Using Second Life as an eLearning platform

Case Study

EUROPEAN UNION
European Regional Development Fund

Investing in the future by working together for a sustainable and competitive region

The Interreg IVB North Sea Region Programme

Index of contents

Using Second Life as an eLearning platform 1
Virtual Worlds 3
What is Second Life 4
What we aimed for 6
Infowalk 8
What has been achieved 8
Conclusion 9

EXECUTIVE SUMMARY

This document outlines the goals, efforts and achievements of the Second Life virtual eLearning project. It further shows the experiences gained in the process of developing a prototype presence at the Jade University of Applied Sciences.

Virtual Worlds

Virtual worlds are interactive, simulated environments, which can be visited, used and altered from users from all over the world simultaneously using the internet. Virtual worlds are also referred to as digital worlds, simulated worlds or MMOGs (massively multiplayer online games). A user enters the virtual world by using a virtual body, the so-called avatar. The position of this avatar defines what the user will see and where other users will see the graphical representation of his avatar. The avatar can move around, interact with other avatars (i.e. communicate) and alter objects in the virtual surrounding (i.e. building or scripting). A virtual world is defined by following points:

1. **Shared World** : The contents of the world can be used and altered by multiple users simultaneously.
2. **Graphical User Interface**: The GUI allows the user to build and design in the virtual environment itself.
3. **Immediacy:** the executed interactions have an immediate effect on the environment so that all logged in users see the effects instantaneously.
4. **Interactivity:** the world allows for change, development and user based content. Users can communicate with each other via chat and/or instant messages.
5. **Persistence:** the changes to the world must have a persisting impact, regardless the number and time of logged-in users
6. **Community:** the world must allow for users to form groups (teams, guilds, clubs, roommates etc). Groups can have special

rights (i.e. the right to alter objects or place new objects or the right to visit certain locations). It must further support and advertise the social functions, for it is an integral part of the virtual world

What is Second Life

Second Life is a software product by Linden Labs (www.second-life.com / www.lindenlab.com). Linden Labs was founded 1999 by Philip Rosedale, aiming to create a unique form of exchange: a user-designed world which offers all the real-world possibilities in the digital environment: making social contacts, trading, exchanging and providing of knowledge. Second Life achieved exactly what Rosedale wished for: He believed that success derives from self-determined collaboration, creation and freedom.
Today, Linden Lab employs 330 people in the USA, Europe and Asia (Lindenlab.com, 2010)

Therefore, Second Life is more than just another virtual world in the Internet. Introducing the Linden Dollar and tying it to the real economy opened up a new economy sector. Like in the real life users have to pay rent for land to build upon. But users could also earn money by selling virtual goods (i.e. buildings, clothing, etc) or by providing services (i.e. teaching courses). Therefore Second Life offers features that surpass those of a normal MMORP by far.
Buying virtual real estate (-> server capacity) enables the community to design and build own buildings and place objects in the virtual

world, defining a „web presence“ in a complete new way. All objects in Second Life can be programmed, the so-called scripting. With scripting, objects can perform actions if a certain criterion is met, in example a door opens automatically if a user stands before it.

Beside altering the virtual world by placing objects in it the user could also shape the body of his or her avatar or alter the look of it by placing objects (clothing, jewellery, etc) on it. By allowing the user to fully create their own Avatars, the user can decide whether to reinvent or mirror him or herself.

A user can move his avatar around in the simulated 3D world on a so-called sim. Sim is short for Simulator, because each sim is normally computed on a dedicated server. Besides moving the avatar it is also possible to move just the viewpoint (camera) in the virtual world. Each sim consists of 65536 square meters of virtual land, which can be rented directly from Linden Labs for premium members (there is a monthly fee for the rented land and the premium membership). The sim is then named by the land owner (i.e. Eduversa) and can then be divided into smaller parcels, which can be leased to normal users. The whole Second Life universe is commonly called the grid, which is the sum of all available sims linked together. A user can store the location of interesting places in so-called landmarks or LMs for short. A LM consists of the sim name and the coordinates within the sim. By using a LM the avatar is transferred to the LM location, which is also called a teleport.

Users can meet other people and communicate with them by means of the exchange of text messages. If this exchange takes place in real time it is called a chat, but it is also possible to send messages directly to other users, even if they are offline by instant messages or IMs. IMs are also used if users want to exchange messages privately, because in open chat all nearby avatars could also read the text messages. It is also possible to use audio streams (called voice chat or just voice). The software client automatically adjusts the volume depending on the distance between the speaking and hearing avatar. This enables multiple discussions in the same room like in the real world.

Beside direct communication between avatars it is also possible to present graphical elements (i.e. a PowerPoint presentation or a video). However this has drawbacks: A PowerPoint presentation has to be converted to a series of images, which them must be uploaded to Second Life. Each picture upload has a fixed fee of 10 Linden dollars (approximately 3.5 Euro cent). This is a prohibitive price for large presentations. Video content could be streamed from any server in the Internet, but specifying this URL in Second Life requires a special right, which the landowner might not want to give away for security reasons.

