Encouraging the Use of Virtual Environments by Librarians

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Abstract

As the technology of the Virtual Environment (VE) has advanced educational institutions and international corporations are becoming more interested in investing time and money to have a presence in these virtual worlds. How should information professionals respond to the increased interest? In this paper we will investigate the unique role that VEs may play in the development of services and programs in the physical and virtual spaces of libraries, archives and museums. Speculation on the possible role of information professionals within these new contexts are explored, and suggestions for future investigation and research are offered.

Method

A review of the literature was performed along with a brief environmental scan into the use of Virtual Environments in LAMs.

Introduction:

Virtual environments have quickly evolved from primarily entertainment purposes into indispensable tools for learning and collaboration. People in all kinds of professions can use VE for teaching, conferences, and many other forms of social interaction.

Many people feel bewildered by this evolving form of immersive environment, and therefore are deterred from using them. This causes them to miss out on the many benefits of the social interaction and knowledge creation that occurs in these spaces. The primary challenge for information professionals is to teach people how to access and navigate these environments to gain the benefits from them.

To begin to address the question of how to get librarians to use VE, we must first identify the types of spaces that are used by different libraries. Different libraries use different types of physical spaces, and therefore would likely require different types of virtual spaces.

Academic libraries tend to provide physical spaces that are designed for student collaboration: The 'learning commons' model of peer-led teaching environment. Public libraries typically provide physical spaces that facilitate public meetings (IMLS, 2011). Essentially, it's just blank, generic space that's made available for groups to direct their own agendas.

What is missing in this situation is the role of the librarian as facilitator and coordinator of events. In a physical space, just providing a space is probably enough to create a successful learning environment, but in VE, we have a lot more creative control to shape the learning experience, and create environments that stimulate creative output. This is a role that has very little librarian presence and participation at present.

How librarians fill this role is an open question. We could set up a central librarian hub in a virtual world and entice people to come visit us, or we could wear our librarian adventurer hat and infiltrate other worlds carrying messages of reference gospel.

The crux of the issue is that the traditional role of the librarian as provider of access to information has been marginalized in a VE situation. In this new paradigm, people can gain access to VE on their own without help from information professionals. A new role for librarians in these environments must be established and cultivated. Facilitator, teacher, and maybe even creator of worlds; these are some possible areas that librarians might embrace. Much more exploration of these emerging roles needs to be done as we all venture into this new territory.

General Overview of Virtual Environments

What are virtual environments?

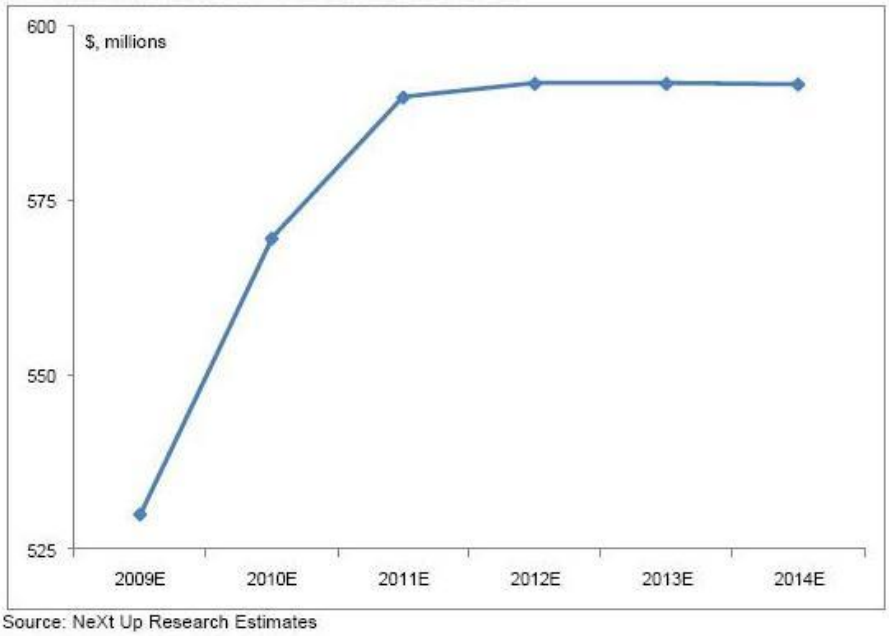
Virtual environments began as gaming platforms. A single user would enter and complete some task against a computer program, usually involving navigation through a computer generated 3D environment shooting an enemy until an ultimate goal is reached. Eventually, other players were able to enter the same virtual environment, and players could play against each other instead of the program. Once interaction with other players occurred, the virtual environments began to be used for other purposes besides gaming such as for educational and business collaboration purposes.

