

Information and Communication Technologies in Tourism 2014

Zheng Xiang · Iis Tussyadiah
Editors

Information and Communication Technologies in Tourism 2014

Proceedings of the International Conference
in Dublin, Ireland, January 21–24, 2014



Springer

Editors

Zheng Xiang
Virginia Tech
Blacksburg, VA
USA

Iis Tussyadiah
Washington State University
Vancouver, WA
USA

ISBN 978-3-319-03972-5

ISBN 978-3-319-03973-2 (eBook)

DOI 10.1007/978-3-319-03973-2

Springer Cham Heidelberg New York Dordrecht London

Library of Congress Control Number: 2013955915

© Springer International Publishing Switzerland 2013

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed. Exempted from this legal reservation are brief excerpts in connection with reviews or scholarly analysis or material supplied specifically for the purpose of being entered and executed on a computer system, for exclusive use by the purchaser of the work. Duplication of this publication or parts thereof is permitted only under the provisions of the Copyright Law of the Publisher's location, in its current version, and permission for use must always be obtained from Springer. Permissions for use may be obtained through RightsLink at the Copyright Clearance Center. Violations are liable to prosecution under the respective Copyright Law. The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

While the advice and information in this book are believed to be true and accurate at the date of publication, neither the authors nor the editors nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Preface

Organized by the International Federation for IT and Travel & Tourism (IFITT), ENTER2014 eTourism Conference was held in Dublin, Ireland on January 21-24, 2014. The international conference featured the latest research and industry case studies on the application of information and communication technologies (ICT) to travel and tourism under the theme “Where Social Inspiration Meets Dynamic eTourism Innovation.”

The research track of ENTER2014 received a total of 141 submissions, 106 of which were full research papers covering a diverse variety of fields within the area of ICT and tourism. Each research paper submission went through a rigorous double blind review process with at least three members of ENTER2014 Scientific Committee assigned as reviewers. Where issues remained, additional reviews were commissioned. As a result, 65 full research papers were accepted for presentation at the conference and are included in this proceedings.

While still maintaining a broad topic of ICT application in travel and tourism, the conference covered local specializations and interests, as reflected in this proceedings. This proceedings comprises eight topics ranging from the development and strategic use of mobile and context-aware systems, social media and big data analytics, e-learning and organizations' adoption of ICT, and many more. This shows not only how significant the advancement in ICT is to tourism management and innovation, but also how relevant and impactful scientific research in tourism can be for further development in ICT. The papers featured in this proceedings bring new perspectives to the field and give a promising evidence that the field of ICT and tourism will continue to contribute to our society. We hope this proceedings will serve as a valuable source of information on the state-of-the-art in ICT and tourism research.

We greatly appreciate the considerable time put in by all members of ENTER2014 Scientific Committee who helped us ensure that the content of the research papers was of high quality. We are indebted to the panel of experts who helped us with additional reviews to select candidates for best paper award. We are also thankful to ENTER2014 Chair, Wolfram Höpken, IFITT President, Dimitrios

Buhalis, other ENTER2014 organizers and members of IFITT for their support and for accommodating the many inquiries we have made while managing the research track. Lastly, we thank all who have expressed interest in the conference and contributed to it.

