Exploring the Potential of the Web-based Virtual World of Second Life to Improve Substance Abuse Treatment Outcomes

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On May 29 and 30, 2008, a group of nationally recognized leaders in the addiction/recovery field met at the Public Ledger Building in Philadelphia to explore whether the Web-based virtual world of Second Life has potential for use in addiction treatment and recovery, and if so, how? The results were pragmatic and mostly encouraging.

As perhaps the first meeting of its kind at the national level, the group of both researchers and practitioners exchanged many innovative ideas. Also addressed were significant barriers to using Second Life in substance abuse treatment and behavioral health care, which offers abundant opportunity for social support and skills building but also features potential pitfalls such as loneliness and deception.

The group convened to discuss the many complex questions inherent in moving into innovative unknown territory. Addressed during the proceedings were basic questions such as: What are current addiction treatment processes that could be used in Second Life? What are new and innovative ways to use Second Life for treatment? What obstacles are there in the virtual world of Second Life that could prevent adoption of the platform for more effective treatment?

Information in the following report features background on Second Life, current initiatives related to this topic in Second Life, along with potential applications and barriers to using a virtual world such as Second Life in the context of substance abuse treatment and recovery counseling. In conclusion, there are suggestions for future research directions and concerns listed regarding some of the pitfalls of research and practice using a virtual reality based milieu such as Second Life.

Background

Second Life is an Internet-based virtual world that has been available since 2003. Its real-world physical headquarters, Linden Labs, are located in San Francisco, CA. Users or "residents" who are "in-world" interact via motional avatars and the entire content of Second Life is exclusively user-generated. Second Life is one of several virtual worlds (e.g., Google Lively, Active Worlds, Club Penguin, There) but this report focuses exclusively on Second Life, which has received the most attention from media, industry and researchers. Visually, Second Life is similar to video games such as World of Warcraft, the very popular multi-player online role-playing game. But Second Life, even though it is role-playing to a large degree, is distinct from video games in that there are no points scored, specific levels to reach, or tasks to accomplish. There are no winners and losers. People create and control their own realities within the sprawling Second Life universe.

It is also important to note that residents, those who control the avatars within Second Life, maintain intellectual property rights of their in-world creations. The laws and ethics of intellectual property, the world of ideas and virtual creations, are a hotbed of legal argument. Second Life follows the mandates set through the Digital Millennium Copyright Act of 1998, which offers federal protection of intellectual property rights and allows for provisions to punish those who infringe on these rights. In doing this, Second Life allows its users vast creative freedom and the ability to maintain legal control over their creations.

With a total number of Second Life registered residents reaching nearly 14 million people worldwide, Second Life has a very large population of users in the scope of virtual reality communities. The United States has the largest percentage of Second Life users, but there are also many users in, among other places, France, Germany, Japan, Korea, and Australia. It has become a truly worldwide phenomenon.

Peak concurrent usage recently topped 60,000 users. On average, there are about 44,000 users logged on at any given time. The number of current registered users has approximately tripled in the last 15 months, but those numbers can be misleading since an estimated 85 percent of avatars are created and then abandoned. The average age of residents is 32 years old, with women being almost as active as men.

When users first log on to Second Life, they are brought to Orientation Island, where they must complete a few brief tutorials to learn how to walk, fly, teleport, speak, and edit their appearance. Some experienced Second Lifers can often be found hanging around Orientation Island, voluntarily helping the "newbies" get their footing.

Using Second Life

When first logging on and learning about Second Life, Orientation Island is a valuable virtual locale for learning how to control an avatar. It is an all but required starting point for further exploration. Here, a new user can learn to walk, run, sit, fly, and teleport to different locations throughout the larger Second Life community. Orientation Island is one of over 19,000 islands functioning within Second Life.

