Editorial Introduction

The three papers that open this issue of the *Journal of Management Information Systems*—its thirty-third volume—focus on the role of information systems (IS) and information technology (IT) these systems are built around creativity and innovation. A new division of labor is emerging between people and machines, and we need to develop new effective ways for individuals to use IT in creative decision making, problem solving, and product development, and in fostering organizational futures. In parallel, we need to learn how to develop information systems that combine the comparative strengths of people and machines. In the first of the papers, Niek Althuizen and Astrid Reichel empirically investigate the effectiveness of IT-enabled cognitive stimulation tools in enhancing individual ideation and creative problem solving. The three types of software tools the authors examine are stimuli providers, process guides, and mind mappers (which cause individuals to lay out in a map their cognitive associations with the problem to be solved). Following the model of a dual pathway to creativity, the authors dichotomize the stimulation into deeper versus broader exploration of problem solutions. The results offer well-defined guidance for the deployment of creativity support systems and thus contribute to creativity theories as well.

In the next work, Nicholas Roberts, Damon E. Campbell, and Leo R. Vijayasarathy examine at the individual level of analysis managers' use of IS in sensing opportunities for innovation. The well-defined innovative use of IS is seen as a dynamic capability crucial to organizational learning and to exploration in the rapidly changing environment in which contemporary firms operate. The researchers find that the innovative use of IS is related to the higher volume and greater diversity of the generated ideas than routine IS deployment. The authors also surface the organizational factors that moderate the beneficial effects of innovative IS use. In other words, it is vital for the organization to create the climate, training, and environment in which people use technology innovatively.

Social Q&A sites are an important factor in value co-creation and open innovation. Online communities can be involved in sponsored co-creation or in the internal setting to benefit organizations by supporting their products and building their brands. They can also be deployed in autonomous co-creation, where community members organize themselves around interests, brands, life-styles, and various other passions, enthusiasms, and concerns. Both intrinsic and extrinsic motivators are operative in stimulating contributions. What makes community members share their knowledge in online communities? Extrinsic

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motivators have been known—in general terms—to crowd out intrinsic ones. Here, Li Zhao, Brian Detlor, and Catherine E. Connelly refine our thinking about the unintended consequences of extrinsic motivators. The authors use a large data set to study how virtual organizational rewards (such as points, stars, etc.) on the one hand and the sense of reciprocity on the other affect knowledge-sharing behavior. Practical advice to community organizers follows, along with a contribution to motivation theory. In an organizational setting, where the extrinsic motivators prevail, it becomes the task of management to foster a sense of community and peer influence to make the most of such a site.

As a method of distribution of risks and rewards in the shaping of organizational information service, IT outsourcing has attracted close attention for a couple of decades now. A sophisticated understanding of the issues involved and solutions that can evolve is reflected in the next paper, by Amrit Tiwana and Stephen K. Kim. In concurrent sourcing, firms combine in-house provision of some IT services with the outsourcing of others. Things change in IT sourcing as companies seek new capabilities and competences with IT. As cars become the delivery vehicles for software-based services (and not only for the passengers and cargo) and as software-controlled cars are controlled or driven by tens of millions of lines of code, car manufacturers find themselves in the software business and increasingly insource large swaths of IT services. And this is only one example of an industry that gets into the IT business as its core competence. Clearly, things are far more complex than it sounds in combining insourcing and outsourcing of IT. When and how does concurrent IT sourcing enhance the client firm's IT performance? The authors answer this question via their econometric study of the performance of 233 firms, informed by organizational theory. With organizations rebalancing their IT sourcing, the results provided here will be helpful.

The research into social networks and electronic word of mouth (eWOM) continues to bring new insights. Anjana Susarla, Jeong-Ha Oh, and Yong Tan study the propagation of eWOM in social networks, using YouTube video discovery and sharing as their source. What leads to a cascade of popularity? In other words, what are the antecedents of social influence? The authors rely on the extensive literature of social contagion to make a novel contribution to it by uncovering the mechanisms by which early stage popularity of content leads to such contagion. As the (by now) more traditional promotion methods in social media encounter weak response, the results offered here will be of both theoretical and practical interest.

Another online promotion mechanism, group-buying deals, has been encountering headwinds, in part owing to the perception that offering such deals lowers the online reputation of the participating local merchants. Here, Xitong Li shows theoretically and empirically that the volume and valence of online reviews prior to the deal offering has a strong influence and can prevent such a deterioration of reputation. The finding can certainly influence group-deal decision making.

Along with the user reviews, the corpus of articulations available online includes professional reviews by experts and critics. The interplay between the two has not been studied to a significant extent, and the two review streams have been treated as independent. Here, Wenqi Zhou and Wenjing Duan show that the interaction between the two streams is indeed significant. The researchers show that professional reviews have a large effect on user choice decision online, both directly and indirectly, by affecting the volume of user reviews. Taking these results together with those of the two preceding papers, we see a multifaceted contribution to our understanding of eWOM and to the ability to use online media for effective promotion.

Zhenhui (Jack) Jiang, Weiquan Wang, Bernard C.Y. Tan, and Jie Yu present a comprehensive model of the role of website aesthetics in a user's first interaction with the site. As we know, first impressions are often decisive—but how are they formed? The authors propose a five-element model of website quality as perceived by a user and show its worth in testing users' interactions with websites. Interestingly, the authors' empirics show that in users' initial interactions with a website, perceived aesthetics has a larger impact than perceived utility. The website design canon proposed here should be further expanded into design specifics.

The freemium pricing model has achieved wide popularity online, in particular in the software industry, including mobile apps. A producer can proceed in two ways: It can offer the core content product for free and charge for the complementary value-added services, or it can bundle the services with the product and charge a single price. Zan Zhang, Guofang Nan, Minqiang Li, and Yong Tan present a game-theoretic study of this question in a duopolistic competitive setting in the presence of stronger or weaker network effects. Based on this analysis, nuanced guidelines are offered on pricing strategy.

The last paper in the issue addresses one of the key issues of cybersecurity today: the dynamics of malware propagation. Hong Guo, Hsing Kenneth Cheng, and Ken Kelley present a structural risk model of this propagation, based on a growth curve whose four parameters are determined by the properties of the social and technological network in which the propagation is occurring. The authors provide empirical evidence for the explanatory power of their model, based on data from a large organization. The key contribution is the demonstration via simulation of the superiority of the proposed model in applying common malware-defense strategies and thus its relative effectiveness in gauging the risk of a social and technological network configuration.

As we begin the thirty-third annual volume of the *Journal of Management Information Systems*, it is my distinct privilege to offer thanks to our referees, the primary guarantors of the quality of the papers we publish. Here are the names of our reviewers:

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Vladimir Zwass
Editor-in-Chief