The Business of VE

According to Second Life's statistics from 2009, the number of users has steadily increased from approximately 530 million users in 2006 to a projected peak at the middle of 2011 of approximately 590 million users at which the level is expected to

stabilize for the foreseeable future (Wauters, 2009).

Exhibit 34b: Valuations Based off Various Calendar Years



Source: NeXt Up Research Estimates

According to NextUp, a company that conducts market research, there several factors that may inhibit future growth (Wauters, 2009):

- The aging population of its main target markets (U.S. and Europe) and less of a presence in developing nations where its main target audience (people from 13 to 45) is quickly gaining in size.
- Limited amount of premium subscriptions (about 1% or 170,000 users)
- Possible taxation on virtual monetary transactions in a variety of countries
- Cost and complexity of running the technical infrastructure behind the virtual world

Second Life and Virtual World Reference Services

Background

In 2003 Second Life (SL) a 3D virtual world created by Linden Labs broke on to the Internet scene. The ability to construct purposeful environments within SL and the significance of what this implies has drawn educators, researchers and their supporting organizations to investigate the possible uses of this immersive environment. In April 2006 the Alliance Library System, a consortium of 253 libraries in Illinois, developed the first virtual library in SL. Joined by other libraries they created the Info Archipelago to take their information resources and services to the SL community residents as well as develop and support projects that would take advantage of the immersive environment of SL (Lou 2008). Reference librarians have always been the mediators between the library user and the collection by being accessible to users, having the resources needed by the users and by offering services to teach them how to use the library resources and so it was natural that the first service offered by SLL to SL residents was the virtual world library reference service (Erdman, 2007). The original mission of the Second Life Library (SLL) was to:

- Explore the issues of providing library services in a virtual world.
- Evaluate services currently offered by real-world libraries in the light of features offered in virtual reality environments and the information needs of virtual reality residents.
- Examine how libraries will remain relevant when more business and education activities take place virtually.
- Promote the real library and online library services to residents of SL.

- Learn what types of library services are desired in virtual space.

The Importance of the Reference Interview

The traditional reference interview has gone through several eruditions since it's inception. As technology changed so did the manner in which the interview between user and reference librarian was conducted. From face to face conversations at the library reference desk to virtual reference utilizing online technology such as, Instant Messaging (IM), Chat and email and eventually, to the virtual world interactions between user and reference librarian avatars. No matter what the technology the importance of listening to the user's queries to determine the best resources to fill the user's information needs is the main goal of the reference librarian (Erdman 2007). One of the questions that the first virtual world librarians wanted to explore is whether the reference interview would be dramatically altered by the immersion experience. The chat tool, common in online reference transactions and used as a means of communication in Second Life was used to compare the two reference environments. Fundamentally, online reference and virtual reference have the same affordances with their accompanying pros and cons. Anonymity, transcendence of geography and convenience being applicable to both environments (Godfrey, 2008). The use of an avatar that can use gesture and use computer-to-computer Voice over Internet Protocol (VoIP) helps to create in the virtual world an atmosphere that more closely resembles a face-to-face interaction. There is a feeling of "presence" with the avatar that increases the likelihood of engagement as well as the frequency of the interaction (Buckland & Godfrey, 2009).

Types of Reference Questions Asked by SL Residents

To determine the information needs of the residents of SL statistics were kept on the types of questions asked of the reference librarians. The data showed that there were two distinct types of queries. Questions that were centered on Second Life itself and questions that could be considered real-world information reference. The recording of over 6,700 reference interactions revealed that about 4,500 questions were focused on SL itself with 2,000 of these focusing on SL events and activities and 2,500 questions centering on the use of the technology of SL. Only 287 of the questions asked could be considered requests for true reference assistance (Godfrey, 2008). It is clear that the reference services are being used, however, the nature of the questions, at least in the early stages of the reference service development in SL, are very different from the real-world reference experience.

