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**CYBER-MAVENS AND ONLINE FLOW EXPERIENCES:  
EVIDENCE FROM VIRTUAL WORLDS**

Stuart J. Barnes

School of Management and Business, King's College London

Franklin-Wilkins Building, 150 Stamford Street

London SE1 9NH, United Kingdom

Tel: +44 (0)20 7848 3327; Fax: +44 (0)20 7848 4639

Email: [stuart.barnes@kcl.ac.uk](mailto:stuart.barnes@kcl.ac.uk)

Andrew D. Pressey

Birmingham Business School, University of Birmingham

University House, Edgbaston Park Road

Birmingham B15 2TY, United Kingdom

Tel: +44-121-414-8307; Fax: +44-121-414-7380.

E-mail: [a.pressey@bham.ac.uk](mailto:a.pressey@bham.ac.uk)

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## **HIGHLIGHTS**

- Examines market maven propensity across real-life, web and virtual world channels.
- Cyber-mavens are found have a greater tendency to experience flow in virtual worlds.
- Cyber-mavens are more likely to trial new products to satisfy hedonistic motives.
- Managers and policy-makers should focus on identified maven features to obtain value.

# **CYBER-MAVENS AND ONLINE FLOW EXPERIENCES: EVIDENCE FROM VIRTUAL WORLDS**

## **ABSTRACT**

Social media and web-based environments provide important new channels for the dissemination of messages and roles for central individuals in networks to provide conduits for marketplace information. The purpose of this research is to test individuals' propensity to transfer market mavenism – a characteristic associated with a group of highly knowledgeable consumers who are disseminators of generalized marketplace information – from physical to virtual world environments and the features of these 'cyber-mavens.' We posit that cyber-mavens are more likely to be immersed in flow experiences – the feeling of total immersion and deep involvement in human-computer mediated interactions – and to trial new products in virtual worlds. We also test hypotheses regarding a number of other demographic features and individual characteristics of likely mavens. The analysis is based on ANOVA, with post-hoc tests for group comparison. Our findings indicate that while 'real-life' market mavenism remains most dominant, mavens are able to extend this capacity into virtual worlds, suggesting the transferability of the maven concept across major channels. We also find that cyber-mavens have a greater propensity to experience 'flow' in virtual worlds than non-mavens and are more likely to trial new products in order to satisfy hedonist motives for personal interest in new products. Further, our findings indicate that cyber-mavens can be male or female, are well-educated, and slightly older consumers, are keen users of virtual worlds and have knowledge of other mavens. This study represents one of the first attempts to better understand how consumer behavior might differ in virtual world channels, and,

by so doing, better inform our understanding of an important group of consumers for digital goods, namely cyber-mavens.

**Keywords:** market mavens; cyber-mavens; virtual worlds; flow; consumer innovativeness.

## 1. INTRODUCTION

Whether described as lead users, innovators, early adopters, user communities, or other labels, the scholarly literature overwhelmingly advocates the involvement of advanced and highly knowledgeable consumers in organizational innovation practices spanning product modification to the introduction of new technology, and to facilitate the dissemination of product information (Hofmann, 2015; Yoshida *et al.*,2014; Parmentier and Mangematin, 2014; van Rijnsoever and Oppewal, 2012; Nahuis *et al.*,2012; Ortt *et al.*,2007; van den Hende *et al.*,2007; Funk, 2007; Cachia *et al.*,2007).

One group of lead consumers that are particularly influential is market mavens – agents who are ‘super consumers’ and enthusiastic disseminators of generalized marketplace information –first introduced by Feick and Price (1987). The present study questions if the propensity for individuals to act as market mavens is transferrable into virtual world environments. Further, if market mavenism is fluid across context (i.e. transferable from real-life settings to the Internet and relatively new technologies such as virtual worlds), what might facilitate this behavior? The market maven concept has received widespread support in physical (i.e. real-world) channels (Clark and Goldsmith, 2005, Feick and Price, 1987; Goldsmith, Clark and Goldsmith, 2006) as well as Web-based channels (Barnes and Pressey, 2012; Belch, Krentler and Willis-Flurry, 2005) and has inspired hundreds of replication studies and extensions. As Barnes and Pressey (2012: 167) note, however: “A notable absence from these studies is an understanding of market maven behavior in

alternative communication channels”, particularly in new social media platforms and virtual worlds. The present study extends the market maven concept by examining maven propensity in cyberspace; specifically, exploring individuals’ propensity to transfer market mavenism to virtual world environments and the ‘cybermarketspace’ (Venkatesh, 1998), a personal capability or role which we term the ‘cyber-maven’.

In addition to examining the presence of the cyber-maven in virtual world channels, we explore how such behavior is facilitated by examining the influence that ‘flow’ (Csikszentmihalyi, 1977, 1997) – the feeling of total immersion and deep involvement in human-computer mediated interactions (Novak, Hoffman and Yung, 2000) – has on cyber-maven propensity. We also examine cyber-mavens’ motives for trialing new products and services in virtual worlds (or ‘customer innovativeness’ – see Roehrich, 1995), and provide a demographic profile of the cyber-maven. Our data is collected via two surveys in the popular social virtual world, *Second Life* (phase I:  $n=1424$ ; phase II:  $n=448$ ) and analyzed using ANOVA, the Kruskal-Wallis H Test, and post-hoc tests.

Online virtual worlds have grown considerably in popularity and economic value since early precursors such as *Habitat* in the late 1980s, with the ‘virtual economy’ – the market for virtual characters, items and currencies – estimated to be worth US\$6 billion by the end of 2013 (Worthen, 2010). It is estimated that 13% of Americans have bought virtual goods or services online (Rosenberg, 2010), while 12% of American adults refer to social media before making purchase decisions (Sass, 2011), and that the number of people participating in virtual worlds could be as much as 2.3 billion (KZero, 2013). Indeed, such is the popular uptake of some virtual worlds some studies point to the potential addictive properties of these platforms (Barnes and Pressey, 2014). As a consequence, these online platforms provide considerable opportunities for marketers and for the dissemination of product information (Barnes and Pressey, 2012; Saren *et al.*, 2013; Cachia *et*

*al.*,2007), as well as for virtual brand development (Barnes *et al.*, 2015), and virtual entrepreneurs (Papagiannidis and Bourlakis, 2008).

Against this background, the present study is timely for a number of reasons. Initially, mavens are ‘super-diffusers’ of product information, and stand as one of the most important groups of consumers to target with product and service information and particularly new product offerings in this regard (Sundaram, Mitra, and Webster, 1998; Williams and Slama, 1995; Slama and Williams, 1990), making their identification in an online context of particular importance (Barnes and Pressey, 2012; Laughlin and MacDonald, 2010). Recent research has also pointed to the presence of the ‘Internet maven’ – or ‘e-maven’ – (Zhang and Lee, 2014; Kim, Jin and Park, 2011; Ho and Dempsey, 2010; Belch *et al.*,2005), hence studies examining mavens in virtual worlds is a natural extension to this corpus of work, and helps to understand the potential transferability of market maven behavior across channel as well as the universality of the concept (Barnes and Pressey, 2012). Virtual world platforms afford an important setting in which to explore conventional theories and tenets (Hemp, 2006), and to question some of our core ontological assumptions. Finally, this study stands as one of the first to examine an important aspect of existing theory in the setting of virtual worlds.

In the next section we examine the hypotheses to be tested in the study. This is followed by a discussion of the research methodology and subsequently by the results of our analysis. The paper concludes with implications of the study for theory and practice and provides suggestions for future research.

