

# Towards Supple Enterprises: Learning from N64's Super Mario 64, Wii Bowling, and a Corporate Second Life

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## ABSTRACT

We argue that work environments need supple interfaces, that nascent forms can already be seen (e.g., in the form of social software and the recent emergence of interest in game-like interfaces), and that true supple interfaces will be prevalent in such environments in the future. We briefly consider the user experience of three examples: Nintendo 64's Super Mario 64 game, the Nintendo Wii system bowling game, and IBM's emerging presence in Second Life. From these we extract and discuss dimensions that seem to contribute to the experience, including physical interaction, expressiveness, engagement, and social context.

## INTRODUCTION

In an interview with Ray Ozzie in 2005 [5], one of us asked how soon he thought social software and other leading-edge forms of collaboration would penetrate the business world. He expressed doubt that many interesting things happening on the net would find their way into business environments and attributed this to various factors, including the greater need for security and compliance in business. Then he said "I've never seen the technology environment as divergent as it is right now between what's going on outside enterprises and what's going on inside enterprises."

Almost two years later, the divergence is greater than ever, yet there are also signs of change. The notion of serious games has gained traction [8]. Companies are establishing presences in the Second Life™ metaverse, much as they once established web presences. IBM recently announced a new 'social networking' product called "Connections" that leverages user profiles, communities, blogs, social bookmarking, and activities inside the enterprise [3]. Blogs have proliferated inside companies. A survey of 750 CEO's last year found that 76% believed that their future success depended on collaboration and innovation [4]. The "net generation" that has grown up with video games, web and mobile technologies is beginning to enter the workforce.

Our research interest in social computing and supporting collaboration and appropriation among diverse and distributed users [2,6] has drawn us into considering whether and how game-like environments may have a lasting impact in business environments. To this end, the workshop is a chance to reflect on some of our own

experiences with video and 3D games as engaging user experiences, on the extent to which they are supple interfaces, and on the characteristics that contribute to suppleness. We look briefly at three examples, and then attempt to distill some of their critical attributes.

## THREE EXAMPLES

The descriptions that follow are based on a varying amount of personal experience by one or more of the authors and should not be taken as representative of much other than how we like to spend our free time (in the case of the first two examples), and a possibly interesting opportunity for research in the third case.

### Nintendo 64 Super Mario 64 Video Game

N64's "Super Mario 64" (hereafter SM64) game came out in June of 1996. SM64 was the first Nintendo 3D game experience, and the main character, Mario, had a vastly increased number of moves over the previous (NES) incarnation of the game, including double and triple jumps, backflips, wall jumps, and much more [11]. Moves are learned progressively as users advance through the game by



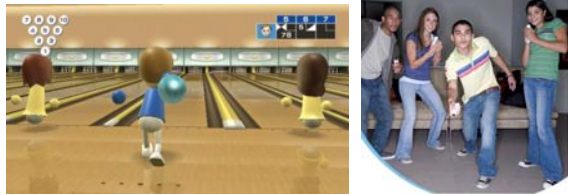
### Super Mario 64 game cover, and moves in instruction manual.

completing tasks and discovering further worlds. Task completion often involves learning to execute specific moves, which often requires attempting a move repeatedly. The repetition of a complex physical motion requiring two-handed manipulation of the controller (usually under pressure) leads to motor learning and eventually becomes automatic. Instead of thinking press "Z+A" or whatever, the player starts to think "triple jump" or "back flip" and make the appropriate gesture. Mario's moves come to feel direct.

### Bowling Together: Nintendo's Wii System

Launched in December, 2006, Nintendo's Wii system hit many of the usual "next hot thing" marks: vendors adopting

crisis-level measures to control virtual or real crowds lining up to buy the system, wild auctions on eBay for systems to be delivered before Christmas, releasing a widespread and popular Internet video that introduced the unique aspects of game play with the new Wii controllers. The first and third author acquired a system through the “wild auction” mechanism, and invited a few friends over to bowl (one of the Wii Sports package games that ships with the system).



**Wii bowlers, virtual and real.**

With extra controllers unavailable, we all had to share one, but despite this, the fun began. Bowling is one of the most accessible Wii sports games, and while we weren’t very good, we had no trouble knocking down pins after a few tries. The motion mimics the motion of real bowling: starting with the controller held up in front of you, you swing your arm back and through while taking a step towards the alley, er, tv screen. The Wii system can detect the bottom of the arc of your forward swing, and balls released too early or too late with respect to the bottom of the swing “bounce” on the alley, or have too little speed.

The Wii game play probably comes closest in our three examples to being a supple interface. The user experience is immediately accessible, fun, and shareable in a social context: you have fun doing it, and it’s also fun to watch others try. “Wii” are no longer bowling alone [7].

### **IBM Gets a Second Life**

In October, 2006, IBM held a block party for past and present IBMers in Second Life. The next month, CEO Sam Palmisano, or rather the virtual Mr. Palmisano, announced ten projects resulting from a “Global Innovation Jam” that would receive \$100 million of funding over the next two years. IBM has acquired at least twelve islands in Second Life, and the virtual worksteading has begun, including research and development labs, consulting practices, the Greater IBM Connection, and more. Lotusphere 2007, a major IBM customer conference, will be hosting a Second Life “day” on January 23, 2007 coinciding with its “face to face” conference in Orlando, Florida.



