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How Social Are Social Virtual Worlds? An Investigation Of Hedonic, Utilitarian, Social And Normative Usage Drivers

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HOW SOCIAL ARE SOCIAL VIRTUAL WORLDS?
AN INVESTIGATION OF HEDONIC, UTILITARIAN, SOCIAL AND NORMATIVE USAGE DRIVERS

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Abstract

Social Virtual Worlds (SVW) on the Internet have become increasingly popular during the last decade. Despite their increasing usage, business potential and societal impact, limited prior research has focused on understanding the factors that drive users to participate in SVWs. Thus far research has investigated the utilitarian and hedonic outcomes derived from SVW usage, but the literature offers limited information on the social outcomes derived from virtual world usage. Moreover, social influence in the VW context has mostly been researched by employing the subjective norm construct, largely leaving the actual sources of normative influence unnoticed. To fill in these gaps, we develop a research model examining the utilitarian, hedonic and social outcomes of VW usage as well as the role of normative beliefs in determining the VW engagement. The model is tested with a sample of 844 German users of the SVW Habbo using PLS. The results demonstrate that usage is mainly determined by hedonic and utilitarian outcomes, i.e. pleasure experiences when immersed in the SVW and perceived benefits in social interaction. Social presence was the only social outcome exerting a significant influence on the use intention. Neither normative nor informational influence was found to be a significant predictor of Habbo usage. We discuss the implications for IS research and practice.

Keywords: Social Virtual Worlds, IS Adoption, Motivation Theory, Social Influence.

1   INTRODUCTION

Social virtual worlds (SVWs) are one of the most topical forms of online social interaction and networking. According to a virtual worlds consultancy kZero the total number of user accounts in virtual worlds exceeded 1 billion in 2010[1]. The increasing usage makes SVWs interesting from business but also societal perspective (Messinger et al. 2009). As a concrete example, in December 2010 Habbo Hotel generated $ 6 million revenue only from selling virtual items.

In SVWs the users do not necessarily know each other from the offline worlds and because inside the virtual world the users are present in a form of avatars. Thus, SVWs differ from e.g. instant messengers and social networking sites. Moreover, in social networking sites the communication takes mostly place between people known from the offline life, whereas in SVWs, fast-paced interaction with other previously unknown users and forming new acquaintances is common.

In SVWs, the usage decisions and the value derived from the usage depend heavily on the social outcomes that are obtained in relation to other users. As SVWs are designed to facilitate user-to-user interaction and building own users' own groups and sub-communities within the world, social outcomes as well as the social influence are likely to be key drivers of user participation.

Prior research on the use of virtual worlds (VWs) has investigated the utilitarian and hedonic outcomes derived from the usage (Shin 2009). Thus far, the literature offers limited information on the social outcomes derived from virtual world usage. Second, the current literature has examined the social influence in the VW context mostly by employing the subjective norm construct (Hua & Haughton 2009) largely leaving the actual sources of normative influence unnoticed. Third, the empirical context of prior virtual world research has focused on VWs such as Second Life (Fetscherin & Lattemann 2008; Zhou et al. 2011) targeted for the adult audience, yet VWs for people under 25 years old, especially teens and children are the largest and fastest growing VW category (Spence 2008).

To fill in these gaps, we develop a research model examining the utilitarian, hedonic and social outcomes of VW usage as well as the role of normative beliefs in determining the VW engagement. We further divide the social outcomes   into status, social presence and perceived network size and normative beliefs into interpersonal influence and secondary sources of information. The research model is empirically tested with a data collected from 844 Habbo users and analyzed with PLS.

