Inf Syst Front (2017) 19:699–703
DOI 10.1007/s10796-017-9776-9

Special issue on smart, connected hospitality and tourism

Chulmo Koo[1] · **Francesco Ricci**[2] · **Cihan Cobanoglu**[3] · **Fevzi Okumus**[4]

Published online: 4 July 2017

1 Introduction

Smart and Connected Hospitality and Tourism deals with tourism products and services in accommodation, transportation, restaurant, shopping, event and festival, which are managed by ICT applications that allow transactions to be exchanged between the travelers and its environment, service provider, operator/traveler, and systems. Connectivity enables travelers to choose providers of "tourism product and services", such as, lodging, restaurant, car, or train, in their value versus cost efficiency, through physical devices (e.g. Smartphones). The mobile or smartphone revolution have created a connection between humans and machines in multifold contexts within smart cities, hence creating a new governance structure, a sustainability model and improving quality of life (Gretzel et al. 2016; Rivera et al. 2016).

Tourists use a variety of tourism related smartphone applications and transform their behaviors by making all the tourism infrastructural actors more interested in "smart, connected products… new functionality, greater reliability, higher product utilization (Porter and Heppelmann 2014, p.4)". Tourists are looking for optimized tourism products based on their specific time and budget. To better understand the research agenda on smart connected tourism we offer this special issue. In this introductory editorial we provide an overview of some smart connected tourism ideas by the concept of connectivity and integration with the use of IS to create smart tourism and solution. We also identify future issues for smart tourism, and include a vision on how in the tourism field one needs to further develop information systems and technologies. We then provide an overview of the papers collected in this special issue and the important themes and solutions here discussed.

2 Smart connected tourism

Smart connected hospitality and tourism, in a smart city and destination, refers to the collection, aggregation and usage of data derived from physical infrastructures, social connections, government and organizational sources, generated by advanced information technologies such as Apps, social media, and website, in order to transform that data into on-site experiences (Gretzel et al. 2015a). For example, Whim, an app supporting the Finish mobility, provides citizen instant access to every type of transports including cars to taxis, buses, trains and bike

✉ Chulmo Koo
helmetgu@khu.ac.kr

Francesco Ricci
fricci@unibz.it

Cihan Cobanoglu
cihan@sar.usf.edu

Fevzi Okumus
fevzi.okumus@ucf.edu

[1] College of Hotel & Tourism Management, Kyung Hee University, Seoul, South Korea

[2] Faculty of Computer Science, Free University of Bozen-Bolzano, Bolzano, Italy

[3] College of Hospitality and Tourism Leadership, University of South Florida Sarasota-Manatee (USFSM), Sarasota, FL, USA

[4] Hospitality Services Department, Rosen College of Hospitality Management, University of Central Florida, Orlando, FL, USA

sharing. It has been implemented by integrating ticketing and payment. In fact, there is a huge travel business potential for global tourists to get a specific destination and a more convenient mobility (The Economist Sep 29th 2016). And the smart connected layers of both cities and tourism is a social phenomenon arising from the convergence of citizens' daily life in a business ecosystem (Kim et al. 2010) and tourism ecosystems (Gretzel et al. 2015b) in Fig. 1.

3 Smart cities

Smart city and tourism layers are generally combined as communities of interacting city daily lives and their tourism environments (Gretzel et al. 2015b). The term "Smart" is associated with resource sharing for optimization through the use of advance technologies (Gretzel et al. 2015a) by supporting the residential government policies and systems integration. Both general business actors and touristic actors are environmentally interacting and engaging. Loosely connected individual agents, groups of agents, or tourism companies proactively form symbiotic relationships with tourism producers, distributors, consumers, government agencies. Those smart components in a smart city, by means of a network of cooperating general and tourism business, can generate unexpected outcomes that go, beyond a particular context.