## **2. HYPOTHESIS DEVELOPMENT**

### **2.1 Market Mavens and Propensity across Channel**

Scholars have for some time sought to identify consumers who exhibit a greater capacity to act as market influencers and as disseminators of consumption information than other consumers (Sheth, 1971; Kotler and Zaltman, 1976). One particular consumer role that “individuals can adopt” (Feick and Price, 1987: 85) is the market maven. Mavens collate and disseminate marketplace information in the belief that they can increase their perceived power in society, be useful in their interactions with other consumers (Sieber, 1974), and in the expectation that they will become the recipient of ‘rewards’ (i.e. that they will be the recipient of informed information on topics from others in return) (Feick and Price, 1987).

The concept of market mavens has attracted considerable scholarly enquiry. Lawrence F. Feick and Linda L. Price’s original ‘foundational’ papers on mavens (Feick and Price, 1987; Price, Feick and Guskey-Federouch, 1988; Price, Feick and Guskey, 1995) have attracted numerous replications and extensions. This includes psychological influences, motives, and maven profiling (Goldsmith, Flynn, and Clark, 2012; Vazifehdooost, Akbari, and Charsted, 2012; Fitzmaurice, 2011; Stokburger-Sauer and Hoyer, 2009; Goldsmith, Clark, and Goldsmith, 2006; Clark and Goldsmith, 2005; Walsh, Gwinner, and Swanson, 2004), the extent of the maven repertoire across product and service categories (Slama and Williams, 1990), the presence of teen Internet mavens and their influence in family decision-making (Belch, Krentler and Willis-Flurry, 2005), mavens and consumer self-confidence (Clark, Goldsmith, and Goldsmith, 2008; Chelminski, and Coulter, 2007), mavens’ attitudes towards technology (Geissler and Edison, 2005), consumer innovativeness of mavens (Andrews and Benedicktus, 2015; Ruvio and Shoham, 2007; Goldsmith, Flynn, and Goldsmith, 2003), maven blog activity (Kim *et al.*, 2012), the value of mavens in product referrals (Walsh and Elsner, 2012), mavens’ adoption of service innovations (Evanschitzky *et*



*al.*,2014), and market maven activities in illicit markets (O’Sullivan, 2015), among many other areas that have received scrutiny.

In addition, the maven concept has proven robust across different cultural settings including the United States (for example, Goldsmith, Clark, and Goldsmith, 2006; Slama and Williams, 1990), Israel (Ruvio and Shoham, 2007), South Africa (Abratt, Nel, and Nezer,1995), Germany (Wiedmann, Walsh, and Mitchell, 2001), The Netherlands (Steenkamp and Gielens, 2003), Poland (Chelminski and Coulter, 2002), China (Zhang and Lee, 2014), and South Korea (Kim, Jin and Park, 2011; Chelminski and Coulter, 2007), and demonstrating high construct validity in its usage when employed in non-marketing contexts (see, for example, Boster, Carpenter and Kotowski’s (2015) studies of ‘political’ and ‘healthcare’ mavens). Although the market maven measure has received some criticism (see, for example, Voss, Stem, and Fotopoulos, 2000; Goodey and East, 2008; Williams and Slama, 1995) it remains one of the most highly cited concepts in marketing scholarship some three decades after its introduction.

Virtual worlds offer platforms ideally suited to mavens by facilitating social interaction via avatars and the potential dissemination of marketplace information, particularly given the large and rapidly growing economy based around the consumption of virtual goods. While the notion of the ‘Internet maven’ – or ‘e-maven’ – has received some attention (Zhang and Lee, 2014; Kim, Jin and Park, 2011; Ho and Dempsey, 2010; Belch *et al.*,2005), *the cyber-maven* – individuals with the capacity to extend this behavior into virtual world settings – has received little scrutiny (*cf.* Barnes and Pressey, 2012). Given the growing importance of virtual worlds and social media in consumption decisions this would seem a notable omission. For example, a study in 2011 found that 12% of American adults refer to social media before making consumption decisions (Sass, 2011).

Previous studies have rarely looked in any detail at the nature of the channel itself and market maven propensity, but instead focused instead on mavens' personal characteristics (e.g. Clark *et al.*,2008; Stokburger-Sauer and Hoyer, 2009; Goldsmith *et al.*,2006; Clark and Goldsmith, 2005; Geissler and Edison, 2005; Price *et al.*,1995). The only extant study to have empirically examined the concept of market mavenism in a virtual world setting is Barnes and Pressey (2012), who found evidence to support the notion that market maven propensity is transferable across physical, Web, and virtual world channels owing to the pervasive qualities of the concept and its 'fluidity' across channels. In an attempt to confirm this finding we propose the following:

*H1: Individuals with high market maven propensity retain this characteristic across channel, both onto Web and virtual world platforms.*

In addition to the transferability of the market maven concept, Barnes and Pressey (2012) examined the extent to which mavenism may be greater in a particular channel, asking the question: "If market mavens do retain their maven behavior across channel then is this behavior equally strong in all channels? [and] ... might a market maven have a particular channel in which he or she exhibits their strongest maven behavior?" (p.171). They found that there *is* a "variability of market mavenism between channels" (p.175), noting a stronger relationship between virtual worlds and the Internet (presumably as both are IT-based, electronic communication channels). Interestingly, however, crucially they did not test nor hypothesize in *which* actual channel market maven propensity was strongest. Although virtual worlds provide "environments in which complex social systems can develop [and as] social shopping for virtual products in virtual stores is a popular activity" (Hoffman and Novak, 2009: 31), we would nevertheless expect market maven propensity to be greatest in real-life and the Internet compared to virtual worlds as the former two contexts are more familiar environments in which consumers have had the experience to develop their market

maven role and develop the expertise associated with it, and given the learning-curve associated with mastering such relatively new computer-mediated environments<sup>1</sup> (Hoffman and Novak, 2009). Therefore, we propose the following:

*H2: Market maven behavior will be greatest for individuals in physical and Web environments compared to virtual world channels.*

## **2.2 Cyber-Mavens and Online Flow**

Pioneered by Mihaly Csikszentmihalyi and colleagues (Csikszentmihalyi 1977, 1990, 1997; Csikszentmihalyi and Csikszentmihalyi 1988; Csikszentmihalyi and LeFevre 1989), flow is a concept that helps explain human-computer mediated interactions and refers to a “seamless sequence of responses facilitated by machine interactivity” (Wang *et al.*, 2007: 146). The concept of flow has been studied in numerous contexts including shopping, work, sports, hobbies, computer use, and games; more recently it has become an important construct helping to comprehend compelling online experiences (Dholakia and Bagozzi, 1999; Hoffman and Novak, 1996). Regarded as a multidimensional concept (Ghani and Deshpande, 1994; Trevino and Webster 1992; Webster, Trevino, and Ryan, 1993), flow has been subject to a number of alternative conceptualizations (Csikszentmihalyi, 1997; Trevino and Webster, 1992; Hoffman and Novak, 1996). In this study we adopt Novak, Hoffman and Yung’s (2000) construct as well as the seven key aspects of flow comprising: *arousal* (online stimulation), *challenge* (the capabilities of the user being stretched online), *control* (no feelings of frustration while online), *speed/interaction* (perceptions of speed of interaction with a website while online), *skill* (perceptions of Web-

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<sup>1</sup> *Second Life* (one of the most popular virtual worlds) initially went online in 2003 and has subsequently increased in sophistication.

knowledge being tested while online), *time distortion* (the perception of time passing quickly and without notice while online) and *telepresence* (feelings of displacement or being in a different world while online).