2   RESEARCH BACKGROUND

2.1   Social virtual worlds & Habbo Hotel

In large, virtual worlds can be divided into Gaming Virtual Worlds and Social Virtual Worlds (see e.g. Jung & Kang 2010). In contrast to GVWs, SVWs do not have explicit narratives or level-ups but the users define the purpose and content of the usage. In this study, we define SVWs as *persistent, computer-mediated 3D environments; used for various user-determined purposes such social interaction, where the users are represented as avatars.*

Habbo Hotel is the world's largest SVW targeted for teenagers having 11 million unique visitors in 35 country-specific portals with local payment systems. According to the operator, 90 % of the users are aged between 13 and 18[2]. Habbo avatars do not resemble human beings but are more like cartoon figures. The users are anonymous inside Habbo, revealing one's real identity of contact information is prohibited and moderated by the operator.

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[1] Virtual world registered users breakthrough 1 bn http://www.kzero.co.uk/blog/?p=4448 (accessed 10 Mar 2011)

[2] Habbo Hotel – where else? http://www.sulake.com/habbo/index.html?navi=2.1 (accessed 10 Mar 2011)

In contrast to e.g. Second Life, Habbo does not facilitate an in-world economy or a currency that could be exchanged to real money. Moreover, Habbo does not apply access fees of periodical subscriptions, but the users can use real money to purchase virtual items and premium memberships that provides exclusive features.

Unlike the habitants of Second Life, the Habbo users cannot manipulate the surroundings. Each avatar is provided with a virtual room that one can decorate and invite other users. In addition, Habbo accommodates various non-violent games to play. Events, such as celebrity visits are organized on regular basis. In sum, the activities the users can do in Habbo relate to social interaction with other users, spending time in various ways, decorating and accessorizing their rooms and avatars and trading their virtual possessions with other users.

2.2   User motivation and social influence

Motivation theorists view human behaviour being driven by desirable outcomes of the behaviour (Lawler & Porter 1967). In the prior technology adoption literature increases in one's performance (Davis 1989), perceived enjoyment (Davis et al., 1992) and gains in status and image (Moore & Benbasat, 1991) have found to be desirable outcomes driving the decisions to use technological innovations. As a result, the benefits from using information technology can be divided into utilitarian, hedonic and social outcomes (Venkatesh & Brown 2001).

We propose that the use of social virtual worlds is a function of utilitarian, hedonic and social factors. Furthermore, we suggest that in addition to status gains, experiencing human warmth and sociability in the SVW, i.e. social presence and perceived network size, i.e. the presence of other people in the SVW are salient social outcomes.

Factor	Theory	Construct	Definition	Reference
Social outcomes	Innovation diffusion theory	Status gains	The degree to which the status of an individual is conferred by using the SVW	(Moore & Benbasat,1991)
	Theory of network externalities	Perceived network size	The perception of the degree to which the important others are present in the SVW.	(Katz & Shapiro, 1986; Valente 1995)
	Social presence theory	Social presence	The degree of human warmth associated with the SVW.	(Yoo & Alavi 2001)
Utilitarian outcomes	Self-determination theory	Utilitarian outcomes	The extent to which using the SVW will help to attain gains in social interaction and free time	(Deci & Ryan 2000; Venkatesh & Brown 2001)
Hedonic outcomes	Self-determination theory	Hedonic outcomes	The extent to which using the SVW is perceived enjoyable on its own right.	(Deci & Ryan 2000; Venkatesh & Brown 2001)
Normative beliefs	Theory of reasoned action	Interpersonal influence	The normative influence from the important referents to use the SVW.	(Fishbein & Ajzen 1975)
	Innovation diffusion theory	Secondary sources of information	The extent to which information from TV, newspapers and other secondary sources influence the SVW use.	(Brown & Venkatesh 2005; Rogers 2003)

Table 1.   The nomological net of the research

In addition to the desirable outcomes, we posit that the SVW use is predicted by social influence. Abundant prior literature on IS adoption has demonstrated the decisions to adopt and use technology being affected by social influence, often measured with subjective norm (see e.g. Venkatesh & Davis 2000; Venkatesh et al. 2003). Instead of employing the subjective norm construct, we go deeper in the sources of normative influence and investigate two sets of normative beliefs, interpersonal influence and external sources of information (Venkatesh & Brown 2001). Normative beliefs are distinct from the social outcomes since they do not reflect the utility derived performing a behaviour but the

different facets of external pressure to perform the behaviour. The nomological net of the research is presented in Table 1 and the research model with the hypotheses presented in the following chapter.