Issues and Barriers to Library Services in Second Life

Issues for the Librarian

The librarian stationed at the SLL reference desk must be able to multitask. The open and spontaneous nature of avatar interaction in SL places the librarian in the position of possibly conducting several simultaneous interviews in multiple formats. Because of the nature of the type of information users request the librarian must stay current on SL technology as well as community activities and events. One of the more disturbing issues for librarians who would like to provide the type of information resources available in the real-world libraries is the lack of formal licensing agreements

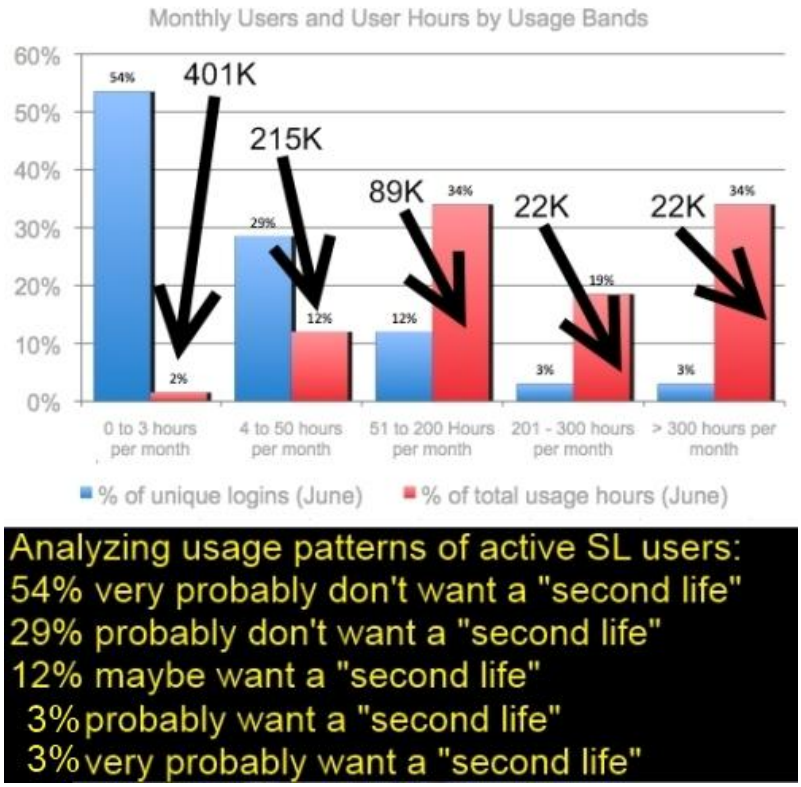
with electronic resource publishers. This limits the librarian to the open source resources on the Internet (Erdman, 2007).

Issues for Users

The term for people who resist virtual environments (VE) and don't see the value in software such as Second Life is "luddites". People who enthusiastically embrace the immersive platform and think there is value in VE, even though there are technical hurdles and the learning curve may be considered steep are referred to as "evangelists" (Sanchez, 2009). In the early stages of the development of VE, the dialogue surrounding the usefulness of the tool has been polarized by these two extreme views. To get past the dichotomy, we must investigate these two perceptions and seek solutions to resolve the barriers.

The Luddites

In the latest published statistics of user activity patterns in a report by Linden Labs, August of 2009, shows that 54% of Second Life users are in Second Life for less than 3 hours per month. These individuals have gone beyond the technical or psychological barriers and are actively accessed VE, but then choose not to use it. The data may imply that many people don't want a second life or because of the openness and ambiguity of the environment become confused and frustrated and eventually give up. (Au, 2011).



The Evangelists

People who are the opposite of the luddites are the “evangelists”. These people spend the most time in immersive environments and use them for all kinds of activities, from educational to recreational. But between the luddites and the evangelists, there are a whole range of users with different reactions to VEs. The users that we would like to focus on are those who are open to VE, but who are blocked because of some psychological or technological barrier.

People who see value in VE may be resistant to accessing virtual worlds because of their own knowledge deficit. As with any new technology, there is a learning curve

associated with assimilation into VE. A new user must learn how to download the software, establish an avatar, enter into a world, and navigate within and between worlds in a way that they can understand. Once in, they are confronted with a bewildering array of avatars flying around or standing in awkward poses typing out messages in puppet-like postures in fantastic landscapes.

And all of this presupposes that the person has overcome technical barriers such as the cost of owning a computer that is new enough with the latest browser and operating system updates to support access. In a library setting, there would be costs associated with teaching librarians how to access and use VE, and also to upgrade old computers to run the software.

The barriers caused by technological problems might be thought of as cumbersome access points. People use many different devices to access the Internet: Desktop computers, laptops, pads, phones, etc. And anyone who has tried to engage in any kind of collaboration such as audio or video conferencing across platforms knows that in most situations, something will go wrong, and either a connection cannot be established initially or communication fails as an application crashes or some other problem. These are mostly compatibility problems between different devices and requirements by new software regarding browser updates, plug-ins and hardware such as webcams, microphones, etc.

