

## Chapter 19

# Virtual Communities of Practice in Immersive Virtual Worlds: An Empirical Study on Participants' Involvement, Motives, and Behaviour

**Grzegorz Majewski**

*University of the West of Scotland, UK*

**Abel Usoro**

*University of the West of Scotland, UK*

### **ABSTRACT**

*Immersive virtual worlds such as Second Life have recently gained much attention from education and business because of their adaptability to address real world challenges such as: online presentations, meetings, collaboration, 3D data visualization, and online knowledge sharing. These features make immersive virtual worlds a convenient place for knowledge sharing activities that occur in Virtual Communities of Practice (VCoP). A great number of virtual communities exist in Second Life to serve various purposes ranging from business to entertainment. Knowledge sharing in this environment may thus serve diverse purposes. There is, however, little research into knowledge sharing in immersive virtual worlds. Therefore, the purpose of this research is to fill this gap in knowledge. This study investigates participants' involvement, motives, and behaviour and attempts to construct and validate a conceptual model of factors influencing members of VCoP in immersive virtual world while they share their knowledge. In order to achieve these goals, quantitative and qualitative research were carried out with participants of a group in Second Life.*

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## 1. INTRODUCTION

Modern organisations realize that their market value is to a high degree dependent on their employees and on the employees' knowledge in particular. It is noteworthy that to achieve full potentials, this knowledge needs to be shared between employees. Thus, knowledge management activities have gained much attention just like other business processes. One of the ways to capture and share knowledge is to use a collaborative virtual environment (CVE) which is a "software environment that emulates some of the features of the real world" (Tomek 2001, pp 458-459). The characteristics of the real world that are useful for knowledge sharing activities and are usually emulated include: the concept of space, the representation of an object, the representation of a human (in a form of avatar), and various tools that can be used to interact with other objects. To share knowledge in this environment, a participant does not need to type texts using the keyboard as she would do with other knowledge sharing media. Instead she uses her avatar to act out the knowledge that she wants to share. This approach is very useful especially when sharing tacit knowledge which cannot easily be reduced to text or even realised by the knowledge owner. A simple example is the instruction to change a car wheel. In the "flat" static ICT environment, such as a discussion board, the participant would have to use a text description of how to change the wheel with detailed description of each step. A CVE knowledge recipient would rather observe how it is performed in practice. Although it is in a virtual environment it is easy to copy the behaviour into the real world. Generally speaking, CVE essentially captures relevant parts of the work process, organizes it and provides data retrieval and data mining functions. It is a very efficient and productive way of managing participants' knowledge which includes the tacit form. Apart from that, it is also more attractive and richer than the static web based media. Therefore it is

possible to benefit from increased motivation of employees to share their knowledge by combining work and entertainment-like functions. (Tomek 2001, p 459).

## 2. THEORETICAL BACKGROUND

*Knowledge is embedded in people, and knowledge creation occurs in the process of social interaction. – Karl Erik Sveiby*

As was described in the previous paragraph, knowledge sharing activities may be enhanced by the use of a CVE. Immersive virtual worlds such as Second Life (SL) may be perceived as a form of CVE. An immersive virtual environment is a 3D environment which also "help[s] [to] develop a common understanding in a collaborative mind set and engage people through appealing and memorable experiences" (Schmeil & Eppler 2008, p 667). Participants are encouraged to be creative and to develop stronger social ties compared to a static web discussion board or forum.

While utilizing an immersive virtual world in knowledge management and collaboration related activities it is necessary to consider the following characteristics of this environment (Tomek 2001, Ondrejka 2008, Schmeil & Eppler 2008):

- Physical topology can be emulated as a natural metaphor, a useful feature for a successful groupware.
- People, information and knowledge can be organized spatially.
- Awareness of co-workers, usage policies for tools and objects is enhanced.
- Content is produced by residents of the world; developers provide powerful tools designed to be used by everyone.
- Group and private chat functionality, as well as object sharing, provide inherent collaboration possibilities (additionally all communication can be logged instantly).

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