The flow construct has been applied to numerous contexts, including as a predictor of purchase intentions (Korzaan, 2003; Hsu and Lu, 2003; Luna, Perrachio and de Juan, 2003; Sanchez-Franco, 2006), influencing attitudes towards playing online games (Hsu and Lu, 2003), and in influencing Web and brand attitudes (Sanchez-Franco, 2006). Virtual worlds provide a new context for the application of flow, and one which is potentially more immersive that “presents an exciting and accessible fertile environment for the study of flow” (Hoffman and Novak, 2009: 30). Indeed, it is thought that the social context to virtual worlds, the extent and variety of interactivity, the virtual representation of space and the significant learning curve are likely to accentuate the role of flow in human-computer interaction<sup>2</sup> (Hoffman and Novak, 2009).

We propose that virtual world settings can have a profound effect on the extent to which mavens can experience flow, based on their: (i.) desire to seek out new technology, (ii.) desire to capitalize on opportunities to increase their learning as mavens, and (iii.) personality characteristics. Initially, mavens have a greater affinity for new technology than those with low maven propensity and “are more likely than non-mavens to communicate with other consumers through new technology” (Geissler and Edison, 2005: 88), and hence may well seek out virtual worlds and subsequently experience greater states of flow. Secondly, Hoffman and Novak (2009) propose that consumers who experience a state of flow tend to increase their learning as they are “more likely to retain more of what they perceive” (p.30) – as supported by other studies

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<sup>2</sup> Interestingly, Hoffman and Novak (2009) note that had they undertaken their study of flow in the 2000s rather than in the 1990s they would have based their conceptualization on virtual world interactions rather than the Internet.

(Csíkszentmihályi *et al.*, 1993; Skadberg and Kimmel, 2004; Choi *et al.*, 2007; Suh and Chang, 2006) – clearly something that the well-informed market maven would seek in order to sustain their status and to attain the power and rewards they perceive their role affords (Feick and Price, 1987; Sieber, 1974). Thirdly, the personality characteristics of individuals with a greater disposition to experience a flow state (termed the ‘autotelic personality’) – which includes curiosity, a need for achievement, and seeking situations that encourage growth and stimulation (Csíkszentmihályi and Nakamura, 2011; Engeser and Rheinberg, 2008; Eisenberger *et al.*, 2005; Abuhamdeh, 2000) – would seem consistent with the maven traits of seeking personal growth (Ho and Dempsey, 2010), their need to assert their role as “competent information providers and advisors” (Walsh, Gwinner, and Swanson, 2004: 110), and their capabilities as ‘smarter’ shoppers (Slama, Nataraajan, and Williams, 1992). This leads us to our third hypothesis:

*H3: Cyber-mavens will experience higher levels of (a) flow and (b) the key dimensions of flow in virtual worlds than non-mavens.*

### **2.3 Cyber-Mavens and Consumer Innovativeness**

Consumer innovativeness – or the ‘consumption of newness’ (Schreier and Prügl, 2008) – refers to the tendency of individuals to trial new products more expediently than others (Midgley and Dowling, 1978; Cotte and Wood, 2004; Roehrich, 2004). Roehrich (1995) conceived of consumer innovativeness as capturing two core needs: a need for uniqueness (Snyder and Fromkin, 1980) and a need for stimulation (Berlyne, 1960). We adopt Roehrich’s (1995) measure which comprises two dimensions: *social innovativeness* (need for uniqueness) and *hedonist innovativeness* (need for stimulation). Socially innovative consumers are amongst the first in their peer group to trial new products in order to infer some special status on themselves and impress others (trial as an *external* motivator), while hedonistic innovative consumers are excited by new products and adopt or trial

based on their own personal enjoyment (trial as an *internal* motivator) (Roehrich, 2004, 1995; Vandecasteele and Geuens, 2010). Consumer innovativeness merits examination in virtual worlds as it provides an insights into the consumption values (Sheth *et al.*,1991) of consumers in these increasingly important online platforms.

Mavens are innovative in nature and have a greater likelihood for early trial and adoption of new products compared to individuals with low market maven propensity (Barnes and Pressey, 2012; Geissler and Edison, 2005; Slama and Williams, 1990; Feick and Price, 1987). Further, mavens often “...feel the need to distinguish themselves from non-mavens through their purchases” (Clark and Goldsmith, 2005: 298-299), particularly seeking variety and uniqueness (Stokburger-Sauer and Hoyer, 2009; Clark and Goldsmith, 2005), we would, therefore, expect cyber-mavens on the basis of both hedonistic innovativeness and social innovativeness in virtual world settings. The extent to which cyber-mavens extend this behavior into virtual worlds is uncertain; given their personal characteristics, however, we propose the following:

*H4: Cyber-mavens will experience greater levels of (a) hedonist innovativeness and (b) social innovativeness in virtual worlds.*

#### **2.4 Cyber-Mavens’ Demographic Profile and Channel Characteristics**

While the originators of the concept found that market mavens in the U.S. were more likely to be female, African American and have lower educational levels than non-mavens (Feick and Price, 1987), no clear or consistent demographical profile of mavens has subsequently been proposed; Geissler and Edison (2005: 85) even go as far as to note the “lack of success of demographically profiling mavens.” Equivocal (or at least inconsistent) findings have been offered in prior studies (e.g. Goldsmith *et al.*,2006; Clark and Goldsmith, 2005; Geissler and Edison, 2005; Goldsmith *et al.*,2003) consequently making targeting this important group of consumers challenging. As no

compelling argument or evidence has been offered to propose that mavens adhere to a particular demographic profile the following hypothesis for cyber-mavens is offered:

*H5: Cyber-maven behavior is not determined by respondent characteristics: (a) age, (b) gender, or (c) education.*

Market mavens enjoy learning about products and services, collecting coupons from newspapers and magazines and generally engaging with shopping behavior to a greater extent than other individuals (Feick and Price, 1987), and virtual worlds potentially afford mavens a new channel in which to interact. Belch *et al.*,(2005) found that the more hours spent online by young adults the greater the likelihood that they would be perceived as an Internet maven. Hence it is proposed that if, as it is supposed, mavens have a greater affinity for technology than non-mavens and proclivity for shopping interest then these characteristics will be extended to virtual world channels. Hence, market mavens' user interaction and involvement with virtual world channels in terms of user experience (the length of time the individual has been using each medium) and intensity of usage (measured in terms of the time spent in each medium) will be greater, in general, than those with low market maven propensity as they search for and disseminate product information. Similarly, we propose that market mavens will have both greater virtual world channel usage and experience. Hence we posit:

*H6: Cyber-mavens will have a greater propensity of: (a) channel experience; and (b) intensity of usage in virtual worlds.*

The final area of market maven personal characteristics concerns the ability of consumers to recognize others as market mavens – an important means of validating the market maven construct (Feick and Price, 1987) yet a measure that is often curiously omitted from empirical studies (Barnes

and Pressey, 2012). Feick and Price (1987) found that a sizeable proportion of respondents had knowledge of other mavens, based on the premise that mavens seek out other mavens in order to exchange information (Feick and Price, 1987; Sieber, 1974). Therefore we propose the following:

