Tour a Virtual World

an intro & demo of Second Life

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What is a Virtual World?

Let’s try this definition:

An internet-based, multi-user, 3-D simulated world that enables creativity, innovation, collaboration, socializing, and self-government.
Why is this interesting?

• We are in the very early days of VR technology.

• It is useful now for
  – Collaboration
  – Visualization
  – Training
  – Public Outreach

• The future is probably in the merger of the VR technology and the web.
Some Virtual Worlds out there

- Qwaq
- IMVU
- There
- Active Worlds
- Kaneva
- Second Life
What is Second Life?

• Online Virtual World created by Linden Labs in 2003.
  – Financial backers include M. Kapor, J. Bezos, P. Omidyar.
• The environment is similar to VR worlds described as the “Metaverse” in 1990’s cyberpunk novels and Gelernter’s *Mirror Worlds*.
• Content is created by its users = residents.
• Currently there are 13 million residents with 50,000 logged on at any given time.

*Photo credit: Harper Beresford*
But, what is it really?

*Second Life is real life but you can fly.*
Some more...

• SL is an MMORPG <Massively Multiplayer Online Role-Playing Game> but there are no roles and it isn’t necessarily a game.

• SL is a glorified 3-D chat room.

• SL is Web 3.0 or the 3-D Internet.
Components of SL

- **Avatar**: your virtual representation or self
- **Regions**: islands that can be owned/rented
- **Objects**: items residents create and build
- **Landmarks**: places to visit (x,y,z)
- **Inventory**: items you have such as objects, clothing, flashlights, scripts
- **Commerce**: money L$ = Linden Dollars
  
  US$1 approx L$270
"The yen is up, the dollar is down, the franc is all over the place. The only currency I’m comfortable with are my Linden-Dollars in Second Life."
How to communicate

- Local text chat - public
- Instant Messaging (IM) text - private
- Voice Chat - public
- IM Voice Call - private

Photo credit: Harper Beresford
Recording in SL

- Chats and IM’s can be captured
- Snapshots can be stored and emailed
- Videos can be made - the art of machinima
- Where you have been in-world

Photo credit: Harper Beresford
Multimedia in SL

- Streaming Live and On-Demand Audio/Video
- Podcasts
- Slides
- Web Links
- Documents
Other universities in-world

More than 225 universities have presences in Second Life.

Just to name a few…
• MIT
• Stanford- Virtual Human Interaction Lab
• Princeton
• Harvard
• Cornell
• USC
• Tufts
• Rice
• UC Berkeley
• UC Santa Barbara
• University of Washington
• Virginia Tech

• Hong Kong Polytechnic
• Dartmouth
• Duke University
• Texas A&M
• University of Texas
• University of Denver
• Pepperdine University
• Penn State
• Ohio State
• Vassar College
• Cal State Pomona
• University of Notre Dame

Et cetera……
Who else is there?

- United States Government
  - Military
  - Homeland Security
  - Center for Disease Control
  - Congress (hearing in April)
  - NASA including JPL
  - NOAA <National Oceanic and Atmospheric Administration>

- Foreign Embassies
  - Sweden, Estonia, Maldives

- Political Campaigns <official and unofficial>

- Foundations & Societies
  - NSF, MacArthur Foundation, American Cancer Society, Alzheimer Society
Who else is there?

- Libraries
  - University, Public, Private
- Museums
  - Art, Historical Maps, Holocaust
- Corporations
  - Cisco, IBM, Xerox, Phillips, Sears, Dell, Mazda, Coca-Cola, Adidas
- News Organizations
  - NBC, Reuters, CNN
Why is this interesting?

• Collaboration
  – meetings, conferences, teleconferences
• Visualization
  – 3-D models, animations
• Training
  – equipment, lab techniques, software
• Public Outreach
  – tours, meet people, lectures
What kind of events?

• Lectures
• Conferences
• Meetings
• Spacecraft launches & landings
  – May 25, 2008, Mars Phoenix Landing in SL
• Concerts
Neutron Star

A few times the mass of the Sun, only 10km across. Held up by neutron degeneracy pressure. Mind-bogglingly dense.

Neutron stars are sometimes observed as pulsars.

The Crab Nebula in X-rays from the Chandra Space Telescope

The Crab Nebula is the remnant of a supernova observed in 1054.
Public Talk

Caltech professor gave a public lecture at Feynman’s 90th Birthday Celebration in SL on May 10, 2008.

> 60+ avatars attended.
> Lecture included slides and audio.
> Professor only needed: SL application, uploaded slides, internet connection, & headphones.

Photo credit (above and below): Harper Beresford
A Theory of the Universe

Gravity is the only important force at large distances, thus a theory of the Universe must be a theory of gravity.

In 1911 - 1917, Albert Einstein developed a revolutionary new theory of gravity, the General Relativity.

The mass-energy determines the geometry of space, geometry of space determines the notion of mass-energy.

Thus, the matter and energy content of the Universe determines its evolution, and the space is not static.
Explore

- Mars Victoria Crater
- Lava tubes in northern CA
- Celestial sphere
- Architectural spaces
- Maps
- Underwater terrains
- Inside a hurricane
- Innovative art
How to get started
Minimum PC Requirements

• Cable/DSL internet connection
• Windows 2000, XP, or Vista
• 800 MHZ Pentium III or Athlon, or better
• 512 MB of Memory
• 1024 x 768 pixels of screen resolution
• Graphics Card:
  – (XP/2000) NVIDIA GeForce 2 or 4 MX, ATI Radeon 8500, 9250, Intel 945 or better
  – (Vista) NVIDIA GeForce 6600, ATI Radeon 9500, Intel 945 or better
How to get started
Minimum Mac Requirements

• Cable/DSL internet connection
• Mac OS X 10.3.9 or higher
• 1 GHz G4 or better
• 512 MB of Memory
• 1024 x 768 pixels of screen resolution
• Graphics Card:
  – ATI Radeon 9200, ATI Radeon X Series, NVIDIA GeForce 2 or 4, NVIDIA GeForce 5000 Series or better
How to get started
Minimum Linux Requirements

- Cable/DSL internet connection
- Modern 32-bit Linux environment
- 800 MHZ Pentium III or Athion, or better
- 512 MB of Memory
- 1024 x 768 pixels of screen resolution
- Graphics Card:
  - NVIDIA GeForce 2 or 4 MX, ATI Radeon 8500, 9250, or better
How to get started

• Get a free account at www.secondlife.com
• Download application
• Go through the orientation island
• Search for Groups and join
  – Caltech SL Developers group by IM’ing Celeste Brimm
• Explore by searching keywords in “Places” or “All”
• Freebie stores for free clothes and avatars, skins, etc.
Thoughts & Discussion