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Bo Han
University of North Texas, Denton, United States., bo.han@unt.edu

John Windsor
ITDS, University of North Texas, Denton, TX, United States., windsor@unt.edu

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Bo Han
University of North Texas
bohan@my.unt.edu

John Windsor
University of North Texas
windsor@unt.edu

ABSTRACT

In the current study, we investigated the effects of several factors on the user's willingness to pay (WTP) on hedonic social network sites (HSNSs), which includes WTP for HSNSs and WTP online contacts on HSNSs. Integrating the hedonic system use perspective with the social capital based view, we find that a user's WTP for HSNSs is significantly positively influenced by the user's perceived value of online social connections and perceived ease of use of the system. A user's WTP online contacts on HSNSs is significantly positively influenced by the user's perceived value of online social connections and perceived playfulness. The findings provide a theoretical foundation for the future economic value research of HSNSs, and provide several implications to practitioners.

KEYWORDS

Willingness to pay, hedonic social network sites, social media, economic value.

INTRODUCTION

Hedonic social network sites (HSNSs) such as Facebook and Google+ have experienced a rapid growth in recent years and continue to see a promising future. With millions of users, HSNS managers have taken several actions in the hope of transforming the valuable customer resources into a financial success. However, many attempts have failed (Lu and Hsiao, 2010). Facing these challenges, factors that could significantly influence the user's willingness to pay (WTP) for HSNSs have become supportive knowledge to practitioners, especially when HSNSs are going public, both Web site managers and potential investors are eager to explore a new business model, in order to break through the limitation of the excessive reliance on online advertisements (Raice, 2011). Besides HSNS managers, individual HSNS users also have strong interest in exploring the commercial opportunities hiding on the Web sites. HSNS based consumer-to-consumer (C2C) e-commerce markets such as Facebook Marketplace have become one of the most critical platforms for individual sellers to display their products and look for potential buyers from their HSNS contacts such as Facebook "friends" (Kaplan and Haenlein, 2010). However, the lack of relevant research from a payer's perspective leads to a knowledge gap: When a user finds that HSNS contacts try to sell products to him or her, could the online interpersonal *social* connections influence the user's willingness to get involved in the *business* transactions? A rigorous investigation on the effect is important, because the transference of the social intimacy to the business connection is the seller's intuitive presumption of the validity of the HSNS based e-commerce. If the relationship between the a user's perception of online social connection and the user's WTP online contacts on HSNSs is not confirmed, getting the expected revenues on HSNSs could only be the seller's unilateral wishes, but could lead them to blindly invest a large number of resources into chasing infeasible expectations.

To further study a user's WTP on HSNSs (i.e., the user's WTP for HSNSs and the user's WTP online contacts on HSNSs), we first have a review on the current literature of the factors that could significantly influence the user's behavioral motivations in the current research. Then, we introduce a new theoretical model by integrating the hedonic system use perspective and the social capital based view of HSNSs. Consequently, we will present our methodology and data analyses. Contributions to information systems research, implications to practitioners, limitations and future research will be discussed in the last two sections of this paper.

LITERATURE REVIEW

Before investigating the user's WTP on HSNSs, we suggest it is necessary to primarily understand the motivational factors of the user's intention and behaviors on the Web sites. According to the nature of HSNSs, we suggest two streams of studies can be used to support the current research, including the hedonic system use perspective and the social capital based view of HSNSs.

Hedonic system use research is an emerging field in information systems studies with the rising trend of the hedonic IT artifact development and consumption (Turel et al., 2010). Prior studies (Kim and Hwang, 2006; Moon and Kim, 2001) argue that a hedonic information system is significantly different from a utilitarian information system in the following way: A utilitarian information systems could provide instrumental outcomes external to the human computer interactions (Davis, 1989; Venkatesh et al., 2008; Venkatesh et al., 2003). For instance, on a utilitarian social network sites such as LinkedIn.com, people could find potential job offers and business collaboration opportunities on the Web site. By contrast, a hedonic information system aims at providing intrinsic enjoyment to users from the human computer interactions (Moon and Kim, 2001). For instance, on a hedonic social network sites such as Facebook Google+ and Pinterest, people could use the Web sites for fun by checking their friends' status updates, sharing photo and video with each other, etc. Drawing on the Technology Acceptance Model (TAM), van der Heijden (2004) argue that, in a hedonic information system, a user's attitude toward the system and subsequent behavioral intentions are strongly positively influenced by two critical factors, including the user's perceived enjoyment and the user's perceived ease of use of the system. The hedonic system use model (van der Heijden 2004) is then broadly adopted by the HSNS user studies. Sledgianowski and Kulviwat (2009) find that a person's perceived playfulness, an intrinsic perception equivalent to perceived enjoyment, has a significant motivational effect on the person's adoption and continuance intention of a HSNS. Other studies (Cha, 2009; Heinrichs et al., 2011) find that a person's perceived ease of use could positively influence the person's experience on HSNSs, thereby determining the person's intention on the Web sites as well. However, the above studies leave out two important research questions: (1) Since a user's perceived playfulness and perceived ease of use are influential, could the two factors also have significant positive effects on the user's WTP for HSNSs? (2) Could the user's perceived playfulness derived from the online interpersonal interactions have a significant positive effect on his or her WTP the online contacts, when the possibility of C2C e-transactions is seen? We will further address these two research questions in the theoretical model section.