*H7: Cyber-mavens will have knowledge of other market mavens in virtual worlds.*

### **3. METHODOLOGY**

The research design adopted by the study involved a cross-sectional, convenience sample using two self-report surveys: one directly in *Second Life* and one via a link to a website (see Appendix). In order to be consistent with previous research examining market mavens, only minor modifications were made to Feick and Price's (1987) original measure to reflect the channel under examination. The nomological validity of the market maven measure has been generally supported in comparison to the broadly conceptually similar measures of opinion leadership and innovators/early adopters (Feick and Price 1987, Ruvio and Shoham 2007). Although the market maven measure has not been without its critics, it has proved robust across different cultural contexts including the US (Chelminski and Coulter 2007, Goldsmith, Clark and Goldsmith 2006), The Netherlands (Steenkamp and Gielens, 2003), Poland (Chelminski and Coulter, 2002), South Korea (Chelminski and Coulter, 2007), Israel (Ruvio and Shoham, 2007), South Africa (Abratt, Nel, and Nezer, 1995), and Germany (Wiedmann, Walsh, and Mitchell, 2001), thus demonstrating the robust nature of the concept and its broad applicability. Similarly, Novak, Hoffman and Yung's (2000) measure of flow was modified only very slightly to fit the domain under investigation. This measure has again proven reasonably robust in previous studies of electronic media (Korzaan 2003, Hsu and Lu 2003, Sanchez-Franco 2006). Customer innovativeness was measured employing Roehrich's (1995) twin dimensions of social and hedonist innovativeness. In addition, data were captured on respondent characteristics: user experience of *Second Life* (i.e. the length of time the



individual has been using the medium), intensity of usage (measured via time spent in the medium), respondent demographics (age, gender and the highest level of educational attainment), and knowledge of others as mavens.

The two surveys employed in the study were administered by means of two avatar 'survey bots' operating in *Second Life* for ten days ( $n=1424$ ). Each bot is essentially an avatar automated to deliver the survey items in text form and to collect responses in a database. Each bot had an advertisement for the survey in its group name, above the avatar. Details of the survey were also provided in the profile of the avatar and respondents were requested to IM (instant message) the bot. Respondents initiate contact and are given details of the survey and how to begin the questionnaire by sending an IM (with the word 'SURVEY'). One bot was male in appearance, the other was female; both had formal attire. To collect sufficient responses, each bot was placed at a high-traffic location selected from *Second Life*'s 'popular locations' list. The two locations were chosen to be as generic as possible (to appeal to both genders, different ages and nationalities) and each focused on providing both free and paid-for digital content and on generating traffic through paid 'camping' activities (where individuals are paid small amounts of money for time spent 'sitting' at a particular location).

Respondents to the *Second Life* survey were then invited to complete an online survey (via QuestionPro.com) with additional questions on flow. The second survey was sent only to individuals who had completed the *Second Life* survey to ensure a matched sample of respondents. This was sent four weeks after the first survey was closed in order to clean the initial response list. A small monetary incentive (in Linden Dollars – the official currency in *Second Life*) of approximately US\$2 was provided to respondents for each completed survey in each phase (approximately 1 US\$ = 265 Linden Dollars). Two reminder messages were sent to *Second Life* participants who had completed the first survey to encourage them to complete the second survey.

All responses were collected within two weeks ( $n=448$ ). Of the 448 responses, just over half were male (52.7%), with a median age category of 25-34 years, and only a third of the sample being 35 years or over. The respondents were generally well-educated, with more than half having at least a college degree. The average use experience was between six and twelve months, with around three-fifths using the virtual world for six months or more. Actual usage, however, was high amongst the sample, with a median usage between 10 and 30 hours per week.

A number of tests were undertaken to establish the validity and reliability of the measures used in the analysis. In terms of convergent validity – the extent to which theoretical scale items are empirically related – the loadings of the measures on their respective constructs ranged from 0.697 to 0.935, with all being significant at the 0.1% level. Further, all of the constructs fulfill the recommended levels with reference to reliability (measured by composite reliability and Cronbach's  $\alpha$ ) and average variance extracted (AVE). All AVE values were higher than the cutoff of 0.50 recommended by Fornell and Larcker (1981); thus, all the values of AVE are considered strong, ranging from 0.551 to 0.855. Similarly, the values of composite reliability are very good, ranging from 0.860 to 0.922, well above the reliability value of 0.70 that is typically advised for building measurement constructs (Nunnally 1978). Note that age, gender, education, channel experience, use intensity and the three items related to knowledge of other mavens are all single-item measures. Next, we examined discriminant validity – the extent to which question items measure the construct intended as opposed to other related constructs. A standard test for discriminant validity was used whereby the square root of average variance extracted for each construct is compared with the correlations between it and other constructs; discriminant validity is demonstrated if the square root is higher than the correlations. Each construct shares greater variance with its own measurement items than with those of other constructs.

## 4. RESULTS

### 4.1 Market Mavens and Propensity across Channel

Based on a comparison of means we initially compared market mavenism across the three channels studied and found no significant differences ( $P=.245$ ,  $F=1.408$ ,  $n=448$  [real-life mavenism=4.32, Web mavenism=4.44, VW mavenism=4.43]), suggesting that there is no general trend towards mavenism between channels. Next, in order to identify the extent to which market mavens retained this characteristic across channel, we classified respondents according to their market maven propensity in ‘real-life’ – or physical channels. This resulted in three groups being created: ‘High Mavenism’ (respondents scoring 6-7 on the market maven measure), ‘Moderate Mavenism’ (respondents scoring 3-5 on the measure), and ‘Low Mavenism’ (respondents scoring 1-2), a treatment consistent with mavenism as a continuum rather than dichotomy (Feick and Price, 1987). This classification is similar to Feick and Price’s (1987) trichotomization of their market maven dataset, which affords a closer comparison with the findings in the present study. It should be noted, however, that Feick and Price (1987) converted their market maven dataset approximately into thirds to derive their ‘low’, ‘medium’ and ‘high’ market maven categories; our categorisation affords more accuracy as it only includes respondents with ‘high mavenism’ (i.e. those respondents who reported only ‘agree’ or ‘strongly agree’ with the market maven measure). We find that market mavens in real-life significantly ( $<.001$ ) retain this characteristic over ‘Moderate’ and ‘Low’ market maven groups for both Web and virtual world channels (see Table 1), thus supporting *H1*.

\*\*\* INSERT TABLE 1 \*\*\*

Next, based solely on the high scoring market maven group in real-life ( $n=94$ ), we examined in which of the three channels studied maven propensity was the strongest (see Table 2). As noted

above, while mavens retain this personal characteristic across channel context in comparison to those weaker on the maven continuum, we find that individuals with a high propensity for market mavenism in real-life consistently score more highly in this context than in Web and virtual world channels, thus offering support for *H2*.

\*\*\* INSERT TABLE 2 \*\*\*

#### **4.2 Cyber-Mavens and Online Flow**

The remainder of our tests are based on market maven behavior in virtual worlds; hence we classify respondents into three groups ('High', 'Moderate' and 'Low' virtual world mavenism). We tested the extent to which the three groups experienced the greatest levels of flow (see Table 3), finding that respondents scoring highly on market maven propensity in virtual worlds (i.e. cyber-mavens) also significantly experienced the greatest levels of flow ( $\leq .001$ ), thus supporting *H3a*. Of the key aspects of flow as outlined by Novak, Hoffman and Yung (2000), however, we find that while *control* (no feelings of frustration while online), *speed/interaction* (perception of speed while online), and *time distortion* (time passing quickly online), are experienced equally by both cyber-mavens and those with limited maven propensity (and suggesting a comparative level of enjoyment of virtual worlds felt by both mavens and non-mavens alike), cyber-mavens more acutely experience *arousal* (feelings of stimulation while online), *challenge* (online capabilities being stretched), *skill* (Web-knowledge being tested), and *telepresence* (feelings of displacement or in a different world while online). These results therefore demonstrate partial acceptance of *H3b*.

