The Impact of Social Networking Websites to Facilitate the Effectiveness of Viral Marketing

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Abstract—**The Internet and the World Wide Web have become two key components in today's technology based organizations and businesses. As the Internet is becoming more and more popular, it is starting to make a big impact on people's day-to-day life. As a result of this revolutionary transformation towards the modern technology, social networking on the World Wide Web has become an integral part of a large number of people's lives. Social networks are websites which allow users to communicate, share knowledge about similar interests, discuss favorite topics, review and rate products/services, etc. These websites have become a powerful source in shaping public opinion on virtually every aspect of commerce. Marketers are challenged with identifying influential individuals in social networks and connecting with them in ways that encourage viral marketing content movement and there has been little empirical research study about of this website to diffuse of viral marketing content. In this article, we explore the role of social network websites which has influence on viral marketing, and the characteristics of the most influential users to spread share viral content. Structural equation modeling is used to examine the patterns of inter-correlations among the constructions and to empirically test the hypotheses.**

Keywords-Social networks website, viral marketing, structural equation modeling

I. INTRODUCTION

Given the increasing popularity of the internet nowadays, businessmen and entrepreneurs have started to explore the concept of marketing on the Web. The World Wide Web has an exorbitance of ways to promote a business and most importantly, the internet caters to a wide range of audience that is perhaps interested to the business' products and services. The most powerful and influential form of advertising is passing the information from one person to another. This form of advertising called "Word-Of-Mouth". Many marketers and researchers believe that word-of-mouth Communication has become a hot subject in marketing. Word-of-mouth is becoming a main base for interactive marketing communication among offline communication strategists. Many reasons have been presented to explain this growth in marketing strategists. Word-of-mouth marketing is such a successful marketing strategy because it fostered "familiarity, personal connection, care and trust" between the consumer and

the translator of the information [10]. Another reason for growing this strategy is that many people like to talk about their purchase with products and services for a variety of reasons. Psychologists believe these customer behaviors may arise through ownership or a need to share their purchase experiences in order to help others. These conversations are then passed to family, friends and other people in social networks [2]. While the underlying principle of Word-Of-Mouth marketing is well-established and acknowledged [39]; [51], the Internet fosters new marketing strategies [3], one of which is viral marketing. Viral marketing is said to be the electronic version of traditional word-of-mouth advertising and product communication [5]. Viral marketing can be described as a marketing technique that uses e-mail messages containing powerful advertising messages and promotional offers that are specifically designed for its recipients to forward to their family, friends, or others on their e-mail contact list [5]. The reason behind providing viral marketing with its specific name is because like human and computer viruses it also "multiplies rapidly in a cell, commandeering the cells resources to do the virus' bidding" [15], [41]. At the base of viral marketing is the transmission of viral message through internet users by peers. This is an opportunity for Marketers that can transfer information between internet users without the involvement during these transmissions. Viral marketing works because friends are better at target marketing than any database [7]. Due to advancements in computer technology and internet people all over the world can now interact and communicate with virtually anyone else who has access to a computer and the internet. These advancements in communication and technology have opened up huge opportunities for businesses to appeal to much larger markets than ever before. The Internet, with the help of instant messaging and social networking sites, has hyper-accelerated the rate at which people talk to each other and has greatly expanded the range of topics they discuss and how they discuss them. According to Alexa.com four social network websites (MySpace.com, Facebook.com, Twitter.com and Hi5.com) belong to the top ten of the global traffic ranking [53]. The nature of these social networking websites assist people to convey a message through a potentially self-replicated, growing campaign where, ideally, one person tells two people who tell two more people each. Among the global websites Facebook.com, is the leading social

network website that currently has more than 55 million active users, with an average of 50,000 new registrations per day [14]. StudiVZ.net, the most popular social network website in Germany, witnessed an impressive increase in user subscriptions since its launch in 2005, currently having more than 3 million members [46]. Social networking is rapidly expanding; Williamson in 2008 estimates that there was an 11 percent increase of people visiting social networking sites between 2007 and 2008, with "79.5 million people—41% of the U.S. Internet user population" visiting the sites in 2008[53]. Furthermore, the trend will continue, and, by 2013, the number will increase to 52 percent. According to an eMarketer study in 2008, nearly six out of ten United States users now communicate with businesses and believe that the businesses must "interact with their consumers" and "deepen the brand relationship" via social networking website. Its big instrument for viral marketers that develop their process because they can be driven by content integrated into consumer/user profiles and such content is increased through new user acquisition and retention.

