



## Introduction

Second Life is an online virtual world. First released by Linden Labs in 2003, Second Life is a metaverse filled with opportunities for networking, teaching, experimenting, and even making money.<sup>1</sup> To some it may seem like just another electronic game, but in this world people create avatars—digital representations of themselves, who they would like to be, or just about anything else—and do what they would do in the real world and far more. Avatars can even fly in Second Life! Residents of Second Life purchase products, meet new people, visit various facilities, and exchange ideas. It is free to download and join, but there are plenty of opportunities for residents to spend money acquiring items both in-game and in real life. In fact, an entire economy exists in the game with residents spending “Lindens”—Lindens and dollars can be exchanged through the Second Life bank Lindex.<sup>2</sup> As shown in the box below, Second Life use is widespread and growing!



### Second Life Statistics (through April 2007)

- 5,973,301 registered users
- US \$7,190,159 exchanged
- >20% growth/month
- Active users spend about 40 hours/month in game
- 579.42 km<sup>2</sup> of land
- Exchange rate: L\$268/US\$1
- Age of avatars:
  - 18-24: 26%
  - 25-34: 38%
  - 35-44: 21%
- Gender of avatars:
  - Male: 57%
  - Female: 43%

Sources:

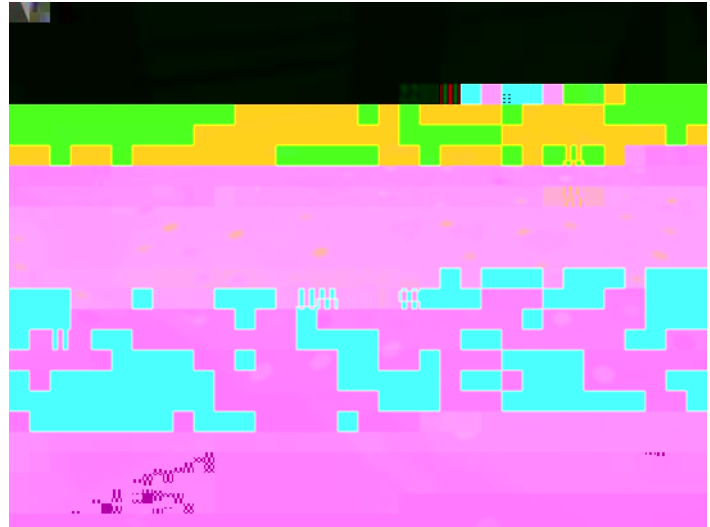
## Review of Agency and Company Activities in Second Life

### National Oceanic and Atmospheric Administration (NOAA):

NOAA's simulation is called Meteroa. On this island sim, avatars in Second Life can find fully interactive educational demonstrations about the ocean and weather. Examples include a sea life submarine ride and two different tsunami demonstrations. Other features include a demonstration of a real-time weather map, an airplane ride into a hurricane, a weather balloon ride, and a melting glacier demonstration.

View a video of a Tsunami demo at: <http://media.putfile.com/Tsunami-45>

The weather map on NOAA's Second Life island works by way of dozens of scripted reporting stations dotted all over a map of the United States. (See Fig. 1) These stations retrieve METAR<sup>3</sup> data from NOAA every eight minutes, which they then decode and render into models of the appropriate weather phenomenon for the area. All sorts of cloud cover and precipitation models are available as well as





## IBM:

IBM has been researching and experimenting with virtual worlds to understand, among other things, the importance of visual imagery to convey information and a vast range of other aspects of human interaction with visual and virtual spaces. IBM believes virtual worlds and gaming will have a huge impact on IT, business, society and our personal lives in the very near future.

IBM is looking into what it would be like if corporate planners were able to experiment with models of their suppliers, customers, and employees in a virtual world. Such virtual business worlds could go far beyond today's simulations. They could simulate entire ecosystems, each one evolving as streams of data flow in from the real world.

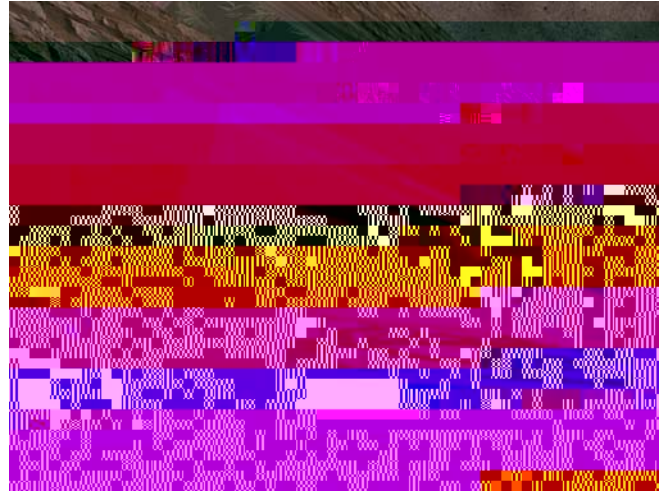


Figure 3: "The future of computer games," IBM facility.