Social capital based view provides another lens of research to investigate the user's behavioral intention on HSNSs. The studies with this view suggest that people have strong expectations to absorb social capitals (i.e., social contacts and social connections with these contacts) by using HSNSs (boyd and Ellison, 2007; Ellison et al., 2007). Subsequently, receiving and sustaining the social gains will strongly influence a person's behavioral intention on HSNSs, such as acceptance of the Web service, intention to consume other resources (e.g., time and money) to bridge and bond the social connections, etc. Further, Enders et al. (2008) argue that the influential factors of a social network site system user's intention and behaviors could be studied according to the stage of the user's pre-adoption and post-adoption of HSNSs. In the pre-adoptive stage, a person's estimated number of possible social connections could strongly influence the person's acceptance of a HSNS. The more a person believes he could create social connections with others through HSNSs, the more likely the person will join in the Web sites (Westland, 2010). In the post-adoptive stage, the number of a user's frequent social contacts decreases over time. However, the frequency and volume of the information exchanged among online contacts gradually increase. The improved communications subsequently increase a person's perceived value of the online social connections, thereby influencing him or her to keep using HSNSs (Hsu and Wu, 2011). The social capital based view draws a theoretical map of the HSNS user's acceptance and continuance of the Web service and online social connections. However, the answers to the following research questions are still unclear: (3) Could a user's perceived value of online *social* connection have a significant positive effect on the user's WTP for *business* activities with the user's online contacts? (4) If a user values the social connections with others on HSNSs, could this perceived value of interpersonal connections also have a transferred positive effect on the user's WTP for HSNSs?

THEORETICAL MODEL

Prior studies (Cha, 2011; Han and Windsor, 2011; Lu and Hsiao, 2010) have made several attempts in studying the HSNS user's WTP. Han and Windsor (2011) propose a HSNS user's WTP model by integrating factors from both the hedonic system use view and the social capital based view. However, one weakness of the model (Han and Windsor, 2011) is that the effect of a user's perceived ease of use on the user's WTP was not taken into account. According to van der Heijden (2004), the user's perceived ease of use has strong effects on both the user's perceived playfulness and the user's attitude toward the system. Thus, we suggest the construct should not be ignored when studying the user's WTP for HSNSs. Adding the user's perceived ease of use into the previous model could further advance our knowledge in the influential factors of the HSNS user's WTP, and better reflect the nature of a HSNS as a hedonic information system. Thus, extending the previous model (Han and Windsor, 2011), we introduce a new research model, as shown in Figure 1.

Willingness to Pay on HSNSs

Willingness to pay has been studied through diverse lenses of research, such as psychological, marketing, information systems, etc. According to Ajzen and Fishbein (1980), a person's behavioral willingness to perform (or not perform) a