II. LITERATURE REVIEW

In this section, we review previous studies on the social network websites and viral marketing, and provide a set of hypotheses to examine the motivational characteristics of these websites on facilitated the viral marketing.

A. Viral Marketing

In 1997, Juvertson and Draper was developed the viral marketing by describe free email service for Hotmail, they explain term "viral marketing" simply as "network-enhanced word-of-mouth" [25]. However after them, many researchers used different terminology to explain what viral marketing is. According to [49], some of the terminology used to describe electronic WOM includes "Interactive Marketing" [4], viral marketing[25], Internet communication [8], Internet word-of-mouth and word-of-mouse [17], online feedback mechanisms [8], stealth marketing [27], buzz marketing [43], electronic word-of-mouth communication [20], interactive or electronic word-of-mouth advertising [37], and electronic referral marketing [9],defines viral marketing as "any strategy that encourages individuals to pass on a marketing message to others, creating the potential for exponential growth in the message's exposure and influence"[52].

However, viral Marketing using informal communication among consumers in social networks to promote and grow products, services and brands. Viral marketing as any strategy that encourages individuals to pass on a marketing message to others, creating the potential for exponential growth in the message's exposure and influence [52]. Base on social theory suggests that people tend to connect with others who share common interests [19]. Purchasing decisions are often strongly influenced by people who the consumer knows and trusts by his or her social network and their community. Viral messages can reach and potentially influence many receivers, and are usually perceived by consumers to be more reliable and credible than firm-initiated ones, since the senders of viral are mostly independent of the market [55]. After the emergence of the Internet, marketers tend to look at this phenomenon of how

they can increase awareness about their services and products with immediate and low cost in many countries with different cultures. [36] researcher suggest viral contents such as joke, picture, game and video through the Internet, often distributed through independent third-part sites, are usually personal, more credible than traditional advertising and we must employ these material for viral in executions by website. Despite the increasing shift of advertising spending to viral marketing [27], the factors critical to viral marketing effectiveness remain largely unknown to both marketing academics and practitioners [16].

Now with increased social networking in the internet, viral marketing could encourage consumers to spread their message and entertaining media to their friends and also in turn encourage their friends to diffuse forward these message in a largely chain reaction of consumer awareness. Furthermore, viral marketing is often also stealth marketing, encouraging customers to feel they just happened to hear about the product or service rather than to feel directly marketed to [54]. Considering the viral marketing capabilities to increase customer awareness of our products and services can be concluded that there can be significant benefits to be gained from viral marketing. Before review the influential factors on viral marketing we should determine the main viral marketing characteristic that can be more effective on success of its campaign. In order to implementing this purpose we done research and after having studied we find main following characteristic as important indicator:

- Rapid diffusion to audience reaches:

Kaikati, Helm, Welker believe viral marketing can reach audience and spread exponentially within a short period of time [26], [18]. This rapid diffusion can significantly boost the speed of the adoption of the marketed product or service [11]. Viral marketing can help achieving substantial audience, reaching as marketers get access to diverse audiences through social contacts [18].

B. Marketing through Social Networks sites

Nowadays, social sites have become most popular place for internet user on the Internet. These sites are instrument for building virtual communities with same age, education, lifestyles, idea and interests or to create a variety of activities for individual. Today, these sites have been able to break geographical boundaries and set many people with different cultures and nationalities together. These sites are helped to be broken down into sub networks, based on demographic or geographical preferences.

Marketers believe that members of social sites who share information with other members and friends are best target for participation in viral marketing. Their involvement in these social sites allows marketer to spread more the viral content because they naturally want to share information to other members and send interesting content to friends.

More than half of social network site users already tell members of their social network about products they have used [29]. Online social network members are also more interested in viewing the profile pages of companies [29]. The online

social networks are favorable places for executing a purpose to reach groups of consumers who share common interests and comments same viral messages that can be spread quickly by consumers who truly share common interests and preferences.

