Creation and communication in virtual worlds

Experimentations with OpenSim

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***Abstract*—We were invited in 2009 to introduce a large audience to virtual worlds through a workshop called : "Introduction to virtual worlds and Machinima." It took place at Paris' "Cité des Sciences et de l'Industrie" during one week. It allowed us to study the behavior of untrained user confronted to these new collaborative spaces and thus to evaluate the impact of virtual worlds in terms of creation and communication. In this paper, we explore particularly how virtual worlds make inter-cultural and inter-generational communication easier.**

Keywords : virtual worlds, OpenSim, communication, workshop, avatar, build

I. Introduction

From October 27th to November 4th 2009, "the Atopic Festival", took place at the "Cité des Sciences et de l'Industrie"[1]. It was subtitled : "Virtual worlds make cinema"[2]. This festival gave us the opportunity to initiate a large audience to virtual worlds and the possibilities they offer, through an educational and creative workshop. The purpose of this workshop was to let attendees discover the new tools of creation and mediation that are virtual worlds. On the menu : visit of virtual platforms, discovering the user interface, avatar creation, introduction to build, approach of additional softwares (FRAPS, GIMP,...) and Machinimas creation.

The workshop "Initiation to virtual worlds and Machinima" was aimed at all audiences. Four coordinators took in charge the training and supervision during this week : Edwige Lelièvre, Nicolas Sordello, Julien Levesque of EnsadLab EN-ER[3] research program and Frederick Thompson of the Human Atopic Space[4], event organization team. This event took place at the "Carrefour Numérique"[5] with a rhythm of a two hours workshops each day during a week.

All along this workshop, we had the chance to come across a large diversity of people interested in discovering virtual worlds. It allowed us to analyze the behavior and demands of the users. This event was the occasion to create interaction between the participants, young and not so young. The relationships developed during this workshop overtook our expectations.

Figure 1. A coordinator explains building's process in OpenSim to a workshop's participant

Through this experience, we studied the impact of virtual worlds on communication between the attendees and on user's creations.

[1] The "Cité des Sciences et de l'Industrie" is a French public establishment specialized in spreading science and technological culture.

[2] Les mondes virtuels font leur cinéma

[3] EN-ER : Espace Numérique – Extension du réel, http://ener.ensad.fr/

[4] http://www.humanatopicspace.com/

[5] Digital Crossroad

Our initial hypothesis was that virtual worlds encourage artistic creation even for novice users, because they are user-friendly. The communication finally took the upper hand. This is what we will develop in this paper.

II. A technology for virtual worlds : OpenSimulator

OpenSim (OpenSimulator) was the main tool we used during the workshop in order to make participants discover virtual worlds. It is an open source free software allowing to create a virtual world's server. A client software (Hippo OpenSim Viewer in our case), once connected to an OpenSim server allows several users to meet simultaneously in a real-time 3D space, through and avatar [4], to make this world evolve.

A. Virtual worlds

"Virtual world" is a general term referring to an environment created by a software allowing interaction of several users in real time in the same space thanks to Internet.

The main and only purpose of a virtual world is not the game, unlike MMORPGs (Massively Multiplayer Online Role Playing Game). These are social environment where users have many goals : artistic creation, discussions, dating, learning, and several games (like gambling).

Virtual worlds are synthetic spaces where it is possible to find both elements based on fiction (drifting architectures for instance) or on the physical world (houses), according to users' will.

These worlds are usually qualified persistent. Indeed, they don't stop when users leave them, they are always accessible and they evolve continuously. [1]

To be more specific, we can describe virtual worlds as social multi-users persistent online environments in real-time 3D.

B. Open source software derived from Second Life

OpenSim has been developed with Second Life's source code. Second Life was created in 2003 by Linden Lab. OpenSim being an open source software means that its source code is open : users can look at it and modify it. It is not supported by a company earning money with this software but by voluntary developers.

From an user's point of view, the difference between Second Life and OpenSim is mainly about money. In fact, in Second Life, it is possible to buy and sell almost everything in an intensified version of capitalism [3] : "The deepest source of value in virtual world lies within the self-construction. In economic terms, this appears directly in the avatar aspect. The face, the hairs, the body, the gender, the clothes, the eyes. I think this economy will be revolving around the evolution of the most rares and most beautiful ways of self-figuration." Interview with Edward Castronova" by Irvin Bearcat [1].