Blacksburg
Vancouver

Zheng Xiang
Iis Tussyadiah

ENTER2014 Scientific Committee

Alford Philip	Bournemouth University, UK
Au Norman	Hong Kong Polytechnic University, Hong Kong
Aubke Florian	MODUL University Vienna, Austria
Baggio Rodolfo	Bocconi University, Italy
Beldona Srikanth	University of Delaware, USA
Pan Bing	College of Charleston, USA
Benkendorff Pierre	The University of Queensland, Australia
Bolchini Davide	Indiana University-Purdue University, USA
Buhalis Dimitrios	Bournemouth University, UK
Cantoni Lorenzo	Universita della Svizzera Italiana, Switzerland
De Ascaniis Silvia	Universita della Svizzera Italiana, Switzerland
Del Chiappa Giacomo	University of Sassari, Italy
Di Blas Nicoletta	Politecnico di Milano, Italy
Dioko Leonardo	Institute for Tourism Studies Macau, China
Egger Roman	Salzburg University of Applied Sciences, Austria
Fesenmaier Daniel	Temple University, USA
Francalanci Chiara	Politecnico di Milano, Italy
Frew Andrew	Queen Margaret University, UK
Froeschl Karl	University of Vienna, Austria
Fuchs Matthias	Mid Sweden University, Sweden
Gerrikagoitia Jon Kepa	CICtourGUNE, Spain
Goecke Robert	Munich University of Applied Sciences, Germany
Govers Robert	Independent scholar author and advisor
Gretzel Ulrike	University of Wollongong, Australia
Ham Sunny	University of Kentucky, USA
Hitz Martin	Alpen-Adria-Universität Klagenfurt, Austria
Horan Patrick	Dublin Institute of Technology, Ireland
Höpken Wolfram	Hochschule Ravensburg-Weingarten, Germany
Inversini Alessandro	Bournemouth University, UK
Jung Timothy	Manchester Metropolitan University, UK
Kausar Devi Roza	Pancasila University, Indonesia
Kawamura Hidenori	Hokkaido University, Japan

Klein Stefan	University of Münster, Germany
Koo Chulmo	Kyung Hee University, South Korea
Kurata Yohei	Tokio Metropolitan University, Japan
Lamsfus Carlos	CICTourGUNE, Spain
Law Rob	The Hong Kong Polytechnic University, Hong Kong
Lee Andy	The Hong Kong Polytechnic University, Hong Kong
Lee Miranda	University of New Haven, USA
Leung Daniel	Hong Kong Polytechnic University, Hong Kong
Leung Rosanna	Caritas Institute of Higher Education, Hong Kong
Lexhagen Maria	Mid-Sweden University, Sweden
Li Gang	Deakin University, Australia
Li Nao	Beijing Union University, China
Linaza Maria Teresa	Vicomtech, Spain
Lubbe Berendien	University of Pretoria, South Africa
Ludwig Bernd	Erlangen University, German
Marchiori Elena	Universita della Svizzera Italiana, Switzerland
Maurer Christian	University of Applied Sciences Krems, Austria
McGrath Michael	Victoria University, Australia
Mich Luisa	University of Trento, Italy
Mills Juline	University of New Haven, USA
Minghetti Valeria	CISET-Ca' Foscari University, Italy
Mistilis Nina	University of New South Wales, Australia
Mitsche Nicole	University of Sunderland, UK
Munar Ana María	Copenhagen Business School, Denmark
Murphy Jamie	University of Western Australia, Australia
Not Elena	FBK Italy, Italy
O'Connor Peter	Essec Business School, France
Onder Irem	MODUL University Vienna, Austria
Paolini Paolo	Universita della Svizzera Italiana, Switzerland
Pechlaner Harald	Catholic University Eichstätt-Ingolstadt, Germany
Peters Mike	MCI Management Center Innsbruck, Austria
Pijl Gert Van Der	Erasmus University Rotterdam, Belgium
Proell Birgit	Johannes Kepler University Linz, Austria
Qi Shanshan	Institute for Tourism Studies, China
Reino Sofia	CICTourGUNE, Spain
Ricci Francesco	Free University of Bozen-Bolzano, Italy
Scaglione Miriam	University of Applied Sciences Western Switzerland, Switzerland
Schegg Roland	University of Applied Sciences Western Switzerland, Switzerland
Sigala Marianna	University of the Aegean, Greece
Stangl Brigitte	University of Surrey, UK
Teppan Erich	University of Klagenfurt, Austria
Tussyadiah Iis	Washington State University Vancouver, USA