This is achieved by autonomous and organic leveraging the information and communication infrastructure (Hunter et al. 2015; Law et al. 2015), and a range of new mobile and wearable user's devices for travelers and citizen in the smart city layer. City-wide network integrates digital platform by connecting mobile payment, monitoring streets, reducing energy use, which can be better managed and designed form a smart city perspective. Smart connected services for travelers allow them to explore a destination safely, affordably, and reliably like the residents who are living in a daily life in the region. All the dynamics in the ecosystems and its openness can make users' engagement possible and simply by leveraging the globally open and interactive networked architecture in a smart city. Moreover, it could be systemic and digital on-demand basis.

This new paradigm now changes quickly door-to-door within the city and gives to both citizen and tourist a new experience, and enhance tourism cities (i.e., destinations) competitiveness. Smartness encourages connecting more networking layer, which supports the cooperation of tourism actors and business partners seamlessly, either humans or machines (Koo et al. 2016a). With the growth of daily life innovations in smart city, it should be applicable to smart tourism systems at the same time for travelers being connected one another (Koo et al. 2016b).

In recent years, industry practitioners and scholars have started viewing smart connected tourism from a more holistic perspective integrating smart city and smart tourism. In fact, it has become evident that smart and connected tourism businesses give more opportunities to maximize actors' benefits than conventional ways of getting around general businesses. In sum, since smart connected city and tourism overlap, the tourism business requires a design that bridges all the residential

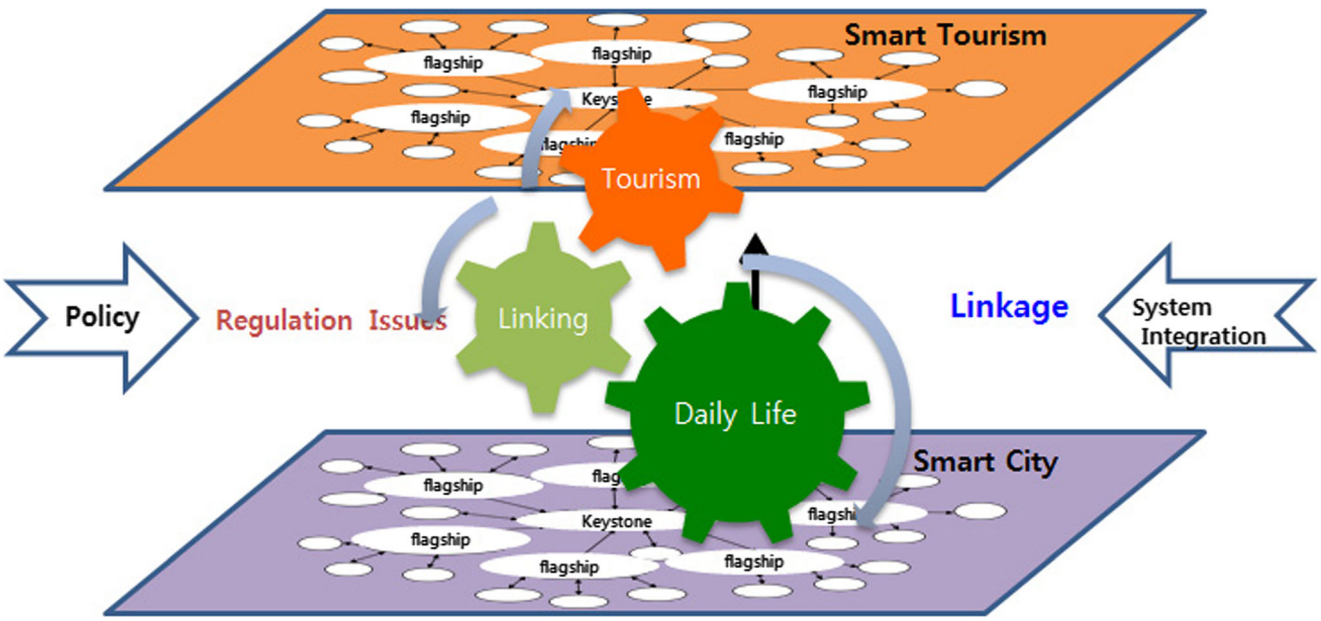

Fig. 1 Smart connected layers of smart city and smart tourism

life components and non-residential systems (e.g., global mobile booking, ticketing, and payment service).