On the other side, in OpenSim, there is no currency.

Besides, if Second Life was a very free and open virtual world at the beginning (as long as people paid), control on users has progressively increased among time, for legal reasons in particular. There is absolutely no control or censorship by default in OpenSim. Servers' owner (home-users, associations or companies) have to define their rules themselves.

C. Creation with OpenSim during the workshop

When the workshop's attendees arrived in our OpenSim servers, they discovered and empty space, waiting for them to take possession of the place. There was just a flat ground surrounded by water and the users' avatars, represented by 3D characters.

Members of the workshop were able to create objects in this space, alone and collectively, from primitive shapes (cube, spheres, cylinders, etc). These objects could be scaled, moved, oriented and modified in their shape. The tools offered by OpenSim in that purpose are user friendly and accessible for everyone. They allowed a fast learning process for the participants, who created a lot of buildings and objects.

They also had the possibility to import on the server images found on the Internet. These images or textures could be used then on objects they created before. For instance, one of the attendees imported a picture of stone to apply it on his wall.

Another possibility offered to the participants was terraforming. It allowed them to modify the server's ground, where they were building. They created mountains, plateaus, rivers and lakes.

In addition to environment modifications, users could modify their avatars' aspect[6]. It was possible for them to choose their avatar's gender, body shape, clothes, skin hair and eyes color.

III. Description and behavior analysis

A. Workshop attendees' profile

The introduction to virtual worlds workshop was open to all. No questionnaire was asked, so data on participants' profile were collected thanks to discussions with workshop's members and our general observations.

We welcomed persons of extremely various profiles. There was child from 8 years old, teenagers, adults (young and not so young, workers and students) and seniors (more than 60 years old). During the week, we noticed a globally homogeneous repartition of genders.

[6] Avatars are virtual characters representing the user in virtual worlds. They are the interface that allows interacting with virtual environment and other users. [4]

Some attendees came alone, some others in small group (two or three persons). We also had during two days a large group of children from an holiday camp (more than ten children of the same group each time).

As a result of our talks with the participants, we discovered it was also a very heterogeneous public in term of social background and education. We had for instance a mathematics teacher and game design students mixing with persons who were not familiar at all with computers.

Thus, during this week, we had the occasion to help an extremely various audience – way more than what we were expecting – discovering virtual worlds. It was not obvious at the beginning that the workshop's members will communicate together, considering generational and cultural differences between them.

The only common point between participants concerned virtual worlds : it was the reason of their presence and it was something new for them, whatever their profile was. In that regard, we had an homogeneous group, as even game design students have never been in a virtual world.

Figure 2. Customization of an avatar in OpenSim by one of the attendees

B. First approach : moving in the world and creating an avatar

Moving in a virtual world is not an easy thing for everybody. The youngest attendees, familiarized by video games, were the most comfortable with displacements. For generations who did not grew with video games, this process was slower and more delicate.

Flying, walking, diving : the large freedom of movement given to users in virtual worlds sometimes involves a loss of orientation. Oldest members of the workshop often needed several minutes to learn to use their avatars, virtual world's exploration vector [4].

One of the essential steps of virtual worlds discovery is the character customization. The way the virtual body is pictured is a central element who allows to identify ourselves and to be identified in the virtual space. Creating the virtual identity is about implication and taking part to the environment. The fun aspect of this process, the re-looking of our avatar, is considered as a game by the users but is very important. By the way, it was often the first will of the attendees. Like a doll we dress, a puppet we shake, the avatar transforms itself according to user's desires, that are sometimes extremely specific.

C. Collaborative creation of real-time 3D virtual environments

One of the virtual worlds feature is their capacity to welcome simultaneously several users, while allowing them to bring change in this world with the build system. These experiences take place in the same place and are collaborative. The users live together and really have the feeling to belong to the same place and moment.

Thus, workshop members had the occasion to share a piece of land and to try their hand at collective building.

First creations were often houses. We can figure that attendees decided to build this kind of building because it is the most common and it may also be a reflex of space's appropriation. It is actually a place reassuring the user. By doing so, the user could also discover the building interface through a simple shape.

From the very beginning of the workshop, we saw users creating together a lot of buildings. However, attendees generally restricted themselves to the representation of known and relatively simple shapes, We could hardly qualified these shapes of artistic creations, as they didn't expressed the personal sensibility of their maker. It appears clearly that the purpose of these creation for the attendees was not to express themselves through this new medium.

