

Preface

This book presents the proceedings of the 15th International Federation of Information Processing (IFIP) Conference on e-Business, e-Services, and e-Society (I3E) which was held in Swansea, UK, during September 13–15, 2016. The annual I3E conference is a core part of Working Group 6.11, which aims to organize and promote the exchange of information and cooperation related to all aspects of e-business, e-services, and e-society (the three *Es*). The I3E conference series is truly interdisciplinary and welcomes contributions from both academicians and practitioners alike.

The central theme of the 2016 conference was “Social Media: The Good, the Bad, and the Ugly!” although, in line with the inclusive nature of the I3E series, all papers related to e-Business, e-Services, and e-Society were welcome. The ubiquity of social media has had a profound effect on the way we communicate and is of significant importance to the three *Es*. Despite this, research regarding social media is still evolving and in-depth reviews of existing literature reveal a multiplicity of gaps for future research to address (e.g., Abed et al. 2015; Dwivedi et al. 2015; Plume et al. 2016). Therefore, the aim of the conference was to bring together a community for the advancement of knowledge regarding the adoption, use, impact, and potential of social media across e-business, e-services, and e-society.

Social media tools have helped break down geographical barriers that once restricted communication and have led to an explosion of e-participation, virtual presence, and diverse online communities (Pan et al. 2014). The widespread adoption and use of mobile phones and hand-held wireless devices (Shareef et al. 2016) is acting as a catalyst for the further growth, adoption, and use of social media platforms and related applications particularly in the context of developing countries. Professional benefits of social media include sharing of information, publicity, and giving and receiving support and advice. Consumers have become increasingly empowered to exert an influence on brands (Labrecque et al. 2013) and businesses are able to acquire rapid feedback and garner insight into individual preferences that can be used for service and product development (Rathore et al. 2016). Social media tools also enable citizens to share advice and information with their local community, and are becoming increasingly important for civic engagement and political campaigns (Kapoor and Dwivedi 2015).

The radical transformation of the world that has been enabled by social media presents a fascinating environment for academics from all backgrounds. Social media applications provide a source of valuable big data – the focus of the 14th I3E conference (Janssen et al. 2015). Automated techniques and systems are emerging that can analyze and manage the big data generated. Analytics help businesses to ensure their social media activities are adding value and helping to accomplish business goals, although some organizations are failing to measure return on investment (McCann and Barlow 2015). Analysis of data derived from social media is also being increasingly used to predict political election results (Burnap et al. 2016).

With seemingly endless benefits it is perhaps easy to overlook the disadvantages of social media, which are an increasingly important consideration as social media platforms continue to proliferate. Social media has facilitated a loss of ownership and control of content as private, public, and institutional domains increasingly overlap. Users are becoming more aware of how their behavior on social media affects others' impressions of them (Marder et al. 2016). Other drawbacks include time pressure, plagiarism, misrepresentation, addiction, and negative psychological consequences. The benefits of citizens' social media reporting can quickly be outweighed by rumor mongering (Oh et al. 2013). Research has also highlighted more sinister use of social media to facilitate terrorist attacks (Oh et al. 2011), but even the use of social media for overarching benefits to society, such as detecting and managing crises, presents ethical issues and privacy concerns (Johansson et al. 2012).

The Call for Papers solicited submissions in two main categories: full research papers and short research-in-progress papers. Each submission was reviewed by at least two knowledgeable academics in the field, in a double-blind process. The 2016 conference received submissions from more than 25 countries across the world, including Australia, Canada, China, Germany, India, Japan, Mauritius, Saudi Arabia, South Africa, Sweden, and the USA to name a few. The best papers were selected for inclusion in a special issue of *Information Systems Frontiers* or the opportunity to enhance the manuscript for fast-track review and publication in the *Journal of Enterprise Information Management*, *Transforming Government: People, Process and Policy*, or *International Journal of Electronic Government Research*. The final set of 64 full and short papers submitted to I3E 2016 and appearing in these proceedings were clustered into eight groups, each of which are outlined below.

