



# Down the Rabbit Hole

*...or how the NMC took the red pill, got a Second Life, and found love on the 3D web*

A speech by Larry Johnson to IBM executives, February 15, 2007

Over the past year, the New Media Consortium (NMC) has conceptualized and built a virtual campus in Second Life where they have been exploring the potential of this virtual environment for serious work and knowledge sharing. NMC's commitment to the project is long-term, and the effort includes not only a fully-realized campus in SL and a thriving community of more than 2,000, but also a full-services development subsidiary, several active blogs, and a technical infrastructure of streaming servers, audio and video capture devices, and more.

Last fall, NMC expanded its holdings for the NMC Campus estate twice, and now the campus has grown to encompass more than 30 sims or "islands." Included among the resources there are a theater and performing arts complex, a life sciences complex, a museum, a planetarium, a library, classrooms, three amphitheatres, dozens of places to gather and meet, and much, much more. The NMC Campus estate is now the largest educational presence in Second Life by far.



Those of you who are fans of the *Matrix* trilogy will recognize the title of my remarks as being drawn from the conversation, illustrated here, where Morpheus gives Neo, who had been having, shall we say ... a very bad day... the choice of two pills, one red and one blue. If he took the blue pill, he'd wake up in his bed the next day, as if nothing had happened. If he took the red pill, however, he'd leave all he knew before and embark on a journey from which there was no return — at least when Alice went down the rabbit hole in Lewis Carroll's 19<sup>th</sup> century fantasy, she eventually woke up back at home.

For someone who never spent any time in virtual worlds or games before getting an account in Second Life, yet now, barely a year later, finds himself among the top 20 landowners there, I wonder which of those experiences will be closer to mine.

*"But I don't want to go among mad people," Alice remarked.*

*"Oh, you can't help that," said the Cat: "we're all mad here. I'm mad. You're mad."*

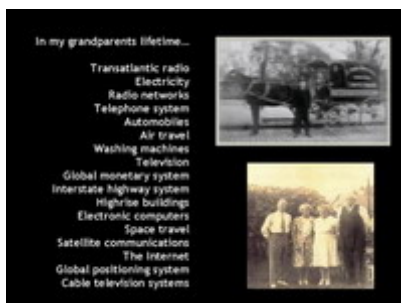
*"How do you know I'm mad?" said Alice.*

*"You must be," said the Cat, "or you wouldn't have come here."*



*"But I don't want to go among mad people," Alice remarked.  
"Oh, you can't help that," said the Cat: "we're all mad here. I'm mad. You're mad."  
"How do you know I'm mad?" said Alice.  
"You must be," said the Cat, "or you wouldn't have come here."*

Madness it may be, but come with me down the NMC's little rabbit hole ...



I often use this slide to set the stage when I talk about change and emerging technologies. These are my grandparents, and their lives paralleled the 20<sup>th</sup> century — they were all born in either 1901 or 1902, and lived into their 90s. On the left is a list of some of the ideas and technologies that were new for them ... radio, electricity, telephones ... cars and the roads upon which to drive them ... planes, space travel ... television, computers, space travel ... the Internet, GPS ...

It is hard to even imagine the scope of change that can occur over a period of time like that, much less its impacts. I often wonder what my grandkids will write about my century — I was born at the midpoint of the 20<sup>th</sup> Century, in 1950. My grandparents and I will share listings for some things ... computers, GPS and the Internet ... and as you'll soon be able to tell, I am convinced that the 3D web will be on that list as well ... but I am getting ahead of myself.



My organization, the New Media Consortium, is a group of world-class universities, but also museums, research centers (Almaden is a member), and other institutions interested in emerging technologies and their applications for learning. The NMC focuses on gaining an early understanding of interesting developments, and leveraging those efforts into demonstration projects that our members can learn from.

We describe ourselves in pioneer terms sometimes, as the folks with the machetes clearing out the underbrush to cut paths into the jungle of emerging technology. We do that in several ways, and those efforts are what led us to look at educational gaming.