Many factors will make social network website an interesting instrument for marketing strategy. Many users can join easily to these websites without pay money where they could share their opinion about anything and also make recommendation on these sites. Some research showed 78% of global consumers say they trust and believe other people's recommendations for products and services more than any other medium [10], actually it has been shown that many consumer attempt to know another persons' opinion in the social network websites when considering the purchase of products and services because they belief and trust on their friends opinion. Many members believe that their friends in these sites are better resources than companies advertising for buy products or services. Members of social networks serve two roles; they both supply and consume content. The creators of content are typically highly engaged consumers and, as a result, influential [10]. When one person who affects or influences others perceives message as valuable, he or she could be turned into a viral. This event make these website as powerful weapon for marketers, because users don't feel that the information is being pushed at them, but referred to them by a trusted friend in a trusted network.

Nevertheless, in spite of the fact that we have been studied about word-of-mouth and offline social network but there is little research that studies the phenomenon of viral marketing through social network websites and the factors affecting the effectiveness of this kind of marketing. Among the limited number of studies with this line of research, we found social network websites influence facilitated viral marketing. Therefore we want to explain how the motivational characteristics of these websites have impact on main character of viral marketing.

III. CONCEPTUAL FRAMEWORK AND HYPOTHESIS

Based on our review of the related research, we found very few studies that investigate the impact of motivational characteristic of social network website on marketing special viral marketing. The proposed research model is depicted in *"Fig. 1"*. As we know the primary users' purpose of these websites are used for entertainment to pleasure purposes rather than utilitarian purposes. Our model which we call the Social Network Website Influence model (SNWI) focuses on motivational factor of these websites. It is expected that natural motivators and social influences of user behavior are dominant predictors of usage [44]. In this model, the networks' characteristics include perceive playfulness, critical mass, community driven, peer pressure, perceive ease of use and perceive usefulness involvement. The dependent variable is the Rapid diffusion to audience reaches. To build our model, we examine these factors on dependent variable have paid. We suppose that these factors will have a direct effect on rapid diffusion to the audience reaches of viral marketing content. In order to prove that we prepare model that includes six motivational components. The model used for the

effective components of these websites to end-users' intentions in order to publish viral content among their friends.

A. Playfulness

Current or potential users of social network website believe that perceived playfulness by social network website will bring him/her a sense of enjoyment and pleasure. In the study of global network, [38] describe that the playful actions expressed by social network websites such as Facebook Applications could be viewed as representations of characteristics of online playfulness. Researchers are believed that perceived playfulness exhibits an important role in the usage or continuance use of Social network website. By base on [32] and [30], "Perceived playfulness" is defined as intrinsically enjoyable or interesting". They found that perceived playfulness has a direct effect on extent viral marketing content. Therefore, we propose that:

H1: Playfulness website has a significant positive effect on rapid diffusion content in viral marketing.

B. Critical mass

Critical mass is a subjective measure of the point where enough of one's friends participate in a social network to make it valuable. In the context of Social network websites, this subject refer to user perceives this website to have a significant number of users that they can associate with them due to friendship, common interests, and share content for example. A critical mass of users who actively occupied content transfer, information exchange and knowledge sharing activities is crucial to keep users online community up and running over time. If a social network website may claim they have many users and member and current or potential users perceive enough active members that they can associate with, consequently critical mass achieved or sustained for those members. But if these members of social network website perceive there are not enough active members for associate with, therefore this subject has not been achieved or sustained for member. Researchers believe that perceived critical mass has an initiation to intention to use other communication technologies, such as groupware [31], and instant messaging [45]; hence, we expect perceived critical mass to impact intent to use social network website, as hypothesized below:

H2: Perceived critical mass has a significant positive effect on rapid diffusion content in viral marketing.

C. Community-driven

One of the strong motivational characters of social network website is community driven. This character is a new way to find, share and transfer information with internet users. Social network website with this character allows their member to ask any question and to receive answer from other members.

Some researchers on information system and information technology pay attention to community driven as a good example of harnessing user generated content [32],[28].They believe that community driven provides the best opportunity for social network website Internet users with non-stop access to any kind of information from multiple domains. Nowadays we can find many sub communities of people who share

commonalities between social network website, such as fan of movie, music, alumni of particular university and an economic welfare group. Many users during these communities find old friends that they lost connection with them many years and reconnect with them or discover new friends. We argue that community driven in social network website can influence between members to transfer and share content in internet. This makes the next hypothesis:

H3: community driven has a significant positive effect on rapid diffusion content in viral marketing.