3 RESEARCH MODEL AND HYPOTHESES

Research on user adoption of technology has developed and tested numerous models to understand the factors driving the use decisions (see Venkatesh et al. 2003 for an overview). These models propose a number of predictor variables that presumably influence IT usage intention. For example Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB) assert that IT usage is determined by *IT usage intention,* due to the human tendency to behave in accordance with intentions, which in turn are predicted by other cognitive beliefs or perceptions of IT usage. The relationship between IT usage intention and usage behaviour has been empirically verified in numerous previous studies (Davis 1989; Taylor & Todd 1995). As a result, the usage intention is here employed as the dependent variable of interest.

Abundant prior literature has found IT use decision being influenced by the perceived utility derived from the usage (see e.g. Davis et al. 1989; Venkatesh & Davis 2000; Venkatesh et al. 2003). Prior VW research has found utilitarian outcomes influencing the decision to engage in virtual worlds (Fetscherin & Lattemann 2008; Hua & Haughton 2009). In Habbo, the potential utility is most likely to be related to enhanced communication with other people, spending time and self-expression via decorating the virtual room or the avatar.

H1: Utilitarian outcomes have a positive effect on the intention to use the SVW.

Use of a wide range of IT applications and services found to being influenced by hedonic outcomes (van der Heijden, 2004). Prior research offers inconclusive evidence regarding the role of hedonic outcomes in virtual world usage (Hua & Haughton 2009; Shin 2009). As Habbo does not facilitating doing business or participating education, hedonic outcomes are likely to particularly salient in predicting the user engagement.

H2: Hedonic outcomes have a positive effect on the intention to use the SVW.

Prior research uncovering the role of social outcomes in VW usage decision is scant. However, prior research on the adoption of other forms of IT has found status driving the decision to use technological innovations (Moore & Benbasat 1991; Venkatesh & Davis 2000; Venkatesh & Brown 2001) . Among the teen audience gaining status and social recognition can be assumed to particularly important in building and supporting the self-image and seeking for social acceptance. In Habbo, a user can show status by accessorizing the avatar, decorating one's own virtual space and having a lot of people included in the friends list.

H3: Status has a positive effect on the intention to use the SVW.

In addition to status, the need feel relatedness to other individuals has been found to drive participation in online communities (Bagozzi & Dholakia 2002; Rheingold 2000). We examine the fulfillment of this need with the concept of social presence i.e. the perception of sociability and human warmth associated with Habbo.

H4: Social presence has a positive effect on the intention to use the SVW.

According to the theory of network externalities, a large number of users in one's personal network is likely to increase the value of adopting a technological innovation that is used to interact and communicate with other users (Katz & Shapiro 1986). We suggest that the presence of other users is likely to increase the value of the SVW for an individual. Since evaluating the actual number of users in one's network possesses challenges (Li et al. 2010), we examine define perceived network size as the perceived degree of SVW users in one's personal network (Lin & Bhattacherjee 2008) as position perceived network size as a direct predictor of use intention (Van Slyke 2007).

H5: Perceived network size has a positive effect on the intention to use the SVW.

As regards the normative influence, Brown & Venkatesh (2001) argued that social pressure is transmitted through interpersonal and external influence. The sources of interpersonal influence may include family, friends, relatives, and peers (Hsieh et al. 2008). Interpersonal influence has been found to influence IT use decision in household context (Brown & Venkatesh 2005) as well as with interactive digital technologies (Hsieh et al. 2008), both relevant referent contextual domains for VWs

H6: Interpersonal influence has a positive effect on the intention to use the SVW.