Technical Issues for Users and the supporting real-world Libraries

There are several technical issues that users should investigate before considering residence in Second Life. Use of the software requires a relatively new computer with a good graphics card to take full advantage of the 3-D imagery. To avoid slow Internet connections during times of large demand which may cause lag time in image and avatar action response access to a high Internet bandwidth is recommended. This level of service may not be available in some rural areas. The user should also have technical support available to trouble shoot software problems. Technical support is important for both the institution providing the information services (LAMs) and the end user to install the system software updates and perform service maintenance (Godfrey, 2008).

There are human resource issues to consider when a member of the library staff takes on the additional responsibility for service inside an immersive environment. Does the staff member have enough time allocated to learn how to navigate in the virtual world as well as become knowledgeable about the virtual community and its needs to effectively function within the virtual world? Because the software works better on a dedicated computer would this negatively impact the staffs' productivity within the real-world library (Erdman, 2007; Godfrey, 2008)?

Dissolving the Barriers

A key part of effectively using Virtual Environments in library and educational settings is understanding users and how they interact with VE's. If VE's are not used in ways which attract users than regardless of the perceived benefits to librarians and educators, the potential of VE's will not be fully realized, or worse, could be a waste of limited resources. By understanding the way users experience VE's we can identify those areas where VE's are most beneficial, as well as what works better in another format, which will increase the effectiveness of VE's use by librarians and educators.

Two recent studies suggest some important, and complimentary, characteristics that are necessary for attracting users and maximizing the learning potential of VE's, and in particular Second Life, currently the most commonly used VE. Yunfei Du emphasizes the importance of *behavioral intention*, which is a person's readiness to perform an action, in determining whether users will use, and positively experience, Second Life (Du, 2011). Behavioral intention has three elements; the users attitude towards the technology; their subjective norms; and their perceived behavioral control. Attitude is the perceived benefit of a technology; if a student believes a technology is going to increase their learning experience there is a greater chance that they will use that technology (Du, 2011). If we want more users for VE's, we must convince them of the benefits. If a user has a positive attitude towards a technology, the other two

elements are more likely to fall into place, as the technology will become normalized for the user.

Intention does not equal action, however. Du gives the example of the intention to quit smoking as an example of behavioral intention not always leading to action (Du, 2011). To increase the likelihood of action one must increase the positive attitude towards it. Yu-Chih Huang, Sheila J. Backman, and Kenneth F. Backman, argue that one way to do this is to ensure that users experience "flow" when within a VE. Flow is, 'the process of optimal experience (Huang et al, 2010). To achieve flow one must have focused attention, interactivity, and telepresence, the genuine feeling of the presence of others within the VE. It is the combination of an interesting task in a social setting that enables the total immersion of the flow experience, it cannot be an asynchronous environment. All users must feel as though they are interacting with everyone, whether students, teachers, or librarians, in the VE.

Backman et al, suggest that achieving flow experiences in a VE will help engender a positive attitude towards VE's. This is important because on of the barriers to adoption identified by Du is the lack of a positive feedback mechanism such as the one that exists in video games where players earn points and other rewards.(Du, 48) The experience of flow could be the reward that is necessary to attract repeat users. Another barrier to adoption of VE's is the learning curve of the technology. Both studies

emphasize Second Life due to its ease of use. As Backman et al argue, 'because Second Life offers the advantages of immersion, ease of use, wide availability, and low barrier to entry, educators use the 3D virtual world to conduct courses or meetings with students, display digital artwork, perform music, and build virtual environments (Huange et al, 2010). Where Second Life, and all VE's fall short is that they can ultimately become time wasting activities themselves, (Du, 2011) and the flow experience may be difficult to achieve because it requires intense focus. As Backman et al argue, designers of virtual learning environments need to minimize outside distractions to assist learners in perceiving a good sense of presence within the virtual mediated environment (Huange et al, 2010). Getting users to put aside their web browsing, email, instant messaging and other distractions to achieve total immersion is likely out of the hands of VE's.