We began in a typical academic way... we had a conference on the topic at Yale in the fall of 2005. I was amazed at two aspects of that event...first that the sessions were so rich and engaging —clearly there was some very good work going on — and at the reaction of the audience. Every session was full and overflowing, with standing room only.



Our work with the Horizon Project that same fall demonstrated that the interest in educational gaming was widespread, and as a result, the topic was featured as one of six areas to watch in the 2006 Horizon Report. The NMC generally picks one or more of the topics from each year's report to flesh out into a demonstration project, and so in late 2005, we began to look for a platform upon which we could do something interesting.

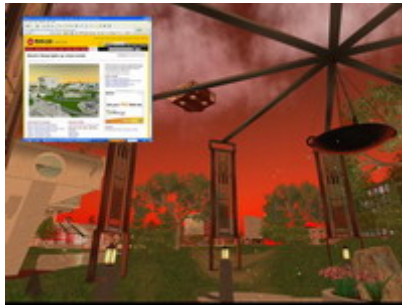
We looked at all kinds of platforms, games, game engines — even non-computer games. We quickly zeroed in on virtual worlds as the area we wanted to explore, and looked at all the various options that existed there at the time.

When we saw Second Life, we had a reaction similar to all of you, I imagine. We instantly saw that something interesting was happening there...not the least of which was that it had an *economy*. That economy served many purposes, but the



one that interested us the most was that it had allowed the growth of an artisan subculture — - many of those artisans were really, really good — and in some very interesting ways, their work supported and fueled an incredible culture focused on creativity and expression.

We embarked on a research project to learn more and get some “on the ground” experience, and aimed to do several things. We knew we were neophytes — there was much to simply learn — but we also knew there were things we needed to do if we were to be successful.



We needed to convey an immediate impression from the work we did that it was not only possible to engage in serious activity in a virtual world, but that it was desirable.

For the NMC, a community of technologists and futurists, but all designers at heart, that meant that we needed a virtual location that not only would be beautiful to look at, but one which conveyed a sense of gravity and purpose while looking great.

In February 2006, we set about doing all that. At the core of the project was a set of research questions:

- How do you do serious work in a playful space? Is it even possible? If so, what are the factors that make it successful?
- What supporting tools and technologies are essential?

We thought carefully about what it even meant to have a virtual campus. In the end, we realized we needed elements from our real life work to help “set the stage.” As such we have a full-functioning museum, a library, a planetarium — and of course dozens of meeting spaces — we used a matrix to ensure we had the full range of possibilities, from formal to informal, to playful, and so forth.

Spaces	Presentation	Discussion	Hands-On	Demonstration	Tour
Formal	●	●	○	○	○
Reflective	○	●	○	○	○
Waterfront	○	●	○	○	○
Playful	○	○	○	○	○
Creative Work areas	○	○	●	●	○
Learning Spaces	○	●	○	○	○

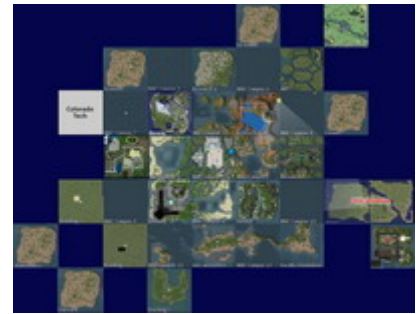
● = ideal  
● (with dot) = requires support  
○ = not suited

Early on, we spent hours just framing our language. We did not even know how to approach a serious conversation about what we were trying to do, and wanted to be very careful not to turn people off. For example, we avoided describing the places we were building in Second Life as “islands” — we called them “sims” and took care to explain that they were actually servers that were connected to several thousand other servers in a huge grid.