External influence is such as mass media, expert opinions, and other forms non-personal information which is demonstrated to have an effect on adoption intentions (Rogers 2003). Brown & Venkatesh (2005) found secondary sources of informational influencing the intention to purchase PC for domestic use. As Habbo is visibly present is mass media followed by the teen audience, it is plausible to assume that mass media and commercial exert normative pressure.

H7: Secondary sources of information have a positive effect on the intention to use the SVW.
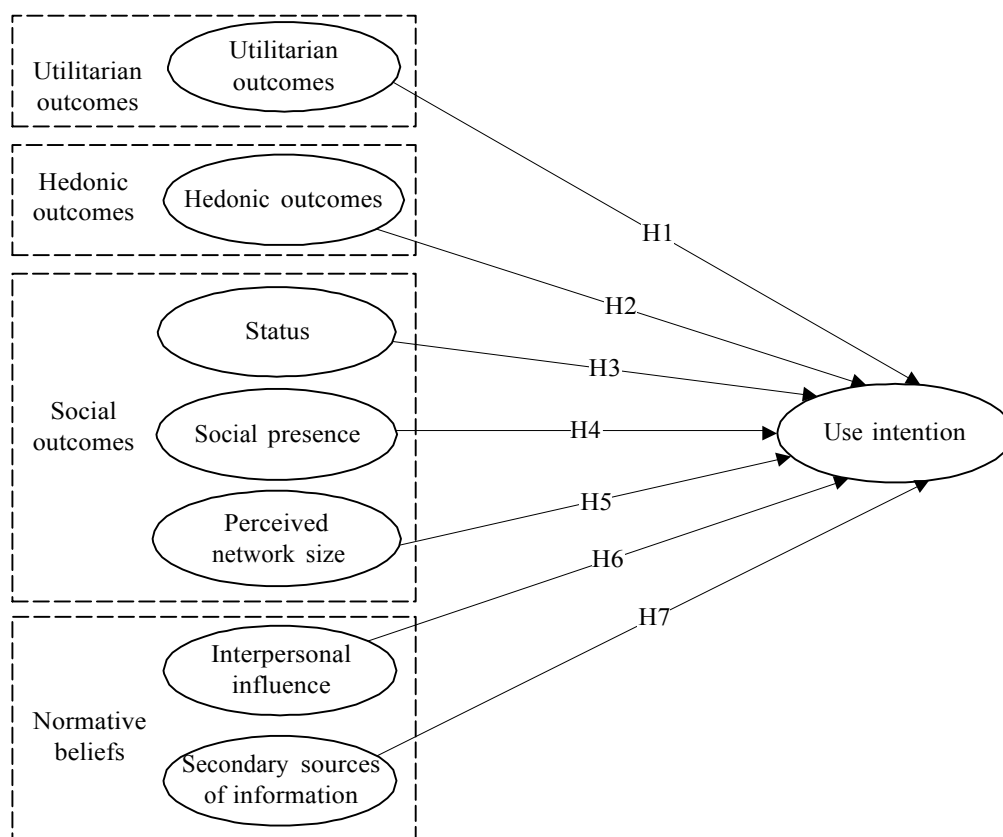

Figure 1.   The research model

4   EMPIRICAL RESEARCH

4.1   Measurement & data collection

The survey contained worded items on a 7-point Likert-scale anchoring from strongly agree to strongly disagree, adapted from existing measures. The measurement items with references to literature are presented in Appendix 2 Each construct was modelled as reflective, except referents' influence that was viewed as an explanatory combination of its items and thus treated as a formative construct (Hsieh et al. 2008).

The data was collected through an online survey that was published on home page in the German Habbo Hotel portal. In total, the online survey was opened 3,459 times. A total of 1,811 responses were received. Thus, the response rate was approximately 52 %. To ensure the best possible quality of the responses, only fully completed responses were included in the analysis. Given that according to the operator, 90 % of the Habbo Hotel users are aged between 13 and 18, only the respondents within this group were analyzed. As a result, the final dataset consisted of 844 responses. Of the final dataset 13 and 14 were the most common age categories. 62 percent of the respondents were males. The respondents were relatively experienced users; only 4.1 percent had reported having less than six months of experience with Habbo.