4 Summary of the special issue

The papers collected in this special issue incorporate smart tourism issues into information systems research. They tackle and expand various research methodologies, including: theoretical approaches such as theory building, empirical studies encompassing surveys, and data analytics approaches. They connect smart tourism to engineering, economics, and social sciences. We received twelve papers for consideration and after a rigorous review process we have selected six of them.

The opening paper by Wani et al. (2017) proposes a travel website evaluation model, which considers traditional utility and hedonic aspects in the analysis of the Indian market. The authors extend DeLone and McLean's IS Success model to a travel website context and suggest utility and hedonic dimension as important factors. The second paper by Chung et al. (2017) focuses on the perspective of travelers' readiness and technology acceptance model with hedonic view and analyzes the relationship between travelers' readiness, geotag technology perception, and geotag adoption. The use intention of geotag is affected by ease of use and enjoyment. The third paper by Ozturk et al. (2017) sets the stage by providing an integrated theoretical model that examines the determinants of mobile hotel booking loyalty. This study suggests that personalization, privacy concern, trust, perceived risk, and loyalty are in the research context and found the personalized service was a strong predictor of mobile hotel booking users' mobile hotel booking technology. This study has specific theoretical and practical implications for online travel agencies, hotel operators, and hospitality technology vendors.

In travelling from a place to a place using information systems in the cultural heritage site, the fourth paper by Lee (2017), analyzes the low usage of audio guides. The author found that the multi-functionality of audio guides (user-friendliness, usability, interactivity, and social functions) needs to be improved for the wise use of ICT in the promotion of heritage places. The fifth paper by Hlee et al. (2017) explores the characteristics of trade show's onsite information technology. The author find that relative advantage and compatibility had positive impacts on trade show effectiveness. Trade show needs high quality information for both of specialists and experts in one place at one time. The paper's theoretical and practical implications are for convention and exhibition area experts. In trying to further understand how online reviews for a specific destination and actual characteristics of the destination interact, the final paper by Shin et al. (2017) proposes a conceptual foundation of a landscape personality scale based on a destination personality scale using online review. This study implies that a specific landmark may differ from those that portray the entire destination and the words by tourists suggested in real situations.

5 Conclusion

We are delighted to have finalized this special issue. We would like to thank our authors who have contributed to this special issue and our reviewers for their time and feedback. We also greatly appreciate the help of the Editors-in-Chief, R. Ramesh and H. Raghav Rao, of Information Systems Frontiers, for allowing us to guest edit this important and timely special issue. Finally, we would like to thank the Springer staff who helped us to manage the review and publishing process.

Reviewer List

Gun-Woong Lee, National Technology University of Singapore, Singapore.
Eunjoo Yoon, Hallym University, Korea.
Heejeong Han, Korea Culture and Travel Institute, Korea.
Hungmin Lee, Sungshin University, Korea.
Jaewon, Soonchunhyang University, Korea.
Jinyoung Kim, Kyung Hee University, Korea.
Jiuchang Wei, University of Science and Technology of China, China.
Juhyoung Han, Kyeonggi University, Korea.
Kyungmin Lee, Kyung Hee University, Korea.
Morteza Alaeddini, Amirkabir University of Technology, Iran.
Seung Jae Lee, Kyung Hee University, Korea.
Sujeong Choi, Chonnam National University, Korea.
Sunyoung Hlee, Kyung Hee University, Korea.
Young-Wook Seo, Daejeon University, Korea.
Sangcheol Park, Deague University, Korea.
Yoonjae Nam, Kyung Hee University, Korea.
Yohei Kurata, Tokyo Metropolitan University, Japan.
Yoyo Yuan, Jinwen University of Science and Technology, Taiwan.

Acknowledgements This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2016S1A3A2925146).

References

Chung, N., Tyan, I., & Han, H. (2017). Enhancing the smart tourism experience through geotag. *Information Systems Frontiers, 19*(4). doi:10.1007/s10796-016-9710-6.

Gretzel, U., Sigala, M., Xiang, Z., & Koo, C. (2015a). Smart tourism: Foundations and developments. *Electronic Markets, 25*, 179–188.