Volo Serena	Free University of Bolzano, Italy
Wang Dan	The Hong Kong Polytechnic University, China
Werthner Hannes	Vienna University of Technology, Austria
Xiang Zheng	Virginia Tech, USA
Yamamoto Masahito	Hokkaido University, Japan
Ye Qiang	Harbin Institute of Technology, China
Yoo Kyung-Hyan	William Paterson University, USA
Zach Florian	Washington State University Vancouver, USA
Zanker Markus	University of Klagenfurt, Austria
Zhang Mu	Shenzhen Tourism College, China
Zhao Xinyuan	Sun Yat-Sen University, China
Zins Andreas	MODUL University Vienna, Austria

Contents

ENTER2014 Scientific Committee

Part I Mobile Technologies and Context-Aware Systems

Mobile Social Travel Recommender System	3
Ander Garcia, Isabel Torre and Maria Teresa Linaza	
Mobile Apps Devoted to UNESCO World Heritage Sites: A Map	17
Theresa Karolina Schieder, Asta Adukaite and Lorenzo Cantoni	
An Analysis of Mobile Applications Classification Related to Tourism Destinations	31
Ion Gil Fuentetaja, Ion Zugasti Simon, Ariane Rubio Aranzabal, Maria Peralta Ariza, Carlos Lamsfus and Aukrene Alzua-Sorzabal	
Hotel Mobile Apps. The Case of 4 and 5 Star Hotels in European German-Speaking Countries	45
Asta Adukaite, Annina Melanie Reimann, Elena Marchiori and Lorenzo Cantoni	
The Effects of Presence Induced by Smartphone Applications on Tourism: Application to Cultural Heritage Attractions	59
Keumsil Lee, Hyung Ryong Lee and Sunny Ham	
CT-Planner4: Toward a More User-Friendly Interactive Day-Tour Planner	73
Yohei Kurata and Tatsunori Hara	
Context-Aware Points of Interest Suggestion with Dynamic Weather Data Management	87
Matthias Braunhofer, Mehdi Elahi, Francesco Ricci and Thomas Schievenin	

Business Model of Mobile Service for Ensuring Students' Safety Both in Disaster and Non-disaster Situations During School Trips	101
Hidekazu Kasahara, Mikihiko Mori, Masayuki Mukunoki and Michihiko Minoh	

Predicting from GPS and Accelerometer Data When and Where Tourists Have Viewed Exhibitions	115
Junya Kawase, Yohei Kurata and Naoto Yabe	

Part II Social Media Marketing Strategies

An Investigation into the Use of Social Media Marketing and Measuring its Effectiveness in the Events Industry	131
Alessandro Inversini and Emma Sykes	

Investigating Social Media Marketing in the Hospitality Industry: Facebook and European Hotels	145
Roberta Minazzi and Stefan Lagroen	

Strategic Use of Social Media Affordances for Marketing: A Case Study of Chinese DMOs	159
Jing Ge, Ulrike Gretzel and Rodney J. Clarke	

SoCoMo Marketing for Travel and Tourism	175
Dimitrios Buhalis and Marie-Kristin Foerste	

Content Curation and Narrative Tourism Marketing	187
Oriol Miralbell, Aukene Alzua-Sorabal and Jon Kepa Gerrikagoitia	

Destination Benchmarking with Geotagged Photographs	201
Wolfgang Koerbitz and Irem Önder	

The Adoption of Pinterest for Destination Marketing: The Case of Austrian Destinations	213
Christian Maurer and Bianca Hinterdorfer	

Activity and Influence of Destination Brands on Twitter: A Comparative Study of Nine Spanish Destinations	227
Frederic Guerrero-Solé and José Fernández-Cavia	