4.2   Data analysis & results

The data was analyzed using partial least squares (PLS) with SmartPLS M3 software (Ringle et al. 2005). The PLS method is typically recommended in situations in which there are no stable, well-defined theories to be tested in a confirmatory research setting, the research model includes reflective and formative constructs (Haenlein & Kaplan 2004).
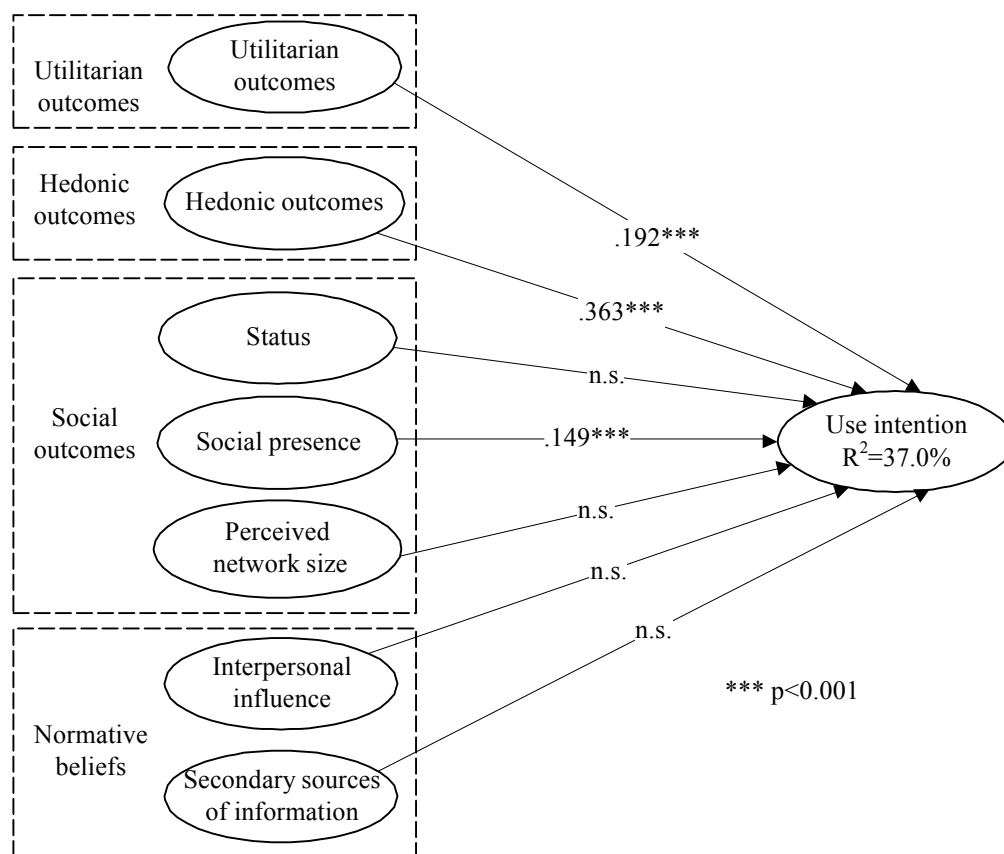

Figure 2.   Results from the structural model.

The convergent validity was evaluated based on three criteria: 1) all indicator factor loadings should be significant and exceed 0.7, 2) composite reliabilities should exceed 0.80, and 3) average variance extracted (AVE) by each construct should be greater than the variance due to measurement error (AVE > 0.50) (Fornell & Larcker 1981). The factor loadings exceeded 0.7 and were significant at .001 level. Thus, all reflective measures met the criteria for convergent validity. As regards the formative interpersonal influence construct, family and relatives did not significantly contribute the construct. Discriminant validity was investigated by examining whether the square root of AVE for each construct was higher than the squared correlation between it and all other constructs (Fornell &

Larcker 1981). The statistics for convergent and discriminant validity are presented in Appendix 2. Figure 2 illustrates the results from the structural model.