Gretzel, U., Werthner, H., Koo, C., & Lamsfus, C. (2015b). Conceptual foundations for understanding smart tourism ecosystems. *Computers in Human Behavior, 50*, 558–563.

Gretzel, U., Zhong, L., & Koo, C. (2016). Application of smart tourism to cities. *International Journal of Tourism Cities, 2*(2). doi:10.1108/IJTC-04-2016-0007.

Hlee, S., Lee, J., Moon, D., & Yoo, C. (2017). The acceptance of 'intelligent trade shows': Visitors' evaluations of IS innovation. *Information Systems Frontiers, 19*(4). doi:10.1007/s10796-016-9703-5.

Hunter, W. C., Chung, N., Gretzel, U., & Koo, C. (2015). Constructivist research in smart tourism. *Asia Pacific Journal of Information Systems, 25*(1), 105–120.

Kim, H., Lee, J. N., & Han, J. (2010). The role of IT in business ecosystems. *Communications of the ACM, 53*(5), 151–156.

Koo, C., Yoo, K. H., Lee, J. N., & Zanker, M. (2016a). Special section on generative smart tourism systems and management: Man-machine interaction. *International Journal of Information Management, 36*, 1301–1305.

Koo, C., Joun, Y., Han, H., & Chung, N. (2016b). A structural model for destination travel intention as a media exposure: Belief-desire-intention model perspective. *International Journal of Contemporary Hospitality Management, 28*(7), 1338–1360.

Law, R., Leung, R., Lo, A., Leung, D., & Fong, L. H. N. (2015). Distribution channel in hospitality and tourism: Revisiting disintermediation from the perspectives of hotels and travel agencies. *International Journal of Contemporary Hospitality Management, 27*(3), 431–452.

Lee, S. L. (2017). A review of audio guides in the era of smart tourism. *Information Systems Frontiers, 19*(4). doi:10.1007/s10796-016-9666-6.

Ozturk, A. B., Nusair, K., Okumus, F., & Singh, D. (2017). Understanding mobile hotel booking loyalty: An integration of privacy calculus theory and trust-risk framework. *Information Systems Frontiers, 19*(4). doi:10.1007/s10796-017-9736-4.

Porter, M. E., & Heppelmann, J. E. (2014). How smart, connected products are transforming competition. *Harvard Business Review*, 1–23.

Rivera, M., Croes, R., & Zhong, Y. (2016). Developing mobile services: A look at first-time and repeat visitors in a small island destination. *International Journal of Contemporary Hospitality Management, 28*(12).

Shin, S. H., Yang, S. B., Nam, K., & Koo, C. (2017). Conceptual foundations of a landmark personality scale based on a destination personality scale: Text mining of online reviews. *Information Systems Frontiers, 19*(4). doi:10.1007/s10796-016-9725-z.

The Economist (2016) It starts with a single app. Sep 29th 2016. http://www.economist.com/news/international/21707952-combining-old-and-new-ways-getting-around-will-transform-transportand-cities-too-it.

Wani, M., Raghavan, V., Abraham, D., & Kleist, V. (2017). Beyond utilitarian factors: User experience and travel company website successes. *Information Systems Frontiers, 19*(4). doi:10.1007/s10796-017-9747-1.

Dr. Chulmo Koo is an Associate Professor in College of Hotel & Tourism Management, Kyung Hee University, South Korea. He received his PhD in business administration from Sogang University, South Korea and having served as a post-doctorate fellowship in the University of Minnesota, MIS Research Center, USA, as well as serving as a full time instructor in Marshall University, West Virginia. He was an Assistant Professor at Chosun University, South Korea, and a tenured Associate Professor currently at Kyung Hee University, South Korea. He is the Editor-in-Chief of the Journal of Korea Service Management and a director of smart tourism at the Kyung Hee University. Since Prof. Koo has been managing the special issue of Smart Tourism, which those are Electronic Markets, Computers in Human Behavior, International Journal of Information Management, International Journal of Tourism Cities, Asia Pacific Journal of Information Systems, Information and Management, Sustainability, Tourism Review, Information Processing and Management, and the Journal of Business Research. He is an author of more than one hundred refereed publications and, according to Google Scholar, has an H-index of 17 and approximately 1000 citations. He has received the "Paper of the Year 2016" award from Electronic Markets journal.

