Significance of Communication and E-Business in Second Life Virtual World

Sharma Gajendra, Qiang Ye, Wenjun Sun and Zhao Daying

School of Management Harbin Institute of Technology 92 West Dazhi Street, Nangang District, Harbin, 150001,

Corresponding Author Email: gsharmahit2008@gmail.com, China, Tel: +86 1512 4506371

Abstract

Second Life is an online 3D virtual world imagined and created by its residents. Virtual world is a computer based simulated environment where avatars can communicate each other through different communication media. The aim of the current study is to investigate why individual and companies communicate in Second Life virtual world and opportunities of e-business. The most common communication media in Second Life are voice, instant messaging and video conferencing. The major theoretical background used in this study was the communication theory and social systems, theory of intrinsic motivation and word of mouth communication. Success story of some real world companies and experiences of business professionals in Second Life were included in this study. Video conferencing was the choice of real world companies to conduct online business events. Initial capital investment, sufficient time engagement and quality of products were equally important in Second Life as in real world. Moreover, advertising, customer relation, after sales service and consumer traffic are mandatory for e-business promotion. The findings provided that communication in virtual environment plays a crucial role for social networking and growth of real world business. The communication in real world has significance to policy makers, managers and leaders for information sharing and decision making.

Keywords: Second Life, virtual world, communication, e-business, social networking

Managerial relevance statement

The findings of the manuscript was focused on the efficiency and superiority of communication in Second Life virtual world among other social networking sites such as Facebook, Myspace, Twitter and Youtube and its significance on real world business. The study provided that communication in virtual environment plays pivotal role for social networking and e-business growth. The outcome of the work is highly significant for managers, policy makers and leaders for sharing information, manage information and decision making. E-business in Second Life through effective communication such as online events, training and education has direct impact on real world economy. Moreover, Second Life is an appropriate platform for researchers to perform numerous research opportunities on information system, social science, engineering, psychology and marketing. The result also suggests that second life has much more freedom to perform e-business and social activities. Communication plays pivotal for the existence and standing of virtual worlds.

INTRODUCTION

Second Life is an online virtual world electronic environment, developed by US based Linden lab in 2003. Virtual worlds are creation of mind and place for people's imagination. There are more than one hundred virtual worlds in computer simulated environment. Second Life is one of the leading and rapidly growing virtual worlds. Second Life is also called a Massively Multiplayer Online Role Playing Game (MMORPG) where people have fun and entertainment and play games. Virtual worlds are online communities in which residents communicate in
simulated environment (Chesney et al., 2007.) Virtual worlds work over the internet and everyone around the glove can access easily. Lastowka and Hunter (2004) described virtual worlds as places where millions of people come to play, trade, create, and socialize.

According to Barnes (2007) virtual worlds belong to the fantasy-oriented category of virtual communities. The population of virtual worlds has grown rapidly since 1996. In the meantime, several million people have registered in virtual worlds. There are many virtual worlds on the Internet, for example, The Sims Online, Everquest, Lineage and Ultima Online. Moreover, There.com’s There, the fantasy world of Norrath (Sony’s Everquest), the interstellar expanses of the Milky Way (Electronic Art’s Earth and Beyond), and a galaxy far away (Sony’s Star Wars Galaxies) are examples of virtual world (Lastowka and Hunter 2005). The virtual worlds are built to access different age group of users ranging from kids to middle-aged or even older people. In virtual worlds, each resident is represented by a 3D character called avatar which can communicate with each other for socialization or business purposes on virtual sims. Avatars are designed mainly for social interaction. They communicate with each other either through text (local chat), instant messaging and voice. Avatars can communicate with others through body language.

All the contents in Second Life are user created. The residents can make and design virtual clothes and houses as per their imagination. Linden scripting language (LSL) can be used to create any type of objects and services. LSL code looks like C, Java Script or the Action Script language used in flash animation. Avatar animations can also be triggered by an LSL script. Best Second Life designers learn how to create buildings and scenes that look attractive and download quickly. People have the intellectual property right to protect and prevent their creations. Thus all type of the real world activities are well mirrored in Second Life (Cheal, 2007). With real world businesses moving to virtual worlds, real world governments are now also becoming interested in virtual worlds (Bray and Konsynski, 2007). The governments of the Maldives and Sweden have opened official embassies in Second Life.

Virtual business or v-business refers to a business inside virtual environment. This is defined as a process to provide products or services in order to generate revenue as an objective of making profit (Rappa 2008). Products are virtual but the real revenue can be earned. Most people think of virtual worlds as just a game but they are evolving toward a society in which social and economic interactions are the main drivers (Zimmer 2007). Residents can run global business in real time. Virtual worlds are inspiring both organization and individual to make revenue. The real world companies such as Nissan has been designing and testing new concept of cars. Banks such as ABN Amro and Meta Bank have been facilitating to open account, deposit and withdraw virtual funds. Some universities have been providing online lectures. Residents are running shops, clubs and recreation sites. Some of them are working as a programmer and designer. There is a huge opportunity of education and training, meeting and collaboration as well as marketing and product testing.