5   DISCUSSION

5.1   Key findings

Altogether only 3 (H1, H2 & H4) of the 7 hypotheses were supported. Altogether, hedonic and utilitarian outcomes as well as social presence from the social outcomes accounted for 37% of the use intention. Prior research on the VW context offers very little point of reference. In general terms, however, explanatory power around 40 % for the use intention can be considered typical for technology adoption research (Venkatesh & Davis 2000).

The results demonstrate that Habbo participation is mainly determined by hedonic and utilitarian outcomes (H1 & H2 supported), i.e. the pleasure experiences when immersed in the SVW and the perceived benefits in. e.g. social interaction. The presence of both utilitarian and hedonic factors can be explained by the fact that SVWs, including Habbo, are used for various purposes. In this regard, SVWs can be viewed to have certain analogies with multi-purpose information appliances as coined by Thong et al. (2006).

Social presence was the only social outcome exerting a significant influence on the use intention (H4 supported) indicating that to some extent seeking the users for human contact and feeling of belonging from Habbo participation.

Altogether, the fact that social presence was the only, albeit not very powerful social outcome influencing the usage was somewhat surprising and in contrast with findings prior research on e.g. instant messaging (Li et al. 2010; Lin & Bhattacherjee 2008) and social networking sites (Sledgianowski & Kulviwat 2009). Furthermore, the perceived network size was not a significant determinant of the usage intention (H5 rejected). This is somewhat counterintuitive, as a tool for communication and social interaction as well as collaborative entertainment, the number of relevant other people would intuitively make the usage more meaningful. Yet lacking direct effect, we however believe that perceived network size is an important determinant of both hedonic and utilitarian outcomes being thus an indirect predictor of the usage.

The results demonstrate (H3 rejected) that using Habbo is not a vehicle for gaining status per se not since status was not found to be a driver for usage. This may be due to the facts that the usage is not visible to outsiders and the users do not use real identities in Habbo.

As Habbo is used with other teenagers, friends rather than family or relatives are not the key referent groups in the interpersonal influence. Altogether, interpersonal influence or secondary sources of information did not exert a significant influence on the use intention (H6 & H7 rejected). This finding contrasts with Hua & Haughton (2009) who found social influence as a significant predictor of the use intention among Chinese VW users.

5.2   Implications for research

Given that Habbo falls into the category of social virtual worlds, perhaps the most interesting finding of the study was that, the social aspects were not pertinent in driving the usage. As the results demonstrate, neither the social outcomes nor social influence exerted significant influence on the use intention. However, the answer to the rhetoric question put forward in the title: how social are social virtual worlds is not clear-cut; the presence of other users and co-creation of meaningful and enjoyable experiences may be embedded in the hedonic and utilitarian value the users perceive from being engaged in the SVW.

Prior research on recent IT innovations such as interactive TV (Hsieh et al. 2008), instant messaging (Li et al. 2010) and social networking sites (Sledgianowski & Kulviwat 2009) has challenged the view

that the normative influence would be the primary source of social influence. These studies have found that instead of the normative influence, informational influence, i.e. a perception of the number of users of the communication technology, is the key form of social influence predicting the usage after the initial acceptance has taken place (Li et al. 2010). Furthermore, in their study on the adoption of Skype in Taiwan, Lin & Bhattacherjee (2008) argued that while relying on the hedonic-utilitarian dichotomy, prior IT adoption research has largely neglected the influence of network externalities in shaping the usage decisions.