\*\*\* INSERT TABLE 3 \*\*\*

### **4.3 Cyber-Mavens and Consumer Innovativeness**

Our examination of cyber-mavens and consumer innovativeness (see Table 4) reveals that while cyber-mavens do not seek to trail or adopt products in virtual worlds for the purposes of social innovativeness to a greater extent than those with weaker maven propensity, they do have a greater proclivity to trial products for the benefits of hedonist innovativeness. Hence *H4* is only partially accepted.

\*\*\* INSERT TABLE 4 \*\*\*

### **4.4 Cyber-Mavens' Demographic Profile and Channel Characteristics**

Finally, we turn our attention to the demographic profile of cyber-mavens. Feick and Price's (1987) original study of mavens finds that they were more likely to be female, African American, and marginally lower in educational attainment than non-mavens; we find, however, that cyber-mavens have a clearer – and contrasting – demographic profile. While the results do not appear independent in terms of gender (tested using chi-square:  $\chi^2=4.388$ ,  $df=2$ ,  $p=.111$ ), Table 5 shows that both cyber-mavens and 'moderate' maven groups are slightly older than non-mavens and are better educated (hence *H5* is only partially accepted). Further, cyber-mavens are more experienced and intensive users of virtual worlds than those weaker in maven propensity (accepting *H6*). This select group are also more likely to know other mavens in a virtual world setting than individuals with low maven propensity (tested using chi-square:  $\chi^2=9.953$ ,  $df=2$ ,  $p=.007$ ) (accepting *H7*), which provides some validation to the veracity of market mavens in virtual worlds.

\*\*\* INSERT TABLE 5 \*\*\*

Based on the tests performed, the results for each hypothesis are summarized below (see Table 6). Evidence is provided to support four hypotheses and to partially accept three hypotheses.

\*\*\* INSERT TABLE 6 \*\*\*

## 5. DISCUSSION

The results of our research indicate (via support for *H1*) that the market maven concept is a fluid (or consistent) personal characteristic that may be transferable across channel and computer-mediated environments (cf. Barnes and Pressey, 2012). Importantly, the evidence suggests the presence of the cyber-maven – an individual who retains the characteristics of an important disseminator of generalized marketplace information – thus extending Feick and Price’s (1987) conception of the maven. The findings also therefore indicate that the mavens harbor the capacity to cross-pollinate generalized marketplace information across channel context as individuals who may seek out new technology and channels (Geissler and Edison, 2005). Further, the results supporting *H2* show that real-life mavenism is strongest followed by mavenism in the Web and virtual worlds (cf. Barnes and Pressey, 2012). This finding may reflect the relatively steeper learning-curve associated with virtual worlds and “in acquiring skills necessary for navigating the environment” (Massara and Novak, 2008: 31) as opposed to more familiar real-life and Web channels. Therefore, although market mavens are able to extend their expertise across digital channels, this capability does diminish somewhat when operating on digital platforms. It is uncertain if this can be attributed to respondents’ more extensive shopping experience in physical

channels followed by the Internet and the relatively more recent introduction of virtual world channels, although it would potentially be an area of interest for further study.

Our findings find partial support for *H3* and suggest a very different level of immersion experienced by users of virtual worlds based on their personal characteristic as a market maven, thereby revealing insights into the psychological traits of cyber-mavens. Initially, skill and challenge are clearly important in effectively navigating virtual world channels; as Hoffman and Novak (2009: 25) note: “there is a significant learning curve to *Second Life* which accentuates the role of skill and challenge.” Virtual worlds also provide an acute sense of escapism (or even refuge) to mavens (through experiencing telepresence and arousal), through feelings of being in a different world and the level of stimulation provided (Ananthaswamy, 2007; Castronova, 2007).

As flow is thought to impact on learning in virtual worlds (Massara and Novak, 2008; Hoffman and Novak, 2009), we note that the heightened states of flow experienced by cyber-mavens should help reinforce the propensity of mavenism through greater learning, and the promotion of product knowledge (Suh and Chang, 2006). Further, as cyber-mavens tend to have a heightened experience of flow (and may indeed seek out flow experiences) in virtual worlds this finding may add credence to the notion that market mavens harbour aspects of the autotelic personality (Csikszentmihályi and Nakamura, 2011) in seeking situations that encourage growth and stimulation in a consumer learning context. The findings suggest, however, that although some mavens will achieve greater flow experiences in virtual worlds, this does not mean that individuals with low maven propensity will not equally experience flow in virtual worlds. Clearly further personality characteristics (beyond the remit of the present study) may well explain this finding and would merit further study.

The research also provides some insight into consumer innovativeness among cyber-mavens. Put simply, cyber-mavens may not view virtual worlds as a means to trial new products or

services in order to satisfy an *external* motivation to impress others or to satisfy a desire for uniqueness (at least relative to other groups of consumers), but rather for *internal* hedonistic purposes based on their personal interest in new products and the stimulation these provide, consistent with the original conception of the maven (Feick and Price, 1987). Thus, offering only partial support for *H4*.

We are also able to provide a clearer demographic profile of the cyber-maven as well as their channel characteristics. While the first study of market mavenism found them to be female and with low levels of educational attainment (Feick and Price, 1987), the cyber-maven is just as likely to be male as female, and is older and with higher levels of educational attainment than non-cyber-mavens, offering partial support for *H5*. In terms of channel characteristics, we find that cyber-mavens have been engaged in virtual world usage for a longer period of time than non-cyber-mavens and also spend more time in virtual world usage, hence supporting *H6*. Finally, we can assert that cyber-mavens have a greater propensity to identify other mavens in virtual worlds, thus supporting the premise that mavens are able to identify other mavens and exchange information (Feick and Price, 1987; Sieber, 1974), albeit in a virtual world setting, thus supporting *H7*.

## **6. CONCLUSIONS AND IMPLICATIONS**

In his book, Noel Capon (2007) documents the relative success of industries that have developed the capacity to identify market mavens and incorporate their distinctive capabilities into their marketing strategies. The market maven concept was predicated on real-life interaction between consumers (Feick and Price, 1987), at a point in time when both the Web and virtual worlds were at an embryonic stage in their development. The present study considers maven behavior within a new channel, an endeavor that would seem valuable given that “finding new ways of identifying



and profiling market mavens and targeting marketing communications to them may be increasingly important in the twenty-first century” (Geissler and Edison, 2005: 74). Further, identifying individuals who influence the agenda for consumer trends is increasing in importance as consumer expectations change (Hofmann, 2015; Yoshida *et al.*,2014; Nahuis *et al.*,2012; Ortt *et al.*,2007), and emphasises the need to involve lead users in online communities (Parmentier and Mangematin, 2014). As market mavens play a pivotal role in sharing product information a better understanding of these individuals has the potential to add considerable value to marketers operating in the growing market for virtual worlds and products. Hence identifying the presence of cyber-mavens in popular new media platforms such as virtual worlds would seem a valuable addition. Virtual worlds are becoming recognized as an area of significant economic growth, and an important part of these virtual economies is the trade in virtual goods. This study represents one of the first attempts to better understand how consumer behavior might differ in virtual world channels, and, by so doing, better inform our understanding of an important group of consumers for digital goods, namely cyber-mavens. We now briefly outline implications for theory, management and public policy, and provide the limitations of the study and suggestions for future research.