The motivation to conduct current study is that Second Life is the latest innovation of information communication technology based on 3D virtual world and outcome of web 2.0 social networks. There have been a numerous research activities in Second Life for IT professionals, managers and business practitioners. Second Life is considered as world laboratory to test real world products and services. The users in Second Life have much more freedom to create and test new products and services. They can buy and sell many types of products and make online revenue. Real world companies enter Second Life to test and offer their products which is helpful for brand promotion.

There have been performed a limited number of researches on Second Life communication. Some previous researches are focused on interactivity through online virtual game. People often play online games for fun and enjoyment and spend time. Online game story, graphics, length and control are highly related to enjoyment and have a significant impact on behavioral intention (Hui et al, 2008). The communication plays vital role during game playing. Some of the important factors are feeling of telepresence, enjoyment, immersion and participation from a distance. Virtual world reduces the time consumption in real world. As a result, people spend less time in real life enjoyment and communication (Wui et al, 2009). Steve et al. (2008) (steve et al, 2008) developed ICT networking project to demonstrate collaboration opportunities in Second Life. Thus it was learnt that previous researches are inadequate and inconclusive on communication research. Some of the previous researches were performed on virtual reality, virtual community and social networking enlightening human avatar relationship.

The research question of the current study is to investigate why individual and companies communicate in Second Life and opportunities of e-business in virtual environment. The significance of the study is that Second Life is a suitable place for business strategy, social interaction, sharing culture and idea among different people residing at different parts of the world and to motivate them to join Second Life. It enables to increase the brand of the products, present organizational information, and provide training and learning skills. Communication is responsible to conduct social and business activities in virtual world. People can participate on distance education and have new experiences and opportunities. Most of the information is social such as asking questions, receiving feedback and recommendation and culture sharing. According to Linden lab, the monetary transaction of more than US$
1.5 million takes place in Second Life everyday. The virtual business has been greatly affecting the real world economy (castronoval, 2003). Second Life has potentiality of business communication, information dissemination and innovation.

RELATED WORKS

Social networking

Second Life is globally shared enabling people to perceive and utilize the environment (Messinger et al, 2009). The traditional advertising network is being replaced by modern electronic social networks, and behavior of individual in online networks can be different from the behavior of the same person in traditional social network (Clemons, 2009). In this connection, the communication behavior in real life and virtual life becomes different. Some researches on Second Life have been performed on development and evaluation of virtual campus for learning environment (Lucia, 2009). Virtual campuses are recreational, collaborative and communicative zones. The result is focused on presence, communication and awareness. In addition, it paid attention on perceived sociality, virtual learning environment, productivity and general satisfaction. Barbara and Gloria (1997) (Barbara and Gloria, 2007) formulated that the collaborative virtual environment can be called as a social system. Avatar movement, nature of turn making, virtual meetings, cultural formations and communication in online communities are studied under Multi User Domain (MUD).

Leimeister et al., (2004) (Barbara and Gloria, 2007) found the success factors for establishing and managing virtual communities. Virtual reality defines the concept of presence and telepresence. Presence can be thought as the experience of one’s physical environment. It can be defined as the sense of being in an electronic environment. Telepresence is referred to as the presence in the environment through communication media (Held and Durlach, 2007). There are two categories of users in Second Life. One user group who remain for a long period of time is called lifers. They might have long term job and have strong social relationship. Another user group who remain for a short period of time is called casuals (Carman and Elena, 2009).

The development of web 2.0 technology helps for policy makers, intelligent analysts and researchers to better understand communication theory (Hsinchun et al, 2008). After the introduction of internet in 1990, the development of social interaction sites took place. One of them is Second Life, in which people have their virtual identity and they can communicate with each other. Riva (2000) (Riva, 1997) formulated that there are three types of presence in virtual world: social, physical and co-presence. The previous survey showed that 97% of managers believe that knowledge bears strategic competitive advantage. Bass (1669) (Bass, 1999) stated that the new users in Second Life are ‘innovators’ or ‘early adopters’. Clemons (2009) (Clemons, 2009) states that the “behavior of individuals in online networks can be very different from the behavior of the same individuals interacting in a more traditional social network”.

Communication in Second Life

Word of mouth communication became an important market force for consumer decision making. Word of mouth is the formal transmission of ideas, opinions, comments and information between two or more individuals. “The consumer is an active participant in an interactive exercise of multiple feedback loops and highly immediate communication” (Valck et al, 2009). There is the difference between avatar email and traditional email communication. Avatar email has media richness and social presence. Managers prefer rich medium (e.g. face to face communication) rather than lean media (Younghwak et al, 2007). Tradition email is a lean media.

