Second Life: Participation and Contribution

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ABSTRACT

Second Life is an online 3D immersive virtual world, in which users interact via avatars — digital personas that project the user's identity and actions into the virtual world. During much of the last decade, Second Life has been reported to have a huge success among social online networks and communities, in part due to the integration of different modalities of communication (voice, instant messaging and avatars) into a single virtual world completely centered in the user. This, in turn, allowed a much richer and varied communication and interaction. Despite these highly acclaimed qualities, suspicions remained of its true success.

This report focuses, then, on the aspect of how the users really participate in their social second life and to what extent. By reviewing and combining solutions from different pieces of literature on the subject of virtual worlds and Second Life, I arrived at an interesting and partly unexpected conclusion.

Apparently, the residents, much like in real-life, tend to focus on well-known spaces, in which , they frequently meet with friends and acquaintances. Furthermore, due to the customizable nature of the virtual world of Second Life, sometimes they are the owners and maintainers of these spaces, possibly giving rise to specific online communities and social networks inside the larger Second Life.

Author Keywords

Second Life, online community, virtual world, participation, contribution

ACM Classification Keywords

H.5.2 Miscellaneous

INTRODUCTION

In the last decade, online social networks and communities have proliferated and have become immensely popular among online users, in such a way that, such social networks as MySpace, Facebook, Twitter and many others have become commonplace and familiar terms to the majority of online users, whether they are members or not. Beside them, other genres of online communities have also grown immensely, such as MMORPGs, 2D and 3D virtual worlds, online forums. One can possibly say the Internet is increasingly becoming an active social space, in addition to sharing and obtaining information and providing services of diverse nature.

One of the latter stands out for its open-ended and flexible nature. Second Life (SL)[1] is an online 3D virtual world, where users interact with it and with each other via avatars, like in other online virtual games, most notably World of Warcraft[2]. However, unlike these online games, the virtual world of Second Life serves a more social and utilitarian purpose, possessing no predefined purpose or game play mechanisms and rules [6, 5]. Instead, it seems to serve as a space where its users can perform diverse activities like exploring, meeting other people, chatting, participating in user-created activities. Second Life affords a user-centered virtual world, meaning that, it is up to the users to shape and expand it [6, 5]. Users can buy and sell islands; create, generate, buy, customize and sell content. This gives rise to a fully-fledged virtual economy, centered on the users of SL, with its own internal currency, allowing the frequent selling and buying of commodities and services. In many regards, these and other features made available by SL allow the user to have a second life or a second persona, besides his or her real life. Another strength of SL consists of the new forms of socialization and self-expression it affords a user. By combining multimedia, textual and graphical technologies of representation, SL like many other virtual worlds allows its user a degree of expressiveness and more importantly, socialization, which is not present in other forms of online communities.

Second Life currently has about 18 million registered users (who have signed up at some time) and 1400000 users logged in from mid-November 2009 to mid-January 2010.[3] Already, one can note a possible discrepancy in the actual activity inside the SL virtual world. In the next sections, the patterns of user participation and contribution will be studied, both from a quantitative and qualitative points of view. There are already many studies on the life in Second Life and this report shall consist of a brief review of them, in order to confirm or disprove the aforementioned discrepancy. Furthermore, it is my goal to be informed a little more on the SL users' effective

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[1] http://secondlife.com/
[2] http://www.worldofwarcraft.com/
[3] http://secondlife.com/xmlhttp/secondlife.php

level of participation and contribution and, from the information gained, take relevant conclusions on how to promote participation and contribution from the users of Second Life, if applicable. It takes special relevance, when discussing the formation and sustainability of online communities inside Second Life.

To this end, firstly, I am going to describe broadly the virtual world of SL, regarding especially its current state, the different forms of user appropriations and the different usage scenarios currently afforded by SL.

SECOND LIFE
In the following subsections, I present a brief description of Second Life regarding several different aspects.

Virtual World
Second Life is composed of an online 3D virtual world, that mimics, to a certain extent, the real world. Each person is represented by and interacts with it via a customizable avatar. Each avatar is created when each user first logs in (to access the virtual world) and he/she can, in that moment, set various parameters, which fine-tune the avatar to mimic the user's physical persona or a completely different persona, including (but not limited to) robots, sci-fi and fantasy characters and animals. Also, it is possible and likely for a user to change his/her avatar's appearance.