D. Peer pressure

Push factors, such as peer pressure, were identified as being a strong influence upon decisions to join a social network website. Many members special teenager typically join the social network website such as Facebook because a friend invites them to join [6]. Some researchers believe external influence such as peer pressure is important external determinants that should be accounted on participation in social network [40]. Social network websites grab more members and expand their network influence that makes people connect together and participate in community. This leads to the following hypothesis:

H4: the degree of peer pressure to participate has significant positive effect on rapid diffusion content in viral marketing.

E. Perceived Ease and F. Use and Usefulness

Perceived ease of use is related to user extent to which people find using a new technology will be comfortable and perceived usefulness is identified with a person who believes that using of a new technology will increase their productivity or performance. Accordingly, both perceived usefulness and perceived ease of use are likely to affect users' self-disclosure intentions [35]. Some researchers believe that both perceived ease of use and usefulness are strong determinants of user acceptance, adoption, and usage behavior [42], [50]. If users find a social networking website very useful and done without waste of time to communicate with others members, they are attracting to regularly update their profiles and disclose more information to others. In similar way, if members believe very few efforts to use the site, they may also frequently update their status and share more personal information to the public. Perceived ease of use is a belief that it would be easy to acquire the knowledge for using the information technology or system [35]. Perceived usefulness is a belief that the target information technology or system will help the user in performing his or her task [35]. This leads to the following hypothesizes:

H5: Perceived ease of use has a significant positive effect on rapid diffusion content in viral marketing.

H6: Perceived usefulness has a significant positive effect on rapid diffusion content in viral marketing.

Figure 1.   Research Model for Social Network Site influence on Viral Marketing

IV.   METHODOLOGY

A. Data Collection

In order to perform this research, we used an online survey to collect data. The data was collected through online survey questionnaires distributed to students enrolled at major Malaysian universities. In the questionnaire survey we define social network website and its motivational characteristics. We introduce some popular social network websites for respondents such as (Facebook, Friendster, Tagged or Myspace) as a frame of reference for their responses. In our study around 150 students were involved during three weeks, of these participants, 41% were females and 59% were males. We focus on adult person because they more potentials to use of these website therefore about 39% of the sample between the age 18-20 and 61% between 21-30 ages

B. Development of Measurement Scales

All theoretical constructs in the study involved and operationalized by multiple item scales. In order to maintain content validity of the adopted scales in the field of social network websites were verified the scales. Some of the scale items were slightly rephrased to reflect the current research context. Additionally, we removed low correlation coefficient item. Table 1 summarizes sources used to operationalize model constructs. All needs-related items were attached firmly on a seven-point Likert scale.

TABLE I.   CONSTRUCT OPERATIONALIZATION.

Construct Name	Construct Type	Sources
Rapid diffusion to audience reaches	endogenous	Helm (2000) and Dobele (2005)
Playfulness	exogenous	Moon and Kim (2001) and Rao (2008)
Critical mass	exogenous	Van Slyke (2007)
Community-driven	exogenous	Moon(2007)
Peer pressure	exogenous	Ajzen (2002) and roger (2003)
Perceived Ease of Use	exogenous	Venkatesh and Davis (2000) and Ohbyung Kwon (2010)
Usefulness	exogenous	Venkatesh and Davis (2000) and Ohbyung Kwon (2010)

TABLE II.   RESULTS FROM THE CFA OF STUDY CONSTRUCTS

Construct	Composite Reliability	Average Variance Extracted (AVE)	Cranach's Alpha
Playfulness	0.885	0.529	0.835
Critical mass	0.847	0.649	0.706
Community-driven	0.855	0.545	0.792
Peer pressure	0.844	0.524	0.748
Perceived Ease of Use	0.901	0.694	0.843
Usefulness	0.891	0.673	0.825
Rapid diffusion to audience reaches	0.918	0.693	0.882

Notes: All factor loadings are significant at p = .05 (i.e., t > 2.0); b: Only remaining items After the purification process are shown.

C. *Analyses and Results*

The purpose of the statistical analysis is to explain the relationship between the dependent variable and independent variables. In our study dependent variable or endogenous variable is Rapid Diffusion to Audience Reach in social network website and independent variables or exogenous variables are playfulness, critical mass, community driven, peer pressure, perceived ease of use and perceive usefulness. We tested our model with structural equation modeling (SEM) technique. Structural Equation Modeling (SEM) is a statistical technique for testing and estimating causal relations using a combination of statistical data and qualitative causal assumptions. In this research we using 2 step SEM approach using Structural Equation Modeling Software EQS. At first to determine the composite reliabilities, convergent and discriminate validity of the multi-item measure, we purified by confirmatory factor analysis (CFA). Second, we used the structural model for evaluate the proposed hypotheses.

