Chapter 15
The Role of Standards for E–Commerce in Virtual Worlds

Joerg H. Kloss
Consultant, Germany

ABSTRACT
This chapter discusses the topic of standards for Virtual Worlds with emphasis on their usability as a stable and reliable basis for long-term investments into 3D-E-Commerce. The text explains why standards are important for the success of Virtual Worlds as well as the business in these shared online 3D environments, and what the relevant criteria are to decide for the right technology and/or provider. Although sometimes in the shadow of popular proprietary platforms there are already many different candidates for a Virtual World standard, currently in different states of development. By choosing a 3D platform, E-Commerce providers will decide about their business potential and at the same time strengthen one or another standard in the current technical competition phase. So it is important to get an overview about the current approaches, their advantages and disadvantages as well as the tendencies for the future developments. In this chapter the reader will be sensitized for the issues of standardization, compatibility and interoperability of Virtual Worlds for successful E-Commerce applications. An overview about the current approaches supports the orientation and decision for the different technologies. Some concrete XML-based code examples realized in the international ISO standard for interactive 3D-Graphics X3D demonstrates the practical deployment of highly compatible concepts. An outlook to the further integration of interactive 3D graphics into the Next Generation Web respectively the 3D Internet completes the overview.

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INTRODUCTION

Although many companies have left the flagship Second Life®, the potential for Virtual Worlds (VW) is still forecasted as one of the most driving technologies and applications also in economically challenging times. While Gartner Research prognosticated 80% of active Internet users in VW’s by 2011 [Gartner, 2007] and 70% of corporate organizations with their own VW’s by 2012 [Gartner, 2008], Forrester Research expected the 3D-Internet by 2013 [Forrester, 2008]. And even during a serious global recession, VW’s seem to be an appropriate way for cost savings in travel, training and collaboration for companies.

Today’s VW’s are not at all in a consolidation phase, yet. On the contrary, the number of VW’s is currently exploding according to the figures of e.g. KZERO Research [Kzero, 2009] or the Association of VW’s [AVW, 2009]. Hundreds of VW’s are classified into different categories over various levels, like Game, Social and Business worlds with subcategories like MMORPG’s, branded, mirror, teen or intra worlds. Also the number of users and hours of usage in VW’s increases, and new technologies are supporting the trend to dissolve the boundaries between the real and virtual world with mobile and ubiquitous devices, localization and augmented reality approaches as well as life logging of objects and users.

Most of these different platforms, technologies and channels are offering an enormous potential for applying E-Commerce approaches to VW’s. On the other hand, the large number of different technical platforms and proprietary approaches seems to be also one of the major hurdles for a broader breakthrough of VW’s in today’s business. While it is already hard for the user to decide for one of the many existing VW’s, it is even harder for the provider to choose and invest into the ‘right’ VW platform to offer its E-Commerce service. How many of the target customers can be reached via this platform, what existing services and 3D models can be imported or need to be rebuild with in-world tools, are the customers able to teleport virtual goods to other VW platforms, how stable and secure is the platform and how long will the operator exist etc.?

So far, these questions have to be answered with lots of uncertainty, even if the provider decides to operate his own proprietary VW platform. To make the right decision for the own VW engagement is essential for the success of the intended E-Commerce solution. With always limited budgets an investor could theoretically try to be on as much as possible platforms, but probably just with moderate success and attractiveness due to limited resources per engagement. So it is a business critical decision to bet on the right horse also in VW’s. Building new 3D models per platform with proprietary in-world tools, loosing assets by teleporting between different VW’s and being dependent on commercial and political decisions of single platform operators increases both, the expenses and the frustration of the E-Commerce providers as well as the many private consumers.

BACKGROUND

To simplify the questions and to overcome the current main challenges of missing interoperability between VW’s, compatibility of 3D assets and teleporting of avatars, standards are required for VW’s. Identified as one of the major challenges in the community, different standardization approaches are currently under development. Not all of them are intended to become recognized as an official standard, but by providing a generic 3D interface to one or more of the dominant web browsers they have the potential to become a de facto standard. Also the feature sets differ tremendously between the various approaches. While one covers the whole spectrum of a fully featured VW including multi-user functionality, persistent asset management and in-world tools,