Nonprofit Island hosts over 40 different nonprofit agencies that use their virtual real estate space as a clearinghouse for information on products and services in real life. One successful example is the American Cancer Society. ACS hosts a virtual version of its popular fundraiser *Relay for Life* in Second Life. In 2007 over $140,000 real-life dollars were raised by Second Life residents through this innovative outlet.

For underage users, Teen Island allows youth an area to feel safe from the threat of predatory adults within Second Life. Access to Teen Island by adults is restricted. Enforcement of what real-world individuals control which in-world avatars can be a challenging endeavor, however. Much of the age-restriction controls are based on a trust-based system, and this is one significant drawback for potential use in adolescent treatment situations. If an adult wants to interact with teens as an adult for research purposes on Teen Island, a reportedly rigorous screening process by Linden Labs is required. More about potential barriers to success will be discussed below.

Even with Second Life support groups, such as the breast cancer support or autism groups, there are no strong controls or enforcements to make sure that the truth is being told. Just as in many real-world support groups, self-report is relied upon heavily, and is harder to read since there are no real-world visual cues. That being said, harassment of any kind is a good way to lead Linden Labs to close a user's account. Linden Labs follows up on abuse reports expediently and there are several ways residents can protect themselves from harassment. Security options to filter out would-be intruders or others who may not be welcome can be purchased at the premium level of membership.

The Business of Second Life

There is no cost to join Second Life and create a basic avatar. Premium membership costs about $10 a month and includes live technical support, a weekly stipend of in-world currency called Linden dollars, and land ownership rights. For about $295 a month in U.S. dollars, users can rent grid space from Linden Labs to set up their own private island. These islands have the added benefit of setting parameters for whom and who may not visit. Smaller parcels of virtual land are also available and residents often rent space just as a tenant may rent an apartment in the real world. Resident-owned land mass within Second Life is likely to reach a billion square meters by 2009. Nonprofit organizations can get the same user benefits and ownership rights for about half the price paid by for-profit businesses.

Linden Labs has grown very fast over the past five years. In fact, many lawyers and journalists who have watched Second Life grow have deemed it a somewhat "lawless" atmosphere and compared it to the "Wild West" in its Libertarian bent and relatively "hands off" approach to regulation by Linden Lab.

Change has been nearly the only constant in Second Life. As rates of general usage have grown, so has the allure to use Second Life as a corporate marketing tool. Dozens of major companies have set up shop in Second Life, spending millions of real-world dollars in the process. IBM has created a massive complex of adjoining islands dedicated to recruitment, employee training, and in-world business meetings. Coldwell Banker opened a virtual real estate office while brands like Adidas, H&R Block, and Sears have created storefronts. The Weather Channel and Reuters have opened virtual bureaus in Second Life as well.

One significant business decision made in 2007 was to banish gambling within the parameters of Second Life. Rather than opening up financial records for tax purposes, Linden Labs decided to ban the once-popular practice altogether.

With one U.S. dollar, residents can purchase about 267 Linden dollars depending on the daily exchange rate. People generate real world income creating and selling avatars, buildings, and vanity items such as clothes, jewelry, and tattoos. A recent daily exchange volume hovered around $33.5 million Linden dollars. People also make money by designing cars, owning nightclubs, acting as tour guides, or even landscaping. Businesses succeed according to the ingenuity, artistic ability, entrepreneurial acumen, and good reputation of their owners and designers.

The "built environment" of Second Life, that is everything seen and heard, including other avatars, provides the opportunity for meaningful and positive social connections. The opportunity for unbridled self-expression is limited only by a resident's imagination.

Many innovative uses of Second Life have capitalized on its strengths. One hotel chain, for example, before con-structing a new building in real life, put up a prototype on Second Life and encouraged clients to offer feedback. This innovative interaction allowed changes to be made to reflect potential customer interests. But typical real-life management challenges such as creating brand recognition, attracting customers, maintaining consistency, regulating quality control, and ensuring employee productivity, can also creep into the idealized community of Second Life.