Given that the perceived network size construct captured the informational influence that Deutsch & Gerard (1955, 629) defined as *"influence to accept information from another as evidence about reality",* and neither interpersonal nor secondary sources of information exert a significant normative influence on the use intention, we conclude that the external pressure from other individuals does not influence participation in Habbo.

As teenagers as a demographic group are unlikely immune to social influence the explanation for the absence of social influence must to be searched elsewhere. Users' anonymity inside Habbo may dilute social influence. However, the users mostly know if their friends use Habbo and can discuss their Habbo activities using instant messengers also when being inside the virtual world.

Taken together, the findings illustrate the teenagers Habbo usage is driven by factors intrinsic to Habbo rather than external pressure or attempts to demonstrate status to people outside the virtual world. The gains such as enjoyment, enhanced communication and self-expression as well as the feeling of social presence are all something that the users experience when being immersed in the virtual world. In other words, the user engage in the SVW because what they gain *inside* Habbo not what they gain in the 'real' world nor because of other people's opinions.

In sum, this study suggest, that among today's digital natives, even in a use context that is highly dependent of the presence and behaviours of other users and used to a large extent for social interaction, the social influence or social outcomes do not automatically act as predictors of the use decisions. More likely, the users view the other users something that is embedded in the SVW as the utility derived from the usage is partly to interacting with other individuals.

5.3   Implications for business

Protecting users' identity inside the virtual world is designed is done to prevent cyber bullying and sex crime. As the target audience are legally minors, these precautions are important and beyond any economic interest. However, the anonymity makes transferring status between 'real' and virtual world more difficult, as well as it potentially makes more difficult to recognize the 'real' life friends inside Habbo.

The fact that the users did not perceive the SVW examined as something that increases their status should be scrutinized further. The fact that users do not perceived using the SVW as something that increases their status is not alarming per se. On the other, if SVW use becomes labelled as something that is uncool or passé among the target audience, the consequences can be serious.

The findings demonstrated that the user perceive Habbo as a hedonic platform. As a result, the operator should pay particular attention to provide a wide range of activities to fulfil the users' need for entertainment and leisure.

The pressure from mass media and commercials was reported to be relatively weak. This raises a question whether the marketing activities have been in a sufficient extent targeted to existing users. Alongside attracting new users, reinforcing the existing users' commitment to remain active and potentially promote spending money on virtual items and premium memberships could potentially be taken into account also when promoting Habbo in the mass media.

5.4 Limitations and further research

A number of limitations needs to be addressed. First of all, the present study used self-reported measures and behavioural intention instead of the actual behaviours. Second, due to the self-selection of the respondents, statistical generalization of the results is not an appropriate course of action. Third, the present study focused solely on the users of Habbo Hotel. As there are various different virtual worlds and social virtual worlds for different user groups, results obtained from one service do not represent the whole field of virtual worlds.

We suggest five avenues for future research. First, in this study, we examined the users' investment in Habbo in terms of time and effort. In addition, the users can invest real money. By purchasing virtual items and premium memberships the users can obtain more tools for self-expression and differentiation from the holders of the basic account. As a result, yet using Habbo is unlikely the best tool to show status to the outside world, purchasing behaviour can be a way to boost one's status and enrich the user experience in other ways. Thus, further research to examine the purchasing as an investment in deepening the customer relationship or taking the user experience to the next level would be highly relevant.

Second, the customer relationship normally starts from using the basic free service and potentially later on purchasing virtual possession or premium memberships. In consequence a managerially highly relevant, area for further research would be to examine the conversion process from users of the free service to paying customers.

Third, as the hedonic outcomes were to be the primary determinant of usage, an appropriate subsequent step in the research process would be to uncover the factors that contribute to a pleasurable user experience in SVWs. A first effort to this direction could be to examine the relationship between perceived network size and hedonic outcomes.

Fourth, the current study examined only one service and one cultural context. Thus, extending the scope of inquiry towards other applications as well as cultural settings would be highly appropriate to validate the findings.