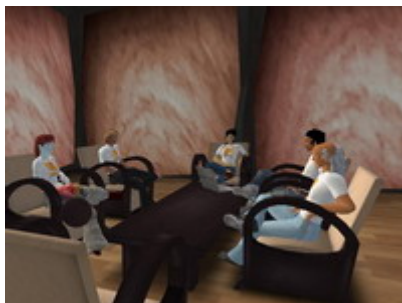
Since we launched NMC Campus in April 2006, we have held dozens and dozens of events, with groups as small as two and as large as 1300 to experiment with the supporting technologies and learn how to approach the craft of convening people around ideas in a virtual world. A bit of trivia — the Global Innovation Jam that led to IBM’s current \$100 million company-wide focus on virtual worlds was held on the NMC’s campus in Second Life.

To make a long story short, we did learn a lot, and we were successful on many levels. That success led to an initial expansion from one sim to 9, and then again to 30, and just a month ago to the creation of an entire new business unit, which we call NMC Virtual Worlds. The satellite view of the NMC estate is at the left, and we're still growing as universities and others join with us. It has been an amazing year by any measure.



The full scope of the research we did is a conversation for another time, but I will summarize three key things that we think are vitally important insights into Second Life culture:

- **Second Life is inherently social.** More than anything, it is the simple set of social networking tools that makes this virtual world platform enjoy an unparalleled success. These tools are also fueling a similar explosion on the flat web, and the growth of Second Life cannot be separated from the phenomenon that is powering MySpace, YouTube, and other flat-web mega-hits.
- **The world of Second Life is 100% user-built.** Residents are immensely proud of this fact. It adds an unpredictable dynamicism that is at the core of Second Life's popularity. It's not unlike another hugely successful network —the World Wide Web — which is also based on a simple set of richly expressive tools. Indeed, ...
- **Second Life is inherently expressive.** The platform not only allows the use of rich media, but fosters a blending of artistic elements that plays out across every dimension of the space. It has been the springboard for entirely new forms of media, art, and performance.



More than anything, however, what makes Second Life interesting is how it has changed how we think about interaction and interactivity. Interactivity used to be about mouse clicks — now it is about people and the exchange of ideas, thoughts, and feelings.

My organization has an almost completely distributed workplace. Most of the staff, including myself and all the senior staff, work from home or the road, and we have people working from offices in 4 states and the UK, in addition to those working at the headquarters offices in Austin. We use our campus in Second Life often as way to meet — an early staff meeting is pictured here.

I describe the kinds of interactions that I've observed and experienced in Second Life as "high fidelity." The term, if you don't know it, dates back to the days before stereo, when recording technology was still fairly young. What they meant was that the recording was a "pretty good" representation of the real thing.





The experience of human interaction in Second Life, as anyone who has experienced a hug there will tell you, is “pretty good.” The Second Life hug is a high-fidelity representation of the actual experience, and even though no one would confuse a virtual hug with a real one, the virtual one will still make you respond in the same way — it evokes a remarkably warm and fuzzy “feeling” of being hugged. (It is also the “killer app” that launched the remarkable career of Anshe Chung, Second Life’s most famous entrepreneur.)

People choose to be in a virtual space for the same reasons they choose to be in any space. Just like the ways people inhabit a real space, a person who places his or her avatar in a virtual space is *extending* him or herself into that space. They do it in a way that communicates something relevant about them — who they are, the image they wish to convey; there is body language in Second Life. They bring along a sense of personal space, and others respect it. To test that, watch when someone accidentally bumps into another person’s avatar; an apology invariably follows.



You can test the importance of personal space in the virtual world easily. If you stand too close to someone, they will move. If someone stands too close to you, you will feel uncomfortable. Similarly, allowing someone into your personal space is a way of communicating intimacy or closeness.

These kinds of cues are simply not present on the flat web. This sort of experience is what is new here. If you are looking to boil down the essence of why Second Life works, it is that human interaction is not only possible in new ways — it even “feels” like you are interacting.



Another simple test....note the behaviors you see as people gather for a meeting in real life, and compare the behaviors to those at a virtual meeting. They are the same. People compliment each other on their outfits, or their hair; they exchange things; they choose who they prefer to sit next to.

For me, when I realized this, I felt like I had discovered some sort of magic pixie dust that could be sprinkled over online experiences — and it would make them more engaging!