**IBM in Second Life: Sam Palmisano (left) makes an announcement; block party for IBMers and alumni (right).**

All of this (and many other companies’ emerging presence on Second Life) is interesting for many reasons, not the least of which is that the user experience is anything but supple; in fact, it’s rather clumsy. It’s not so easy to move your avatar, find places to go, or to figure out how to get there. Once arrived in the metaverse, there’s not much to do in the way of structured activity or progressive goals. Instead there are a variety of activities that seem most like going to the mall or cruising the nightclub scene: shop, socialize, go to a party. Indeed, it was perhaps the poverty of the user experience that led to the recent “Get a First Life” spoof [1]. Second Life raises questions about what “serious” uses it could be put to, and whether ultimately it will survive as a thriving MUVE (Multi-User Virtual Environment) or be a pan in the virtual flash.

### **DIMENSIONS OF SUPPLE INTERFACES**

Although these examples do not fully exemplify supple interfaces, they all embody some characteristics that may form part of an essential definition of a supple interface. We propose four dimensions for discussion: the nature of the *physical interaction* with the system, the ability of the application or system to support *expressiveness*, including expressive communication and self-expression, the quality of *engagement* fostered by interacting with the system, and the degree to which the system creates, inspires, or exploits *social context*. We briefly discuss these in turn.

#### **Physical Interaction**

Both of Nintendo’s systems leverage superbly crafted physical interaction. In the case of N64’s Super Mario 64 game, users are drawn in by the progressive disclosure of ‘quests’ that require increasingly sophisticated and coordinated use of the controller. In the Wii system, the entire body becomes part of the interface, and although the motions needed to produce success in the game are not necessarily fully realistic (raising interesting questions of negative transfer from the game), they are intuitive, understandable, and users readily improve with practice. However, we have already heard (and have ourselves experienced) that many Wii games are tiring or make users (even young ones!!) *sore*; it remains to be seen if the novelty will wear off as feet, shoulders, and arms tire. Couch potatoes take heart: maybe sitting on the couch and letting your fingers do the walking isn’t all bad.

#### **Expressiveness**

Thomas and Kellogg [9] make a distinction between ‘instrumental’ (that which serves getting the job done) and ‘expressive’ (that which serves self-expression, identity, etc) communication. While organizations need both, software has tended to support only instrumental communication; indeed, one of the explicit goals of Babble [2] was to support expressive communication. In general, systems that support conversation also support expressive communication. N64 is not particularly rich with expressive communication, at least within the game itself. Wii’s use of personal avatars (the Miis) increases the degree of self-

expression possible. Mii-related functionality includes the Mii parade, in which users allow other people's Miis to wander around their system, showing up as virtual players or audience members in their games, and the ability to pack up your Mii(s) into your controller and take it(them) over to a friend's house to play. Second Life, by supporting avatars, emphasizing appearance, friends, and other expressions of cultural identity, and conversation among users, is the strongest of the three systems in supporting expressiveness.

### Engagement

Engagement occurs at different levels in these systems. A user can be engaged simply from the intensity of the experience (as in the SM64 or Wii controls), or can get engaged with the storyline, identifying with the character, the quests, or the role-playing that it allows. Certainly it must be well-established by now that offering progressive levels of achievement is highly successful in drawing users in and motivating them to learn, do, and be more.

All three systems rank well on engagement, although of different sorts. SM64 is a long play, with 120 "tasks" and three Bowser battles to be accomplished before the game is fully solved. It is an immersive and intense experience. Wii can be expected to follow suit with compelling controller interactions and the usual enticements of progressive goals, discovery, and mastery. Second Life is most engaging in terms of social interaction and self-expression. In this environment social phenomena can be expected to dominate: appearance, personality, status, who you know, what you do, culture, etc.

### Social Context

Finally, it is interesting to note that all three systems leverage social context. In the Nintendo systems this occurs largely outside the game environment, especially for N64. Gameplay hints, cheats, "Easter eggs" and other insider information are shared in communities on the web. Wii, on the other hand, has made a concerted effort to introduce multiple players and a sociable context into the base system. Second Life directly fosters social interaction with so many in-game communities that an in-game social tagging system called "LandRing" to assist in finding communities of interest has already emerged [10].

Consideration of our three examples raises questions of the many ways in which interfaces may exhibit suppleness, and whether dimensions will have characteristic trajectories that must be supported. We look forward to engaging with others on these and other topics at the workshop.

### SUPPLE INTERFACES WORKSHOP PARTICIPATION

Wendy Kellogg and Jason Ellis, both of the Social Computing Group (SCG) at IBM T.J. Watson Research Center, would like to attend. The SCG has experience designing computer-mediated communication systems (e.g., Babble, Loops) based on the notion of social translucence: the idea that perceptual cues about people and their

activities leads to greater awareness and accountability. Although these systems were but precursors of supple interfaces, they do have characteristics in common (e.g., supporting expressive communication). We could speak to or demo the N64 example (Wendy) or the IBM Second Life example (Jason), but are also interested in crafting a framework (nice if grounded in theory, but any interesting starting place might do) within which to understand supple interfaces, and of course our particular interest is in how they may emerge and be of value in work environments. Goals are to have an interesting day (thus privileging the moment-to-moment experience!), to better understand what we mean by supple interfaces, and to get further grist for our mill of thinking about how 'serious games' and 'supple interfaces' can and should surface in the business world.

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