What we aimed for

In the project we wanted to develop a virtual presence for the Jade University of Applied Sciences: By renting a piece of land on the

Eduversa island, our university should find a place among the other educational institutions present on the island.
Following the example of Universities like San Antonio or Harvard, we achieved to build virtual classrooms and meeting places for use as an eLearning platform. Besides establishing and building a prototype presence in Second Life we wanted to evaluate the platform for eLearning purposes and gain some understanding of running a virtual presence in Second Life.

The use of these places for users is free. Only a free software client, which is available for major OS (Windows, MacOS and Linux), and an free account for Second Life are necessary. However the use of real estate for our building is charged with a fee per square meter and also limited by the available number of prims (construction parts), which can be placed upon it. This is a negative factor for providing a permanent presence in Second Life, since monthly fees occur.

The process of setting up the software and user account is documented in a handout for students and other interested people. This handout also explains how to move around in Second Life and where to find our virtual presence.

To further guide new users and help them make their fist steps in the virtual world, members of the project team should regularly visit the virtual presence.

Infowalk

Another aim was to set up an informational walk with all required information about the study programs offered at the Jade University of Applied Sciences, also including real time information from internal databases. This information can also be transmitted via interaction and be stored in the users inventory. Generally it is possible to place links to web pages on objects, which will then be opened in a build-in browser. Also possible is the reverse direction by using SURLs which link positions within Second Life in normal Web pages. By clicking such a link a user who has installed the Second Life client will be transferred to the specified position in Second Life.

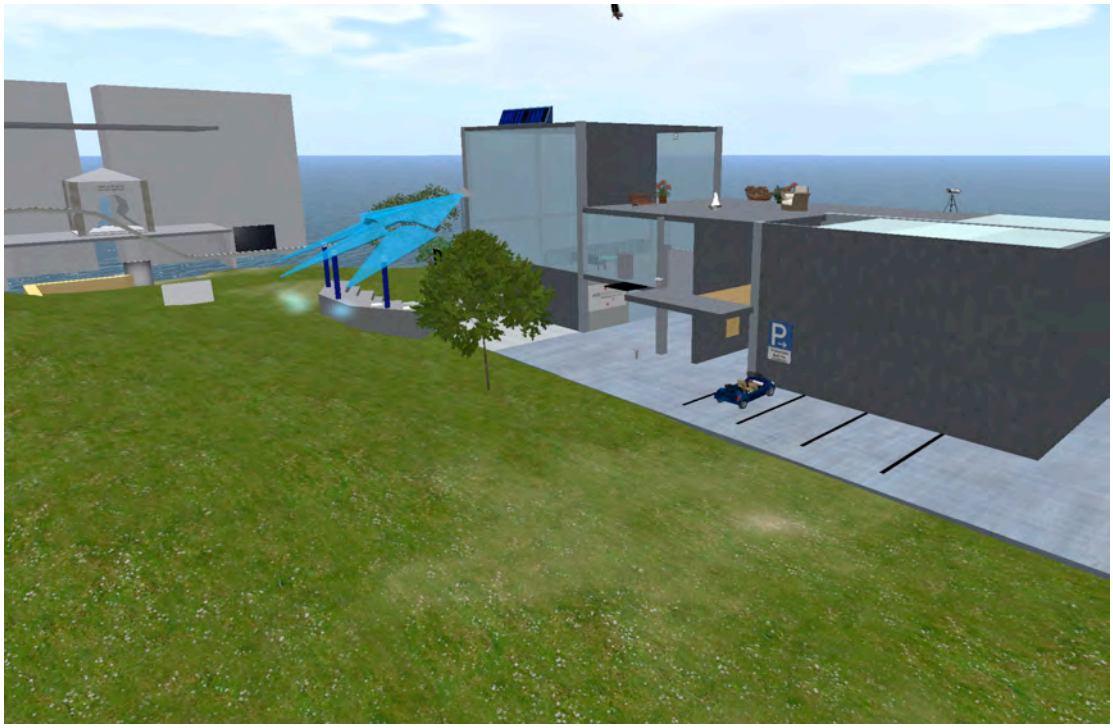
What has been achieved

During the project we formed the Jade University owned land and placed a virtual building upon it (Picture 1). The main building featured a lobby, a lounge and a meeting room including a projector. The information walk was placed on the ground floor. Certain objects (i.e. doors, elevator, projector…) are scripted and provide interaction with users.

Outside this building an auditorium for students with a projector, a small info area for the Design Challenge and a wind power plant are placed.

While running the project, members of the team regularly visited the building to guide new students and inexperienced users and answer their questions. This was also used to visit our virtual neighbours and other virtual universities from all over the world. The resulting discussions led to a deeper understanding of the possibilities and problems for using Second Life as an eLearning platform.

The project further used the meeting and classrooms for virtual meetings of e-clic members (Picture 2: Meeting room).



