage Market and Business Case Analysis. Retrieved from http://www.abiresearch.com/research/product/1005870-digital-signage-market-and-business-case-a/.

Ahn, T., Ryu, S., and Han, I. (2007). The impact of Web quality and playfulness on user acceptance of online retailing. Information & Management, 44 (3), 263-275.

Anderson, E. W. (1998). Customer satisfaction and word of mouth. Journal of Service Research, 1 (1), 5-17.

Babin, B. J., Darden, W. R., and Griffin, M. (1994). Work and/or fun: Measuring hedonic and utilitarian shopping value. Journal of Consumer Research, 20 (4), 644-656.

Babin, B. J., Lee, Y. K., Kim, E. J., and Griffin, M. (2005). Modeling consumer satisfaction and word-of-mouth: Restaurant patronage in Korea. Journal of Services Marketing, 19 (3), 133-139.

Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. MIS Quarterly, 25 (3), 351-370.

Brown, T. J., Barry, T. E., Dacin, P. A., and Gunst, R. F. (2005). Spreading the word: Investigating antecedents of consumers' positive word-of-mouth intentions and behaviors in a retailing context. Journal of the Academy of Marketing Science, 33 (2), 123-138.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13 (3), 319-340.

Dennis, C., Michon, R., and Newman, A. (2010). The appeal of a town's separately branded environments to market segments and the segmented appeal of digital signage. Place Branding and Public Diplomacy, 6 (2), 156-175.

Görlitz, G. and Schmidt, A. (2008). Digital signage: Informal learning in animal parks and zoos. In World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education, 841-846.

Goetzinger, L., Park, J., Lee, Y. J., and Widdows, R. (2007). Value-driven consumer e-health information search behavior. International Journal of Pharmaceutical and Healthcare Marketing, 1 (2), 128-142.

Grewal, D., Ailawadi, K. L., Gauri, D., Hall, K., Kopalle, P., and Robertson, J. R. (2011). Innovations in retail pricing and promotions. Journal of Retailing, 87, S43-S52.

Grobelny, J. and Michalski, R. (2011). Various approaches to a human preference analysis in a digital signage display design. Human Factors and Ergonomics in Manufacturing & Service Industries, 21 (6), 529-542.

Hedman, J. and Gimpel, G. (2010). The adoption of hyped technologies: a qualitative study. Information Technology and Management, 11 (4), 161-175.

Kim, H. W., Chan, H. C., and Gupta, S. (2007). Value-based adoption of mobile internet: An empirical investigation. Decision Support Systems, 43 (1), 111-126.

Kim, H. W. and Kankanhalli, A. (2009). Investigating user resistance to information systems implementation: A status quo bias perspective. MIS Quarterly, 33 (3), 567-582.

Kim, S. S. and Son, J. Y. (2009). Out of dedication or constraint? A dual model of post-adoption phenomena and its empirical test in the context of online services. MIS Quarterly, 33 (1), 49-70.

Krishna, M. (2007). Realizing the promise of enterprise video communications. Journal of Digital Asset Management, 3 (4), 197-208.

Lee, Y., Kim, J., Lee, I., and Kim, H. (2002). A cross-cultural study on the value structure of mobile internet usage: comparison between Korea and Japan. Journal of Electronic Commerce Research, 3 (4), 227-239.

Lu, J., Yao, J. E., and Yu, C.-S. (2005). Personal innovativeness, social influences and adoption of wireless Internet services via mobile technology. The Journal of Strategic Information Systems, 14 (3), 245-268.

Monroe, K. B. (1990). Price: Making Profitable Decisions. McGraw-Hill, New York.

Moore, G. C. and Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. Information Systems Research, 2 (3), 192-222.

Oliver, R. L. (1981). Measurement and evaluation of satisfaction processes in retail settings. Journal of Retailing, 57 (3), 25-48.

Parthasarathy, M. and Bhattacherjee, A. (1998). Understanding post-adoption behavior in the context of online services. Information Systems Research, 9 (4), 362-379.

Pihlström, M. and Brush, G. J. (2008). Comparing the perceived value of information and entertainment mobile services. Psychology & Marketing, 25 (8), 732-755.

Rintamäki, T., Kanto, A., Kuusela, H., and Spence, M. T. (2006). Decomposing the value of department store shopping into utilitarian, hedonic and social dimensions: Evidence from Finland. International Journal of Retail & Distribution Management, 34 (1), 6-24.

Roca, J. C., Chiu, C. M., and Martínez, F. J. (2006). Understanding e-learning continuance intention: An extension of the technology acceptance model. International Journal of Human-Computer Studies, 64 (8), 683-696.

Sánchez, J., Callarisa, L., Rodríguez, R. M., and Moliner, M. A. (2006). Perceived value of the purchase of a tourism product. Tourism Management, 27 (3), 394-409.

Sheth, J. N., Newman, B. I., and Gross, B. L. (1991). Why we buy what we buy: A theory of consumption values. Journal of Business Research, 22 (2), 159-170.

Smith, D., Menon, S., and Sivakumar, K. (2005). Online peer and editorial recommendations, trust, and choice in virtual markets. Journal of Interactive Marketing, 19 (3), 15-37.

Swan, J. E. and Oliver, R. L. (1989). Postpurchase communications by consumers. Journal of Retailing, 65 (4), 516-533.

Sweeney, J. C. and Soutar, G. N. (2001). Consumer perceived value: The development of a multiple item scale. Journal of Retailing, 77 (2), 203-220.

Turel, O., Serenko, A., and Bontis, N. (2007). User acceptance of wireless short messaging services: Deconstructing perceived value. Information & Management, 44 (1), 63-73.

Turel, O., Serenko, A., and Bontis, N. (2010). User acceptance of hedonic digital artifacts: A theory of consumption values perspective. Information & Management, 47 (1), 53-59.

Van der Heijden, H. (2004). User acceptance of hedonic information systems. MIS Quarterly, 28 (4), 695-704.

Venkatesh, V., Morris, M. G., Gordon, B. D., and Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27 (3), 425-478.

Verhagen, T., Feldberg, F., van den Hooff, B., Meents, S., and Merikivi, J. (2011). Satisfaction with virtual worlds: An integrated model of experiential value. Information & Management, 48 (6), 201-207.

Want, R. and Schilit, B. N. (2012). Interactive digital signage. Computer, 45 (5), 21-24.

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. Psychological Review, 92 (4), 548-573.

Woodruff, R. B. (1997). Customer value: The next source for competitive advantage. Journal of the Academy of Marketing Science, 25 (2), 139-153.

Yu, J. (2013). User acceptance of new services and devices in the ICT industry: An extended perspective of perceived value. Ph.D Dissertation. KAIST.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. Journal of Marketing, 52 (3), 2-22.

Zeithaml, V. A., Berry, L. L., and Parasuraman, A. (1996). The behavioral consequences of service quality. Journal of Marketing, 60 (2), 31-46.

Zhou, Z., Jin, X. L., Vogel, D. R., Fang, Y., and Chen, X. (2011). Individual motivations and demographic differences in social virtual world uses: An exploratory investigation in Second Life. International Journal of Information Management, 31 (3), 261-271.