Harnessing the Power of Social Interaction Technologies

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As the popularity of social media continues to escalate, participatory modes of content production symbolize an important shift from the user vs. producer paradigm to the social production of content. Participatory media outlets such as blogs, photo and video sharing services, and online social networks are revolutionizing the way people create, consume, distribute, and use media. These interactive spaces are powered by social interaction technologies (SIT), which have been defined as a new generation of Internet-based tools and techniques designed to initiate, share, and maintain interactive and collaborative activities online (Dumova & Fiordo, 2010). Much of the focus of the present issue is on active user involvement in technologically mediated environments enabled by SIT, and the ways society can harness the power of technology for value creation, learning, citizen engagement, bottom-up grassroots initiatives, and collaboration. The following papers include evenly balanced studies of the use of specific SITs in fostering consumer participation and value co-creation; the role of intelligent virtual agents in learning social skills; the relationship between social media and citizen empowerment; measuring the social impact of blogs; and SIT and bottom-up collaboration.

Social Interaction Technologies and Consumer Participation in Value Co-Creation

The opening article by Miia Kosonen and Hanna-Kaisa Ellonen (Finland) explores the business side of consumer participation through social media, which are increasingly transforming the European media landscape. The authors conducted 31 semi-structured interviews with the publishers of the leading Finnish newspapers and magazines. Computer-assisted qualitative analysis revealed a wide spectrum of company and consumer driven types of participation. Based on the results of the investigation, Kosonen and Ellonen developed a typology of online consumer participation roles: *agent*, *commentator*, *tester*, *debater*, *content producer*, and *messenger*. Analysis indicates that the key value promise of content co-creation "is linked to the harnessing of knowledge that resides in consumers – in other words, benefiting from the wisdom of crowds" (Kosonen & Ellonen, this issue). Overall, the study documents the perceptions held by the leaders of the Finnish newspaper and magazine industry of the growing potential of social media for businesses. This research supports the conclusion that the emergence of social interaction technologies

allows companies to establish direct relationships with customers, reaching new frontiers of value co-creation.

Social Interaction Technologies for Social Learning

The study by Samiullah Paracha and Osamu Yoshie (Japan) focuses on the social learning potential of interactive edutainment systems and interactive storytelling techniques enabled by social interaction technologies. Specifically, the authors evaluate the value of the *Shimpai Muyou!* virtual learning environment developed to help Japanese school children learn anti-bullying skills and practice coping strategies. The article introduces an interactive narrative framework which guided the various stages of development of *Shimpai Muyou!*: system design and architecture, narrative management, testing, and project evaluation. Designed as an anti-bullying intervention, the virtual environment integrates the *interactive narrative* (IN) approach with the techniques of a so-called *Forum Theatre*, developed by the Brazilian dramatist Augusto Boal (1979) and based on the principles of simultaneous dramaturgy. In Boal's stage productions, spectators were able to not only influence plot development but also join the cast of actors. The resulting *Shimpai Muyou!* virtual drama offers a highly interactive environment in which participants learn important social skills through empathic interactions with graphically embodied characters and intelligent virtual agents.

When examining bullying in Japanese schools, one should take into account the cultural specifics of youth socialization in Japan, a country where young people "strive to conform to adult norms and values so intensively that they are acutely sensitive to any kind of deviancy" (Foljanty-Jost, 2003, p. vii). The Global School-Based Student Health Survey, periodically conducted among 13-15 year old students by the World Health Organization in collaboration with the U.S. Centers for Disease Control and Prevention (CDC), demonstrates a varying degree of bullying for every country involved. In most countries the problem is especially pressing at the high school level. The fact that bullying in Japan is prevalent in elementary and middle school indicates that early intervention strategies can be successful, and by the time children enter high school they can develop strong anti-bullying skills.

