Research on Virtual World

2010. 08. 11

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Talk Issues

• What is Virtual World

• Application of Virtual World
  – Tangible Baseball in Virtual World
What is Virtual World
Emerging of Virtual World
(‘08 ~ )
Introduction – Virtual Worlds

Second Life

Wonderland

Croquet
Virtual World


- **virtual world** is a genre of online community that often takes the form of a computer-based simulated environment, through which users can interact with one another and use and create objects.

- **Virtual worlds** are intended for its users to inhabit and interact, and the term today has become largely synonymous with interactive 3D virtual environments, where the users take the form of avatars visible to others graphically.
Main Features of VW

• *Virtual World*
  – Social Space (Social Media)
  – Avatar
  – Interaction among Users
  – **Persistent*** Virtual Environment

*Persistent: 지속되는*
Second Life®
Second Life

http://secondlife.com/
http://wiki.secondlife.com/wiki/Main_Page
Second Life®

- Second Life® is an on-line 3-D virtual world created by its Residents.

- Since opening to the public in 2003, it has grown explosively and today is inhabited by billions of Residents from around the globe.

- Linden Research Inc.
Why Develop in SL?


- The Virtual World Market Is Growing Rapidly

- A recent report from market research firm [Strategy Analytics](http://www.strategyanalytics.com/) predicts that the adult social virtual world population will grow from **11.5 billion in 2009** to 32.5 billion in 2015.
Second Life

• Server
  – Not Open Source

• Viewer
  – Version 2.1 (Beta Version), Jul 7, 2010
  – Version 1.23
  – Open Source
Secondlife - What Are Virtual Worlds - Intro to Second Life

OpenSim
OpenSim

- [http://opensimulator.org/wiki/Main_Page](http://opensimulator.org/wiki/Main_Page)

- OpenSimulator is a **3D Application Server**.

- It can be **used to create** a **virtual environment (or world)** which can be accessed through a variety of clients, on multiple protocols.

- OpenSimulator is released under a **BSD License**, making it both **open source**, and commercially friendly to embed in products.
OpenSim Server Download

• The current release is **0.7** (released on 22nd July 2010).
  – Windows, Linux

• In case of Mac OS, Version **0.6**

OpenSim

• OpenSimulator is written in C#, and can run under the Microsoft .NET runtimes.
Viewer

• **Hippo OpenSim Viewer**
  - The Hippo OpenSim Viewer is a modified [Second Life](http://secondlife.com) viewer, targeted at [OpenSim](http://opensimulator.org) users.
  - The current version is based on the official Linden Lab release **1.23.5**.
  - [http://opensimulator.org/wiki/Main_Page](http://opensimulator.org/wiki/Main_Page)

• **Second Life Viewer**
Croquet
Croquet Consortium

http://www.opencroquet.org/index.php/Main_Page

Welcome!

Croquet is a powerful open source software technology that, in the form of the Croquet Software Developer's Kit (Croquet SDK), can be used by experienced software developers to create and deploy deeply collaborative multi-user online virtual world applications on and across multiple operating systems and devices. Derived from Squeak, the Croquet system features a peer-based messaging protocol that dramatically reduces the need for server infrastructures to support virtual world deployment and makes it easy for software developers to create deeply collaborative applications. Cobalt® is a National Science Foundation-sponsored effort to develop an open source virtual world browser and authoring toolkit application based on the Croquet technology.

How to Help

- Become involved in the effort to build Cobalt®
- Contact us and let us know how you'd like to help.
Open Cobalt

http://www.opencobalt.org/
Features of Open Cobalt

• **Peer-to-Peer System**
• Open Source (MIT License)
• Multi-platform (runs on Mac OS, Windows, and Linux)
• Navigable 3D hyperlinking between virtual worlds!
• Integrated text chat (Jabber)
• In-world voice chat (speak with other users through VoIP)
• In-world web browsing
MIT License

• MIT 허가서(MIT License)는 미국 매사추세츠 공과대학교(MIT)에서 자학교의 소프트웨어 공학도들을 돕기 위해 개발한 허가서다.

• MIT 허가서를 따르는 소프트웨어를 개조한 제품을 반드시 오픈 소스로 배포해야 한다는 규정이 없으며 GNU 일반 공중 허가서의 엄 격함을 피하려는 사용자들에게 인기가 있다.

• 이 허가서를 따르는 대표적 소프트웨어로 X 윈도 시스템이 있다.
Open Cobalt Alpha (2009)

- [http://www.youtube.com/watch?v=1s9ldlqhVkM](http://www.youtube.com/watch?v=1s9ldlqhVkM) (3:43)
Wonderland
Open Wonderland

http://www.openwonderland.org/

http://en.wikipedia.org/wiki/Open_Wonderland

Open Wonderland is a 100% Java open source toolkit for creating collaborative 3D virtual worlds.

Use Open Wonderland to build your virtual world! Create dynamic learning environments, collaborative business applications, or interactive, multi-user simulations. Start with a blank slate, or modify an existing world. While some types of worlds can be created by end-users or 3D artists, this toolkit is designed primarily for developers familiar with the Java programming language. As a developer, you can extend any part of the system and add functionality by creating modules, the Wonderland version of plugins. Click the Browse button above to explore the extensions currently available in the Wonderland Module Warehouse.

support us...
Open Wonderland

• Java-based open source toolkit for creating collaborative 3D virtual world.
  – Version 0.5

• Within those worlds, users can communicate with high-fidelity, immersive audio, share live desktop applications, and collaborate in an education, business, or government context.
Introduction to Virtual Worlds

• [http://www.youtube.com/watch?v=1s9ldlqhVkM](http://www.youtube.com/watch?v=1s9ldlqhVkM) (5:36)
Application of VW
Role of Virtual Worlds in Real World Business

Shopping Safety

If the deal sounds too good to be true, it probably is.