People play online games to remove challenges, make friends, spend time but the basic reason is to enjoy (Davis et al, 2005) Second Life has scripting tool for monitoring and controlling the entire communication system. The podcast is an important communication media to communicate from Second Life to real life (Davis et al, 2005). Machinima is a video created by avatars. Chatboats are artificial intelligence (AI) based software used for responding reference questions while having facial expressions in virtual environment (Kim et al, 2002).

In Second Life voice communication is important than text. Birdwhistell (1970) [25] stated that 65% of information takes place through facial expression and remaining 35% through spoken words. Non verbal communication is limited in Second Life. Facial expressions are used to show reactions and these are shown through gestures. Residents can walk, run, stand and fly easily but animations and gestures are sophisticated. Peter et al., (2007) [26] states that the privacy and trust should be maintained in order to encourage face to face meeting.

Telepresence is defined as the experience of presence in an environment by means of a communication medium. The environment can be temporary, real or virtual (computer mediated). Heeter (1992) (Heeter, 2008) describes three types of presence: subjective personal presence, social presence and synthetic presence. Robinett (1992) (Robinett, 1992) made distinction between real and synthetic experience. Held and Durlach (1992) (Held and Durlach, 2007) made a remark that telepresence is common to teleoperation and the experience of the virtual environment. By employing concept of virtual reality, this is defined as a
simulated environment in which a user experiences telepresence (Held and Durlach, 2007). Interactivity is variable characteristics of communication and has great concern to researchers (Heckel, 1991). The three important factors that contribute to interactivity are speed, range and mapping. The speed of time or response time is very important in communication. Range can be defined as the amount of change that can be affected to the mediated environment. Mapping is referred to as the way in which human actions have relation to actions within a mediated environment (Norman, 1998). Multimedia, computer technologies and high speed data networks cause development of global village through interaction.

**E-Business opportunities**

Web based technologies are useful to create new e-commerce for income generation and consumers participation (Holsapple et al, 2005). Hemp (2006) (Hemp, 2006) argued that the virtual worlds have future importance for marketers. They become interactive, collaborative and commercial platform for all. In this connection, there is a huge opportunity of virtual e-commerce. Virtual world offers flexibility in brand building, new product development, testing and advertisement (Vedrashko, 2006). Avatars and virtual representations play a pivotal role to conduct marketing activities in Second Life and have numerous business opportunities (Chambers, 2005). Virtual business is divided into three parts: virtual stores to conduct virtual commerce, web store to conduct e-commerce and brick and mortar store to conduct physical commerce (Arakji and Lang, 2008). The revenue status is that 80% of the money comes from land and land maintenance fees and 20% comes from subscription fees (Yi et al, 2008). Thus the web based technologies have motivated users for generating and engaging users. The researchers investigated that users are able to get enjoyment through instant messaging (Li et al, 2003) and online shopping but less attention has paid to online gaming. Virtual worlds have significance in electronic gaming and social networking, so this is called a place as “information superhighway” (Messinger et al, 2009).

Virtual worlds are becoming popular everyday and they are developing inworld economies offering different types of business activities, called virtual commerce or v-commerce (Castranova, 2005). Virtual markets are creating more advantages for them (Vedrashko, 2006) and improving the firm performance (Warr, 2008). A multidisciplinary approach is required to study synthetic environments (Bray and Konsynski, 2007). Virtual presence may be advertisement or product placement and business sponsored virtual activities (Vedrashko, 2006). The behavior of virtual avatars differs with real world people in some extent (Clemons, 2009).

Second Life provides flexibility in brand building, new product development and advertisement (Vedrashko, 2006). Second Life virtual world offers more than 100 real life brands. The virtual presence may be advertisement or product development and business sponsored virtual activities (Clemons, 2009). Traditional advertising media are loosing their impact due to the disability of revenue generation. Modern advertising media such as online social networks including Second Life are playing pivotal role in making money, exchange information and entertainment. In this connection, social networks have been replacing traditional advertisement media (Clemons, 2009).

Second Life virtual environment keeps relationship between producers and consumers. The firms design, produce and distribute products. The consumers in another hand buy the products as per their interest and budgetary limitations. The communication establishes collaboration between producers and consumers. The video games establish a favorable collaborative environment between producers and consumers (Arakji and Lang, 2008). Massively multiplayer online games are technically feasible, economically suitable for both producers and consumers to establish a favorable collaborative environment. Online games on virtual world are able to generate a good amount of revenue in real life. Due to this reason, virtual worlds are important source of emotional and material benefit [40].

With rich features of social networking and user freedom, a large number of users are increasing everyday in Second Life. Moreover, a large amount of business transactions is taking place. Communication plays a pivotal role in virtual world to perform social and business activities. The synchronous communication in Second Life is highly effective to perform business activities in virtual environment.