If I were to list the one essential reason that I believe that the 3D web is going to take off, and take off like a rocket — it is that pixie dust. **Now we can add realistic and high-fidelity human-to-human interaction to the mix of tools we use to design online experiences.**

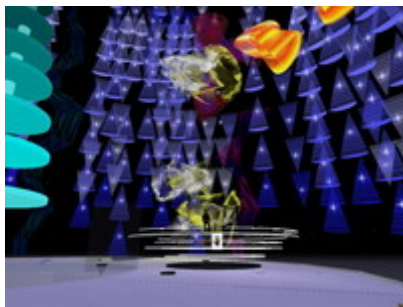
When people extend themselves into virtual space by inhabiting an avatar with the expressive abilities of a platform like Second Life, they are present in that space in a fundamentally new way. We are just beginning to understand how that changes the equation, and what kinds of new things it makes possible.

We have a lot of work to do, to be sure. I think we are in a period of time with virtual worlds that has striking parallels to 1994, when the web was young and just beginning to demonstrate significant growth. Today, in 2007, it is hard to even imagine how things were back then, so I went to the *Wayback Machine* for this reminder of what IBM.com looked like back then. In the current sense of the term, there was no e-business at all being done there yet.



Of course, today, the web is everywhere, and business uses of it are well understood.

But back in those days, when businesses began to pour into the web at an unprecedented pace, ideas like intranets, extranets, VPNs, enterprise level e-business systems, backend integration ... all were yet to be built. When they were built, it is not unkind to say that they were clunky and inefficient by today's standards — kind of like how things are on the 3D web today.



We now face a very similar set of challenges for the 3D web. All these things will need to be rethought and reconfigured, with the organizing mechanism not TCP/IP, but grid computing. The growth of the world wide web was amazing, but it is likely that the growth of the 3D web will be even faster. Ahead of business, already new forms of art are emerging at an incredible pace, art uniquely suited to and only possible in 3D virtual space, like this performance by an in-world troupe called the ZeroG Skydancers.

The growth of Second Life over the past year has been amazing, no matter how you interpret the numbers. When I first came in world in late January 2006, there were 150,000 residents, and a few thousand online at any given time. As I finalized these remarks in February 2007, there were 3.6 million residents, and concurrent users had topped 40,000 at least once in the last 10 days.

But resident statistics are just one measure, and there is some controversy around them. Let me offer an alternative view of growth, one focused on what colleges, universities, and companies are doing. These entities buy "islands" — sims — to establish their presences, and there is no fuzziness in the numbers of islands added each month. In November 2006, 558 sims were brought online; three months later, in January, 2007, 779 sims were added — 25 every day.

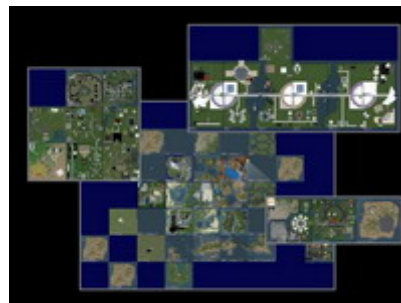


That is a 90-day growth rate of 40%.

In my experience, once an organization finds traction in Second Life, they expand quickly.

Some case studies from the education world:

- *Info Island* began with one sim, now it has 8
- The *International Space Museum*, launched on SpacePort Alpha, now is building *SciLands*, a science-focused collection of more than a dozen sims
- Ohio University began with one sim, grew immediately to two, and is now expanding to 7.
- MIT has barely begun planning for its first sim, and is already thinking it may need new sims for expansion.

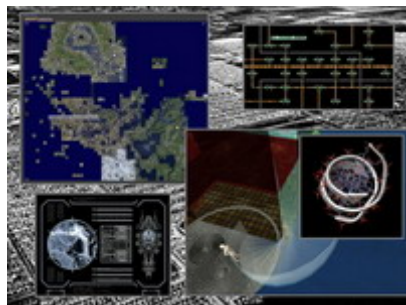


My own organization's experience mirrors this. NMC has grown from one to more than 30 sims. Commercial interests are experiencing the same effect: IBM's early "under the radar" efforts on Almaden (a partnership with NMC) have now expanded to more than 15 sims.

