DRAFT

On Privacy of Famous Users in Active Worlds

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Abstract: Collaborative Virtual Environments (CVEs) are being developed to support work and education, yet, research for entertainment is getting popular. A qualitative research was conducted in Active Worlds (AW). Some of AW users are famous in the virtual world, which affects their usage of the system.

Keywords: Collaborative virtual environment, Active Worlds, famous users, contact, privacy.

1. Introduction

Current research in Collaborative Virtual Environments (CVEs) mainly concentrates on developing virtual environments to support work and education, yet results of the research could also be applied to entertainment (for example [4], [8], and [9]. On the other hand, it has been suggested that Computer Supported Collaborative Play (CSCP) could be the future of Computer Supported Collaborative Work (CSCW) [5]. Considering different contexts of these two environments a question arises: Do requirements of virtual environments differ when they are used for work and for entertainment purposes?

Active Worlds (AW) [1] is a public virtual environment on the Internet, created for entertainment among a bulk of people. Users create virtual worlds of their own and chat with each other in them. Technically advanced users tend to help other users to create worlds consisting of 3D models and bot programs. Some users publish freebies - avatars, objects, textures, and utility programs of various types - on their websites for others to use. Having many friends in the Virtual world makes some users famous when the word goes around. After a while, people with poor technical skills usually start asking famous people to modify freebies for their own purposes. This will put famous users in a hard situation as they have to decide how to deal with the requests from amateur users.

Users of AW, particularly the famous ones, are concerned about privacy. Recent studies have shown that this concern is as prevalent in the online environment as it is for physical world interactions. The privacy issue in AW environment is however different from traditional online

privacy concern which is more concerned about online malicious threats, invasions and personal data exposition. In AW privacy mainly refers to disturbance from unknown users. For traditional online privacy there are different technologies help users protect their privacy. For example Platform for Privacy References Project (P3P) [13] from the World Wide Web Consortium is one such technology. However, there is a need to study the methodologies to solve AW privacy issues as traditional privacy technologies simply do not work well in AW environment. There is also a need to know more about the range of user concerns and preferences about privacy in AW in order to work out possible solutions.

A qualitative study was conducted in AW for about 600 hours of time on-line in an ethnographic manner. The goal of the study was to investigate the system and its user community through eyes of a normal user. Since the system saved all conversations into a chat log they became visible

and accessible to researchers, all the verbal communications between people were stored Most of the communication is verbal even though visual presentation is supported through avatars. In analysis of the chat log we focused on the four elements of support for collaboration in virtual environments defined by Churchill, Snowdon and Munro [6]:

- shared context
- awareness of others
- negotiation and communication
- multiple viewpoints

Keeping these four elements in mind, we studied for issues that have a clear effect on users' ways of using the AW system.

2. Active Worlds

Some aspects of AW system and the user community should be explained before we step into further research. The AW system includes a universe which consists of individual virtual worlds. The AW universe, accessed to through the AW browser program, is an index that links worlds together. Through the world index users may teleport from one world to another. Every user-made world is included to the index, yet access to some worlds can be restricted. Most worlds are accessible to all registered users and some can also be accessed to by non-registered users. Such a world is usually built and managed by a caretaker who decides what the world contains. Some users build worlds together, which makes building them a collaborative task.

Figure 1. The AW browser.

The browser for AW is presented in Figure 1. On the browser's user interface, there is a contact list containing nick names of other users. Through the contact list the user can send telegram, join others, and see their on-line status. Telegrams are short text messages. By telegrams it is possible to have a chat with others while avatars are apart in the virtual AW universe. People tend to use telegrams for short notices and questions while doing something more time-consuming where the avatar is. Another feature for instant communication is the join function, which allows the user to teleport instantly to the h n t of another user. In addition, the user may enable an automatic indicator that tells others whether the user is online. Also, the name of the virtual world where the avatar is can be shown to others. All of these features can be disabled or they may be enabled for every user individually.

AW users are divided into two categories. Tourists, who are non-registered users, have limited access to features of the system; Citizens are the registered users who have access to all features. These two groups are distinguished from each other by using quotation marks around nick names of tourists. The contact list is disabled for tourists, so that they cannot join instantly to other users' company nor tourists can be joined by anyone else. Also telegrams and the on-line status indicator are disabled for tourists.

Being an AW user does not mean using the AW system only. Users have web sites where they publish utility programs, avatars, 3D models, and tutorials for others to use. For example one of the most famous sites is Mauz's Active Worlds Pages [11]. Active Worlds Newsgroup [2] enables people to communicate with the whole user community and Active Worlds Inc., too.

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Also, there is a newsgroup maintained by an old AW user [3]. Sometimes people refer to messages in newsgroups, and conversations started in newsgroups continue in the virtual 3D world.

