

## Chapter 24

# Virtual Design Teams in Virtual Worlds: A Theoretical Framework Using Second Life

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### **ABSTRACT**

*Design innovation increasingly requires cross-functional virtual teams and is becoming plural, collaborative and distributed. In order for global companies to compete they must be able to sync with the rapidly increasing pace of change and be able to tap the international talent that may, in the future, only connect via virtual worlds and virtual reality. It is important to recognise how design innovation and knowledge flow are regulated and how the virtual ecosystem can either inhibit or excite collaboration and the creation of new ideas, and the design of useful prototypes. This chapter presents a theoretical framework using three models, with examples, to explain and understand how virtual design teams can identify the regulation of knowledge flow and collaboration in the virtual world, Second Life.*

### **INTRODUCTION**

This chapter will examine the pervasive discipline of design and the early lessons to be gained from design practice and design education in the virtual world SL (Second Life). Three case studies, that were conducted in SL, will be used to illustrate examples of how virtual teams collaborate and connect on design projects within that virtual world. The primary research question posed was: how to design a virtual innovation ecology in SL? There were two important sub-questions related to this: what enables knowledge creation during design innovation in SL? What enables creative collaboration amongst designers in SL?

DOI: 10.4018/978-1-5225-5469-1.ch024

Three models were used to assist with the interpretation of the ethnographic data collected during the research in SL. They were:

1. The spectrum of fidelity that was used to interpret perceptions of presence (Rive, 2012);
2. Lessig's model of cybernetic regulators, and the four modes of knowledge flow (Lessig, 2004, 2006, 2008); and
3. The indosymbiotic knowledge life cycle (Rive, 2012). These models will be discussed in greater detail.

Design is a discipline that has become pervasive in almost all areas of human endeavor and goes far beyond aesthetics to shape products, processes, society, and even the foundations of life (Mau, Leonard, & Institute without Boundaries, 2004). By its very nature design is virtual and while it is becoming increasingly hidden through the miniaturization of products, and the implicit design of process and organization, teams of designers are working together in the virtual space to determine the future of technological evolution (Kurzweil, 2005; Taylor, 1997). Design is no longer about one designer, one client, and one location, it is now becoming plural, collaborative and distributed (Mau et al., 2004). In order for global companies to compete they must be able to sync with the rapidly increasing pace of change with agile tools and be able to tap the international talent that may, in the future, only connect via virtual worlds and VR. It is important to recognize how design innovation and knowledge flow are regulated and how the virtual ecosystem can either inhibit or excite collaboration and the creation of new ideas, and the design of useful prototypes. Three models will be introduced that can help to explain and understand how virtual teams can identify the regulation of knowledge flow and collaboration with examples from the three case studies.

Following negative reports in the media, and the collapse of media interest, many technologies continue to evolve and improve only to eventually be part of another future hype cycle. The technology consultancy the Gartner Group describes a hype cycle as one in which the media enthusiastically reports a new technology that over-sells the features and attracts new users only to collapse once those features are not fulfilled. Both virtual reality and virtual worlds have participated in a number of hype cycles and it appears a new wave of these technologies are about to be hyped again (Gartner, 2007). The long history of interest in virtual experiences suggests these technologies will continue to evolve and are not simply fads, (Grau, 2003; Wertheim, 1999). There have been many organizations around the world that have experimented with, and used virtual worlds, such as SL for collaboration within virtual teams. Despite enthusiastic experimentation many have now abandoned their virtual islands, and had their virtual property returned to them. SL has just passed its tenth year anniversary, and while 400,000 new users still sign up every month, many do not last longer than that first month (Au, 2014). However, according to Wagner Au, the first embedded journalist in SL, believes virtual worlds are set to once again take off (2014). There has also been a recent resurgence of interest in VR, and the acquisition of Oculus Rift by Facebook for USD\$2 billion, and the release of other virtual reality products from Samsung and Microsoft, to name a few, suggests that there could be more developments to come in virtual reality, virtual worlds and social media.

The objective of this chapter is to describe a theoretical framework that could provide a useful means of examining how design teams interact in a virtual world when they are sharing a design innovation goal. Three case studies; six years of cyber-ethnographic observation of *residents* (as they are known by the users) in SL; and a literature review provided the basis for this theoretical framework.

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