behavior is the immediate determinant of the person's actual behavior. In e-commerce research, drawing on TAM model, Theory of Reasoned Action, and Theory of Planned Behavior, Kim et al. (2008) argue that a person's willingness to purchase services or products from a seller though the Internet is a predictor of the person's actual orders. We suggest that further understanding a user's WTP on HSNSs will provide a solid foundation for future research of the user's actual payment on the Web sites. In current study, we define a user's WTP on HSNSs as the degree to which a user intends to pay money for business transactions on HSNSs. This generic construct could be further separated into: (1) a user's WTP for HSNSs. We define the construct as the degree to which a user intends to spend money on using HSNSs and other services (e.g., virtual properties, virtual gifts) provided by the Web sites; (2) a user's WTP his or her online contacts on HSNSs. We define this construct as the degree to which a user intends to purchase products from his or her contacts on HSNSs, when the possibility of C2C e-commerce is seen. As Han and Windsor (2011) suggest, a user's WTP his or her online contacts on HSNSs has the following important features: 1) The construct is defined on the assumption that the user's perception of the online contact's primary purpose is to create social connections rather than business relationships with him or her. 2) The possibility of C2C e-commerce transactions emerges when a user's online contacts attempt to sell the products to him or her through HSNSs. Because of the two characteristics, we suggest that the HSNS based interpersonal commerce activities becomes an online equivalent to the offline direct sales.
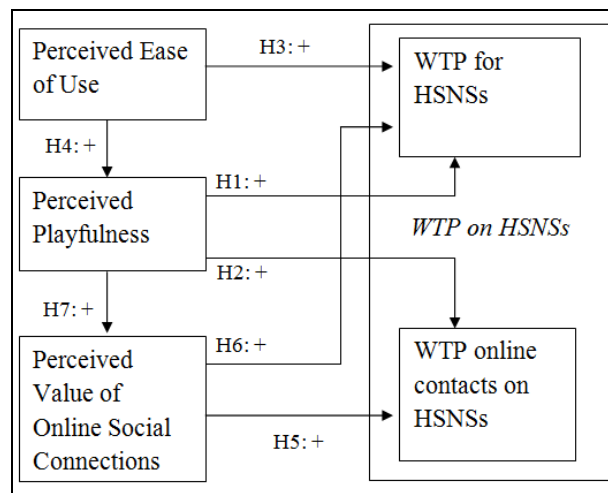

Figure 1. Proposed Model of the User's WTP on HSNSs

Perceived Playfulness

Perceived playfulness is defined as the degree of personal enjoyment or pleasure when a user believes using HSNSs and communicating with other people will bring to him or her. A user's perceived playfulness could have two possible motivational effects on the user's consumption intention. First, from an addictive consumption perspective, when a user perceives enjoyment by using a system, the user is inclined to consume other resources to sustain the enjoyment (Turel et al., 2010). Secondly, from a temporal consumption perspective, when a user perceives enjoyment, it is more likely for him or her to make impulsive purchase decisions as well (Aroean, 2012). The two motivational effects have been found in several hedonic IT artifact (e.g., gaming consoles and mobile phone ringtones) consumption research. We suggest the two effects could also exist on a HSNS. The following hypothesis will be tested:

H1: A user's perceived playfulness has a significant positive effect on the user's WTP for HSNSs.

Different from using other hedonic IT artifacts such as mobile phone ringtones, HSNS users not only obtain the playfulness from the interaction with the Web site systems, but also get enjoyment from the information exchange with contacts on the Web sites (boyd and Ellison, 2007). Thus, it is possible that a user is willing to make the purchase decisions when online social contacts, whom the user has created an emotional attachment with, attempt to direct-sell products through the Web sites. The following hypothesis will be tested:

H2: A user's perceived playfulness has a significant positive effect on the user's WTP online contacts on HSNSs, when the possibility of C2C e-commerce is seen.

Perceived Ease of Use

Perceived ease of use is defined as the degree to which a system user believes that using the system is free of effort. In the current study, we suggest that a user's perceived ease of use of HSNSs could positively influence the user's WTP for HSNSs in the following two ways: 1) Direct influence. A user's perceived ease of use of HSNSs could create the user's perception that it is free of efforts to use the Web systems to create online social networks and broaden the boundary of social cycles (Heinrichs et al., 2011). We suggest:

H3: A user's perceived ease of use has a significant positive effect on the user's WTP for HSNSs.

2) Indirect influence: A user's perceived ease of use of HSNS systems could also facilitate the user's interaction with the Web service and online social contacts, thereby obtaining more enjoyment from the flowing experience. Thus, the following relationship could also exist on HSNSs:

H4: A user's perceived ease of use has a significant positive effect on the user's perceived playfulness, thereby significantly positively influencing the user's WTP for HSNSs.