There are usually several sub communities within the AW user community, for example Peacekeepers are those who help new and regular users, and Active Worlds Inc. by providing continuous online presence of experienced users willing to help others [12]. Communities can operate partially outside the 3D virtual environment, and they have developed alternative ways for easy communication such as community-specific newsgroups, chat rooms, and mailing lists.

3. Privacy of Famous Users

In the following case study a story of a famous avatar-maker and bot programmer is presented and discussed. A user called BigMoonGuy is known for his avatars and utility program, which make lots of users to ask him to make something special for them as a favor. People talk about his work and a fiend of BigMoonGuy may recommend him to people seeking avatar-makers. Since BigMoonGuy has many friends the number of people who get to know of his abilities has reached very high in a relatively short period of time. In newsgroups BigMoonGuy provides finks to his web pages containing downloadable freebies which is a much easier way of distributing freebies than sending e-mail to every fiend separately. Many of the world owners prefer unique 3D models and avatars to their worlds. SirCyberStar is very familiar with these problems too, since he is also a very experienced and technically skillful user.

Extract 1. A user is getting too many contact requests.


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BigMoonGuy:        ok, no telegrams anymore
Investigator:      hehe
SirCyberStar:      : I
Investigator:      is it hard to be famous?
BigMoonGuy:        you cannot chat anymore without being asked for 100 things
BigMoonGuy:        by telegram
Investigator:      Yep
Investigator:      shut them all off
BigMoonGuy:        people from Dreamland Park keep sending email that they want
                   this or that avatar and I should make it: (
Investigator:      oh
BigMoonGuy:        AW is just stress lately, not fun anymore
Investigator:      oh =(
SirCyberStar:      could be good to have a secondary account that nobody would
                   know about
Investigator:      BigMoonGuy what was the most fun part in AW?
BigMoonGuy:        I liked to make s t u f f and to chat and to build - hut I
                   liked to make stuff that came to my mind instead of being asked
                   to make stuff that doesn't interest me at all
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Investigator:        oh
BigMoonGuy:          TV scripts - I hate TV scripts: - I
Investigator:        so you lost your artistic freedom?
BigMoonGuy:          I have at least made 20 TV scripts for different persons
Investigator:        =(
Investigator:        Why can't you just stop making them?
BigMoonGuy:          lol
BigMoonGuy:          well, I made one so I cannot say "no" when the next one asks
                     for one
Investigator:        would it be easy?
Investigator:        like "reset BigMoonGoy" or something
Investigator:        serious reboot of your identity
BigMoonGuy:          The problem is that I posted several avatars in the newsgroups
                     but people do not read the newsgroups they just hear I posted
                     them and request a new one for themselves
Investigator:        hmm...
Investigator:        no thought whatsoever
                     many who make freebies put up a note that they are unsupported
SirCyberStar:        to get away from all that
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In Extract 1 BigMoonGuy is disguised as a tourist using his normal nick name. He tells that he gets contact requests very often when being online and that most of the requests are not welcome. If he makes an avatar to a person he does not how yet, he has to make an avatar to another person too in order to treat everybody equally. In return he may get nothing except satisfaction for making other persons happy. This leads to making customized avatars for people who ask for small favors more and more often. BigMoonGuy feels he cannot be logged into the AW universe like before becoming a famous avatar-maker. He needs privacy for doing the things he likes, only for himself. As a tourist BigMoonGuy can act like ordinary users since he can be contacted only through chat and he cannot be interrupted by telegrams.

SirCyberStar suggests that famous people could have a secondary AW user account. It would allow them to have two permanent virtual identities, which could be used when convenient. The user could choose when to be a virtual celebrity without serious problems. However, having two

user accounts in the AW system the user would have to pay for both of them separately, which is an expensive way to figure out the problem.

Extract 2. Getting tired of AW.