Part III Emotion and Sentiment Analyses

How Emotional Do We Get? A Closer Look into the Trip Advisor Dialogue	239
Astrid Dickinger and Lidija Lalicic	
Sentiment Analysis: Extracting Decision-Relevant Knowledge from UGC	253
Sergej Schmunk, Wolfram Höpken, Matthias Fuchs and Maria Lexhagen	
Breaking Up is Hard to Do: Why Do Travellers Unlike Travel-Related Organizations?	267
Ulrike Gretzel and Anja Dinhopl	
Measuring Emotions in Real Time: Implications for Tourism Design	281
Jeongmi (Jamie) Kim and Daniel R. Fesenmaier	

Part IV Social Network and Interaction

Exploring the Role of Facebook in Re-Shaping Backpacker's Social Interactions	299
Edward Alexander Berger and Cody Morris Paris	
Analysing Ecotourists' Satisfaction in Socialisation and Knowledge Sharing Intentions via Social Media	313
Sudipta Kiran Sarkar, Norman Au and Rob Law	
Opinion and Consensus Dynamics in Tourism Digital Ecosystems	327
Rodolfo Baggio and Giacomo Del Chiappa	
Co-creation Through Technology: Dimensions of Social Connectedness	339
Barbara Neuhofer, Dimitrios Buhalis and Adele Ladkin	

Part V Online Reviews

An Exploratory Study on Restaurant Review Websites	355
Shanshan Qi, Fiona Yang and Catherine Li	

Measuring Hotel Service Quality from Online Consumer Reviews: A Proposed Method.	367
Edward Boon, Michelle Bonera and Alessandro Bigi	
Online Review Contents and Their Impact on Three and Four-Star Hotel Reservations: Some Evidence in Italy	381
Selena Aureli, Renato Medei, Enrico Supino and Claudio Travaglini	
Towards a Better Understanding of the Cognitive Destination Image of Euskadi-Basque Country Based on the Analysis of UGC	395
Ainhoa Serna, Jon Kepa Gerrikagoitia and Aukrene Alzua	
Part VI ICT and Travellers' Behaviour	
Adaptive Strategies to Technological Change: Understanding Travellers Using the Internet for Trip Planning	411
Zheng Xiang, Dan Wang and Daniel R. Fesenmaier	
Assessing Structure of Online Channel Use by American Travellers.	425
Yeongbae Choe and Daniel R. Fesenmaier	
Older Tourists: An Exploratory Study on Online Behaviour.	439
Vania Vigolo and Ilenia Confente	
Analysing the Traveller Activities Network for Strategic Design: A Case Study of Baltimore, MD.	453
Jason L. Stienmetz and Daniel R. Fesenmaier	
Facebook it: Evaluation of Facebook's Search Engine for Travel Related Information Retrieval	467
Paul Bulencea and Roman Egger	
A Literature Framework Analysis of Online Hotel Accommodation Process Factors	481
Manus Ward and Mathew Shafaghi	
Part VII Gaming, Gamification and Smart Tourism	
Pervasive Augmented Reality Games to Experience Tourism Destinations.	497
Maria Teresa Linaza, Aitor Gutierrez and Ander Garcia	

Dublin AR: Implementing Augmented Reality in Tourism	511
Dai-In Han, Timothy Jung and Alex Gibson	
Gamification in Tourism	525
Feifei Xu, Jessika Weber and Dimitrios Buhalis	
Expectation of Travel Experiences with Wearable Computing Devices	539
Iis Tussyadiah	
Smart Tourism Destinations	553
Dimitrios Buhalis and Aditya Amaranggana	
NFC Smart City: Cities of the Future—A Scenario Technique Application.	565
Emre Ronay and Roman Egger	
The Impact of Potential Travellers' Media Cultural Experiences	579
Chulmo Koo, Youhee Joun, Heejeong Han and Namho Chung	