Since 1995 in the U.S., when the Carnegie Council on Adolescent Development summarized the findings of a ten-year investigation in its final report *Great Transitions: Preparing Adolescents for a New Century* (1995), early adolescence has been viewed as a crucial phase in human development, the time when young people begin adopting behavior patterns that can have a life-long impact, and also have an increased risk of developing antisocial behaviors. The importance of early interventional strategies in dealing with behavioral and social risks in the lives of youth has long been emphasized by psychologists (Davis, 1999; Lerner, 1995). The article by Paracha and Yoshie provides one such example of a successful technology-supported intervention in the context of edutainment.

Social Interaction Technologies for Citizen Empowerment

After the initial outburst of optimism typical of the early adoption phase in any technological revolution, comes the realization that technology cannot replace existing power relations and eliminate poverty, injustice, and other social ills. Even more so, technology alone cannot bring about a good society. Therefore, critical voices are important for maintaining a balanced view of the role and place of technology in society. In contrast to a stereotypical view, the study by Corinne Weisgerber (USA) questions the notion of the empowerment that social media hypothetically provide for every netizen. The author maintains that although popular social media empowerment stories have become almost synonymous with Web 2.0, they favor a utopian vision of technology and leave millions of common Internet users with the illusion of empowerment. By

deconstructing some of the social media empowerment stories, particularly, the story of the "United Breaks Guitars" YouTube viral video, the author questions whether citizen journalists, citizen videographers, and citizen marketers really have a public voice. "Broadcasting into a void does not empower anyone," Weisgerber contends. "The true challenge is not to figure out where the people are and what channel to use to deliver a message to them, but rather how to make those people discover you" (Weisgerber, this issue). The argument is made that empowerment cannot be found in a voice alone, and that social media visibility, authority, and engagement are critical in bringing a message to an audience and opening the door to true empowerment.

Measuring the Social Impact of Blogs

The article by Shahizan Hassan, Norshuhada Shiratuddin, Mohd Fo'ad Sakdan, Nor Laily Hashim, and Mohd Samsu Sajat (Malaysia) addresses one of the major issues in the study of the national blogospheres—the social influence of blogs. The authors introduce two award-winning tools for measuring blog influence, the Blog Influence Index (BII) and Blog Influence Analyzer (BIA), and apply the BII and BIA to identify the most influential, most recognized, most active, and most novel blogs in the Malaysian blogosphere. Alexa Internet traffic rankings and Agarwal's (2008) properties of recognition, activity generation, and novelty provided the basis for constructing the BII. In order to test the Blog Influence Analyzer, focus group interviews with a total of 51 participants and a user interface test were conducted.

The study of opinion formation in the blogosphere poses a plethora of challenges. Bloggers mediate mainstream media messages, interpret them, and perform surveillance of their immediate social environment. Influential bloggers act as informal public opinion leaders confirming Elihu Katz' and Paul Lazarsfeld's (2006) brilliant insight into the two-step process of the dissemination of media messages. Drawing upon the two-step flow hypothesis, influential blogs can be viewed as the catalysts of informal social networks that play a growing role in decision-making at various levels, from voting to shopping.

The metaphor of a blogosphere relates to online environments that equal the sum of all blogs and the interactions between blog creators and their audience. It also relates to the boundless universe of all blogs, which is practically impossible to measure. Although a number of systematic efforts in evaluating the size of the blogosphere, such as Technorati's annual State of the Blogosphere assessments, blogosphere mapping projects by the Berkman Center for Internet and Society at Harvard University, or BlogPulse metrics have been attempted, none were able to index the global blogosphere consistently due to its sheer size. According to BlogPulse, in 2011 the global blogosphere encompassed 167.5 million blogs and over 1 million new blog posts were indexed every day. Perhaps the issue can be addressed through the study of national blogospheres. Therefore, any new attempts that shed light on the structure and organization of national blogospheres contribute to the scholarly understanding of public opinion mining in the blogging universe.

