Virtual Worlds, Standards and Interoperability

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ABSTRACT

It is well documented that virtual worlds today are applied in both educational and commercial teaching and learning contexts. Where virtual worlds were once the reserve of entertainment, they have now taken on a variety of roles as platforms for business meetings, simulation, and training and education. In this context, the integration and interoperability with both online and offline resources and technologies is important. In this paper, the authors review progress toward increased integration and interoperability from the first virtual world games to today’s virtual world platforms. This paper highlights opportunities that will arise from further improvements in the ability to create virtual world platforms, content and activities that are truly interoperable, as well as more significant challenges along the way.

Keywords: Digital Games, Education, Interoperability, MUVE, Serious Games, Specifications, Virtual

INTRODUCTION

I’d like to be able to hold a virtual meeting in a 3-dimensional area where there is a table and where you can move the chairs around, and when I move the chairs you see it happen. (Berners-Lee, 1997)

It is now almost exactly thirty years since the first online virtual world was created by Roy Trubshaw and Richard Bartle (Bartle, 2003). MUD1 was (and still is) a text-based virtual world taking much inspiration from older single-player text-based mainframe adventure games. MUD1 is effectively a ‘closed’ proprietary system – while clients connect to the server over the internet (or in the early days via dial-in connections), the virtual world does not afford communication with other online applications or data sources outside of its own databases.

To a large extent the same is true of all game-oriented virtual worlds to this day. Via custom client software or standard telnet Internet connections, users log into the virtual world, which exists solely on servers operated by the company, which owns that virtual world. User commands are sent to the client where the actions are executed along with other world updates and any updates are sent back to the client. Other than this connection between remote user and server, the server does not interact with other online or offline services or resources.

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To a very limited extent this has changed in game-based virtual worlds. A few games such as World of Warcraft or Runescape make in-game data available online via web-based high-score tables or pages for character or clan profiles (see for example Figure 1, taken from wowarmory.com). But within the game world itself there is usually no access to data from the external web – barring the occasional frivolous gimmick, such as the ability to launch a web-browser to order pizza from within Everquest II by typing the command “/pizza” (CITE).

Alongside the phenomenal growth of game based virtual-worlds, there has been a parallel growth in more socially-oriented virtual worlds – where structured game play is replaced with more free form social interaction. And many of these have been adopted and adapted for more serious purposes, in the commercial and academic worlds (Churchill & Bly, 1999; Haynes & Holmevik, 2001). Recent growth in educational use of virtual worlds has been particularly striking – as evidenced by a series of reports commissioned by the Eduserv Foundation in the UK (Kirriemuir, 2007; Kirriemuir, 2008; Kirriemuir, 2009).

A feature in many of the social virtual world platforms is the ability to decorate personal spaces – and to streaming media from the internet to provide music and/or video entertainment into users’ virtual rooms, or adding web-links to objects to automatically launch separate web-browsers. Some, such as Active Worlds, Second Life and Open Wonderland provide a much richer range of capabilities for customisation and modification (helping drive the growth of

Figure 1. Second Life (top) and OpenSim (bottom) viewed using the open-source ‘Meerkat’ viewer
The “Smart” Regulatory Framework
www.igi-global.com/chapter/the-smart-regulatory-framework/125317?camid=4v1a