With this information we can identify certain activities that are well suited to a VE. Any activity which requires a physical presence can potentially be done within a VE, which has the potential to greatly increase the effectiveness of distance education (Huange et al, 2010). Story-telling, role-playing, community engagement, exploratory activities, collaborative spaces, anything that involves interacting with a physical object that can be virtualised, all of these work well in a VE. The key is in making sure the activities require interaction, some kind of task or tasks that are stimulating and

challenging, and enough social interaction to ensure users feel the presence of each other in the VE (Huange et al, 2010). Activities that do not have these elements will not lead to the flow experience, so they will not increase the positive attitude towards VE technology which in turn will not encourage the repeated use of VE's among users.

Future Improvements to Information Services in Virtual Environments

Currently, libraries in Second Life tend to mimic the services offered by real life libraries. What future improvements can be made to these information services in order to encourage more librarian and patron participation in the virtual library?

Advances in Digital Libraries and Virtual Librarianship

A 2009 study showed that Second Life libraries that had no real life library counterpart and were run by non-librarian users were more successful than Second Life libraries with real life library counterparts run by librarians. The authors of the study could find "no clear indications of what makes a Second Life library more or less popular than another" (Baity et al, 34). This is a clear indicator that libraries in virtual environments and virtual librarianship needs to improve.

The main reason why people come to libraries in real life is to obtain reading material. Yet in Second Life, where most virtual world libraries currently exist, the selection of ebooks is limited and the technology hampers the reading experience.

Access to ejournals is also limited, as the complex permission structures of online journal subscriptions do not mesh well with the virtual world technology. There need to be some improvements in these technologies before ebook and ejournal offerings by virtual world libraries can replicate the selection in real world libraries.

Currently, digital librarianship in virtual world libraries emphasizes providing reference service. Yet, as the reference question statistics provided earlier point out, this service is not being utilized to its full potential. What other roles can the librarian play in a virtual library that may be currently underutilized? The librarian needs to be a virtual library planner, designing virtual library spaces that best fit the needs of the users and the limitations of the technology. The librarian needs to be a marketer, investigating strategies to insure that the services match and attract the desired group of users. The librarian needs to be a researcher of user statistics, using quantitative and qualitative methods to evaluate library services within the virtual library. In short, the librarian in Second Life needs to become a true, dedicated virtual librarian—not just a real life librarian who participates in Second Life off the side of her desk.

Digital Exhibitions

Another developing role for the virtual librarian is that of a curator of digital exhibitions. The creation of digital exhibits in virtual environments has been termed “Museum 3.0”. Museum 3.0 exhibits allow for inclusion of multimedia content, interactive

features, and content that can be browsed similarly to a real life museum. These digital exhibitions need to be advertised more effectively to real life library patrons to encourage them to use the virtual counterpart of their library. Currently, virtual museums and galleries have a much stronger presence in Second Life than virtual libraries; if libraries can follow their museum counterparts' lead and incorporate more visual and interactive stimuli into their virtual space, they may encourage more users to visit.

Virtual Archives

Archives have seen far less adoption in Second Life or other VEs. A start has been made with the creation of the "Archivists in Second Life Group" set up in "Archives Land". Some real life archives that have made a presence in Second Life are: the NASA CoLab Archives, the Frank Lloyd Wright Virtual Museum, and the Australian National Film and Sound Archive. The Caledon Library, a Second Life library not associated with a real life library, also has future plans to develop a Second Life archives called the Caledon Archives. This virtual archive will be unique, as it will preserve digital records created in Caledon, an area of Second Life that recreates the 19th century. If institutions based in the real world like archives can be encouraged to participate in virtual environments, then all information organizations will be that much closer to making their virtual efforts a success.

Conclusion

Virtual worlds are thought to be the perfect medium for educators, information professionals, researchers and governments to collaborate over great distances while gathering and collating information. While it is a powerful medium for all these activities it also presents some challenging technological hurdles. Persistence is needed to get past these barriers and to look to the affordances of these new worlds were opportunities may abound that the real world finds difficult to provide due to constraints and restrictions. If an information professional working in a library, an archive or a museum wants to become a true “citizen” of the virtual world they must fill the virtual space with interactive services, resources and exhibits that nurture engagement through intense social interaction. Stylized content and the strong sense of physical presence through the avatar will bring individuals back again and again to the virtual world.

If young digital natives continue to be intrigued in virtual worlds, in the very near future, networked immersive environments will become ubiquitous. As information professionals of the 21st century we must be ready with the skills and the ideas to inhabit this three-dimensional space when the opportunity to engage the society we serve presents itself.

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"Immersion" - http://www.youtube.com/watch?v=HfOUhwhdUV0