The papers appearing in Part I address social media strategy and digital business. Based on a literature review, Ogbuji and Papazafeiropoulou suggest a social media strategy framework that organizations can use for business value. Spil, Effing, and Both develop a 3E framework for creating social media strategies based on case studies from the airline industry. The exploratory study by Kwayu, Lal, and Abubakre reveals how social media is reforming strategy within the telecom industry by exerting influence on organizational processes. Moghrabi and Al-Mohammed analyze the effect of social media on the business environment and present recommendations regarding the integration of social media into business operations. Singh, Kumar, Gupta, and Madaan develop a conceptual model of the effect of social media on the competitiveness of electronics manufacturing. Alkhawaiter explores the use of Instagram as a selling platform by Saudi female entrepreneurs and presents some of their success stories. Salichos, Polemi, Douligeris, and Qusa et al.'s paper is the final paper in this cluster and presents an ICT tool, namely, Daedalus, as a best practice example for enabling cross-border collaboration and exchange of information regarding the supply and demand of labor in the Mediterranean basin.

Part II contains papers relating to digital marketing and customer relationship management. Alalwan, Rana, Algharabat, and Tarhini's paper is the first in this part and provides an overview of the main themes and trends of existing social media research in the marketing context. Qi and Mitra's research highlights the need for higher education institutions to create an integrated presence on different social media platforms to truly create a buzz about the institution when marketing postgraduate

courses. Bühler, Cwierz, and Bick consider the interplay between social media and traditional offline advertising channels on cause-related marketing campaigns. Using interviews with campaign creators, Elden, Cakir, and Bakir explore the effect of new communication technologies on corporate social responsibility campaigns. Colicev and O'Connor present preliminary findings relating to how the social media efforts of brands influence consumer mind-set metrics that underlie the purchasing decision. Jalonon and Jussila develop a conceptual model of the relationships between an organization's social media behavior, negative consumer emotions, and brand disloyalty. Using a netnography approach, Peeroo, Samy, and Jones uncover the ways customers react to corporate messages on social media and how value can be created and destroyed. Baur, Henne, and Bick conduct an exploratory study to ascertain opportunities, pitfalls, and success factors organizations report when using social customer relationship management to leverage customer experience. By contrast, Rathore, Shioramwar, and Ilavarasan undertake a quantitative study to explore how social media affects customer relationship management, comparing B2B and B2C relationships. As the final paper in this group, Zhang, Kotkov, Veijalainen, and Semenov apply situational crisis communication theory to explore interaction of airlines with customers on Facebook and how this affects brand image and reputation.

Incorporating a core theme of previous I3E conferences, Part III comprises manuscripts relating to adoption and diffusion. Abdullah and Chan employ focus groups to explore the use of social media among teenagers in Brunei Darussalam. Adopting a different method, Alryalat, Rana, Sarma, and Alzubi use surveys to examine adoption of Facebook by young adults in a rural state of India. Wamba and Akter investigate the role of perceived connectivity on intention to use social media. Abed extends the Technology Acceptance Model to examine the antecedents of continued usage intention of Facebook users in Saudi Arabia and implications for social commerce. Namankani, Moxham, and Tickle develop a conceptual framework for achieving social media adoption in small to medium enterprises. Eginli, Ozdem, and Aktuglu utilize content analysis to discover how GSM operators in Turkey are using Twitter. Marriott and Williams's paper develops a theoretical model to explain antecedents of consumer acceptance of mobile shopping. Baabdullah, Nasseef, and Alalwan adopt a quantitative method to examine factors affecting adoption of mobile government in Saudi Arabia. Gao, Zhang, and Peng undertake an empirical study of factors affecting adoption of smart wearable devices in China. Through case studies of two Indian banks, Sahu and Singh investigate the critical success factors for successful adoption and implementation of green information systems. Finally, Praditya, Sulastri, Bharosa, and Janssen propose a conceptual model to analyze the adoption and implementation of eXtensible Business Reporting Language standard.

Part IV continues the core theme of the conference to draw together manuscripts related to information sharing on social media. Plume and Slade review the theoretical concepts used to explain sharing on social media to date and propose future developments. Bahia and Simintiras consider how value from social media information is created from a combination of sharing, persuasion, and timing. Alajmi and Farhan empirically test a model to examine the influence of source, message, and recipient characteristics on information exchange via Twitter. Ismagilova, Slade, and Williams provide a review of the literature related to effectiveness of electronic word-of-mouth

(eWOM) and an overview of the determinants of eWOM persuasiveness. Kapoor and Gunta utilize a case example to consider the impact of anonymity on eWOM behavior on social media. Mikalef, Pappas, and Giannakos's paper concludes this cluster with an empirical examination of how utilitarian and hedonic features on social media platforms affect purchase and eWOM behavior.

