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Taking a Broader View by Looking Deeper

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The field of virtual worlds is vast, interconnected and expanding. In this issue, we take a review lantern and shed some light on some of this field's aspects. Clearly, we do not cover everything. We will often see shadows and not the full image. Ultimately, we hope to encourage further exploring of the field.

The third thematic issue of JVWR 7th year (2014) focuses on a literature review of 3D3C worlds according to specific topics. Due to the substantial amount of responses to our "Lantern" CfP which resulted in 15 accepted manuscripts, the Lantern issue is published in two parts: Part 1 was published on the 1st quarter of 2014 and part 2 is now published, on the 3rd quarter of 2014. Both parts connect with our workshop "Via the Looking Glass" held in Milan, Italy on December 15, 2013 (as part of AIS ICIS 2013).



Figure 1: Prof. Yesha Sivan at Bocconi university, Milan

For this issue, “topical review” means a review of a corpus of knowledge of one aspect of virtual worlds. It can be a classic literature review, a more formal statistical meta-analysis or other forms suggested by authors.

In that respect, "3D3C Worlds" is defined as a combination of four factors:

- **3D** stands for the three dimensional representation of worlds as seen in Google Earth, Augmented Reality, 3D printing and the like;
- **Community** as in a collection of people work, play and act together. Consider Facebook and Twitter as one example, and enhance it by the dynamics of World of Warcraft guilds;
- **Creation** is the ability to create new artifacts, as seen for example in Second Life or in Open Source movement;
- **Commerce** is the ability to harness these previous factors to gain monetary real value (consider Bitcoin, exchanges, etc.)

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- Maged N. Kamel Boulos, University of Plymouth's Health Informatics, Devon, UK.
- David Gefen, Drexel University's LeBow College of Business, Philadelphia, PA, USA.
- Abhishek Kathuria, Hong Kong University's School of Business, Hong Kong, China.

Part 2 of the Lantern issue includes :

1. **Virtual Worlds Enabling Distributed Collaboration** by Marko Hakonen / BIT Reserach Centre, Department of Industrial Engineering and Management, Aalto University, Finland, and Petra M. Bosch-Sijtsema / Department of Civil and Environmental Engineering, Chalmers University of Technology, Sweden. The main question of this work is “how virtual worlds (VWs) are used in professional distributed work and how they influence new forms of collaboration in distributed work settings.” The study is based on a partially grounded theory analysis method of 47 semi-structured interviews. The interviews revealed several new collaboration potentials of virtual worlds in distributed work, like new forms of training and learning, as well as enabling small group meetings and large events. Based on the interview findings we developed a conceptual model in which psychological processes supported by the VW enable distributed collaboration in terms of immersion, engagement, social presence, and trust. Furthermore, technological features of the VW, like the use of avatars, import of 3D objects, and use of physical clues, enable distributed collaboration.
2. **Meta-theoretic Assumptions and Bibliometric Evidence Assessment on 3-D Virtual Worlds as Collaborative Learning Ecosystems** by António Correia, Fernando Cassola, Diogo Azevedo, André Pinheiro / UTAD – University of Trás-os-Montes e Alto Douro, Vila Real, Portugal; Leonel Morgado / Universidade Aberta, INESC TEC, Lisbon, Portugal; Paulo Martins, Benjamim Fonseca, and Hugo Paredes / UTAD, INESC TEC, Vila Real, Portugal. This paper presents a meta-analysis of 35 publications to identify gaps and opportunities for research in collaborative three-dimensional environments based on content analysis. At a general perspective, there is a lack of established approaches to measure the influence and research potential of sociocultural factors in virtual worlds' usage, autism spectrum and other healthcare-related settings, learning outcomes, content characteristics, task support for groups and crowds, and online data collection.
3. **Two Decades of Evolutionary Art Using Computational Ecosystems and Its Potential for Virtual Worlds** by Rui F. Antunes, Frederic Fol Leymarie, and William Latham / Goldsmiths,

University of London, UK. The authors analyse works of digital art that use a technique from artificial life (ALife) called computational ecosystems (CEs). These are systems running on computers where agents are organized in a hierarchical structure (of a food-chain) and trade token units (of energy and biomass) as a way of promoting community dynamics. They analyse a collection of forty (40) papers communicating works developed in the last two decades.

4. **Fostering Team Creativity in Virtual Worlds** by Pekka Alahuhta, Emma Nordbäck, Anu Sivunen, and Teemu Surakka / School of Science, Department of Industrial Engineering and Management Aalto University, Espoo, Finland. This article addresses the potential of virtual worlds as a platform for creative team collaboration. A systematic literature review was conducted to reveal the affordances of virtual worlds contributing towards team creativity. The results of the literature review reveal eight proposed affordances relevant for virtual worlds to foster team level creativity. Avatars (1) allow the team members to express themselves and their insights and point out information to others. Changing the users' frame of reference (2) embraces the virtual world's potential as a context for creative action. Perceived feeling of co-presence (3) within the team members, and user's own experience of immersion (4), contributes towards engaging creative team collaboration. Multimodality (5) and rich visual information (6) facilitate communication between team members. Finally, virtual worlds allow teams to modify the collaboration environment to simulate a new kind of reality (7), and offer a selection of supporting tools (8) that can be utilized in the creative collaboration.
5. **Virtual Currencies, Micropayments and Monetary Policy: Where Are We Coming from and Where Does the Industry Stand?** by Ruy Alberto Valdes-Benavides and Paula Lourdes Hernandez-Verme / University of Guanajuato, Mexico. The exponential growth of the micropayments industry and the expansion of social networks in the last few years have produced the necessary conditions for the birth and growing importance of virtual currencies. The present work attempts to survey the main issues and challenges posed to Economic Theory and to the design and implementation of economic policy. Particularly, the authors look at the implications that virtual currencies may have for: 1) The economic principles associated with voluntary holdings of different kinds of money; 2) The rate-of-return dominance by some currencies that may coexist with currencies offering lower real returns; and 3) The state-of-the-art Monetary Dynamic Stochastic General Equilibrium models with micro-foundations. The author claim that virtual currencies share some important features of both fiat currencies—whose value is mainly determined by the issuer's reputation and the people's beliefs regarding its future acceptability in exchange for goods or services—and commodity currencies, with intrinsic value. However, virtual currencies are typically issued by private agents, rather than by governments, and thus regulation and appropriate monitoring arise as potential problems that we may have to deal with in the near future.
6. **Finding Healthcare Support in Online Communities: An Exploration of the Evolution and Efficacy of Virtual Support Groups** by Donna Z. Davis and Willemien Calitz / University of Oregon, USA. Healthcare support communities represent an especially vulnerable population who can potentially gain most significantly from the ability to connect via online social support groups. This paper reviews current literature on the efficacy of online social support groups, with a particular interest in 3-D online social virtual worlds. The literature reveals the importance of social support in general; of finding support online in these mediated environments; and the strengths and weaknesses in the current technologies that offer virtual healthcare support groups. Characteristics of social virtual worlds including persistence, anonymity, 24/7 access to individuals globally, and virtual embodiment reveal powerful potential to build support online. Finally, the review also identifies the

varied methodological approaches to studying virtual healthcare support communities and the challenges identified in data collection and analysis.

We thank the authors and the readers for their on-going support.



Figure 2: Google Glass & Oculus Rift workshops, and lectures at Bocconi university, Milan