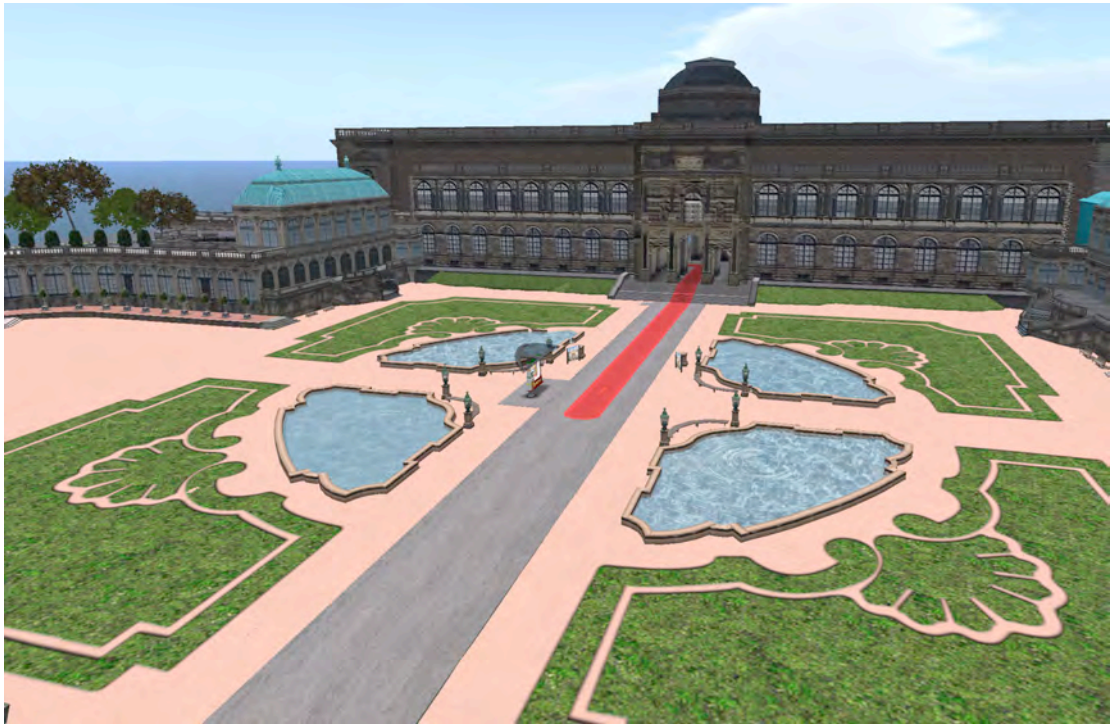
Picture 1: Building of the Jade University of Applied Sciences

Picture 2: Meeting room

Conclusion

The implementation of the building went as planned, but we clearly missed out on the Second Life Hype. The software had its highest point of interest a couple of years ago. Perhaps it would have been possible to draw more attention with better advertising, to get the students on the platform and create a digital space to learn and spend some leisure time. A great advantage was that the students could play an active role in designing that space. This is a strong motivational point for participating in the virtual environment. A small drawback was the requirement to install the software client and setup the user account at Linden Labs. There exist other virtual worlds, which are rendered directly in a web browser using VRML technology. This eliminates the need for a software client for the user

but hurt the rendering performance. The comparison and evaluation of other virtual worlds will be the subject of another case study. Another use for the virtual world are conference calls with multiple people using voice chat. There is no setup required and the use is very intuitive. This is far easier then using Skype for example. Besides using Second Life for eLearning purposes it is also a great tool for showing touristic attractions. A presentation at the local chamber of commerce clearly showed interest for such applications. Commercial examples for this type of application in Second Life are the virtual Zwinger from Dresden or the Isle Mont San Michelle in France, which are almost photo realistic (Picture 3).



Picture 3: Dresden Zwinger

Using voice chat it is also possible to conduct language courses. Due to the Internet it is possible to use native speakers as teachers. Even if users only use text chat it will improve their English language skills since English is the by far most common language in Second Life.

Problems arise from the cumbersome handling of multimedia content and the high fees for renting real estate and uploading content. Here the commercial interest of Linden Labs clearly shows. A way to overcome this limitation may be the Sloode project, which aims to link Second Life and Moodle, a wildly used eLearning system. In this system the student could download the course material directly from Moodle, thus avoiding the upload fees of Second Life. Using this system makes it also possible to restrict access to special courses to enrolled students only.
Another problem in heavily using audio and video streams is the required network bandwidth, which then increases dramatically. This lead to poor performance for users without fast Internet access i.e. DSL.

It is possible to restart the project using OpenSim on university owned servers but it has to be kept in mind that aims and roles have to be defined clearly from the very beginning. Who advertises, who scripts, who builds etc. This would eliminate the fees to Linden Labs completely but would also mean that avatars from Second life could not visit our presence. This would greatly reduce the number of potential visitors.

The idea of the project shows the development of digital life. Getting and distributing information happens more and more on the internet, universities start „digital only“ curricula and the social life is supported by networks like Facebook and not, as previously

assumed, reduced. Adding a virtual 3D world has become possible with increased network bandwidth and available computing power. The digital university definitely could become an interesting and frequently used platform.

This case study is based on a project that took place in the years 2009/10. Involved where Olaf Fischer, Udo Willers and the students Thomas Hauke and Sebastian Weiß.