In response to this increasingly predictable growth, NMC launched a new business unit, NMC Virtual Worlds, expressly to meet the demand for virtual development services of educational institutions in general, and its members in specific.

We see the expansion of the grid as a certainty, and we've reached what we think is a vitally important conclusion as we watch the unrelenting growth in the grid and the overall expansion trends we seeing.

### **We need to be planning now to build grids.**



Islands are proving to be just toes in the water for organizations. Quickly organizations are beginning to think about the 3D web from the enterprise level. Things will get really interesting when we start linking grids to grids.

Not to mention the myriad of opportunities for learning and commerce, a great many issues for companies and educational institutions could be solved if they owned their own grids, including issues of security, ownership, and IP.

And so, as soon as they can, organizations exploring the 3D web are demonstrating they want to build their own entire grids. and interconnect these to each other and to commercial platforms like Second Life. And they will again be led at first by universities — just as these institutions were the first to embrace the Internet.

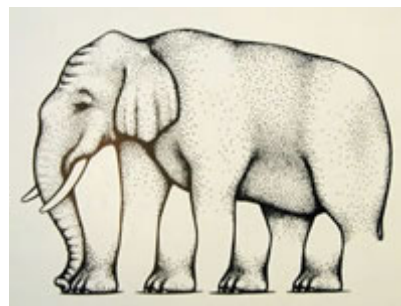
There have been some interesting recent developments on this front. In early 2007, Linden Labs released the Second Life client into open source, and developers have already begun to respond with alternative clients, such as one by the University of Michigan that supports stereoscopic imaging. While Linden Labs do not yet plan to release their backend code into open source, clearly there are incentives for others to develop similar code, and they are doing so. Linden Labs is fueling this interest by specifically allowing such grids to connect to theirs.

Just as the web exploded as companies and educational institutions added web servers all across the organization, enterprise grids will allow the development of virtual spaces across the entire range of their activities.

That is the future I see — a web of grids all interconnecting and the development of vast virtual worlds. There are many issues to be solved, to be sure, but seeing so many leading universities and companies like IBM so engaged in the early development of the platform is most encouraging.

In 2050, if my grandkids sit down to list the innovations that occurred over my lifetime, I'd want to see the 3D web on that list, and I'd want them to know the excitement we all felt when it was just beginning. I think it has the potential to change everything.

That is a pretty strong statement, so I'll temper it with a simple caution for all of us as I close. In many ways, what we are embarked on reminds me of that old Hindu poem about the Blind Men and the Elephant. As we all learn our way around the elephant that is the 3D web, let's hope we can avoid the fate that befell this poor pachyderm when it was reconstructed. All seems right on first glance...but as you can see, even though all the pieces and parts are there — this particular elephant will never get very far.



Let's be sure ours can run!



**Laurence F. Johnson, Ph.D.** (Larry) is Chief Executive Officer of the New Media Consortium (NMC), an international consortium of nearly 250 world-class universities, colleges, museums, research centers, and technology companies. The NMC dedicates itself to finding ways for new technologies to inspire, energize, stimulate, and support learning and creative expression. He is an acknowledged expert on the effective application of new media in many contexts, and has worked extensively to build common ground among universities, museums, and research centers across North America and in more than a dozen other countries.

---

## **The New Media Consortium**

*sparking innovative learning and creativity*

2499 S Capital of Texas Hwy  
Building A, Suite 202  
Austin, TX 78746-7762  
tel 512 445-4200  
fax 512 445-4205

email [johnson@nmc.org](mailto:johnson@nmc.org)  
web [www.nmc.org](http://www.nmc.org)

*View a 5-min video about the NMC's virtual campus in Second Life:  
<http://media.nmc.org/sl/video/seriously-engaging.mov>*