

## VIRTUAL WORLDS RESEARCH: A CONCEPTUAL PRIMER

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The development of Virtual Worlds is not really new and probably began with the first Multi-User Dungeon (MUD) in the late 1970s. The early text-based or simply animated Virtual Worlds were the spark, lightning a rapid development of increasing technologically sophisticated artifacts. Famous examples in the 1990s, which were already relatively close to today's graphics engines, include *Alphaworld* and *Blaxxun*. In the last few years, improvements in technology infrastructure, hardware and software fostered the emergence of highly sophisticated Virtual Worlds such as *Active Worlds*, *There* or *Second Life* (SL) among others. Since the early 21<sup>st</sup> century, millions of users have signed up for accounts and hundreds of companies have begun to set up shops *in-world*. The vivid opportunities for communication, collaboration, and cooperation in Virtual Worlds are changing online consumer behavior and we might currently be witnessing the evolution of new ways and channels to conduct electronic commerce.

Research on Virtual Worlds began in the late 1980s with first contributions along the constructivist paradigm of computer science and engineering. Until today, there are an increasing number of scientific contributions to the research of Virtual Worlds from different disciplines such as Psychology, Information Systems (IS), and Marketing. Because of its multi-disciplinary, research on Virtual Worlds is still lacking an overall terminology and research framework. Some of the core research streams address issues relating to the creation of new technological artifacts, the perception of different technologies, as well as the impact on mental and physical health. Despite its existence of Virtual Worlds, practitioners and researchers still face a variety of fundamental questions which have been unanswered such as why people are using Virtual Worlds, what creates a compelling experience *in-world*, or how Virtual Worlds can be used in the business value creation process. This special issue on Virtual Worlds of the *Journal of Electronic Commerce Research* (JEER) addresses these and other important and emerging questions.

Research on Virtual Worlds can be broadly categorized into four different research fields as outlined in Figure 1. Research either can be focused on the behavior of users in Virtual Worlds by looking at individuals or it focuses on companies' activities hence by looking at organizations. At the same time, Virtual Worlds can broadly be categorized into more game oriented or social interaction oriented. Both, social and game Virtual Worlds, are based on social activities and social interactions, however the set of rules and constraints and user roles differ between the two categories of Virtual Worlds. For example, in social-oriented Virtual Worlds such as *Second Life*, no levels, scores, nor an "end" or "game over" exist. Even if the four research fields are interrelated in some respects, the proposed framework for Virtual Worlds research is at least suitable for the purpose of categorizing the contributions presented in this special issue.

Research being conducted in field 1 (organization/game) of the framework addresses business-oriented issues in game-oriented Virtual Worlds. This field has been at the core of the existing computer/video game literature for a long time and has been greatly explored by scholars such as Nelson [2002] and Chaney [2004] who did research

about the options and effects of brand and product placement in computer/video games. In addition, research on advergames and similar advertising-related involvement of organizations in game oriented Virtual Worlds is mostly part of marketing and advertising research which was not the focus of this special issue.

		Orientation	
		Game	Social
Focus	Organization	1	2
	Individual	3	4

Figure 1: Framework for Virtual Worlds Research

Our special issues starts with a contribution from *Stuart Barnes* and *Jan Mattsson* referring to field 2 (organization/social) of the proposed research framework. Their empirical work entitled *Brand Value in Virtual Worlds: An Axiological Approach* addresses factors and concepts relating to organizational behavior and economics in the context of social-oriented Virtual Worlds. The authors argue that social-oriented Virtual Worlds, such as Second Life, are rapidly becoming recognized as an important new channel for marketing and brand-building. However, the nature of the channel and its “prosumers” is likely to be quite different to other channels, including the Web. Consequently, this may have knock-on effects for traditional multi-channel brand management strategies. Taking an organizational perspective, the authors assess the emotional, physical, and logical value of eight real-life brands that have moved into Second Life. Based on the Hartman value profile they develop a scale to measure brand value. A survey resulting in 252 brand assessments was conducted. Their results show that moving an established brand into Second Life is highly challenging due to the absorptive, individualized, and highly interactive nature of social-oriented Virtual Worlds.

The theoretical article from *Reina Yahya Arakji* and *Karl Reiner Lang* on *Avatar Business Value Analysis: A Method for the Evaluation of Business Value Creation in Virtual Commerce* is another example of research conducted in field 2 (organization/social) of the proposed framework. This article presents an avatar-business value analysis, a novel theoretical framework, and a computational method and decision tool to help evaluate and strategically manage value creation in Virtual Worlds. Their framework can be applied to cost-benefit analysis in practical settings. The decision-tree-based method includes traffic metrics that may be used to empirically estimate the business value of virtual commerce ventures. They also investigate some intangible factors that are impacting these metrics in the context of Second Life, a social-oriented Virtual World. Their article concludes by outlining strategies that could be considered by the operators of Virtual Worlds and organizations in order to promote a sustainable business development in Virtual Worlds.

Research being conducted in field 3 (individual/game) addresses questions relating to the individual adoption process, yet focuses on the sub-set of game oriented Virtual Worlds and thus likely involves specific play factors. The article with the title *Why they Enjoy Virtual Game Worlds: An Empirical Investigation* from *Jiming Wu*, *Pengtao Li* and *Shashank Rao* is an example for this type of research. Their article develops and empirically tests a theoretical model of determinants of online gaming enjoyment. Their study suggests that key elements of online games are the primary factors associated with the enjoyment of playing an online game. The current study also investigates the impact of enjoyment on gaming behavior while controlling for other known critical variables of attitude and subjective norms. Their hypotheses are tested by using questionnaire responses of 253 online game players. Overall, their results indicate that online game story, graphics, length, and control are highly related to enjoyment, and that enjoyment has a significant impact on behavioral intention even with the presence of control variables.

The article about *User Acceptance of Virtual Worlds* from *Marc Fetscherin* and *Christoph Lattemann* is an example of research conducted in field 4 (individual/social) of the proposed research framework. By extending the Technology Acceptance Model (TAM), this article assesses the reasons to use social-oriented Virtual Worlds, in particular Second Life. Based on an extensive literature review, an extended TAM has been constructed. Their empirical analyses show that community factors such as communication, collaboration, and cooperation play a pivotal role in means of influencing user intention and acceptance of Virtual Worlds. This article provides a

meaningful contribution to theory building of user acceptance in the context of Virtual Worlds as it shows that traditional models need to be extended by these factors and they need to be taken into account when assessing user acceptance and adoption of Virtual Worlds.

As depicted with the proposed research framework, each article accepted for publication in this special issue highlights different aspects of Virtual Worlds. These contributions significantly advance the body of knowledge in this research field. The call for this special issue attracted an overwhelming number of articles from excellent scholars. We are very thankful for all submitted manuscripts. We are confident that this special issue will provide new insights for the readers and we encourage any scholar to continue to conduct research in that field, as there are still many open questions and topics being investigated and discussed further. Finally, we would like to acknowledge and thank the Editors of JECR *Melody Kiang* and *Robert Chi* for their trust and support making this special issue happen as well as the various reviewers, specifically we would like to thank:

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