Perceived Value of Online Social Connections

In this research, perceived value of online social connections is defined as a ratio of a person's perceived emotional and social gain by creating connections with others on HSNSs over the person's perceived cost of maintaining the online social connections. In fact, a person's perceived value of social connections have been broadly used as an effective marketing strategy. For instance, the U.S. based direct selling company, Amway, creates an interpersonal sales network by exploiting Chinese customer's perceived value of social network, and successfully has China as its largest market (Lewin, 2009). We suggest a HSNS could facilitate the social based sales by allowing sellers to create broad networks with others online. A user (i.e., the potential buyer) is likely to pay his or her social contacts for the potential C2C sales because of two critical reasons: First, a user could believe that the future social gains from the connections are greater than the costs of weathering continued relational conflict; Secondly, a user could believe that the cost of ending the online connections could be worse than the cost of remaining in it (Grayson, 2007). The following hypothesis will be tested:

H5: A user's perceived value of online social connections has a significant positive effect on the user's WTP online contacts on HSNSs, when the possibility of C2C e-commerce is seen.

In addition, when a user strongly relies on the virtual social network, the user is more likely to pay for the HSNS system, because the virtual social connections are invisible to users and costly to manage, while the hedonic social network sites provide an effective and efficient service to maintain the valuable online social connections. The convenience could motivate the user's WTP for HSNSs. We introduce the following hypothesis:

H6: A user's perceived value of online social connections has a significant positive effect on the user's WTP for HSNSs.

In addition, according to the social capital based view, a user's perceived value of online social connections is changing over time. The user's perception of these connections will vary with the frequency and volume of information exchange. When a person obtains enjoyment from the interaction with others on HSNSs, the user's would also believe the more social capital he or she gets from the connection, thereby perceiving more values from the online social network (Ellison et al., 2007). Thus, we suggest:

H7: A user's perceived playfulness has a significant positive effect on the user's perceived value of online social connections.

METHODOLOGY

In this study, we adopted a survey based strategy to collect data. A total of 156 students, whose ages ranged from 18 to 24, were recruited from a U.S. university to take part in the survey. We went through the responses before data entry, and excluded 8 incomplete questionnaires from data analyses. The number of usable responses was 148, or approximately 95% usable response rate. In the usable sample, the numbers of female and male participants were 86 (58%) and 62 (42%) respectively. At the time of the survey, 12% of participants had been using HSNSs such as Facebook and Myspace for more than five years. 43% of participants had been using HSNSs for two to five years. 45% of participants had been using HSNSs for less than two years. The questionnaire items used for data collection are listed in Table 1. Each item was rated on a Likert scale of 1= Strongly Agree to 5 = Strongly Disagree.

Table 1. List of Questionnaire Items by Constructs

Items	Factor Loading*
Perceived Playfulness *Adapted from (Chung and Tan, 2004)*	
I am happy to keep in touch with friends on social network sites (such as Facebook and Myspace).	0.965
Overall, I think social network sites bring lots of fun.	0.944
Social network sites are interesting.	0.897
I feel pleased to chat with my friends on social network sites.	0.670
I feel pleased to meet new friends on social network sites.	0.567
Perceived Value of Online Social Connections *Adapted from (Han and Windsor, 2011)*	
My social network on the Internet is a valuable resource to me.	1.005
I like to be close friends to my contacts on the social network sites.	0.908
Overall, I think my social connections on social network sites are important to me.	0.880
It's important to keep in touch with my friends on social network sites.	0.834
Perceived Ease of Use *Adapted from (Gefen and Straub, 2000)*	
It takes me very little effort to know how to use social network sites.	1.002
It takes me very little time to know how to use social network sites.	0.734
It's easy to create social connections with others on social network sites.	0.673
Willingness to Pay for HSNSs *Adapted from (Lu and Hsiao, 2010)*	
I am likely to pay for virtual properties on social network sites.	1.088
I am likely to pay for memberships on social network sites.	0.893
I am likely to pay for social network sites if they start charging fees.	0.607
Willingness to Pay Online Contacts on HSNSs *Adapted from (Kim et al., 2008)*	
I am likely to buy the products from my friends on social network site in priority, if I have multiple options.	1.058
I am likely to make a purchase from my friends on social network site if I need the products.	0.931
I am likely to recommend products sold by my friends on social network sites to other friends.	0.710

* Oblique rotation is employed, in some cases loadings may be higher than 1 (Rencher, 1998)

DATA ANALYSES

To test the proposed research model, we use partial least squares (PLS) to conduct data analyses for structural model and measurement model. We suggest that PLS has the following two advantages: First, PLS provides a powerful method for assessing a structural model and measurement model with the minimal demands on sample size, residual distributions and measurement scales (Goodhue et al., 2006). Secondly, handling both formative and reflective indicators PLS can be used not only for theory confirmation, but also for suggesting where relationships might or might not exist and for suggesting propositions for later testing (Kim et al., 2008). In the current study, all of indicators in the model are treated as reflective indicators of their respective constructs. Warp PLS 1.0 was adopted as the analytical software.