Complementing the previous two clusters, Part V contains papers related to impression, trust and risk management. Thordsen, Murawski, and Bick undertake a structured literature review to devise a research model of the factors affecting self-disclosure in social networks. Gonibeed and Ravishankar conduct interviews with Indian IT professionals to explore how individuals manage their image when interacting with professional contacts online. Aggarwal, Rai, Jaiswal, and Sorensen investigate how the norm of reciprocity affects trustworthiness in social media. Kaur, Arif, and Akre conduct a literature review to explore the positive and negative effects of social media interactions on trust among virtual team members. Abdelghani, Zayani, Amous, and Sédes consider concepts and properties of social Internet of Things, and the models that have been proposed for trust management in these environments. Dordevic, Safieddine, Masri, and Pourghomi seek to identify the variables that influence the process, speed, and success pace of fighting misinformation online. Tackling privacy risks and misuse, Hashimoto, Ichino, Kuboyama, Echizen, and Yoshiura present a method that uses machine learning to link social network accounts to resumes. Kumar, Dasari, Nath, and Sinha's paper concludes this part with a discussion of techniques to control and mitigate targeted socioeconomic attacks that can result from social media.

Significant opportunities and challenges are presented by the large volumes of data resulting from social media. The papers in Part VI address data acquisition, management, and analytics. Mian, Mäntymäki, Riekk, and Oinas-Kukkonen extend the concept of the Internet of Things to develop a conceptual framework of the Social Sensor Web along with five dimensions that can guide the design of future health and wellness technologies. Based on a case study of a large telecom company, Wahyudi and Janssen derive process patterns for dealing with big data comprising various qualities. Setiya, Ubacht, Cunningham, and Oruç seek to uncover the kind of business intelligence on opinion information that can be derived from user-generated content on Twitter. Bosangit, McCabe, and Hibbert use discourse analysis of blogs to demonstrate how qualitative analysis of language can provide rich insights into consumption experiences. Lakhiwal and Kar utilize more than 40,000 tweets about a major economic event in India to explore social media personality dimensions. Amirhanyan and Meinel collect and analyze social geotagged data and propose filters to provide situational awareness. Using semistructured interviews, Marbouti and Maurer seek to provide insight into the challenges that practitioners face when trying to extract emergency-related information from social media. Saumya, Singh, and Kumar investigate the role of social media users in predicting stock price movements in India. Brous, Janssen, and Herder's paper completes this section with an exploration of the impact of data governance on asset management decision-making.

Part VII draws together all papers related to e-government and civic engagement. Pal and Gonawela's paper starts with an examination of growing social media use for political communication in low- and middle-income countries. The literature review undertaken by Sivarajah, Weerakkody, and Irani seeks to examine the opportunities

and challenges that Web 2.0 technologies offer to public authorities. Bolívar adopts a quantitative method to explore the perceptions of local government policy makers about the governance model for management of Web 2.0 applications used for the delivery of public services. Mitra, Gupta, and Bhattacharya seek to derive insight from mobile governance initiatives by urban and local bodies in India. Kumar, Singh, and Gupta propose a framework for smart governance through social media. Raghavan, Wani, and Abraham empirically investigate the role of personality traits and technology perspectives in affecting use of social media for civic engagement. The final paper in this group by Hossain, Chan, and Dwivedi undertakes a quantitative study to identify the factors that influence intention to share political content on social media and the moderating effect of collective opinion.

The final section of these proceedings, Part VIII, presents manuscripts focused on e-society and online communities. Gao and Zhang propose a framework of four overarching dimensions of business model concepts to explore the sharing economy in China. Jenkins, Lin, and Jeske empirically examine the influences and benefits of role models on social media. Hattingh and Matthee explore the ways in which Facebook is used in the quest for finding missing persons in South Africa. Sircar and Rowley use a case study analysis of Hillsong megachurch to understand how social media can be used for the growth of engagement in large scattered communities. Tripathi explores the effects of Indian higher education institutions' unofficial presence on social media. Al-Hamad, Kollar, Asim, and Mishra, propose a mathematical integrated connectedness model to monitor effectiveness of teaching and learning strategies, assuming identical importance of the six learning domains. The final paper contained within the 15th IFIP I3E proceedings is by Majekodunmi and Harris who explore the factors affecting adoption of social media banking.