**THEORETICAL FOUNDATION**

**Communication theory and social system**

Communication is the exchange of information from source to the destination through channel. Lasswell defines communication theory as “who says what to whom in what channel with what effect”. Communication research in Second Life has a broad scope to study human behavior. The communication theory has been reflected at the beginning of Socrates and Plato. Later, Aristotle developed the theory of communication. Nowadays, communication theory has wide application on information systems, psychology, sociology, linguistic and advertising. Many authors and researchers divide communication by ‘context’ or ‘levels’ and human users are ‘symbol users’ or symbol makers.

A social system is widely used term in sociological systems theory. The basic requirement is that there
should be an interaction between at least two people. Communication plays a vital role in Second Life social systems. There are different methods of measuring participation within social systems such as reach, engagement and frequency of participation. All social systems have commonalities. We can assume Second Life as a place for social networking.

Theory of intrinsic motivation

Intrinsic motivation is the theory which can be described as a motivation to engage in activities that enhance or maintain a person’s self concept. It further states that the reward of performing an activity is the process of the activity itself and not an end result [41]. The factors that promote intrinsic motivation are challenge, curiosity, control, fantasy, competition and recognition. Intrinsic motivation theorists divide motives into two global categories: drives (also called extrinsic motivation) and intrinsic motivation. Drives are biological survival links whereas intrinsic motivation pertains to what some have called ego motives. Some of the examples of drive are hunger, thirst and pain. Whereas curiosity, autonomy and play are examples of intrinsic motivation. The intrinsic motivation is about competence or mastery. The Second Life community is curious, competent and challenging. So, individual and organizations are motivated to join Second Life virtual world.

Motivation is required for residents to live in Second Life for a long period of time. According to Markus (1994) [42] the motivation is required to eliminate users’ conservatism, fear of changing the environment and lack of involvement. The Second Life is a wide place for entertainment and engagement. People may have fun, interact with each other, make friends and form a social group through communication media. The theory is widely used to understand information system related human behavior.

Word of mouth communication

Consumers interact with each other through internet to share knowledge, experience and opinion. Word of mouth is an important marketing tool for consumer decision making. The marketing tool is useful for marketers, managers and researchers for decision making. Companies and consumers access online network to have communication and interaction. Hoffman and Novak (1996) (Hoffman, 1996) stated that “the consumer is an active participant in an interactive exercise of multiple feedback loops and highly immediate communication.” Through online technology, information can be transmitted worldwide at lower cost. In virtual environment, friendship can be made, information is gathered and collect opinion of experts. Information is exchanged through other social networking sites such as Myspace, Youtube, Facebook and Wikipedia. Virtual communities play an important role for new product development and consumers motivation. Blackwell et al., (2001) (Blackwell, 2001) stated that “World of mouth is the informal transmission of ideas, comments, opinions and information between two or more individuals, neither one of which is a marketer”. Virtual communities can be considered as a word of mouth networks. The impact of world of mouth communication is characterized into two parts: structural and interactional characteristics. The structural characteristics include network size, number of connections whereas interactional characteristics include strength and degree of homophily among network members. When people enter first time in virtual environment, they are not familiar with the virtual activities. So, they should engage in informational and instrumental activities.

METHODOLOGY

E-Business opportunities in Second Life: Case Study

The current study is based on case study taken from business professionals and reputed real world companies entering Second Life for making revenue and brand promotion. The study was conducted from October 4 to November 3, 2010. The opinion of 20 participants and case of 12 companies were included in this study. Online conversation with Second Life residents was performed introducing ourselves and research topic. Experienced and professional users were selected for interview verifying their profile information. Different regions of Second Life were visited to have conversation with business professionals and real world company representatives. The open questionnaires were focused on e-business experiences in Second Life and success of brand promotion. The questionnaires were focused on following points:

1. How effective is Second Life for communication?
2. Do you have experience to make real revenue in Second Life?
3. What are the popular businesses in Second Life?
4. How successful is Second Life for e-business?
5. How virtual events are useful for business promotion?
6. What are the future scope, problems and challenges of Second Life?