Table 2. Descriptive Statistics and Construct Reliability

Construct*	Cronbach's Alpha	Composite Reliability	AVE
PSNS	0.822	0.894	0.738
PCON	0.907	0.935	0.783
PLAY	0.874	0.910	0.672
PVAL	0.955	0.965	0.847
PEOU	0.731	0.848	0.652

* PSNS = Willingness to Pay for HSNSs; PCON = Willingness to Pay Online Contacts on HSNSs; PLAY = Perceived Playfulness; PVAL = Perceived Value of Online Social Connections; PEOU = Perceived Ease of Use

Reliability

The assessment of the measurement model includes the estimation of internal consistency for reliability and test of convergent and discriminant validity for construct validity (Chin and Todd, 1995; Kim et al., 2008). Cronbach's alpha and Fornell's composite reliability are calculated to test the internal consistency. Cronbach reliability coefficients require 0.70 or higher (Hair 2005), and composite reliability should be greater than 0.7 to be considered adequate (Fornell and Larcker, 1981). The calculated values of Cronbach's alpha and composite reliability are shown in Table 2. All of calculated Cronbach's alpha and composite reliability are greater than 0.7, indicating adequate internal consistency. In addition, all Average Variance Extracted (AVE) values of constructs are greater than 0.65, indicating that more than 65% of the variance of the measurement items can be accounted for by the constructs.

Table 3. Correlations of Latent Variables

	PSNS	PCON	PLAY	PVAL	PEOU
PSNS	**0.859**				
PCON	0.558	**0.885**			
PLAY	0.325	0.455	**0.819**		
PVAL	0.493	0.276	0.388	**0.920**	
PEOU	0.292	0.619	0.400	0.171	**0.807**

* All correlations are significant at the level of 0.001

Construct Validity

Construct validity can be examined by assessing convergent validity and discriminant validity (Chin et al., 1997). Convergent validity is measured by item loading. The coefficient is considered acceptable when it is greater than 0.5 (Wixom and Waston, 2001). The calculated coefficients of factor loading are shown in Table 1. All calculated values are greater than 0.5, indicating the convergent validity among variables. We use the average variance extracted (AVE) to evaluate discriminant validity. The AVE from the construct should be higher than the variance shared between the construct and other variable in the model (Kim et al., 2008). As Table 3 shows, the square roots of each AVE value are greater than the off-diagonal elements, indicating discriminant validity among variables (Wixom and Todd, 2005).

Table 4. Results of Hypothesis Testing

Hypothesis	Path coefficient	Significance level	Supported
H1	0.137	Not significant	No
H2	0.435	0.01	Yes
H3	0.123	0.05	Yes
H4	0.397	0.01	Yes

H5	0.291	0.01	Yes
H6	0.438	0.01	Yes
H7	0.238	0.01	Yes

Structural Model Assessment

We use path coefficient and R^2 to assess the structural model. Both path coefficient and R^2 indicate model fit, i.e., how well the model is performing. The results of hypothesis testing are shown in Table 4. The structural model test results are shown in Figure 2.
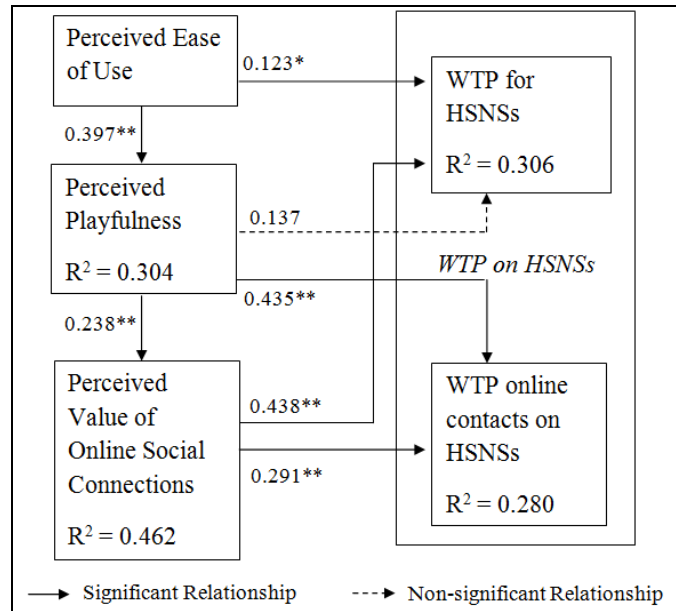