Part VIII Website Evaluation

Website Development in Tourism and Hospitality: The Case of China.	595
Liang Wang and Rob Law	
Measuring the Global Readiness of Airline Websites: Are They Speaking the World's Languages?	609
Peter O'Connor and Zaheer A. Shaik	
Digital Divide in Tourism: An Exploration of the Digital Divide Through Quantitative Analysis of the World's National Tourism Organisations Websites	621
Shongwe Sifiso	
An Analysis of the Key Factors Affecting the Success of a Re-Launched Destination Marketing Website in the UK	637
Philip Alford, Yanqing Duan and Jacqui Taylor	
The Website Quality of the Regional Tourist Boards in the Alps: Ten Years Later	651
Luisa Mich	

Hotel Websites, Web 2.0, Web 3.0 and Online Direct Marketing: The Case of Austria	665
Ioannis Stavrakantonakis, Ioan Toma, Anna Fensel and Dieter Fensel	

Measuring the Perceived Image of Lithuania Through its Destination Management Organization Website	679
Stela Dragova, Kristina Petrovskaya and Roman Egger	

Examining Online Brand Image Dimensions from Hotel Managers and Customers Perspectives in Relation to Herzberg's Two-Factor Theory	693
Duangthida Nunthapirat, Andrew Lockwood, Brigitte Stangl and Hesham Al-Sabbahy	

Part IX ICT Adoption

Listening to CEOs: A New Perspective to Study Technology Adoption in Hotels	709
Sofia Reino, Carlos Lamsfus, Hugo Salas, Ortiz Torices and Aurkene Alzua-Sorzabal	

Barriers Affecting Social Media Adoption in Finnish Tourism Businesses	723
Juho Pesonen, Jenni Mikkonen, Marika Makkonen and Antti Honkanen	

Prioritisation of Key Performance Indicators in an Evaluation Framework for Determining the Economic Value and Effectiveness of Internet Room Diagramming Solutions by the Application of AHP	733
Kuan-Wen Lin, Andrew J. Frew and Joe Goldblatt	

Study on Factors to Adopt Mobile Payment for Tourism E-Business: Based on Valence Theory and Trust Transfer Theory	747
Jianqing Huang, Yahui Li and Hailin Li	

Part X eLearning

eLearning Courses Offered by Tourism Destinations: Factors Affecting Participation and Awareness Among British and Indian Travel Agents	763
Nadzeya Kalbaska and Lorenzo Cantoni	

The Property Management System: The View from the Front Desk on Training and Performance	777
Hilary Catherine Murphy	
Sharing Internship Experience on the Internet: A Study of Tourism and Hotel Management College Students	785
Lawrence Hoc Nang Fong, Hee "Andy" Lee, Chris Luk, Daniel Leung and Rob Law	
 Part XI Distribution and Decision Support Systems	
Substitution Effects Across Hotel Distribution Channels	801
Roland Schegg and Miriam Scaglione	
Online Auctions for Selling Accommodation Packages: A Readiness-Intensity-Impact Analysis	813
Matthias Fuchs, Wolfram Höpken, Alexander Eybl and Andreas Flöck	
Toward a Characterisation of the Maturity of Organisational Online Capabilities: The Case of Hotel Distribution in Morocco	827
Larbi Safaa and François Bédard	
Assessing the Visibility of Hotels on Smartphones: A Case Study of Hotels in Hong Kong	841
Daniel Leung, Hee "Andy" Lee, Lawrence Hoc Nang Fong and Rob Law	
Mobile Devices as a Tourism Distribution Channel: Perceptions of Visitors to National Parks in South Africa	855
Anneli Douglas and Berendien Lubbe	
A Web Platform to Generate and Deliver Mobile Web Contents Without Programming Skills	869
David Martín, Ortiz Torices, Hugo Salas, Carlos Lamsfus and Aurkene Alzua-Sorza	
Constructing a Data Warehouse Based Decision Support Platform for China Tourism Industry	883
Xiangjie Qiao, Lingyun Zhang, Nao Li and Wei Zhu	
Destination Inspiration Using eTourism Tool	895
Martin Goossen, Henk Meeuwsen, Jappe Franke and Arjen de Jong Alterra	