Second Life as a Social Outlet

Second Life is very much a dynamic social outlet. People who may be reclusive in real life are free to shed social inhibitions and put forth any personality or behavior traits they wish in Second Life. The immersion of oneself in the anonymity and visual flexibility of an avatar hold the possibility for freedom of expression that does not exist for people in real life. Regular users of Second Life report that, over time, it can become very immersive. The distinction between "in-world" activity and the real world becomes blurred, it is said, in curious and unique ways.

Social activities in Second Life are often event and time-driven. Residents often congregate at particular places at particular times in response to certain scheduled events. So much so that in areas where there are no events taking place, it is a virtual ghost town in most virtual locales. Events range from rock concerts, lectures, business meetings and fashion shows.

An area of potential growth for research and educational purposes in Second Life is collaborations in classroom, seminar or conference settings. Several major universities, including Princeton, Harvard, Ohio State, Istanbul Bilgi University, and others, have set up virtual campuses in Second Life, where instructors use it in conjunction with, or in

Many events in Second Life are well-attended.
Business meetings, lectures, and concerts can draw dozens of avatars
to user-created in-world venues.

place of, regular classroom lectures (Foster, 2008; Graves, 2008). Second Life has been used for training medical students to develop better patient rapport and for coping during crisis situations. Sales professionals have used Second Life to develop more effective interpersonal skills and sales techniques. Marketing and management applications have been found in teaching managers how to launch new products or communicate more effectively with their colleagues.

Physical brick-and-mortar barriers to real-life social participation can be compensated for through a virtual reality realm such as Second Life. For people with physical disabilities but who can still use a computer, either independently or with assistance, Second Life may offer the opportunity to develop a broader sense of community. The same goes for people who live in isolated geographic regions; along with the Internet comes a kind of community not bound by real-world geography that can provide information as well as communication.

Participants of this meeting noted that, when looking at the computer screen as a user, the view is generally one of watching oneself (as the avatar) rather than seeing the world just in front of oneself as we do with real-world vision. In other words, the default view in Second Life (it can be changed) is to watch the back of the avatar's head and body as it is maneuvered around. Just as watching video of oneself can offer a unique perspective for self-reflection, so may the act of watching one's avatar as it plays out various roles and encounters new, or even familiar, actions and interactions, positive and negative.

Researchers at Stanford University's Virtual Human Interaction Lab have found that time spent controlling avatars of different physical dimensions and appearance can affect a user's self-conception and/or level of assertiveness in real life. For example, in what they have termed the Proteus Effect, researchers found that subjects who were assigned a taller avatar behaved more confidently in a subsequent negotiation task than participants assigned shorter avatars.

Researchers also discovered that participants assigned to more attractive avatars were more "intimate in a self-disclosure and interpersonal distance task" than those participants assigned to a less attractive avatar. (Yee & Bailenson, 2007)

Many avatar styles and looks are available at the level of free membership. A new user simply has to pick out general body-type characteristics and a basic look such as hair and eye color, height, clothing, etc. It takes only a few minutes to choose these options and a little longer to become competent in moving an avatar around to walk, sit, jump, run, or fly. Residents can also pick less human-like avatars, such as a dolphin, fox or fairy if they prefer.

Many, if not most, users communicate with other avatars by typing their portion of the conversation using a computer keyboard. More advanced users may employ a headset with a microphone for speaking and speakers to hear what is being said by others. Typewritten communication shows up in a chat screen portion of the larger computer monitor and conversations can be saved for future reference if desired. Second Life maintains a roster of people who speak various foreign languages and who make themselves available for translation services. The prospect of employing text-to-voice/voice-to-text applications through various software tools is on the horizon but not currently integrated into the platform.