### **6.1 Implications for Theory**

This study responds to calls for more studies into online eWOM and the dissemination of consumption information (King *et al.*,2014), engagement in social commerce and consumption decisions (Yadav *et al.*,2013), explaining why some individuals are more prone to engage online regarding consumption information (Blazevic *et al.*,2014), and understanding what motivates individuals to participate in virtual worlds (Eisenbeiss *et al.*,2012). The contribution of the present study is to both extend and understand the role of the market maven in cyberspace; while we find that ‘real-life’ market mavenism remains most dominant, mavens are capable of

extending this behavior into virtual worlds over those weaker on the maven continuum, suggesting the fluidity or transferability of the maven concept across channel. Interestingly, we find that cyber-mavens have a heightened propensity to experience ‘flow’ and consequently immersion in virtual world environments than non-mavens and are more likely to trial new products in order to satisfy hedonist motives for personal interest in new products – something that reinforces their capacity to act as cyber-mavens, similar to their offline counterparts or real-life selves (Feick and Price, 1987).

Our analysis also provides insights into the demographic profile of the cyber-maven, finding that they can be either male or female, are generally well-educated, and slightly older consumers than those individuals with weaker maven propensity, and furthermore are keen participants in virtual worlds (based on user history and usage patterns) and have knowledge of other mavens (suggesting their connectedness in virtual world consumer networks). These findings indicate that the modern-day cyber-maven has a broader profile than Feick and Price (1987) found in their original investigation, and conforms to the notion that mavens are difficult to demographically profile with consistency (*cf.* Geissler and Edison, 2005).

Given the importance of the market maven concept to the literature, this study consequently brings a concept over a quarter of a century old and based on the consumption habits of consumers in physical stores in the 1980s, into the 21<sup>st</sup> century, reemphasizing its relevance to contemporary marketing theory. Further, given as Yadav *et al.*,(2013: 320) note: “[v]ery little is currently known about social media's potential role in influencing transactions, supporting sales or even serving as a selling platform”, our findings contribute to our understanding of social media and consumption, and demonstrate the importance of understanding the behavior of this important subset of consumers in multimedia and multichannel environments.

While retailing channels available to consumers continue to proliferate and expand, ‘channel migration’ (Rangaswamy and van Bruggen 2005) presents a challenge to researchers in understanding the continuity of consumer behavior in new channels, as consumers transition to the latest channels. Our findings point to the robustness of the maven concept and its applicability across channels, and indicate that the challenges of channel migration to theory actually provide researchers with opportunities to examine the versatility of core theories.

A final implication for theory relates to the escalating power of consumers and the greater opportunities for customer interaction. Just as the original conception of the market maven privileged these individuals as consumers of considerable influence (Feick and Price, 1987), the cyber-maven concept extends this behavior across virtual platforms and seeks experiences to be immersed in digital settings. This affords mavens greater power than was originally thought and empowers them as important agents to interact with other consumers; how this behavior is manifest would seem a natural area of inquiry to extend market maven theory. Overall, cyber-mavens present an intriguing subset of consumers to understand and for the extension of theory in our contemporary multichannel environment.

## **6.2 Managerial Implications**

Scholars have recognized for some time the growing importance of virtual channels (Hagel, 1999), although companies have not always afforded these channels appropriate significance (Nambisan and Baron, 2007). By examining market mavens in VW environments, this research offers practitioners – both operators of VWs and firms engaging with them as part of a multi-channel strategy – significant implications regarding their interaction with an important group of consumers. VWs are clearly ripe environments in which market mavens can operate, as they are highly relational consumers who intrinsically take pleasure in engaging with other consumers both

online and offline, which emphasizes the importance of blended forms of consumption to some consumers and the importance of multichannel strategies by companies to target these individuals. Consequently, operators of VWs should encourage users' socialization and engagement, as well as a sense of escape and fostering creativity, in VW environments that create compelling activities for users where personal goals can be met and challenged. To achieve this, realistic design, opportunities for individualization, the acquisition and creation of virtual objects, and encouraging interaction among users are crucial factors (Hemp, 2006, 2008).

We contend that VW operators should encourage the facilitation of flow experiences. Cyber-mavens and individuals with limited maven propensity are both likely to experience key aspects of flow including control (no feelings of frustration while online), speed/interaction (perception of speed while online), and time distortion (time passing quickly online) (Novak, Hoffman and Yung, 2000). Thus, VW environments that create compelling experiences with high design ideals will encourage user immersion, just as early online communities that invested in infrastructure (e.g. interactive events, bulletin boards, and chat rooms) had a positive effect on user loyalty of particularly relational consumers. Further, as cyber-mavens more acutely experience arousal (feelings of stimulation while online), challenge (online capabilities being stretched), skill (Web-knowledge being tested), and telepresence (feelings of displacement or in a different world while online) in VWs, creators of VWs can create compelling experiences that provide destinations to explore and discover, introduce new events, the ability to browse user profiles and identify users with similar interests, outlets for self-expression such as marketplaces to buy and sell goods, and online tools to create virtual objects and pursue artistic endeavors.

In addition to operators of VWs, companies utilizing VWs as part of a multi-channel marketing strategy can benefit from the findings of the study. As cyber-mavens seek to trail or adopt new products in VWs for the purposes of hedonist innovativeness, companies should

encourage this propensity as a means to disseminate new product information. Hedonistic innovative consumers, in an attempt to satisfy a need for stimulation as an internal motivator, are enthusiastic about new products and adopt or trial based on their own personal enjoyment, making them ideal users to target in VWs, provided that marketers can create bespoke content to target specific consumer preference groups (Kaptein and Eckles, 2012). This could include creating content specifically for cyber-mavens that enables them to interact with the brand, affords greater levels of product information, competitions, vouchers, special offers, product videos, as well as product co-creation and development opportunities, given their greater affinity for new technology and a likelihood of consumer interaction through new technology as compared to individuals with low maven propensity (Geissler and Edison, 2005). In addition, consumer-generated content and advertisements for company contests can engage consumers – particularly cyber-mavens – and facilitate consumer-to-consumer communications (Ertimur and Gilly, 2012).

In line with the findings of Blazevic *et al.*, (2014: 98), who conclude that “[c]ompanies and institutions are increasingly trying to deliver value to their customers by engaging them in the marketing process”, our findings point to the importance of VWs and interactive online technologies as useful channels that provide a significant capacity for consumers to interact and participate in consumption communities. As VWs, among other platforms, facilitate community engagement and eWOM opportunities (King *et al.*, 2014), which in turn can encourage consumer loyalty (Blazevic *et al.*, 2013), this would further appear to emphasize the importance of seeking the support of cyber-mavens.

### **6.3 Implications for Policy**

The present study also has a number of implications for policy. Initially, in this period of austerity in many countries, consumers are searching for the most advantageous consumer deals. Cyber-

mavens therefore can help assist other consumers who lack the maven expertise in order to help them obtain the best shopping deals regardless of their physical location. This has the potential to help less well-off consumers to save money via online platforms.

Many consumers are located in physically isolated environments; virtual worlds allow these individuals the opportunity to interact with others and socialize online. Online platforms also enable people in secluded locations to potentially interact with cyber-mavens who are particularly adept at helping less experienced consumers navigate online consumption experiences and locations.

Virtual worlds also afford public agencies and charitable bodies a means of targeting consumers, and in a relatively low-cost manner. Cyber-mavens, therefore, are a particularly valuable group of consumers for them to target as they are proficient in disseminating consumption information and there is no reason why these skills cannot be utilized for philanthropic causes (for example, in supporting campaigns such as fair trade).