The virtual world itself is built on a client/server architecture, composed of a client (viewer) and a cluster of servers. Different servers perform different roles regarding the representation of the virtual world. For more details, please consult the following article detailing the architecture of SL [10]. There is a set of servers responsible for the simulation of the virtual world. Each of these takes a region of 256x256 meters, which is connected to other four neighboring regions. These regions are completely independent of each other and can serve diverse purposes, depending on its owner's goals. They are divided in public (owned by Linden Labs — the owner of SL) and private regions (bought and/or sold by users) for their purposes. In fact, the owner of a region or terrain is given full control over it. These different regions can be visualized together in a small map, showing at any given time a portion of them, jointly with the traffic of avatars in each [11]. As such, the map consists of a grid of units and each unit represents a region, as it is shown in the figure 1. The user interacts with the virtual world through a client (executed locally in his/her computer). It is the viewer, which allows the user to navigate it, by traversing through the map visualized in the client.

Avatars
In Second Life, as in other virtual worlds, an avatar is a virtual body created and customized by the user to project their identity and actions into the world [4]. The avatar has two main roles in the interaction of the user with the world: user's visual representation and communication.

Through the avatar, the user is able to project his/her emotions, feelings, thoughts or even personality, i.e., a whole
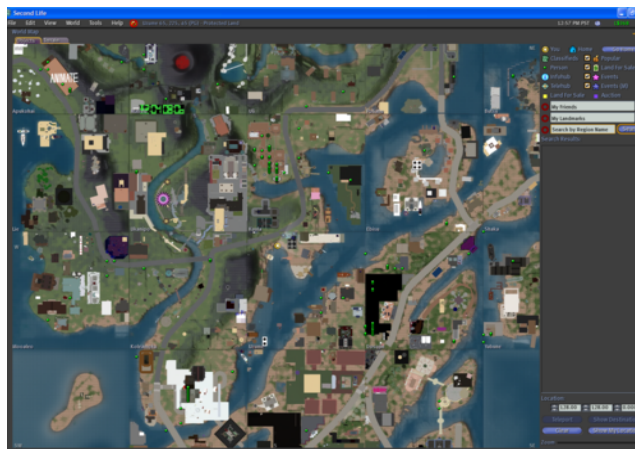

Figure 1. World Map of Second Life (showing a portion though)

persona. In this way, it constitutes a "tangible embodiment" of their (virtual) identity to the other users. Normally, face-to-face communication is the richest form of communication, for it embodies a wealth of (implicit) social cues, which help to establish a common ground, crucial to any successful communication and social interaction. However, that communication normally mediated by computers such as video-conferencing or (text-) chatting does not carry implicitly or disembodies such social cues, due to their own technological limitations. Logically, this fact makes the establishment of common ground more difficult and, satisfactory communication and socialization harder [8]. Now, Ma et Agarwal ([8]) hold that allowing the user to project his/her identity and, successfully verify that his/her interlocutor apprehends it, is important to successful knowledge sharing and contribution in an online community. Therefore, it is my opinion that SL verifies this relationship, by centering the user interaction on the avatar, which by itself allows the user to convey his identity in ways not possible through other computer-mediated communication mediums or even face-to-face communication. In sum, in SL, the users can, more successfully and broadly, project and communicate their real or alternate identities, due to three factors, enabled by avatar based communication: virtual copresence, persistent labeling (a user can reliably associate an avatar to its user) and self-presentation.

Additionally, in SL, another (specific) strong point of avatars is that they have an inherent set of actions. The user can augment his identity projection or interaction with someone else through the use of gestures, different postures or even gazing [4]. He/she can also "touch", manipulate objects, interact with other avatars whether to chat (through instant messaging local or remote via text or audio) or even create content or objects like exemplified in figure 2. Finally, a user's avatar also allows him/her to explore the surrounding virtual world, by walking, running, flying or even teleporting to pre-selected regions in the map.

Applications
Due to its open-ended nature, Second Life can serve a variety of purposes, set by each user (individual or organization). As

Figure 2. Author's avatar touching a video panel, while attending an event.

mentioned in the previous subsection, users can purchase land and build and tailor them to their needs. Having full control over it, they can create havens of self-expression for friends or for the general public, places of socialization. They can also host and attend events of all different sorts. Therefore, the combination of customizable avatars and open-ended virtual spaces enables users to appropriate Second Life for diverse and independent purposes namely social and practical ones.