An Example of Application for Treatment in A Virtual World

M. Zachary Rosenthal, Ph.D. of Duke University gave a demonstration of his ongoing research using virtual reality software in conjunction with cellular phones in behavioral treatment for crack addicts in the Raleigh/Durham area of North Carolina. Whereas this research is being conducted in a virtual reality world, it is not being done in Second Life but rather uses a more linear and largely sponsor-controlled game engine platform. The situations are controlled for certain aspects of interactivity and limited to specific scenes and scenarios depending on the variables being tested for any given participant or group. The similarities between the virtual reality milieu used by Rosenthal's research team and that of Second Life were consistent enough to give an excellent example of possible uses for research into addiction recovery and treatment.

Asking the question of "how to help people in recovery learn to live differently in their natural environments," Dr. Rosenthal has employed virtual reality-based exposure therapy to help patients learn new responses to the people, places, and things in and around their home environments.

By re-creating neighborhood aspects such as parks, motels, restaurants, public housing, urban and suburban areas; virtual reality in this therapy context can be customized to fit different patient experiences in real life. Social or drug-trade interactions can be simulated in this setting, which in turn allows those who control the avatars to practice alternative behaviors and develop cognitive strategies to combat cravings that may lead to relapse.

Over a six-month period, Dr Rosenthal's test group had a lower percentage of positive urinalysis test results than the control group. Participants reported mostly effective experiences, but wanted more flexible interactivity and sophistication in the virtual reality simulation.

The potential for integrating certain types of bio-monitoring software to track user behavior and physiological responses to stressors is an area ripe for investigation, says Dr. Rosenthal. Every avatar has a basic tracking system of sorts and chat logs are all savable. The building blocks for avatar assessment are there, but they would need to be refined for more specific tracking in order to provide statistically valid measurement of avatar "behavior" in relation to the controller's bio-sensor information.

Brainstorming

On the second day of the meeting, participants were asked to brainstorm through creative ideas for using Second Life in addiction research and recovery situations. Using a nominal group technique, each idea was summarized on a large piece of easel pad paper. Following the brainstorming session, participants were asked to select those ideas they felt were the best and place a small sticker near those ideas as they were displayed around the conference room. The ideas that received the most stickers (5–8 each) are summarized in the paragraphs below. Ideas that received two to four votes each are also summarized below, following the most popular ideas.

If you don't know when and where the popular in-world events are happening, the considerable sprawl of frequently vacant locales can feel like a virtual ghost town.

The potential for delivery of new variations of direct-care services to those who cannot make it to brick-and-mortar treatment centers due to physical, mental, or emotional disabilities, or other limitations such as physical distance, was very appealing to meeting participants. For those patients who may not be ready to step foot inside an actual treatment center, Second Life could also provide a less threatening way to investigate and demystify what treatment and recovery involve. By gathering information through the interface of Second Life, a potential patient may eventually seek real-world treatment.

Meeting participants felt older adults, who tend to be less computer savvy, may not be as interested in taking the time to investigate Second Life as adolescents or young adults who may have grown up with more social networking and virtual reality concepts. Younger people—those in their teens, twenties, and early thirties—may be more open to these emerging Web-based treatment options that focus on prevention and advocacy or that function as a follow-up to residential or outpatient treatment where there is often little opportunity for effective follow-up care. Second Life could bridge a post-in-patient gap in services as a means to provide follow-up communication and community. For example, after school a youth goes home, logs on to Second Life and meets with others in a virtual treatment group. A counselor also joins in and works to extend existing real life relationships in this Second Life context. Giving this type of treatment an element of fun, and via a venue that is within a predetermined comfort zone, could enhance the potential for success in relapse prevention.

For those communities or businesses looking to establish new treatment programs, Second Life could be used to create test versions, try different methodological design options, and see what potential or current clients might like or dislike about any given virtual facility or design. Program offerings and styles of interaction could also be tested for appeal and effectiveness.

Whereas people have been noted to provide more detailed and personal information in a computer-mediated context, Second Life may appeal to those investigating treatment options or to those who are seeking out alternatives for continuing care. The convenience and relative anonymity of Second Life meetings may be less stigmatizing and less intimidating, thus making it more productive and attractive.