Figure 2. Results of Structural Model (* Significant at the level of 0.05; ** Significant at the level of 0.01)

FINDINGS AND DISCUSSION

The results of data analyses support the following answers to the research questions raised in the current study: (1) A user's perceived playfulness has no significant positive effect on the user's WTP for HSNSs, but the perceived ease of use does have a significant positive effect on the user's WTP for HSNSs. (2) The user's perceived playfulness derived from the online social interactions could influence his or her willingness of getting involved in the business transactions with the online contacts, and have a significant positive effect on the user's WTP other contacts when the possibility of C2C e-transactions is seen. (3) The user's perceived value of online social connections have a significant positive effect on the user's WTP other contacts in potential HSNS based C2C e-transactions. (4) The user's perceived value of online social connections could transfer and positively influence the user's WTP for HSNSs. In addition, the user's perceived value of online social connections is significantly positively associated with the user's perceived playfulness on HSNSs. We suggest the findings provide contributions to IS research and practical implications to practitioners in the following way.

Contributions to IS Research

First, our research model draws a conceptual map of the user's WTP on HSNSs by integrating two research perspectives (i.e., the hedonic system use perspective and the social capital based view of HSNS). The holistic view fully considers the effects of factors from both the human-computer interaction perspective and the human-human interaction perspective on a user's WTP on HSNSs. Secondly, our research model further investigated the working mechanism of a user's perceived playfulness in a hedonic system consumption process. Perceived playfulness has long been considered a fundamental drive of the user's intention and behaviors in a hedonic information system. However, some research (Cha, 2009; Cha, 2011) argues that a user's perceived playfulness has no significant positive effect on the user's WTP for HSNSs. Our research model also

supports the argument. Meanwhile, we find that a user's perceived playfulness could indeed influence the user's WTP for HSNSs through the user's perceived value of online social connections that are established and maintained on the Web systems. We suggest that the user's perceived value of online social connections is not the mediator between the user's perceived playfulness and his or her WTP for HSNSs, but its transferred effect on the user's WTP for HSNSs through the user's perceived value implies that a user's WTP for HSNSs is a willingness accumulated through a long term after the interpersonal connections on the Web sites are stabilized. The impulsive consumption effect resulted from the person's perceived playfulness is less likely to occur on HSNSs. More important, hedonic artifacts that are provided by a HSNS with the expectation of stimulating users to pay should serve the major function of improving the user's perceived value of online social connections on the Web sites. This implication is extremely important for practitioners.

Implications to Practitioners

When new HSNSs continue emerging and the competition becomes more intensive in the market, creating a new business model is an extremely important strategic mission for HSNS managers. Multiple major HSNSs have introduced several fun-adding features to their users. These additional services could strongly influence a person's intention to use HSNS systems; however, some of them could not effectively stimulate the person's WTP for HSNSs as expected. Prior studies (Cha, 2011; Han and Windsor, 2011) have briefly discussed the HSNS management should not emphasize on using hedonic artifacts such as online music and videos to motivate users to pay on the Web site. However, we suggest we should not treat all of hedonic artifacts equally and argue that none of them has motivational effects on the user's WTP. We suggest that HSNS managers should consider the following two benchmarks before introducing new services and virtual products to motivate the user's willingness to pay: The first benchmark is whether the new service could improve the interpersonal interactions. As we discussed, the hedonic artifacts should serve the fundamental requirement of increasing a person's perceived value of his or her online social connections, which is highly associated with the interpersonal interactions on HSNSs. Thus, we suggest a HSNS should focus on offering additional services that could reinforce the interpersonal connections and interactions (e.g., social networking games), rather than provide the unilateral egocentric oriented fun adding service (e.g., online music) on the Web site. The second benchmark is whether a new service could fully take advantage of the social connections resource on HSNSs. A typical example is that Myspace aims at charging users for online music download. We suggest the HSNS management should consequently consider what factors differentiate Myspace from other non-HSNS Web sites such as iTune Store that provide homogeneous resources and services to potential customers. Otherwise, Myspace will lose its competitive advantage as a HSNS, and fails to motivate users to pay.

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