D. Critical cases

After a short training to OpenSim possibilities, some participants got caught up and set up life size traps, physical experiences on their neighbors, other users' avatars. Sometimes collaboration turned into territorial conflict. The tranquility of some participants was disrupted by users who became too much playful.

For instance, two teenagers had fun creating huge mountains under houses created by others, who became therefore inaccessible. Later, as we forbade such excess, they had the idea to create entirely invisible walls, that prevented avatars to move properly : they were stuck because of the walls but were not able to understand the reason of this block.

We saw that, if some participants learned step by step to live peacefully in this new world, others tried practical joke and disturbed the community. These disturbers gave us the impression they were having fun by testing the limits of this collaborative and open process of creation. They were more interested in the other users' reaction than

by creation itself. It is an extreme but common form of community creation : the traps were created collaboratively and were aimed at the group.

Further to the session where monumental mountains were created, we decided to forbid terraforming. We had to limit by ourselves the freedom offered by OpenSim in order to preserve the comfort of the group. This act of censorship allowed us to understand the limit of considering virtual worlds as utopia [2]. Virtual worlds may contain a part of utopia, but, at the opposite to only written utopia, it is hardly put to the test by their inhabitants, as we noticed during the workshop.

E. Behavior of the attendees toward their avatars.

The aspect of the avatar was of great importance during the workshop. For several reasons, we did not excepted so much interest into avatars. Firstly, a large majority of the adults never used any avatar before : they may have been distracted by this new tool. Moreover, avatars in OpenSim are very simple, graphically speaking, and this could have disgusted some attendees. They could have easily criticized, with good reasons, which is usually reproached to numeric images : “too perfect, frozen, hallucinatory, fascinating, magic, hyper-real, without soul, with mystery, with shadow, without presence, without aura” [5].

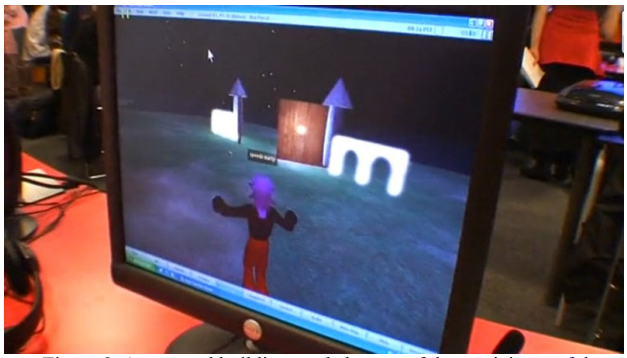

Figure 3. Avatar and building made by one of the participant of the workshop

However we did not had to face any criticism of this type. The importance of the avatar as interaction interface with the virtual world and the extremely wide possibility of customization aroused the participants' interest and made their identification easier. The soul of this animated numerical images – virtual worlds avatars – comes from the fact that they are unique, as well in their actions than in their appearance. In addition, the look of others users and their interactions inside the community on the virtual world give the avatars a great intensity of existence.

F. Avatars' name

One of the feature allowing to identify an avatar is its name, displayed above its head. In OpenSim, it is the user's account, necessary to log into the servers. To avoid spending too much time creating accounts, we created some before the workshop. They had generic names (test01 to test25) and we distributed them at the beginning of each session, according to computers' position in the room.

Regular attendees wanted to keep the same account each time they were coming. Then, we distributed the remaining accounts. Quickly, it became very hard to know at first sight to whom belong each account. In order to know who owned a wall and who was which avatar, participants asked through the room who was “test13” and discussed together orally. Users actually made a transfer between this connection name and a nickname letting them identify users in both physical and virtual worlds.

Retrospectively, we regret the creation of these generic accounts for the attendees. We should have taken time to create these account with them. Indeed, it appears to be very important to be able to create a nickname matching the idea each person has from his avatar.

Moreover, at a practical level, it would have been way better for regular attendees who lived a story with their avatars to have their own account. They could have continued at home the story they began during the workshops. This would also allowed the participants to picture easily the persistent aspect of virtual worlds.

In addition, it prevented them from discovering the complete process of avatars' creation. If we had the opportunity to coordinate another workshop on this subject, we would attach more importance to avatars' name.