Innovative treatment programs such as Accelerated Recovery of Atlanta, GA have already been using Second Life as a proxy to face-to-face therapy with real-world results. By creating a meeting room that is much like the one used at the actual therapeutic center, clients communicate with their peers and therapist while reporting a sense of greater freedom to relate personal details. "It's almost like going to confession" said one participant as recently reported in *Spiegel Online*, an extension of the German newspaper, *Der Spiegel* (Schultz, 2008).

Other well-received ideas generated from the brainstorming session include using this technology for staff training. As a training tool, staff could try out new best-practice methods without the pressure of working with real clients. Students and instructors could watch the playback or read dialogue as an evaluative tool.

Using Second Life for advocacy work was another idea brought forth in the brainstorming session. Even the name Second Life, it was suggested, is close to Second Chance or other avenues for change, renewal, etc. The population that regularly uses Second Life may be sympathetic to giving people a second chance or to those confronting significant life changes. As a vehicle for advocacy, organizing, public education, etc., Second Life has a lot of potential. One example given was that Second Life could be used to help citizens to prepare, through role-playing exercises, for public speaking events or for speaking to legislators or other opinion leaders who could influence substance abuse treatment policy. It also offers a low-cost platform for distributing information regarding treatment options, both in-world and in real life.

In terms of role-playing, it was suggested that a Second Life platform may be useful in helping family and friends practice roles of social support for those going through the recovery process. Virtual interactions such as these would create unthreatening scenarios to demonstrate how family and friends could talk with an addict, thus promoting the overall recovery effort.

It could also be used as a platform for other role-playing in which addicts could practice new behaviors such as declining offers to use drugs or alcohol. Helping to imagine success through virtual means may promote future success in high-risk real-world interactions where old triggers may be present.

The idea of developing a unique island within the realm of Second Life, or by renting part of, say, the Nonprofit Island's virtual real estate, in order to develop a Recovery Island was also well-received by the brainstorming group. Groups like Alcoholics Anonymous, who already have a presence in Second Life, may be interested in being part of the larger recovery network within Second Life. It was noted as well that, in real life, participants in groups such as Alcoholics Anonymous need to have a certain level of comfort functioning in face-to-face group settings. A Second Life therapeutic format may allow potential participants to quell any group dynamic anxieties by participating in a virtual reality context.

Recovery Island may also serve as a safe zone of sorts for women, gays, or others who may be put off by real-world intolerance or the overt sexualized nature of certain elements within Second Life. Recovery Island could also include, it was noted, areas for people trying to reintegrate into society after being incarcerated. Not unlike others who might be motivated to test out and develop new coping strategies in the face of criminal temptation, a Recovery Island within Second Life could serve as a safe place to connect with others who are in recovery and to rehearse pro-social and healthy patterns of behavior.

There are a lot of people who manage their own recovery, and not a lot is known about them. Second Life, perhaps within the confines of a Recovery Island context, could offer access to innovative recovery methods and give people the choices and courage to attempt new things in real life by trying them first in Second Life.

For people trying to build different social networks and to learn new patterns of non-self-destructive behavior, Second Life offers the unique ability for therapists or researchers to construct a personalized virtual neighborhood by using simulations of particular homes, offices, streets, liquor stores, dealers, significant others, carpets, wall paper, etc., which may be part of a subject's real-life surroundings. By giving a more realistic appearance to the virtual reality world, it may help those in recovery to better cope with the real-life triggers encountered as they go through the lengthy process of recovery. Researchers have worked to develop scripts, or simulated scenarios and scenes, which represent real-world interactions in real-world settings.