In addition to the aforementioned papers, we were delighted to welcome Prof. H. Raghav Rao, Prof. Viswanath Venkatesh, and Prof. Ben Light as our keynote speakers. Professor H. Raghav Rao is AT&T Distinguished Chair in Infrastructure Assurance and Security at the University of Texas San Antonio College of Business. His interests are in the areas of management information systems, decision support systems, e-business, emergency response management systems, and information assurance. He was ranked no. 3 in publication productivity internationally in a 2011 Communications of the Association for Information Systems study. Professor Rao's keynote, authored in collaboration with Onook Oh from the University of Colorado Denver, Priya Gupta from Amrita School of Business, Bangalore, and Manish Agrawal from the University of South Florida, was entitled "ICT Mediated Rumor Beliefs and Resulting User Behaviors During a Community Crisis." In this work, authors attempted to explore an extreme case of the ICT-mediated rumor incident – the August 2012 hate rumor(s) targeted toward a specific ethnic community in the technological hub of Bangalore in India – which led to the mass exodus of a targeted group of citizens. A survey of the targeted citizens suggests that kin ties and communication media characteristics influenced rumor belief, which, in turn, prompted extreme behavioral responses such as mass exodus. Confirming the relevance of rumor belief as a trigger of extreme collective behaviors, the authors found that people who believed the received rumors as true information took both informational (rumor-spreading) and behavioral (safety-seeking) actions. People who believed the hate rumors as true messages tended to take more

extreme actions (e.g., rush to leave their own community) rather than mild or moderate actions (e.g., check safety of their acquaintances or stay at home without going outside).

Professor Viswanath Venkatesh is Distinguished Professor and Billingsley Chair in Information Systems at the Walton College of Business, University of Arkansas. His research focuses on understanding the diffusion of technologies in organizations and society. He is recognized as one of the most influential scholars in business and economics, with about 55,000 cites in Google Scholar and about 13,000 cites in the Web of Science. Professor Venkatesh's keynote was entitled "Pursuing the United Nations' Millennium Developmental Goals: Lessons Learned from a Project in Villages in India." The pursuit of the Millennium Development Goals (MDGs) of the United Nations is of economic and social significance to the poorest citizens of less developed countries. Information and communication technologies are seen to have the potential to help achieve these goals. Yet, the presence of a digital divide, which is the gulf between the information and communication technology (ICT) *haves* and *have-nots*, exists across a variety of demographic, ethnic, and geographic dimensions. Overcoming the digital divide by successfully deploying ICTs in developing countries can have major socioeconomic implications for those countries. ICTs can be a cornerstone for the development of these countries by providing a better quality of life through greater access to education, health care, and government. ICT success, typically defined in terms of adoption and use, is rare, with up to 85 % failing to some degree in developing countries. To this end, Professor Venkatesh discussed a large-scale longitudinal (10+ years) research project being conducted in India among more than 3,000 farming families across 10 villages. Against the backdrop of this project, potential research opportunities were discussed.

Ben Light is Professor of Digital Society at University of Salford, UK. His research concerns people's everyday experiences of digital media with a focus on (non)consumption, digital methods, gender and sexuality. His book, *Disconnecting with Social Networking Sites* was published in 2014. Professor Light's keynote was entitled "The Internet of Us: Increasing Convergence Amongst Digital and Physical Actors". The notion that the online and offline are separate elements of life where social media is concerned has been significantly undermined due to various sociotechnical theorizations and practical developments. In recent years, there has been much discussion of algorithmic culture, the politics of platforms, the quantified self, geolocation, bots and the Internet of Things for instance. In his talk Prof Light explored what this increasing convergence of the physical and the digital means for many of us where social media is integral to our lives, particularly where previously somewhat such separate sociotechnical arrangements are brought into being together. Ultimately, he argued that we are seeing a shift not only to an Internet of Things, but also towards an Internet of Us and this has significant implications for how we approach the study of social media.

The success of the 15th IFIP I3E Conference was a result of the enormous efforts of numerous people and organizations. Firstly, this conference was only made possible by the continued support of WG 6.11 for this conference series and for selecting Swansea to host I3E 2016, and for this we are extremely grateful. We are privileged to have received so many good-quality submissions from authors across the globe and the biggest thank you must go to them for choosing I3E 2016 as the outlet for their current research. We are indebted to the Program Committee, who generously gave up their

time to provide constructive reviews and facilitate the improvement of the manuscripts submitted. We would like to thank the School of Management and Swansea University for hosting the conference as well as the EMaRC and i-Lab research centers and Gulf University of Science and Technology, Kuwait, for supporting the conference. Finally, we extend our sincere gratitude to everyone involved in organizing the conference, to our esteemed keynote speakers, and to Springer LNCS as the publisher of these proceedings, which we hope will be of use for the continued development of research related to the three *Es* and social media in particular.

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Yogesh K. Dwivedi
 Matti Mäntymäki
 M.N. Ravishankar
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 Marc Clement
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