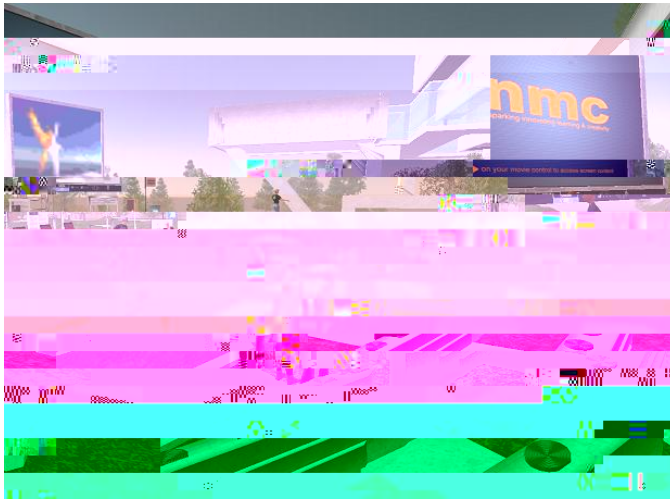


Figure 4: IBM virtual amphitheater.

IBM is already holding meetings and conducting development inside virtual worlds with about 20 major clients, including telecommunications and aerospace firms, a petroleum company that wants to use virtual worlds for training and "a major grocer in the UK" that wants to build a virtual store that will allow consumers to buy real-world groceries online.

So far in Second Life, IBM has set up a simulation of the Wimbledon tennis tournament, using data that tracks the position of the ball to reenact points several seconds after they happen. It has also held virtual events such as an IBM alumni reunion.

Slurl or teleport to a location in Second Life: <http://slurl.com/secondlife/IBM%207/99/132/24/>

*IBM has set up a fairly nice facility within Second Life. Its launch brought a lot of attention, but like most of these destinations within Second Life, I did not see any other avatars during my visit. There is some information about computer game initiatives that might prove to be interesting (see Fig. 3), along with some presentations on innovation. The presentation of information in IBM's space is far more inviting than at the CDC facility. The IBM facility feels much more like a destination than a three-dimensional version of a website. (See Fig. 4)*

## Dell:

Dell Island is much more a store-front than an information center. (See Fig. 5) Visitors to Dell Island will be able to examine Dell products in an interactive, three-dimensional way. They can rotate, change colors, and look at the inner components of a Dell PC. (See Fig. 6) The Second Life stores are also linked to the Dell.com e-commerce system. Residents can build and order a computer in Second Life and have it delivered to them in real life. The first in-world resident to order their PC from Dell will get it for free.



Figure 5: Dell Island courtyard.

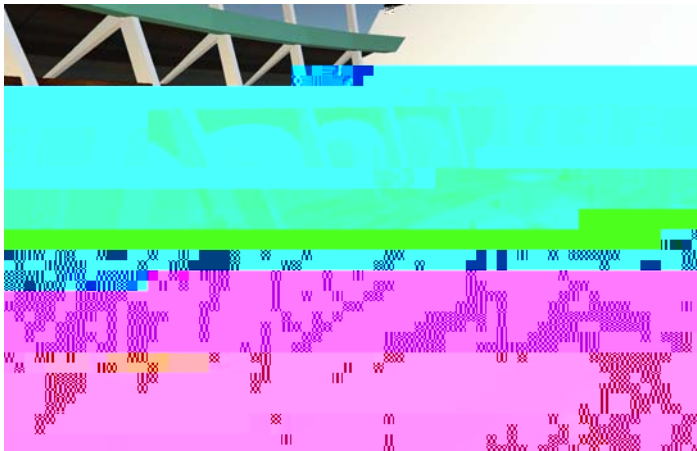


Figure 6: "Drawing boards" on Dell Island.

Dell received heavy criticism for an in-game promotion of its *Plant a Tree for Me* environmental program. Dell's real world promotion solicits donations from PC buyers to plant trees to offset the carbon produced during the manufacture and use of the system. In Second Life, Dell gave away virtual trees which users could plant on private land and determine the rate at which they grew. However, the virtual tree planting program does nothing to reduce actual carbon emissions. Because the Second Life tree is effectively a software application that requires computing power to grow and show up in the virtual world, critics argue the in-game program is likely *increasing* Dell's carbon emissions. Dell's program

illustrates the importance of adequate analysis of forays into Second Life so as to avoid seemingly meaningless involvement in the game.<sup>6</sup>



## **What could EPA do in Second Life?**

Based on the review of Second Life activities by other government agencies and companies, below are suggestions for ways that EPA could productively engage in this growing virtual world.

- Establish a minimal presence like that of CDC, providing information about EPA and its programs.
- Hold regular events in an EPA facility in Second Life. These events could mirror actual events in the real world or be dedicated events in the virtual world.
- Use Second Life for brainstorming meetings between headquarters and regional offices or between EPA's research labs.
- Set up an interactive island with models and simulations (see Fig. 8)
- Use Second Life to study environmental management approaches such as tax credits, recycling programs, labeling, etc.
- Set up an in-game carbon offset program for residents to offset their SL activities and real-life activities.



## **Concluding Thoughts**

*In sum, my explorations in Second Life have shown that there is certainly room in this “metaverse” for educational facilities. However, they can easily be constructed and presented in uninspiring ways that will lose the attention of visitors almost immediately.*