Second Life has wide platform to conduct business occupations. Some of the common business sources in Second Life are party and wedding planner, pet manufacturer, automotive manufacturer, fashion designer and custom designer. Moreover, architect, XML coder, scripter, game developer and tour guide make favorable
Table 1. Examples of business in second life.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Industry</th>
<th>Title and source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anshe Chung Studios</td>
<td>Virtual Real-estate</td>
<td>Second Life's First Millionaire</td>
<td>Anshe Chung Studios is a company that emerged from inside a virtual world. It has made approximately one million real US dollars speculating on virtual real estate. Behind this avatar lies a real-world company located in China, employing several dozen artists and engineers.</td>
</tr>
<tr>
<td>Canimal Zephyr</td>
<td>Fashion</td>
<td>Product developers in virtual world</td>
<td>Maya Hofner is a full time fashion designer in Second Life. Her creations for women and for men are considered highly prestigious in Second Life.</td>
</tr>
<tr>
<td>American Apparel</td>
<td>Fashion</td>
<td>How Viable is Virtual Commerce?</td>
<td>In mid 2006, American Apparel opened a store in Second Life offering virtual clothes. But immediately came pressure from consumers and commentators to integrate the virtual store with real world purchases. It was forced to provide real clothing discounts to virtual clothing purchasers: most of its virtual clothes sell only for less than $1, about 270 Linden dollars.</td>
</tr>
<tr>
<td>Ginko Financial</td>
<td>Banking</td>
<td>The Dismal Economics of Virtual Worlds</td>
<td>In August 2007, a genuine run on a bank located in Second Life, and that bank's collapse. Depositors rushed to withdraw their funds from the bank, their predicament drew delighted attention.</td>
</tr>
</tbody>
</table>

revenue in Second Life. Second Life has public and private communication to conduct all the activities. The benefit of communication is for personal meetings, product simulations, trainings and to meet global partners. Moreover, communication is used to receive product feedback from clients, engage and raise funds and build community.

Anshe Chung (real life name Ailin Graef), a German resident was a first millionaire to earn real money in Second Life. She made revenue through virtual real estate dealings. She has gone real world with her talents, starting Anshe Chung Studios, a 3D environment developer with offices in Wuhan, China. Second Life aims to be a user with opportunities for both business and play. Linden lab has taken remarkable responsibility for users to retain the copyright for their creation. Thus Second Life has been attracting many entrepreneurs. A Second Life resident Crucial Armitage says “when I found out how expressive I could be in Second Life and that I retain copyrights for the things I make, I knew I was in Second Life to stay”. He created online clothes and sold them. “My business has grown from a few bucks a month two years ago to selling more than enough to live on now and it’s growing every month” he says. He quit 17 year real life job as a supermarket manager to engage and create business in Second Life. He is a landowner in Second Life and bears 10 islands. He knows scripting language well which is helpful to create objects. Dibbel, another Second Life resident sells books and says that there is an opportunity for B2B marketing. Most of the work in virtual world business generates from networking and building a list of contacts and friends as in real world. Table 1 shows the examples of some business opportunities in Second Life. Second Life can be adapted to serve a real business purpose that supports corporate commerce and marketing. Second Life presents enough opportunities that corporate technology leader to pay attention. The 3D web is stable and outcome of latest technologies. New types of businesses are born on the web, although the technology is new. Ms. Aimee Weber is an experienced user in Second Life. She opened clothing store and making revenue selling clothes. Moreover, she has developed her own real estate in areas such as Midnight City, where she rents out storefront locations and lofts.

In Linden lab, about 80% of the money comes from
land and land maintenance fees and 20% comes from subscriptions. Users have to pay a US$ 9.95 per month as a subscription fee if they want to own land. The main competitors of Second Life are There.com and Active Worlds. Timeless Prototype is a Second Life resident who is a programmer in real life at a British digital media company, says “If you run a good shop in Second Life, you can earn a good living and can trade that cash out for US$ via LindenX”. Charities have also helped to raise fund in Second Life. The American cancer society raised about US$ 41,000 with Second Life.

From a business perspective the most attractive thing about Second Life is that it is a ready made platform for creating 3D contents. The Second Life environment is perfect for “rough prototyping” says Terry Beaubois, an architect who runs the creative Research Lab at Montana State University. Second Life economy is real and so are the profits. Residents buy and sell virtual land, open shops and work in night clubs. Moreover, they form business partnership and start business ventures. Good builders can always make money by building and selling houses, jewelry and so on. Good scripters are as important as builders. Designing clothes and hair makes real life income in Second Life. Nightclubs and Strip clubs also make profit in Second Life. Building, scripting and selling is the best way to make revenue.

E-business case analysis of real world companies in Second Life

Second Life is becoming an online destination of choice for renowned companies to test and sell new products and to promote their brands. The big companies can examine market for future product creation and host events to promote the brand. The well known real world companies entering to Second Life are Sun Microsystems, Warner Brothers Records, American Apparel, Adidas and Toyota. In October 10, 2006, Sun Microsystems hold a first press conference with John Gage, Chief Scientists of the company. Warner Brothers promoted singer’s Album in Second Life. American Apparel launched a virtual store of clothes on July 2006. Adidas have been offering gym shoes in Second Life. The company tests market styles before rolling them out in the real world to check the color and design. Starwood Hotel was opened in 2007 in Second Life. It has tested architectural designs and furniture choices in online environment before building the physical hotels. Toyota offers virtual version of its cars in Second Life. Reebok designs shoes in Second Life and people wear the same design in real life and Second Life. Educational institutions such as Darmouth College have presence in Second Life. The college conducts emergency response exercises in the virtual environment.