Francesco Ricci is full professor and dean of the Faculty of Computer Science, Free University of Bozen-Bolzano. Since November 2012 he is with the Information and Database System Engineering research area. F. Ricci has established in Bolzano a reference point for the research on Recommender Systems. He has co-edited the Recommender Systems Handbook (Springer 2011, 2015), and has been actively working in this community as President of the Steering Committee of the ACM conference on Recommender Systems (2007–2010). He was previously (from 2000 to 2006) senior researcher and the technical director of the eCommerce and Tourism Research Lab (eCTRL) at ITC-irst (Trento, Italy). From 1998 to 2000 he was system architect in the Research and Technology Department (Process and Reuse Technologies) of Sodalia s.p.a. F.Ricci has participated to several international research projects such as: RECOM (funded by Deutsche Telekom), etPackaging (funded by ECCA), European Tourist Destination Portal (funded by European Travel Commission), Harmoten (funded by IST), DieToRecs (Intelligent Recommendation for Tourist Destination Decision Making, funded by IST). Francesco Ricci is author of more than one hundred fifty refereed publications and, according to Google Scholar, has H-index 42 and around 10,000 citations.

Cihan Cobanoglu is Cihan Cobanoglu is a McKibbon Endowed Chair Professor in the College of Hospitality and Tourism Leadership (CHTL) at the University of South Florida Sarasota-Manatee (USFSM). He also serves as the Director of M3 Center for Hospitality Technology and Innovation at USFSM. He also serves as the Director of M3 Center for Hospitality Technology and Innovation and Director of Global Engagement at USFSM. He is a Certified Hospitality Technology Professional (CHTP) commissioned by Hospitality Financial & Technology Professionals (HFTP) and Educational Institute of American Hotel & Lodging Association (AHLA). He is the Editor of the Journal of Hospitality and Tourism Technology (JHTT) and a co-author of four textbooks and two conference proceedings. Dr. Cobanoglu served as the chair of the American Hotel and Lodging Association's (AHLA) Technology and E-Business Committee from 2009 to 2011 and also a member of CHTP Advisory Council and Editorial Advisory Board of HFTP. In addition, Dr. Cobanoglu is a visionary board member of Hospitality Technology magazine and editorial board member of Cornell Hospitality Quarterly, International Journal of Contemporary Hospitality Management, International Journal of Hospitality and Tourism Administration and Journal of Hospitality and Tourism Education. Dr. Cobanoglu also serves the industry as consultant. He is the founder of Global Interdisciplinary Business-Economics Advancement Conference (GIBA). Dr. Cobanoglu created curriculum for hospitality software: innRoad Property Management System, M3 AccKnowledge Hotel Accounting System, and M3 Link Hotel Business Intelligence System.

Fevzi Okumus is a Professor in the Hospitality Services Department with the University of Central Florida's Rosen College of Hospitality Management. He was the founding Chair of the Hospitality Services Department from 2007 to 2013. He received his PhD in Strategic Hotel Management from Oxford Brookes University, UK. His teaching areas include strategic management, leadership development, strategic human resources management, hotel management, international hospitality management and introduction to hospitality and tourism. His research areas include strategy implementation, competitive advantage, knowledge management, crisis management, cross-cultural management, destination

marketing, information technology and developing countries. Professor Okumus has widely published in leading journals, including Annals of Tourism Research, Tourism Management, Service Industries Journal, Management Decision, International Journal of Hospitality Management, International Journal of Contemporary Hospitality Management and Journal of Hospitality and Tourism Research. He has over 210 academic publications (about 93 refereed journal articles, three books, 11 book chapters and 60 conference presentations, reports etc.). He has received numerous research awards and recognitions. He is the Editor-in-Chief of the International Journal of Contemporary Hospitality Management (IJCHM), which is one of the top-tier journals in the hospitality field with an impact factor of 2.176. He serves on the editorial boards of 23 international journals. He is a frequent invited speaker at international conferences.