1) *Evaluation of the Measurement Model*

At first we evaluated Convergent Validity and Discriminant Validity in order to construct validity. Convergent validity is the degree to which an operation is similar to other operations that it theoretically should also be similar to. High correlations between the test scores would be evidence of a convergent validity. Discriminant validity describes the degree to which the operationalization is not similar to other operationalizations that it theoretically should not be similar to. For convergent validity we must evaluated three criteria: indicator reliability, composite reliability and average variance. We tested these criteria for each indicator and latent variables. As can be seen in table 2, Average Variance Extracted (AVE) for our construct between 0.524 and 0.694 and Cronbach's Alpha is between 0.706 and 0.882. When Cronbach's Alpha is above 0.7, showing that Internal Consistency is assured [34]. Putting together the results from the different criteria, Convergent Validity can be assumed. To ensure Discriminant Validity, require that the AVE for any latent variable has to be bigger than the squared correlation between this variable and all other latent variables in the model [13]. As can be inferred from Tables 2 and 3, this requirement is indeed ensured for all latent variables.

TABLE III.   CORRELATION BETWEEN LATENT VARIABLES

Construct	diffusion to audience reaches	Playfulness	Critical mass	Community-driven	Peer pressure	Perceived Ease of Use	Usefulness
Rapid diffusion to audience reaches	1.000						
Playfulness	0.498	1.000					
Critical mass	0.514	0.662	1.000				
Community-driven	0.519	0.404	0.627	1.000			
Peer pressure	0.429	0.463	0.530	0.513	1.000		
Perceived Ease of Use	0.515	0.501	0.682	0.650	0.553	1.000	
Usefulness	0.448	0.475	0.512	0.587	0.555	0.620	1.000

2) *Evaluation of the Structural Model*

TABLE IV.   SUMMARY OF HYPOTHESES TESTS

Hypothesis	Supported/Not Supported
H1: Playfulness has a significant positive effect on rapid diffusion context in viral marketing.	Supported
H2: Perceived critical mass has a significant positive effect on rapid diffusion context in viral marketing.	Supported
H3: community driven has a significant positive effect on rapid diffusion context in viral marketing.	Supported
H4: the degree of peer pressure to participate has significant positive effect on rapid diffusion content in viral marketing.	Supported
H5: Perceived ease of use has a significant positive effect on rapid diffusion context in viral marketing.	Supported
H6: Perceived usefulness has a significant positive effect on rapid diffusion context in viral marketing.	Supported

We used EQS software to test the hypotheses for structural model analysis. Perceived community driven has the strongest effect on rapid diffusion in social network website (M = .47, p < .01), followed in order perceived playfulness by (M = .36, p < .01), critical mass (M = .33, p < .01), perceived usefulness (M = .29, p < .01), perceive ease of use (M = .11, p < .01 and peer pressure (M=.11, p<.01). Therefore all hypotheses are supported. As anticipated, the usage of social network websites is founded to be positively effect on rapid diffusion of content to audience reach in viral marketing.

V. DISCUSSION

Our study examined the motivational characters of social network websites that contributing the intention to use and diffusion content of viral marketing. The validity of our model (SNWI) and the relationship among its constructs were tested using structural equation modeling. Our model demonstrated that social network websites are significantly influenced by their motivational characters on viral marketing. As the result of our model, Social Network Website Influence (SNWI), community driven is an important driver of rapid diffusion content in social network website with a significant positive path coefficient of 0.47. Social network websites with high level of community driven are predicted to be more likely to share and diffusion viral content. The satisfaction of the perceive playfulness through social network websites is another important driver of rapid diffusion of viral contents with a significant path coefficient of 0.36. Our result shows that critical mass with a significant positive path coefficient of 0.33 is one of influenced character in these websites. Social network website with high level of critical mass has more influence on potential users to believe and participate in viral activity. Perceive usefulness with a significant positive path coefficient of 0.29 showed when users find these websites as usefulness technology will increase their productivity or performance, they will do more activity in these websites and lead to more share and diffusion viral contents. The perceived ease of use and peer pressure by a social network websites was found to have no impact on user participation, as the path coefficient, though positive, was insignificant. But we believe these characters are influenced but Intensity of less than community driven and perceive playfulness. Consequently, social network websites plays an important role in viral marketing influence. Therefore, it can be assumed that social network websites' characters can potentially have a stronger effect on user to share viral content. Social network website is based on network effects, which increases the possibility that a message will reach the right people.