Big media such as Reuters made its presence in Second Life in October 2006. The users are growing at about 38% over month, according to Linden Lab, the overall controller of Second Life. Companies like BBC Radio had created events and design buildings inside Second Life. Media companies face competition inside virtual world including new world notes and Second Life Herald. Mr. Adam Pasick is the Reuters fulltime technical reporter in Second Life. The Reuters also offers market information such as exchange rate between Linden dollar and US dollar and number of US dollars spent by players in Second Life in 24 hours. “Second Life is a really hot economy” says Pasick. Another company CNET thinks Second Life as a suitable way to promote its online features. CNET hold questions and answer session to ask questions to the CEO of Linden Lab in October 16, 2006. Video and podcasts are popular communication media for presentation. In this connection, Second Life offers more features and options for businesses. Mr. David Fleck, the Vice President of Marketing of Linden Lab says that “We are this canvas that allows companies to do what they want to do in Second Life and it mimics real life much more accurately”.

Major organizations utilizing Second Life can be categorized into following categories:

1) Collaboration: IBM
2) Research and concept testing: Nissan
3) Simulation and prototyping: Starwood
4) Events, brand promotion: Coca Cola, Mazda, Nissan
5) Political organization: Sweden Embassy
6) Education and training: Harvard Law School

RESULTS AND DISCUSSION

Summary of the findings

Virtual world such as Second Life is the most popular web based community where users socialize, play games and sell products to imaginary people. Increasingly, tech-savvy businesses are using virtual worlds to design, create and test product concepts before they launch in the real world. The crucial advantage to working in virtual world is that they offer much more potential for customers to interact with new products. Working in virtual worlds help to solve the real world problems. Table 2 shows the summary of results of e-business experiences of residents in Second Life. Communication in Second Life plays pivotal role for social networking and business. Real estate business is successful in Second Life. Performing business is inexpensive and favorable for prototyping and collaboration. Traditional media have been replaced by virtual world. Second Life marketing is stable and it has self sustaining economy. Some challenges are privacy and secrecy of information during communication as all the information goes through Linden server. The learning curve is higher than other
Table 2. Summary of result on e-business experience

<table>
<thead>
<tr>
<th>Resident</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amiee Weber</td>
<td>Conducting real estate business and has virtual clothing stores.</td>
</tr>
<tr>
<td>Timeless Prototype</td>
<td>Programmer in real life. People can have good living in SL if can run better shops.</td>
</tr>
<tr>
<td>Terry Beaubois</td>
<td>Architect. SL economy is real and so are the profits.</td>
</tr>
<tr>
<td>Yarmis</td>
<td>Should understand what virtual worlds offer today and spend a lot of time. Virtual world is relatively inexpensive.</td>
</tr>
<tr>
<td>Paul Steinberg</td>
<td>Engineer in Intel. Business in SL is a big understanding. Manufacturing, distribution and sales are the major part.</td>
</tr>
<tr>
<td>Fred Fuchs</td>
<td>Ease of prototyping and collaboration. Drawbacks are privacy and secrecy.</td>
</tr>
<tr>
<td>Brouchould and Kandy</td>
<td>Designer. SL provides free designing opportunities. He owns his own island.</td>
</tr>
<tr>
<td>Curet</td>
<td>Brought private real estate business. Has designing skill</td>
</tr>
<tr>
<td>Adam Pasick</td>
<td>SL has a real and hot economy. It helps to increase real world business.</td>
</tr>
<tr>
<td>Nappy Bread</td>
<td>SL is similar to real world and has whole culture and economy. SL itself has self sustained economy</td>
</tr>
<tr>
<td>Znethady Isbell</td>
<td>SL has a new way for businesses to reach customers. It’s time consuming but has real effect on real life.</td>
</tr>
<tr>
<td>Kamichat Watson</td>
<td>Artists, entertainers and creative people can earn good money in SL</td>
</tr>
<tr>
<td>Chris Melissinos</td>
<td>Business need to be very careful as conversations in SL is not safe.</td>
</tr>
<tr>
<td>Spelier</td>
<td>Virtual worlds have a good future. Internet is serving as a communication channel.</td>
</tr>
<tr>
<td>Zac Su</td>
<td>Opportunity to engage customers offering virtual products. SL will dominate 3D internet.</td>
</tr>
<tr>
<td>Laszlo</td>
<td>Place for making money and business but the learning curve is high.</td>
</tr>
<tr>
<td>June People</td>
<td>SL marketing is community focused and different from traditional media. Griefing is the major problem.</td>
</tr>
<tr>
<td>Carlos Krefft</td>
<td>Took participation in SL job fair. Good communication and appearance helps to find job in SL.</td>
</tr>
<tr>
<td>Andrew Mallon</td>
<td>Founder of Social Research Foundation. Residents create the contents, value them and commerce. Mid 30’s are active and successful residents in SL. Real world companies have excellent opportunities to generate profits due to low investment cost.</td>
</tr>
<tr>
<td>Daniel Terdiman</td>
<td>SL is flexible and user controlled. Not only game focused. SL market is stable so low risk. If have talent possibility to generate revenue.</td>
</tr>
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</table>