Fifth and finally, further research taking a closer look at the behaviours and activities inside virtual worlds would add on this study by investigating the different facets of the actual use of virtual worlds.

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Appendix 1. The survey instrument & descriptive statistics

	Mean	S.D	Loa-ing/weight	Measurement item	
UTI1	5.175	1.982	0.821	Using Habbo... Helps me stay in close touch with my friends.	(Li et al., 2010)
UTI2	5.416	1.761	0.811	Helps me to make new friends more efficiently.	
UTI3	5.341	1.791	0.769	Allows me to express myself.	
UTI4	5.383	1.753	0.829	Is a good way to spend free time.	
HED1	5.036	1.785	0.793	It is enjoyable to use Habbo.	(Venkatesh, 2000)
HED2	5.955	1.503	0.897	It is fun to use Habbo.	
HED3	5.866	1.528	0.909	It is entertaining to use Habbo.	
HED4	5.598	1.608	0.898	It is pleasant to use Habbo.	
STA1	4.232	2.209	8.471	People who use Habbo have high profile.	(Brown & Venkatesh, 2005)
STA2	3.361	2.187	0.884	People who use Habbo have more prestige than those who do not.	
STA3	3.250	2.168	0.955	Using Habbo improves my status among those who are richest and smartest.	
STA4	3.415	2.269	0.938	Using Habbo improves my status among those who are the most meaningful to me.	
SP1	4.517	2.048	0.885	There is a sense of human contact in Habbo.	(Yoo & Alavi, 2001)
SP2	5.168	1.834	0.884	There is a sense of human warmth in Habbo.	
SP3	4.118	2.134	0.852	There is a sense of sociability in Habbo.	
PNS1	3.466	1.914	0.927	How many of your friends use Habbo? (none…all)	(Lin & Bhattacherjee, 2008)
PNS2	3.989	1.949	0.882	How many of yours peers use Habbo? (none…all)	
PNS3	3.595	1.858	0.904	How many people in your environment use Habbo? (none…all)	
EXT1	4.076	2.227	0.858	Media (Internet, magazines, TV, etc.) and commercials are an important source of information about using Habbo.	(Brown & Venkatesh, 2005)
EXT2	3.846	2.118	0.895	I feel encouraged by media and commercials to use.	
EXT3	3.878	2.278	0.868	I feel persuaded by media and commercials to use Habbo.	
INT1*[3]	2.821	1.848	n.s.	My family thinks I should use Habbo.	(Hsieh et al., 2008)
INT2*	2.769	1.821	n.s.	My relatives think I should use Habbo.	
INT3*	3.518	2.154	0.408	My friends think I should use Habbo.	
INT4*	3.541	2.151	0.719	People I communicate with most often think I should use Habbo	
CUI1	5.732	1.857	0.926	I intend to continue using Habbo during the next three months.	(Bhattacherjee, 2001; Hsieh et al., 2008)
CUI2	5.42	1.852	0.930	I intend to continue using Habbo frequently during the next three months.	
CUI3	5.440	1.842	0.894	I will keep on using Habbo in the future.	

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[3] * formative measurement

Appendix 2. Convergent and discriminant validity

(square roots of AVEs in the main diagonal)

	AVE	C.R.	CUI	ENJ	EXT	INT	PNS	PU	SP	STA
CUI	0.841	0.941	**0.917**							
ENJ	0.766	0.929	0.570	**0.875**						
EXT	0.620	0.860	0.288	0.390	**0.788**					
INT	n/a	n/a	0.276	0.366	0.491	n/a				
PNS	0.818	0.931	0.205	0.254	0.400	0.599	**0.904**			
PU	0.652	0.882	0.538	0.739	0.493	0.461	0.361	**0.808**		
SP	0.763	0.906	0.441	0.510	0.440	0.410	0.290	0.613	**0.873**	
STA	0.786	0.936	0.249	0.371	0.499	0.527	0.492	0.480	0.385	0.887