IV. Communication in the physical and the virtual space of the workshop

A. At the crossroads of physical and numeric communication

Alongside building in OpenSim, we were witnesses of the set up of an important communication between the workshop's attendees.

At the opposite virtual world's classical case, where users are physically distant, the majority of persons present online were also in the same room. There was a lot of oral interaction through the room. Some participants wanted to ask their desks' neighbors for their opinion or show them their creation. A large part of the discussions also concerned virtual worlds' mechanisms.

Seeing others' work generated a very positive emulation between the attendees who asked how it was created. These exchanges were dynamic and concerned almost every member of the workshop, whatever their age. At the beginning, the youngest helped the adults, because they understood faster how works OpenSim. Then, older persons who stayed several days also spread widely their knowledge of virtual worlds through the group.

In addition to this oral communication, we noticed

that the participants were using the written chat system provided with OpenSim to communicate together, although they were in the same room, sometimes next to each other. It concerned generally children and teenagers who probably already used this system in video games, MSN, or in other chat rooms and were familiar with real time written discussion systems. Users behaved then as if they were doubly present, at the same time in the physical space and in the virtual world.

B. Avatars, vectors of communication in virtual worlds

Written communication between users present in the same room can also be explained by the existence of avatars. Talking in the virtual world and not orally introduce a certain distance : it gives the users the impression that it is their avatars, and not them, who are talking, which increases the immersion. They describe what their avatar think, which can be different from what they are thinking, in the same manner as in role playing games.[4]

When a participant told another he had beautiful hairs, it was from his avatar point of view and this was only applied in the virtual world context. The meaning would have been different if said orally.

We also observed the appearance of a new non-verbal communication form between workshop's attendees.

Quickly, users, whatever their age and familiarity with 3D universes, began considering the visual codes governing OpenSim and real-time 3D. For instance, they understood that when an avatar was raising his hand, particles linking its hand to an object, he was building, and that when an avatar was not moving with its arms extended, the user was customizing its avatar.

C. Reassessment of social hierarchy in virtual worlds

During this workshop, participants were set on an equal footing. They learned simultaneously OpenSim functions that are the same for everyone. We think the equality played a major role in the dialogue which was established between the attendees.

In these new worlds, the usual relationships, organized into hierarchy according to age, gender, profession, are questioned. This allows a renewed dialog. For example, a teacher learned building from children during the workshop. No one of them would have dare doing so in another context where hierarchy is more marked.

Contrarily to prejudices saying virtual worlds isolate their users, in the conditions of this workshop, we saw the set up of a strong relationship between attendees. They worked, discussed and created together without any complex related to age, gender or occupation differences.

V. Conclusion

The purpose of this workshop introducing virtual worlds was to make participants discover a technology and its possibilities for artistic creation. It finally appeared to us that the communicative aspect was the richest. Virtual worlds doesn't really encourage artistic creation but rather a form of community creation helping users to communicate, specifically thanks to the distance created by avatars and the physical sharing of a real-time 3D world.

It has often been said that what was allowing unusual meetings in virtual worlds was the protection offered by the lack of real identity and physical distance, as on the web in general (Facebook, MSN…). However, it is not the only parameter to consider. Indeed, the notion of real time shared and simulated 3D space allows unexpected encounters based, not on contacts (like in social networks) or search on precise criteria (on dating websites) but on the presence in the same shared space. These are meetings by proximity and they are related to the accident of virtual worlds exploration.

Shared experimentation of virtual worlds also creates a common point of interest encouraging dialog and modifying usual social hierarchy thanks to building and avatar customization.

It appears finally that virtual worlds can be used as tool for inter-generational and inter-cultural communication.

References

[1] F. Beau et D. Kaplan, Culture d'Univers, FYP, Limoges, 2007.

[2] N. Dimitriadi, De l'Utopie à l'e-topie. Emergence de nouvelles formes de créations ludo-artistiques et auto-évolutives en réseau, Paris, 2008.

[3] E. Castronova, Synthetic worlds : the business and culture of online games, University of Chicago press, 2005.

[4] E. Lelièvre, “Esthétique des avatars dans les univers persistants en 3D”, Revue Arts et Technologies de l'Image n°5, 2010.

[5] E. Couchot et N. Hilaire, L’Art numérique. Comment la technologie vient au monde de l’art, Flammarion, Coll. Champs, 2005.