Virtual worlds. Second Life being an emerging technology has maintained a superior position in 3D internet. Second Life has whole culture and economy inside. It saves time, money and increases productivity. Second Life is a platform for building community, get information and buy products and services and becoming a reliable communication channel. Games are helpful to generate real revenue. Communication plays a significant role for establishing collaboration between producers and consumers to generate business value and it reduces real world cost. Communication is required to receive product feedback, build community, engage and raise funds. Moreover, the implication of communication is in brand promotion, organizational information and training and learning skills. As a result, Second Life has been replacing traditional advertising. Web based technologies are useful to create new e-commerce for income generation and customer interaction and participation. Word of mouth communication in this connection is beneficial for consumer learning. Better the relationship with consumers, better the market. So virtual communication provides advantages to customers, suppliers, business partners, managers and researchers. Managers prefer rich medium such as face to face communication for interaction. Second Life provides synchronous communication for prompt decision making. Quality of product is important in virtual world as in real world. Customer attraction strategies are advertising inside and outside Second Life. Customer traffic is important to increase the business volume. For this, some companies offer free products in Second Life. Sales channels in virtual world as well as on website can be used. Customer service is vital in virtual world to improve and extend business. Skill is required for
building, scripting and developing virtual lands. Initial investment is obligatory to open business. Some of the business sources are retail stores, services, real estate, universities, insurance companies and media. Some of the virtual business problems are viewer session crashed, low viewer frame rates, server capacity, griefers and language.

Table 3 presents the activities of well renowned real world companies in Second Life. Real world companies use Second Life for marketing and brand promotion. Online events such as video conference and meeting are highly successful to promote brand of the products and services. The companies can target customers by learning their demands. Business owners are able to provide business consultations, market surveys, virtual office design and buildings. Like real world, Second Life has competition of products and services. Residents can visit competitor’s location to evaluate quality of the products. Providing more than one product category can increase sales volume. However, providing a single product helps to promote its brand and customers easily recognize that product. The customer benefit focuses on quality which includes design, beauty and user friendly. Second Life has less impact of fast delivery and low price. Many companies provide free products to increase customer traffic. Like traditional business, customer service such as getting feedback, satisfaction guarantee and refund for damaged products is important in Second Life. Advertising is beneficial in both inside and outside virtual world. The outside world includes website and blogs. Important factors on business promotion are traffic volume, keyword for advertisement, demonstration of products and customer survey after purchase. There are two sales channels in Second Life: stores in Second Life and third party purchase. Customers can use both of these channels. The need of multiple contact points, 3D modeling and customer accessibility should be considered. Virtual business greatly effects real world economy. Second Life communication is thus a powerful option for real world companies, business representatives and players.

The companies have been using Second Life for technological development, brand promotion, resource management and business strategy. Furthermore, some of them are using Second Life for prototyping. The products information and trainings through presentations and online demos help to reduce real world cost. Thus companies are making social network among users which have facilitated to increase customer relations and have direct impact on real world business. Communication plays crucial role to perform all business activities in Second Life.

Online events such as conference, training and lecture are highly effective for real world companies to promote business. Instant messaging is found highly popular to interact with residents. The voice communication is clear, reliable and fast. The communication has privacy and security. Some companies are unsuccessful in Second Life due to lack of initial investment and enough time engagement. They consider Second Life only as an experimental place and do not take it seriously. Quality of products, customer relationship and after sales service in Second Life is equally important as in real life for business promotion. Moreover, category of products, advertising and consumer traffic has significant effect for e-business expansion. Thus virtual world business has direct influence to raise real world economy.