Charitable organizations can also target cyber-mavens and draw on their capabilities in diffusing information or promoting important messages and campaigns, such as endorsing fundraising activities. For example, online charitable campaigns that are allied with for-profit companies and brands would potentially represent a potential target for eliciting the assistance of cyber-mavens in promoting such causes. All of the foregoing issues would appear to merit further scholarly enquiry.

#### **6.4 Limitations and Directions for Future Research**

A possible limitation of the study relates to the data collection procedure. Data were captured in a single VW. Given, however, that many VWs operate and function in a similar fashion, our results should be generalizable to other VWs (*cf.* Eisenbeiss *et al.*,2012). Notwithstanding, there are

clearly some differences between the users targeted by particular VWs: for example, while *Second Life*, *IMVU*, and *Active Worlds* may target more general users, VWs such as *Habbo Hotel*, *Teen Second Life*, and *Whyville* predominantly target a teenage audience. However, given the demonstrated pervasiveness of the maven concept among user groups this is unlikely to be a particular concern: for example, Belch *et al.*,(2005) identified Internet teen mavens in their research. Nevertheless, we suggest that future research that examines potential differences should be encouraged.

Future confirmatory studies are needed to support (and extend) our main findings. Future studies could include examining the phenomenon of ‘neophyte cyber-mavens’, a market maven that learns to develop this role in cyberspace; for example, virtual worlds that operate in a slightly different space, such as those that are built around brands and products – including *Buildabearville*, *Club Penguin* (Disney), *Hello Kitty Online*, *Happy Studio* (McDonald’s), and *Dream Town* (Tamagotchi) – in which consumers are in the youth segment, should provide insights into the development of mavenism behaviors in online platforms. As Fortin (2000) notes, “a common question that generally arises when a new technology is introduced is: How does this affect what we already know about a phenomenon?” (p. 524). As technologies such as virtual worlds evolve and increase in sophistication there is a need to question key concepts and theories in order to test their veracity in the wake of new channels and consumption environments.

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## **APPENDIX: SURVEY ITEMS**

### **Part I: Second Life**

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#### **Respondent characteristics**

- Are you:
  - 1: Male
  - 2: Female
- Your age:
  - 1: 18 - 24 yrs.
  - 2: 25 - 34 yrs.
  - 3: 35 - 44 yrs.
  - 4: 45 - 54 yrs.
  - 5: 55 - 64 yrs.
  - 6: 65+ yrs.
- What is your highest level of educational achievement?
  - 1: High school (non-graduate) or below
  - 2: High school graduate or equivalent
  - 3: Bachelors degree or equivalent
  - 4: Masters degree or equivalent
  - 5: Doctoral degree or equivalent
- How long have you been using Second Life?
  - 1: Less than 1 month

- 2: More than 1 and less than 3 months
- 3: More than 3 and less than 6 months
- 4: More than 6 and less than 12 months
- 5: More than 1 and less than 2 years
- 6: More than 2 years

- In an average week, how much time would you say you spend on Second Life?

- 1: less than 1 hour
- 2: between 1 and 4 hours
- 3: between 4 and 10 hours
- 4: between 10 and 30 hours
- 5: between 30 and 60 hours
- 6: more than 60 hours

### **Market mavenism in Second Life (Feick and Price, 1987)**

On a scale from 1 = strongly disagree to 7 = strongly agree, and where 4 = neutral, how much do agree with the statement:

1. I like using information collected from Second Life to introduce new brands and products to my friends.
2. If someone wanted to know which Second Life locations had the best bargains on several types of products, I could tell him or her where to shop.
3. People ask me for information on Second Life about products, locations to shop, or sales.
4. I like helping people by using Second Life to provide them with information about many kinds of products.

5. My friends think of me as a good source of information on Second Life when it comes to new products or sales.
6. Think about a person who gets information from Second Life about a variety of products, and likes to share this information with others. This person knows about how to use Second Life, how to find information on Second Life, what the best locations are, and so on, but does not necessarily feel he or she is an expert on the products he/she gathers information on. On a scale from 1 = strongly disagree to 7 = strongly agree, and where 4 = neutral, how well does this description fit you?

## **Part II: Web and Real-Life**

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### **Market mavenism on the Web (Feick and Price, 1987)**

The following statements will ask you about your opinions and behaviour regarding your use of the World Wide Web (NOT Second Life). Please answer the statements on a scale from 1 = strongly disagree to 7 = strongly agree, and where 4 = neutral (neither agree nor disagree).

1. I like using information collected from the Web to introduce new brands and products to my friends.
2. If someone wanted to know which Web sites had the best bargains on several types of products, I could tell him or her where to shop.
3. People ask me for information on the Web about products, locations to shop, or sales.
4. I like helping people by using the Web to provide them with information about many kinds of products.
5. My friends think of me as a good source of information on the Web when it comes to new products or sales.

6. Think about a person who gets information from the Web about a variety of products, and likes to share this information with others. This person knows about how to use the Web, how to find information on the Web, what the best locations are, and so on, but does not necessarily feel he or she is an expert on the products he/she gathers information on. How well does this description fit you?

**Market mavenism in real-life channels (Feick and Price, 1987)**

The following statements will ask you about your opinions and behaviour regarding your use of the World Wide Web (NOT Second Life). Please answer the statements on a scale from 1 = strongly disagree to 7 = strongly agree, and where 4 = neutral (neither agree nor disagree).

1. I like using information collected from real-life to introduce new brands and products to my friends.
2. If someone wanted to know which locations in real-life had the best bargains on several types of products, I could tell him or her where to shop.
3. People ask me for information from real-life channels about products, locations to shop, or sales.
4. I like helping people by using real-life channels to provide them with information about many kinds of products.
5. My friends think of me as a good source of information in real-life when it comes to new products or sales.
6. Think about a person who gets information from real-life about a variety of products, and likes to share this information with others. This person knows about how to use the real-life channels, how to find information in real-life, what the best locations are, and so on, but does

not necessarily feel he or she is an expert on the products he/she gathers information on. How well does this description fit you?

**Knowledge and importance of other mavens** (Feick and Price, 1987)

- Do you know someone, other than yourself, who has information about a variety of products, stores, sales, etc. and likes to share this general information with others? (Yes / No)
- How important is this person in helping you to find out about new brands and products? (1 = Extremely Unimportant to 7 = Extremely Important, where 4=neutral).
- How important is this person in helping you to evaluate different brands and products? (1 = Extremely Unimportant to 7 = Extremely Important, where 4=neutral).

**Consumer innovativeness** (Roehrich, 1995; 2004)

Please answer the statements on a scale from 1 = strongly disagree to 7 = strongly agree, and where 4 = neutral (neither agree nor disagree). The statements will ask you about your opinions and behaviour in general.

*Hedonist consumer innovativeness*

1. I am more interested in buying new than known products.
2. I like to buy new and different products.
3. New products excite me.

*Social consumer innovativeness*

1. I am usually among the first to try new products.



2. I try new products before my friends and neighbors.
3. I know more than others on the latest new products.

### **Flow (Novak et al., 2000)**

#### *Interaction (Speed)*

1. When I use Second Life there is very little waiting time between my actions and the computer's response.
2. Interacting with Second Life is slow and tedious.
3. Locations in Second Life that I visit usually load quickly.

#### *Skill*

1. I am extremely skilled at using Second Life.
2. I consider myself knowledgeable about good search techniques in Second Life.
3. I know somewhat less than most users about using Second Life.
4. I know how to find what I am looking for in Second Life.