Finally, it was also suggested that Second Life could double as a daily self-monitoring diary card about substance use patterns for users or therapists interested in tracking ongoing recovery progress. As the ubiquity of online social

networking sites such as Facebook and Twitter become popular outlets for the increasingly self-confessional trends among young people, creating a social-support network in Second Life as a means to both group and individual recovery processes may be appealing to those certain demographic groups who also engage in other means of social networking.

Barriers for Practitioners

TECHNICAL BARRIERS

After several rounds of brainstorming about the possibilities of Second Life in treatment and recovery contexts, meeting participants were asked to think through some of the realistic barriers that may prevent use of Second Life in substance abuse treatment. Barriers listed below are separated into categories affecting counselors/researchers as well as those barriers that may exist for patients. These two main categories are then broken down further to detail barriers in several general areas.

Learning to effectively use Second Life for a researcher or counselor who is a true beginner to the system may take up to a couple of hours. For those familiar with comparable software, less time would be needed. A relatively steep technological learning curve would exist for some new users. In general, the average frontline treatment workforce personnel may not be adept in using virtual reality applications such as Second Life. In some cases, the software, which requires a fair amount of bandwidth, may be too much for some older computer systems, and of course there is the issue of people who don't have Internet access at all. It was also suggested that the software running Second Life seems out of date and probably impractical to support much of what would be needed in treatment contexts. In other cases, the necessary hardware may not be sufficiently available or affordable in small business settings to make it a viable addition to any given program's immediate regimen of treatment options.

Some conference participants noted that generational challenges might face older practitioners, who may not be up to speed in virtual world usage. Barriers pertain more to training and treatment providers than to clients, it was suggested, because older therapists, in general, may not be as technically savvy as younger colleagues.

SOCIAL BARRIERS

The challenges of convening residents in Second Life can be just as challenging as getting a group of people together in real life, whether through teleconferencing or in face-to-face meetings. Like any real-world conference call or real-time online forum, there is the benefit of communicating with a geographically separated group. However, just the same, convening a group of professionals or clients within the virtual world must take into account impediments such as technical breakdowns or finding a time that works for a range of busy participants.

Different applications for the use of virtual reality systems will depend on the target population. Within any given population—be they ex-cons, addicts, teen runaways, or people with physical/mental disabilities—there will be those who are further ahead in the therapeutic process than others. The basic elements of treatment within a virtual reality world such as Second Life must be addressed just as in any real-world therapeutic context. Identifying treatment needs will likely still best be achieved on a person-to-person basis, whereas using a virtual reality context may best assist in an ongoing treatment capacity and as part of a larger holistic treatment approach.

ETHICAL/LEGAL BARRIERS

Virtual reality programs such as Second Life do not yet qualify as evidence-based practice though research looking at the potential of virtual worlds to improve learning outcomes is underway. Finding funds for such research and/or usage may be challenging at first. However, it was suggested that, in asking what constitutes evidence-based practice, such an application could be used as a building block on a new road of practice.

Licensing would also be an issue with treatment. There would need to be some way to verify that an avatar's real life controller is within the licensing area that a counselor is certified to practice. Change on this front may take advocacy in amending certain 20th-century licensing and insurance laws. It was noted that telemedicine rules as applied to modern advances in technology may be a current or future source of precedent for redefining certain laws and regulations.

Confidentiality issues are also a concern. Anyone can set up an avatar and, if the password is known, can even gain access to an avatar created and belonging to someone else. For a therapist, knowledge of who is controlling a given avatar in a therapy setting is essential, at the very least, for purposes of billing, confidentiality and confidence in the overall therapeutic process. This is true for both practitioners and their clients.

FINANCIAL BARRIERS

The question of whether there are resources available to anyone or any program that wants to try and implement a virtual reality based component to her/his therapeutic practice or research loomed large. Early-stage exploratory funds, such as those provided by the Robert Wood Johnson Foundation's Pioneer Portfolio for this particular meeting, would need to be made available in order to allow a network of professionals to advance the science and understanding of these particular virtual reality applications in relation to addiction treatment and recovery.