VI. CONCLUSIONS, RECOMMENDATIONS AND FUTURE STUDY

People are increasingly using the Internet to communicate with others, bring out information, find recommendations, increase knowledge and interact with family friends. This study demonstrates that social networking websites by motivational characters are gaining rapidly in popularity and can fill the role of a way to reach and interact between members. Viral marketing is a sufficient marketing strategy and an important tool for all businesses with limited marketing resources. We

can assimilate social network websites and marketing strategies in order to changing and developing consumer behavior expectations to reach company goal. Consumers are and will continue to share their opinions on brands and products with or without company interaction. Hence, it is best opportunity for company to be corporate or engaged in these communications sharing and influencing on it with positively influencing the message therefore facilitate action and brand awareness through integrated viral marketing strategies. Anything is available to embrace and profit from the incorporation of viral marketing and social network website into an integrated marketing and communications strategy. This strategy provides an opportunity to increase brand awareness and exponentially employ the most influential marketing strategy. Entry into social network websites and viral marketing has low barriers to entry and consequently any company can do it. Based on this research and other studies, we recommend that business owners focus on these websites for brand awareness and introduce new products by spreading viral content. This strategy has low cost and more influence between customers for marketers because customers more trust to their friends rather than company advertisement.

Future study is needed to better isolate this effect, perhaps in a more controlled on member characters. It may also prove fruitful to consider alternate models with member behavior, and to draw parallels with member character influence on viral marketing across social network websites. It can be more effective rather than websites character because viral campaign can predict member interaction and make attractive contents for more influence for rapid diffusion.

REFERENCES

[1] Ajzen, I. (2002). Constructing a TpB Questionnaire: Conceptual and MethodologicalConsiderations.http://www.people.umass.edu/aizen/pdf/tpb.measurement.pdf, last access on 10.11.2007.

[2] Allsop, D.T., Bassett, B.R. and Hoskins, J.A. 2007, "Word of mouth research: principles and applications", Journal of Advertising Research, Vol. 47 No. 4, pp. 398-411.

[3] Arnott,D.C.&Bridgewater,S.(2002).Internet, interaction and implications for marketing. Marketing Intelligence and Planning, 20(2), 86-95.

[4] Blattberg, R.C. and Deighton, J. (1991), "Interactive marketing: exploiting the age of addressability", Sloan Management Review, Vol. 33 No. 1, pp. 5-14.

[5] Bidgoli, Hossein (2004), The Internet Encyclopedia. Hoboken, NJ: John Wiley and Sons. p. 568

[6] Boyd, D. M. and Ellison, N. B.,"Social Network Sites: Definition, History, and Scholarship",Journal of Computer-Mediated Communication, 13(1), 2007, pp. 210-230.

[7] Bulkeley, W. (2002). " E-commerce: Advertisers find a friend in viral marketing [Electronic version]. ", The Wall Street Journal Europe, p. 25.

[8] D. Cruz, Honda, Slough, C. Fill,(2008), "Evaluating viral marketing: isolating the key criteria", Emerald Group Publishing Limited 0263-4503-Marketing Intelligence & Planning Vol. 26 No. 7, 2008-pp.743-758

[9] De Bruyn, A. and Lilien, G.L. (2004), "A multi-stage model of word-of-mouth through electronic referrals", eBusiness Research Centre Working Paper, The Pennsylvania State University, State College, PA, February.

[10] Datta, P., Chowdhury, D., & Chakraborty, B. (2005). Viral marketing: New form of wordof- mouth through internet [Electronic version]. The Business Review, Cambridge, 3(2), 69-75.

[11] Dobele, A., Lindgreen, A., Beverland, M., Vanhamme, J. & Van Wijk, R. (2007), "Why pass on viral messages? Because they connect emotionally", Business Horizons, Vol. 50 No. 4, pp. 291-304

[12] D.Sledgianowski,S.kulviwat,(2009), "Using social network sites: The effects of playfulness, critical mass and trust in a hedonic context", Journal of Computer Information Systems,pp.74-83

[13] Fornell, C. and Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. Journal of Marketing Research, 18, 39-50.