#### *Telepresence*

1. Using Second Life often makes me forget where I am.
2. After using Second Life, I feel like I come back to the "real world" after a journey.
3. Using Second Life creates a new world for me, and this world suddenly disappears when I logout.
4. When I use Second Life, I feel I am in a world created by the locations I visit.

5. When I use Second Life, my body is in the room, but my mind is inside the world created by the locations I visit.
6. When I use Second Life, the world generated by the locations I visit is more real for me than the "real world."

#### *Time distortion*

1. Time seems to go by very quickly when I use Second Life.
2. When I use Second Life, I tend to lose track of time.

#### *Challenge*

1. Second Life challenges me compared to other things I do on the computer.
2. Second Life challenges me, compared to the sport or game I am best at.

How do you feel about your overall experience of Second Life use?

(measured on 7-point semantic differential scales)

#### *Arousal*

1. Stimulated / Related
2. Calm / Excited
3. Frenzied / Sluggish
4. Unaroused / Aroused

#### *Control*

1. Controlling / Controlled

2. Influenced / Influential
3. Dominant / Submissive
4. Guided / Autonomous

### *Flow*

The word "flow" is used to describe a state of mind sometimes experienced by people who are deeply involved in some activity. One example of flow is the case where a professional athlete is playing exceptionally well and achieves a state of mind where nothing else matters but the game; he or she is completely and totally immersed in it.

The experience is not exclusive to athletics: Many people report this state of mind when playing games, engaging in hobbies, or working. Activities that lead to flow completely captivate a person for some period of time. When one is in flow, time may seem to stand still, and nothing else seems to matter. Flow may not last for a long time on any particular occasion, but it may come and go over time. Flow has been described as an intrinsically enjoyable experience.

Thinking about your own use of Second Life, please answer the following on a scale from 1 = strongly disagree to 7 = strongly agree where 4 = neutral (neither agree nor disagree).

1. I have experienced flow in Second Life.
2. Most of the time I use Second Life I feel that I am in flow.
3. I frequently experience "flow" when using Second Life.

**Table 1: ANOVA Test for Real Life Mavenism by Channel (n=448)**

	<b>1. High Mavenism</b> (n=94)	<b>2. Moderate</b> <b>Mavenism</b> (n=327)	<b>3. Low Mavenism</b> (n=27)	<b>P</b> (F-value)	<b>Post-hoc tests</b>
<i>Physical</i>	5.91 (.429)	4.24 (.683)	1.67 (.488)	<.001 (537.437)	1>2,3 <sup>a</sup> *; 2>3 <sup>a</sup> *
<i>Web</i>	5.50 (.774)	4.33 (.873)	2.09 (1.189)	<.001 (168.149)	1>2,3 <sup>a</sup> *; 2>3 <sup>a</sup> *
<i>VW</i>	4.80 (1.225)	4.25 (1.433)	3.43 (1.161)	<.001 (11.842)	1>2,3 <sup>a</sup> *; 2>3 <sup>a</sup> *

Note: <sup>a</sup> Scheffe; \* p<=.05.

**Table 2: ANOVA Test for High Real-Life Maven Group by Channel (n=94)**

	<b>1. RL Mavenism</b>	<b>2. Web Mavenism</b>	<b>3. SL Mavenism</b>
<i>Mean</i>	6.11	5.61	4.96
<i>SD</i>	.310	.858	1.311
<i>Post Hoc Results (Scheffe)</i>	1>2,3*	2<1, 2>3*	3<1,2*

Note: \*p<=.01; F-value=36.692.

**Table 3: ANOVA Test for Flow based on High Virtual World Market Mavenism (n=448)**

	<b>1. High Mavenism</b> (n=103)	<b>2. Moderate</b> <b>Mavenism (n=309)</b>	<b>3. Low Mavenism</b> (n=36)	<b>P (F-value)</b>	<b>Post-hoc</b> <b>tests</b>
<i>Flow</i>	4.83	4.33	4.06	.001 (9.868)	1>2,3 <sup>a</sup> *
<i>Interaction</i>	4.54	4.26	4.36	.069 (2.690)	N/A
<i>Skill</i>	4.79	4.48	4.72	.019 (4.011)	1>2 <sup>a</sup> *
<i>Telepresence</i>	4.74	4.30	4.53	.002 (6.161)	1>2 <sup>a</sup> *
<i>Time distortion</i>	5.04	4.73	4.60	.076 (2.589)	N/A
<i>Challenge</i>	4.74	4.35	4.39	.035 (3.369)	1>2 <sup>a</sup> *
<i>Arousal</i>	4.65	4.31	4.47	.021 (3.920)	1>2 <sup>a</sup> *
<i>Control</i>	4.45	4.24	4.37	.233 (1.461)	N/A

Note: <sup>a</sup> Scheffe; \* p<=.05.

**Table 4: ANOVA Test for Consumer Innovativeness based on High Virtual World Market****Mavenism (n=448)**

	<b>1. High Mavenism</b> (n=103)	<b>2. Moderate</b> <b>Mavenism (n=309)</b>	<b>3. Low Mavenism</b> (n=36)	<b>P</b> (F-value)	<b>ANOVA</b>
<i>Hedonist consumer</i> <i>innovativeness</i>	4.75	4.41	4.03	<.001 (6.717)	1>2,3 <sup>a</sup> *
<i>Social consumer</i> <i>innovativeness</i>	4.57	4.29	4.06	.057 (2.892)	N/A

Note: <sup>a</sup> Scheffe; \* p<=.05.

**Table 5: Kruskal-Wallis H Test - Demographic Profiles by Market Maven Groups (n=448)**

<b>Demographics</b>	<b>1. High Mavenism: Mean Rank (n=103)</b>	<b>2. Moderate Mavenism: Mean Rank (n=309)</b>	<b>3. Low Mavenism: Mean Rank (n=36)</b>	<b>p (<math>\chi^2</math>)</b>	<b>Dunn's Post-Hoc Test</b>
<i>Age</i>	238.51	228.09	153.60	.001 (13.330)	1>3* 2>3*
<i>Education</i>	207.10	236.30	173.04	.005 (10.787)	2>3*
<i>Channel experience</i>	245.10	224.66	164.17	.004 (10.964)	1>3* 2>3*
<i>Channel intensity</i>	281.01	218.25	116.49	<.001 (48.187)	1>2, 3* 2>3*

Note: \* p<.05.



**Table 6: Summary of Hypothesis Tests**

Hypothesis	Accept/Reject
<b>H1:</b> Individuals with high market maven propensity retain this characteristic across channel, both onto Web and virtual world platforms.	Accept
<b>H2:</b> Market maven behavior will be greatest for individuals in physical and Web environments compared to virtual world channels.	Accept
<b>H3:</b> Cyber-mavens will experience higher levels of (a) flow and (b) the key dimensions of flow in virtual worlds than non-mavens.	Partially Accept
<b>H4:</b> Cyber-mavens will experience greater levels of (a) hedonist innovativeness and (b) social innovativeness in virtual worlds.	Partially Accept
<b>H5:</b> Cyber-maven behavior is not determined by respondent characteristics: (a) age, (b) gender, (c) education.	Partially Accept
<b>H6:</b> Cyber-mavens will have a greater propensity of: (a) channel experience; and (b) intensity of usage in virtual worlds.	Accept
<b>H7:</b> Cyber-mavens will have knowledge of other market mavens in virtual worlds.	Accept