Barriers for Patients/Clients

TECHNICAL BARRIERS

Using Second Life takes relatively good typing skills in order to communicate with appropriate expediency during standard interactions. Users who do not posses typing skills or who are physically unable to type could either find someone to type their words for them or use a voice transmitting headset. This type of headset can be purchased for a discount as a Second Life resident, but still may be beyond the means for a portion of any given client base.

The problem of access by patients outside of residential treatment facilities may also be a barrier for some. Due to the bandwidth and processing power needed to run Second Life, many public libraries or public workstations may not be able to handle the requirements needed to operate in the virtual world. There is also the issue that the system must allow the machine to download new software, which is often prohibited on public machines. If a patient has a personal laptop computer, the software could be downloaded onto that system but, again, the cost of procuring a personal laptop computer may be out of reach for a lower-income demographic.

SOCIAL BARRIERS

Virtual worlds are essentially social but, as was noted by several meeting participants, Second Life can feel very solitary when navigating the often barren streets and buildings of Second Life. Given that social interaction within Second Life is driven by events, recovery professionals and others would have to work to create a network of events for those who are interested or engaged enough in the recovery process to log on and converge at a given time and virtual place.

Meeting participants also asked if it is even possible to create positive social relationships and friendships in a virtual world where boundaries are soft or even invisible. Those patients with personal identity or trust issues may not be helped very much in a virtual world where a shift in identity—and the deception therein—is often the underlying appeal for many users.

It was also noted that motivational incentives would loom large for patient use. In other words, questions of "what's in it for me?" would need to be answered clearly in order to motivate potential participants into using virtual reality means towards therapeutic ends.

ETHICAL BARRIERS

Second Life can be a very sexualized environment. Although there are some safe zones, there are also areas of overt sexualized behavior in Second Life. These may be found to be particularly threatening or harmful to those who have been victims of predatory behavior or past sexual trauma.

Conclusion

Before the close of this meeting, participants were asked to relate ideas for possible next steps in trying to carry the creative momentum forward. It was suggested that a group of early adopters, perhaps in conjunction with ongoing projects like those at Accelerated Recovery in Atlanta, could really dig in and investigate the practical benefits and obstacles of using a virtual reality based system such as Second Life in the real world of treatment and recovery.

The few participants in this meeting who had already become familiar with treatment opportunities in Second Life stated that they would like to build a stronger professional network to develop more interaction among like-minded cohorts in addiction treatment and recovery. This network would need to work toward building a stronger sense of presence and community within Second Life or other virtual realities by taking advantage of the groundwork that has already been put in place. Space is currently available to rent in virtual buildings on Nonprofit Island, and a growing network of services is developing, and early adopters are eager to continue to develop growth in these areas.

In order not to reinvent the virtual wheel, it was suggested that researchers could also glean information from current Second Life Alcoholics Anonymous/Narcotics Anonymous meetings as to the effectiveness of treatment in the virtual world, and strategically pursue people in AA or NA who would be willing to work together with a larger group of recovery professionals.

By creating opportunities to offer services to vulnerable populations, and to frame the ideas of treatment and recovery in virtual worlds as an untapped opportunity, to be forward looking and positive, will also increase the appeal for private or public funding entities to continue to invest in this type of innovative and imaginative research.

In conclusion, most meeting participants felt that there was significant potential for using Second Life to improve substance abuse treatment outcomes. Being introduced to a lot of new ideas and some of the people behind those innovations was rewarding. For some participants, there were certain fundamentally unappealing aspects to Second Life itself, specifically the strong sense of isolation in certain less-traveled areas and the overt sexualized nature of other more popular destinations. The level of interest by meeting participants coincided with a reserved optimism that there were particular strengths and unique opportunities for treatment and recovery that look only to expand as society becomes increasingly "plugged in" and familiar with these innovative options in virtual reality environments such as Second Life.

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