[14] Facebook.com Official Statistics Page. Retrieved Sept. 12, 2009. http://facebook.com/press/info.php?statistics.

[15] Gattiker, Urs (2004), The Information Security Dictionary. New York: Springer. p. 348

[16] Godes D, Mayzlin D, Chen Y, Das S, Dellarocas C, Pfeiffer B, Libai B, Sen S, Shi M, Verlegh P,(2005). " The firm's management of social interactions", Mark Lett 2005;16(3/4):415–28.

[17] Goldenberg, J., Libai, B. and Muller, E. (2001), "Talk the network: a complex systems look at the underlying process of word-of-mouth", Marketing Letters, Vol. 12 No. 3, pp. 211-23.

[18] Helm, S. (2000), "Viral marketing – Establishing customer relationship by „word-of-mouse"", Electronic Markets, Vol. 10 No. 3, pp. 158-161

[19] Hill, S., Provost, F. and Volinsky, C. Network-Based Marketing: Identifying Likely Adopters via Consumer Networks. Statistical Science, 21, 2, (2006), 256-276.

[20] Hennig-Thurau, T., Gwinner, K.P., Walsh, G. and Gremler, D.D. (2004), "Electronic word-of-mouth via consumer-opinion platforms: what motivates consumers to articulate themselves on the internet?", Journal of Interactive Marketing, Vol. 18 No. 1, pp. 38-52.

[21] Ilie, V., Van Slyke, C., Green, G., and Lou, H., "Gender Differences in Perceptions and Use of Communication Technologies: A diffusion of innovation approach", Information Resources Management Journal, 18(3), 2005, pp. 13-31.

[22] J.Cao,T.Knotts,J. Xu.M.Chau,(2009), "Word of Mouth Marketing through Online Social Networks", Proceedings of the Fifteenth Americas Conference on Information Systems, San Francisco, California August 6th-9th 2009

[23] Jason Y.C. Ho, Melanie Dempsey,(2010)."Viral marketing: Motivations to forward online content". Journal of Business Research 63 (2010) pp.1000-1006

[24] J.Cao, t. Knotts,J.Xuz ,M.Chau,(2009), "Word of Mouth Marketing through Online Social Networks", Americas Conference on Information Systems (AMCIS)

[25] Juvertson, S. and Draper, T. (1997), "Viral marketing", Draper Fisher Juvertson website, available at: www.dfj.com/cgi-in/artman/publish/printer _steve_tim_may97.html (accessed 12 March 2006).

[26] Kaikati, A.M. & Kaikati, J.G. (2004), "Stealth marketing: How to reach consumers surreptitiously", California Management Review, Vol. 46 No. 4, pp. 6-22

[27] Knight K. Forecast: WOM to exceed $1 billion in 2007. BizReport 2007. http://www.bizreport.com/2007/11/forecast_wom_to_exceed_1_billion_in_2007.html.

[28] L.Huang, Z.Xia,(2009), "Measuring User Prestige and Interaction Preference on Social Network Site", 2009 Eigth IEEE/ACIS International Conference on Computer and Information Science

[29] Li, C. (2007), "How consumers use social networks". Cambridge, MA: Forrester Research,

[30] Lin, C. and Yu, S. "Consumer Adoption of the Internet as a Channel: The Influence of Driving and Inhibiting Factors, Journal of Academy of Business, 9(2), 2006, pp. 112-117.

[31] Lou, H., Luo, W., and Strong, D. "Perceived Critical Mass Effect on Groupware Acceptance. European Journal of Information Systems, 9(2), 2001, pp. 91-103.

[32] Moon, J. and Kim, Y., "Extending the TAM for a World-Wide-Web Context", Information & Management, 38, 2001, pp. 217-230.

[33] Moon, Jeremy, and David Vogel. 2008. "Corporate Social Responsibility, Government, and Civil Society." In The Handbook of Corporate Social Responsibility, ed. A. Crane, A. McWilliams, D. Matten, J. Moon and D. Siegel. Oxford: Oxford University Press.