Here are some of the most frequent users' applications of the SL virtual space:

- **Education**: Second Life reveals potential as a plattform for education in two aspects: collaboration-based student learning and building a sense of community between the students of educational institutions, especially when separated by distance and geography. In the former case, Cliburn et Gross ([2]) compare a real-world lecture with a college-targeted SL lecture and conclude the first ends up being more effective than the second. They also hint that SL might be better for online instruction, where students would learn collaboratively. Nonetheless, many academic and other educational are trying to use SL as an educational platform, due to lower costs and the greater sense of proximity described in the previous subsection. In the latter case, there have been some attempts to develop and deploy online campuses in SL, with the intent of promoting collaborative learning among SL students and providing a pleasant social environment supporting casual interaction between the students [7]. Lucia et al. conclude these campus increase a sense of presence and belonging to a community. They also increase students' awareness and quality of communication.

- **Arts**: Users can create and present their own works of art, whether they were created in the real world or in SL itself. This allows the creation of a cultural atmosphere.[4]

- **Science**: SL can be used as a platform for scientific collaboration, research and data visualization. One such example is the continent of SciLands, which includes as members:

[4]For more information see http://wiki.secondlife.com/wiki/Arts_and_Culture

several top universities and academic institutions, NASA and the International Spaceflight Museum.[5]

- **Work or collaboration based solutions**: like the previous case, virtual meeting places in SL are arranged to support collaborative work between employees, through synchronous communication enhanced in the same aforementioned aspects: copresence, increased awareness of partners' actions, multi-modal and richer interaction (voice, chat) and, additionally to these, simple information sharing through multimedia objects (playing video or projecting a slide) customizable in the very environment.

POTENTIAL ACTUALLY ACHIEVED

Discrepancies

What we can infer immediately from the previous sections is the great potential that Second Life has as a flexible and open-ended social platform. Furthermore, for these same reasons, it has achieved continuously great success throughout the last decade. For example, it suffered a rapid growth in the number of residents — from about half a million at the start of 2007 to over 12 million by early 2008 [9]. Even today, it boasts 18 million registered users (residents). The predictions of its growth are optimistic: 80% of internet users will have a SL presence by 2011 and a *targeted* growth of 2 billion residents. On the other hand, as we have seen previously, Second Life seems to have all the right conditions and some more to sustain a rapid growth in the number of residents: 1. free basic access to Second Life so as to encourage the joining of potential new entrants; 2. fully-fledged in-world economy driving a lot of existing interaction between users, as well as the ability to convert any virtual revenue into real-world currency provide further encouragement to join in and participate once one is a member; 3. interaction and game-play focused on the user, especially user-generated content, [9].

Nevertheless, there seems to exist a discrepancy between the total number of residents and the total number of active residents. The chart in figure 3 shows how the number of logins (which we can consider an approximation to the number of active users) has maintained itself constant between 40000 and 80000 users logged in, during the last 14 days (mid-January 2010)[6]. In fact, taken directly from the SL public user metrics, the latest numbers of users logged in is 43422. On the other hand, according to Shore and Zhou, the very availability of free accounts and the ability for users to have multiple avatars makes the population figures not completely reliable. Furthermore, the population may be as little as 10% of the commonly reported statistics [9].

Actual Situation

In order to ascertain the current situation of SL, in terms of user participation and contribution, several different studies have taken place, which try to study the patterns of user participation across SL (quantitative approach) and how each user tends to participate (qualitative approach).
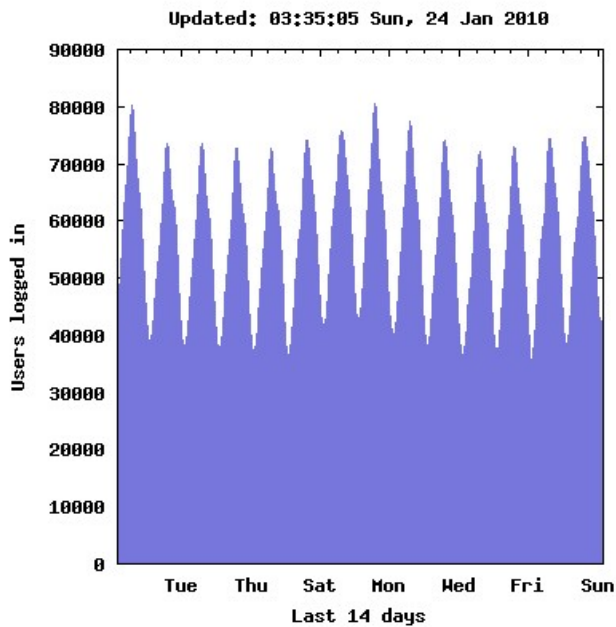
[5]http://www.scilands.org/

[6]http://dwellonit.taterunino.net/sl-statistical-charts/

Figure 3. Number of active users (logged in users).