**Contributions and implications**

This study shows that Second Life is an appropriate place for communication, social networking and business promotion. The popularity of Second Life has been

<table>
<thead>
<tr>
<th>Companies</th>
<th>Activities/Products</th>
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<tbody>
<tr>
<td>IBM</td>
<td>Meeting and conferences, IT</td>
</tr>
<tr>
<td>Sun Microsystems</td>
<td>Conference</td>
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<tr>
<td>Warner Brothers</td>
<td>Promotion of Singer’s Album</td>
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<tr>
<td>American Apparel</td>
<td>Virtual store of clothes</td>
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<tr>
<td>Adidas</td>
<td>Shoes</td>
</tr>
<tr>
<td>Starwood Hotel</td>
<td>Architectural design</td>
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<tr>
<td>Toyota</td>
<td>Virtual version of cars</td>
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<tr>
<td>Reuters</td>
<td>Media. Offers marketing information</td>
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<tr>
<td>CNET</td>
<td>Promote online products</td>
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<tr>
<td>Dutch Amro Bank</td>
<td>Connect customers and help events to attract visitors</td>
</tr>
<tr>
<td>Social Research Foundation</td>
<td>Corporate marketing</td>
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<tr>
<td>Peugeot</td>
<td>Offer vehicles for test drive</td>
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increasing every day. A range of e-business activities such as buying and selling land, leasing and additional services such as scripting, architecture and advertisement take place in virtual environment. There is both real and virtual economy. In addition, Second Life provides education as well as training opportunities through effective communication. It offers several marketing opportunities for real world products and services. They are able to generate sustained consumer engagement with a brand. Second Life is emerging as a test place for new ideas, where real world products can be released at low cost with direct feedback from users. There are many opportunities for innovation and profit making and a lot of e-business opportunities. A number of residents are making part or all of their real life income from Second Life businesses. Second Life real estate market provides opportunities for residents to establish their own communities and business locations.

Virtual worlds offer a large number of research opportunities on information system, computer science and information science. They facilitate numerous opportunities to build, observe, computing, scripting and new system development. Moreover, virtual worlds present project management methodologies and establish link between virtual and real world. Companies and organization are using virtual worlds nowadays to communicate with stakeholders through customer events, trainings and collaboration sessions. Second Life combines social and visual components which help to get resource and cost efficiencies. Many companies are incorporating virtual worlds activities into their integrated marketing strategies.

Theory of communication and social system provides great contribution in online as well as material world. Communication is required for social networking. Communication allows social interaction. Combination of two or more individuals forms social system. In business point of view, sharing information is useful for decision making. Advertising is also a form of communication which plays pivotal role for brand promotion and increase business value. Communication establishes relationship between producers and consumers. Thus communication is important for collaboration and coordination. Rich medium such as voice communication has multiple cues which is helpful for prompt decision making. Motivation is required for residents to live in environment for a long period of time. The motivation is required to eliminate users’ conservatism, fear of changing the environment and lack of involvement. Theory of motivation is widely used to understand information system related human behavior. Disseminating information through word of mouth communication is one of the most effective mediums for relaying important product and company information. Word of mouth has been affecting people and organizations. Word of mouth marketing which comprises a variety of subcategories such as buzz, blog, viral, grassroots, brand advocates, cause influencers and social media marketing. Because of the personal nature of the communications between individuals, it is believed that product information communicated in this way has an added layer of credibility. Word of mouth depends on the extent of customer satisfaction with the product or service and on the degree of its perceived value.

The outcome of these theories is communication, public distribution and networking. Social networking and e-business are the motivating factors for people to join Second Life. Media richness has importance to make prompt decision on real world practice. Moreover, synchronous communication is needed for organizations, managers and policy makers. The current research is influenced by a need to understand the roles of effective communication in business. The study has key implications for practice. First, the findings suggest that Second Life bears high social and business responsibility than other social networking websites such as Facebook, Myspace, Twitter and Youtube. Second, this study shows that the communication is a key part that confers standing and existence of virtual worlds.

CONCLUSIONS

Second Life is believed as a must trusted and reliable communication medium. The success of social networking and online business in virtual world depends upon the reliability of communication. Social networking is becoming one of the inseparable parts of the e-business. Second Life has become a platform for collaboration and business that removes geographic constraints through effective communication. Thus it reduces real world cost to meet global participants in one platform. Like the real world or the web, many residents play with creation, using the virtual world as a medium for communication and expression. People and organizations who build businesses are successful to turn their activities within Second Life. Second Life communication is synchronous that facilitates for effective communication among residents. Second Life is a part of the solution to communication and organizational challenges.

Second Life bears high social and business responsibility than other social networking sites. Instant messaging was more popular for general users. Video conferencing was the choice of real world companies to conduct online business events. Initial fund investment, adequate time engagement and quality as well as multiple categories of products are equally important in Second Life as in real world. In addition, advertising, customer relation, after sales service and consumer traffic are crucial for e-business promotion. Individual and big companies use virtual worlds as a bridge to their current real world business and drawing much attention of both managers and researchers. This study may have some limitations. The research is based on a conve-
niency sample of Second Life users, which is only one of
various existing virtual world. So the generalizability of
the study is limited. The possibility of the existence of the
common method bias can not be completely eliminated.
Since Second Life is still in the developing stage, future
recommendation is provided to study e-business
possibilities on Second Life through online survey from
professional Second Life users.

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