Social Interaction Technologies for Bottom-Up Collaboration

Harnessing the power of social interaction technologies, volunteer cartographers from around the world use GPS devices, portable cameras, and laptops to gather geospatial data and create and distribute online maps that are freely available to anyone with an Internet connection. The technology report by Kevin Curran, John Crumlish, and Gavin Fisher (Northern Ireland) focuses on OpenStreetMap, a collaborative web-mapping project and a notable example of participatory geographic information systems (GIS). Geospatial data collected by citizen cartographers are complemented with digitized open source aerial photography and free maps available from the governmental and com-

mercial sources. According to the authors, the most significant use of OpenStreetMap came in the aftermath of the massive earthquake in Haiti on January 12, 2010. The collaborative mapping effort of thousands of volunteers which followed the devastating earthquake demonstrated the major social impact of Open-StreetMap and the valuable public service it performs for society. Besides OpenStreetMap, Wikimapia is currently the only comparable open-content collaborative online mapping application and community of users. Although Google Maps with over 1 billion users (Locke, 2012) dominates the digital mapping landscape, volunteer-based OpenStreetMap and Wikimapia have not only materialized the idea of citizen cartography, but also affected the practices of commercial mapping. In response to the challenges of open mapping, Google Maps allowed its registered users to make corrections to the local maps it provides.

New Technologies, New Challenges, New Opportunities

A conference report and a book review conclude the present issue of IJICST. The conference report offers an overview of the 2012 Virtual Conference of the International Communication Association, May 14-June 8, which ran in conjunction with the May 24-28, 2012, physical convention held in Phoenix, Arizona. In this report, the editor, who served as a respondent for the Communication and Technology division, shares insight about ICA Virtual Conference 2012 and reflects on the sustainability and future of virtual conference technology. Virtual conferences, trade shows, and other online events are becoming increasingly common. The convergence of stand-alone audio, video, and other teleconferencing applications into comprehensive platforms presents both challenges and opportunities to conference organizers.

While the demise of books in the digital age has been predicted, the death of a face-to-face conference is perhaps far from reality. Instead, a symbiosis of old and new emerges,

in which virtual and physical conventions co-exist in a so-called hybrid format. Such flexibility allows conference organizers to increase their reach, and shift their focus from disseminating information to networking and collaboration. A new generation of virtual conference technologies provides customizable building blocks that users can adapt to design their own virtual conferences. Emphasis is now placed not on streaming video content or making slides available online, but rather on continuous participant engagement before, during, and after the event.

Nicole L. Muscanell and Rosanna E. Guadagno (USA) provide a review of *Strategic Uses of Social Technology: An Interactive Perspective of Social Psychology* (Cambridge University Press, 2011) edited by Zachary Birchmeier, Beth Dietz-Uhler, and Garold Stasser. The book examines the socio-psychological aspects of behavior on the Internet. *Strategic Uses of Social Technology* is a comprehensive text, addressing areas that involve mediated interactions ranging from Internet-based groups and interpersonal relationships to social influence, online engagement and ostracism. According to the reviewers, in order to understand the complexity of behavior on the Internet, researchers should be more open-minded in their approaches to social technologies and technology-mediated social processes. It is hard to disagree with such a conclusion. The study of SIT is an emerging area of inquiry and each discipline brings the best of its research traditions to it, as we have seen with the two-step flow model of communication; however, reviving old theories is not without its own challenges.

Overall, with a distinct focus on harnessing the power of social interaction technologies, the present issue takes a transdisciplinary approach, examining recent trends in value co-creation and citizen empowerment through social media, the use of intelligent virtual agents in edutainment, the social influence of blogs, bottom-up collaborative initiatives in participatory GIS, and advances in virtual conference technology. Therefore, this issue

will provide an essential reading for scholars, entrepreneurs, and students of technology alike. Finally, it will be of interest to academics from a broad range of disciplines who engage in teaching and research on issues related to the implications of technology for business, education, and the public sector.

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