Now, I will proceed to do a brief overview of their conclusions and their implications (if applicable).

Varvello et al. ([11]) try to observe the characteristics of the virtual world of SL, like spatial and temporal distribution of objects and avatars, in Regions, the latter's flow across some given Regions among others. For this purpose, they employ a crawling-based procedure for gathering quantitative data across a large spectrum of Regions of SL. They conclude that, in SL, a significant number of regions are almost always empty or with a low number of avatars, as well as, with an equally low number of objects created and destroyed on these and other regions. Also, as described earlier, they confirm that the number of active (on-line) users remains relatively constant in an order of magnitude of several tens of thousands compared with the typical total of residents in the order of tens of millions. However, what is more significant is the temporal and spatial distributions of users across regions. The clearly discernible pattern is that only a few regions are actively visited (popular) and maintain a high number of avatars, constantly over time. Interestingly, there are other regions who can still achieve a significant number of avatars, but do not maintain over time. Furthermore, inside each region, the movement tends to have a highly static behavior, with the avatars concentrating on POIs (Points of Interest), normally associated with events like concerts or shows. Interestingly, this behavior seems to correlate well with the equivalent real-life behavior of the residents. Finally, one should note, one factor which might be limiting the residents' social behavior relates to the lack of scalability of SL servers. Frequently, when the server (for a region) has not even reached half of the maximum number of avatars, the load already begins to introduce lag and instability, thereby mining the quality of the residents' social experience. It is suggested that considering the static and predictable user behavior, such mechanisms

as client-side caching and prefetching and a migration to a hybrid P2P and Client/Server architecture can be used to minimize server load.

Shore et Zou ([9]) curiously also mention the reliability aspect of SL servers, which undermines the social activities in SL. They also report the frequent instability of some servers and and additionally time down for maintenance purposes, communication delays introducing lag and slow interface responsiveness (client-side). However, what is more important, is the realization of the fact that SL is a complex social virtual world, since it provides a generic social network platform, on top of which, residents can build and maintain diverse and specialized social networks ranging from fully-fledged online communities to simple networks of social contacts including acquaintances and friends.

Cranefield and Li ([3]) explore an interesting idea to improve the quality of social interaction in SL. Assuming SL already affords successful and satisfactory social interactions, one can improve their quality by providing a structured context for them to occur. Normally, human interactions take place in a socially restricted and structured context composed of roles (for the participants), rules and expectations, which are carefully and implicitly followed. On the contrary, SL provides an environment only restricted by its physics and technical limitations. As such, they tried to develop a software agent based on the Linden Scripting Language which can monitor (progressively, if necessary) the social expectations of a certain user during a social interaction or conversation. Nevertheless, one should note that, it is likely that its effect on users' participation is marginal, since the idea is focused on the social interaction itself and not on the broader context of how users relate to the virtual world, in its social aspect.

Boellstorff ([1]) does an anthropological and ethnographical study of the virtual second life. It has the advantage of being deep and detailed, allowing for insights into how the resident relates to the surrounding virtual environment, in the same way, the human being relates to the (real-life) environment surrounding him. However, due to its depth and complexity, the analysis, described in detail in this book, can not be fully explored in this report. The main contribution of value to the ideas expressed here is the confirmation of the complexity of the generic social environment afforded by Second Life. In a nutshell, that complexity partly lies in the birth of a second culture with different cultural factors, which itself seems to greatly determine the relation between the resident and the world.

CONCLUSIONS
From this report, there are two main conclusion to retain:

1. Answering the question of how do residents participate in the social Second Life and to what extent, we can say that firstly, the level of participation is lower than expected by looking at the official statistics and that residents do not spread and participate evenly throughout SL. On the contrary, they tend to restrict their movements to popular regions with POIs, where they regularly meet with already

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known friends and acquaintances, much like in real life (although not exclusively). However, we can also see that they sometimes are the maintainers of such spaces, from where communities or neighborhoods might form, sharing a certain culture [1].

2. The generic and open-ended social environment afforded by SL and centered on the user, which can be used for several purposes (business, socialization, contact, education, knowledge sharing, ...) is a multi-faceted and complex one, involving several factors.

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