[34] Nunnally, J. C. (1978). Psychometric Theory. 2nd Edition. McGraw-Hill, New York, NY. Oleson, M. (2004). Exploring the Relationship between Money Attitudes and Maslow's Hierarchy of Needs. International Journal of Consumer Studies, 28 (1), 83-92.

[35] Ohbyung Kwon, Yixing Wen, (2010), "An empirical study of the factors affecting social network service use", Computers in Human Behavior 26 (2010) 254–263

[36] Porter, L., & Golan, G. J. (2006). " From subservient chickens to brawny men: A comparison of viral advertising to television advertising"

[37] Phelps, J.E., Lewis, R., Mobilio, L., Perry, D. and Raman, N. (2004), "Viral marketing or electronic word-of-mouth advertising: examining consumer responses and motivations to pass along e-mail", Journal of Advertising Research, December, pp. 333-48.

[38] Rao, V.(2008), " Facebook Applications and playful mood: the construction of Facebook as a "third place"", Proceedings of the 12th international conference on Entertainment and media in the ubiquitous era, Tampere, Finland, 2008.

[39] Richins,M.L. (1983). Negative word-of-mouth by dissatisfied customers: A pilot study. Journal of Marketing, 47(1), 68-78.

[40] Rogers, E. (2003). Diffusion of Innovations. Fifth Edition. Free Press, New York, NY. Schneider, B. and Alderfer, C. (1973). Three Studies of Measures of Need Satisfaction in Organizations. Administrative Science Quarterly, 18 (4), 489-505.

[41] Robert H. Luke, Jarrod Freeman.(2008), " viral marketing: a significant learning opportunity marketing strategy and business practive enviroment", MMA Fall Educators' Conference – 2008

[42] Taylor, S., P. A. Todd.(1995), " Understanding information technology usage: A test of competing models", Inform. Systems Res. 6(2) 144–176.

[43] Thomas, G.M. (2004), "Building the buzz in the hive mind", Journal of Consumer Behaviour, Vol. 4 No. 1, pp. 64-72.

[44] Van der Heijden, H.,"Factors Influencing the Usage of Websites: The Case of a Generic Portal in The Netherlands", Information & Management, 40, 2003, pp. 541-549.

[45] Van Slyke, C., Illie, V., Lou, H., and Stafford, T., "Perceived Critical Mass and the Adoption of a Communication Technology", European Journal of Information Systems, 2007, 16, pp. 270-283.

[46] V.Bolotaeva, T.Cata,(2010), "Marketing Opportunities with Social Networks", Journal of Internet Social Networking and Virtual Communities ,Vol. 2010 (2010), Article ID 109111, 8 pages

[47] Venkatesh, V. and Davis F.D., "A Model of the Antecedents of Perceived Ease of Use: Development and Test", Decision Sciences, 27, 1996, pp. 451-481.

[48] Venkatesh, V., Morris, M. G., Davis, G. B., and Davis, F. D., "User Acceptance of Information Technology: Toward a Unified View", MIS Quarterly, 27(3), 2003, pp. 425-478.

[49] Vilpponen, A., Winter, S. and Sundqvist, S. (2006), "Electronic word-of-mouth in online environments: exploring referral network structure and adoption behaviour", Journal of Interactive Advertising, Vol. 6 No. 2, pp. 71-86.

[50] Viswanath Venkatesh,(2000), "Determinants of Perceived Ease of Use: Integrating Control, Intrinsic Motivation, and Emotion into the Technology Acceptance Model", Information Systems Research, _ 2000 INFORMS Vol. 11, No. 4, December 2000, pp. 342–365

[51] Wilson, J.R. (1991). Word of Mouth Marketing, J. Wiley, New York.

[52] Wilson, R.F. (2000), "The six simple principles of viral marketing", Web Marketing Today, Vol. 70, pp. 1-3.

[53] Williamson, D. (2008). Social Network Marketing: Slow Growth Ahead for Ad Spending. eMarketer Research. http://www.emarketer.com/Report.aspx?code=emarketer_2000541

[54] Xu, Y., Zhang, C., Xue, L., & Yeo, L. L. (2008). " Product adoption in online social network. ", Proceedings of the International Conference on Information Systems 2008, Paris, France.

[55] Brown, J., Broderick, A.J., and Lee, N. (2007). Word Of Mouth Communication within Online Communities: Conceptualizing the Online Social Network. Journal of Interactive Marketing, 21(3), 2-20.

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