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BigMoonGuy:     I think MisterZeroDad has the same problem at the moment, I haven't
                seen him for a while and asked - he said he is AW-tired
                this stupid new feature causes that. Many people with knowledge hide
BigMoonGuy :    their online status lately
BigMoonGuy:     so those who do not hide get more requests
Investigator:   naturally
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Investigator:   so when do you know when your true friends are online?
BigMoonGuy:     I don't know, some sure use AW not for chat in first place
Investigator:   yeah probably
BigMoonGuy:     Sometimes - well, more like often - we meet in smaller universes:)
Investigator:   oh =I
Investigator:   do you think AW i5 too big now?
BigMoonGuy:     as long as the relation between requesting people and people who are
                willing to help is OK, the size does not matter so much
SirCyberStar:   I guess I most miss the tourists
                it was funny helping them with basic things and see the joy when they
SirCyberStar:   learnt to build their first wall
Investigator:   SirCyberStar, do you just hang out with the people you already know?
BigMoonGuy:     not only but mostly I guess
BigMoonGuy:     for me atleast
Investigator:   oh
SirCyberStar:   not much hanging out anymore, I think I have not been here for 3
                weeks
BigMoonGuy :    I haven't been here for weeks either
Investigator:   i like the meeting new people part
Investigator:   but I'm pretty new
Investigator:   how long do you have to be online to get AW-tired?
SirCyberStar:   hard to say, I bet many keep short breaks
Investigator:   well... after a break it may feel good again
BigMoonGuy:     a lot of factors influence it. If you have flame wars in the
                newsgroups that influences it a lot
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In Extract 2 BigMoonGuy sees the online status indicator as a "stupid new feature", since it only causes more contact requests and just a little aid for collaboration with his good friends. When people see him on-line they ask for a little of his time. Also, they keep sending requests by telegrams in AW and e-mail outside it at frequent intervals.

Famous users have a term "AW-tired" which means getting tired of making AW-related things. Activities in AW become a stress when obligation to help users, who cannot do certain things themselves, restricts their own activities - the activities the famous users see as the fun part in AW. Some famous users block join requests and telegrams by default. They enable contact features only for the closest friends they have in the virtual world. In addition, AW-related e-mails coming from unknown people are usually ignored.

BigMoonGuy thinks that there should be a balance between users capable of helping others and the users needing help, Now he feels he has to help too many people alone. Both of the famous people have noticed that they do not meet new people any more. Yet, they both would like to meet new people, but not only the ones who need their help.

The burden of helping others makes famous users to "move" to other virtual worlds. For example BigMoonGuy is also a citizen of Dreamland Park [7], which is another, smaller universe, built on the AW technology. When moving there, he had to rebuild his virtual identity for the most part.

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In some sense his virtual life started again and contacting new people and making new friends was fun again. In Dreamland Park he is not as famous as in AW yet, but the same problem is emerging there too.

By the last comment BigMoonGuy means that in newsgroups sometimes people start to argue irrelevant things and the conversation is offering nothing more than accusations and insults. This is called a flame war, and these do not motivate BigMoonGuy to login to AW to express his view of current discussion that he sees as completely irrelevant.

4. Resetting Virtual Identities

It is easy to reset a virtual identity. Yet, in AW, only a few famous users do reset their identities, since it would also affect relations with their closest friends. When too many people know about the nick name change, the nick name changer becomes "user called so-and-so who changed his nick name to so-and-so," and the trouble for changing the nick name goes wasted. Although social norms do exist in virtual communities [10], users do not feel bad for sending a short message to a person they know only by reputation. In addition, resetting virtual identity makes it easy to try alternative means to get what a person wants. After a few inappropriate attempts to contact the famous one, a person may reset the virtual identity and try other approaches over and over again. In the end, it may be possible to return to the original virtual identity. For the famous person this is very annoying.

When speaking of hundreds of users contacting a famous person, the burden of managing every user's abilities to contact is too great. The contact list feature does not support managing relations to other users in a way that is flexible enough for the famous users. Either the famous

one ignores all contact attempts or has some time off from the virtual environment hoping that people forget him. If he is ignoring everybody, he can choose the people he wants to be with from all the users known to him. If he has some time off, he just moves the problem to the next time when the amount of contact requests is far too big to be managed one by one. Either way he loses those few unknown contacts he is searching all the time - new interesting friends. He is hoping to meet someone who would like to have an interesting conversation about something else than he is famous of, for a change, without asking any help. Making new friends stops for the virtual celebrity and potential new friends for future collaboration will not be met anymore.

5. Discussion and Conclusions

This paper demonstrated that features of a CVE supporting collaboration might in some cases need to be reduced. Famous users in AW have trouble in managing system support for communication and awareness of others, which are key elements of support for collaboration in virtual environments [6]. Famous users need the features supporting collaboration with their good friends, yet, annoying contact requests from unknown users needing help are not welcome. When disabling the features for unknown users they also lose their chance to meet new people in the virtual world.

In the case of AW, entertainment context allows users to choose their contacts very freely. Because of this, there are no organizational legislation stipulating how many people should help others. In professional organizations the hierarchy of positions can determine this and problems can be overcome by re-organization. While in an open public system the users have to decide the acceptable amount of contacts by themselves.

How could privacy of people having n vast number of contacts be protected in a CVE system without reducing features supporting collaboration? In this paper we have examined the different privacy concerns and preferences in the CVE system. Future research includes studying the possible solutions to the privacy problem in different CVEs as well as the pros and cons of the respective solutions.

Acknowledgements

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