If someone is offering to sell virtual land or items at a price that is significantly lower than the standard price, then you should use caution before making your purchase. This may be a sign of a scam or some form of customer abuse. If you are unsure, you can always ask to view the item or talk to the vendor to verify their identity.

When you attempt to pay for an item, you should use a secured payment method. This will ensure that your transaction is safe and secure. If you are unsure about the vendor, you can always ask for a reference or a referral from a trusted friend or colleague.

Also, most retail locations do not have live staff present to help with your transaction. If you wish to do a transaction, you should do it through the “About Land” dialogue box. This dialogue box
Role of Virtual Worlds in Real World Education

What is the Edusim?
The Edusim application is a slimmed down version of the core Open Cobalt Metaverse Project. Edusim is a 3D multi-user virtual world platform and authoring toolkit intended for your classroom interactive whiteboard (but equally powerful on the students laptop or desktop computers :)). Cobalt - Edusim has been tested and works on the Smartboard, Activeboard, Interwriter, Polyscreen, Mimio, eBeam, and even the Witeout Whiteboard. Edusim is extendable allowing multiple classrooms to connect their interactive whiteboards for collaborative learning session. Edusim as a concept seeks to model a new way to engage student by leveraging 3D virtual environments on the interactive surface or classroom interactive whiteboard. Read more about Edusim on Wikipedia here.
Role of Virtual Worlds in Real World

Collaboration

MPK20: Sun's Virtual Workplace
On any given day, over 50% of Sun's workforce is remote. MPK20 is a virtual 3D environment built using the Project Wonderland Toolkit. In this 3D world, employees can accomplish their real work, share documents, and meet with colleagues using natural voice communication. Just like on Sun's physical Menlo Park campus, known as "MPK," inhabitants of the virtual MPK20 office building can work together in planned meetings, or can talk informally in unplanned encounters. Unlike the physical campus, however, in MPK20, the community can be built and maintained without the constraints of physical location.

- Video Demos
- Project Wonderland open source community
- Download software
Why 3D for Collaboration?

• While it might be possible to build a 2D tool with functionality similar to MPK20, the spacial layout of the 3D world coupled with the immersive audio provides strong cognitive cues that enhance collaboration.

• In terms of data sharing, looking at objects together is a natural activity.

• With the 3D spacial cues, each person can get an immediate sense of what the other collaborators can and cannot see.
IBM

• Introduction to the opportunities and technologies
  – Virtual World
  – May 2009

• How virtual worlds can be applied within an enterprise to save money and time
Use of Virtual Places to Enable Business Activities

- Events
- Mentoring and knowledge exchange
- New employee orientation
- Rehearsals
- Software development
- Systems management
- White-board brainstorming
## Four “I” Characteristics of Virtual World

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Description</th>
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<tbody>
<tr>
<td>Integration</td>
<td>Linking virtual spaces with <strong>physical world, 2D web, mobile devices</strong></td>
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<tr>
<td>Interaction</td>
<td>Real time collaboration leveraging Web2.0 and <strong>social networking attributes</strong></td>
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<td>Immersion</td>
<td>Exploitation of senses and community to gain <strong>perception of being</strong> part of the environment</td>
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<tr>
<td>Interoperability</td>
<td><strong>Navigation between multiple virtual worlds and spaces</strong></td>
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Some More Thoughts about VW
Interesting Issues in VW

• Day and Night
• Concept of Time
  – More fast than Real World Time

• Policeman
• Crime
  – Criminal, Offender

• **Security**
  – **Personal Identity Issue**
    • In Real World, Same Person
    • In Virtual World, Can login as different avatars at the same time
    • Why to recognize?

• Secure
• Trust
• Legal (합법적인)
Virtual Life

• Virtual Life Project
  – Funded by EU Framework 7
  – 3 year Project
  – 3.3 Million Euro

• http://www.ict-virtuallife.eu/blog/?cat=8
Virtual Life

Secure, Trusted and Legally Ruled Collaboration Environment in Virtual Life

Sophisticated interactive objects in VirtualLife

For more pictures see our Gallery

About VirtualLife

VirtualLife project aims at developing a virtual world platform mainly focusing on security, democracy and collaborative aspects. Combining a virtual legal system with a strong security infrastructure and a peer-to-peer architecture, VirtualLife provides a digital 3D environment suitable for education, training, e-commerce, business and entertainment.

The research leading to these results has received funding from the European Community’s Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 216064.

LATEST NEWS

First VirtualLife workshop
On Tuesday, July, 20th, 2010 the First VirtualLife Workshop took place in Rome - Italy. The workshop was attended both by the VirtualLife Consortium and 10 external stakeholders.

more>>

Poster in the cyber-security session

First VirtualLife workshop (Invitation)
The VirtualLife Consortium is glad to invite you to the First VirtualLife workshop on the 20th of July, 2010 at 9.30 am at Nergis Sr.

more>>
Virtual Life

• The VirtualLife consortium has just released the official VirtualLife demo video;

• it contains general information about the platform and its architecture, together with a general overview of the work in progress and future features.

• The video also show the high level of 3d graphics of this virtual world.

• Version September 2009.
VirtualLife Virtual World
Platform Demo

• [http://www.youtube.com/watch?v=iueJh3iWoHs](http://www.youtube.com/watch?v=iueJh3iWoHs) (5:10)