Robots, Artificial Intelligence, and Service Automation in Travel, Tourism and Hospitality
This is the very first book that focuses on robots, artificial intelligence and automation technologies (RAISA) in tourism and does this from a social science perspective. It comprehensively covers the theoretical problems of RAISA adoption in tourism, principles of service automation, attitudes towards robots, impacts of RAISA on business processes and competitiveness, and the use of chatbots. Furthermore, it shows the practical issues that arise from the application of RAISA technologies in various tourism sectors such as hotels, restaurants, travel agencies, tourist information centres, events and museums. What I find particularly valuable is that the book delves deep into the economic aspects of RAISA technologies in tourism - a problem which has been quite neglected in research. Numerous photographs and figures are used to visualise authors' ideas. The book is valuable for practitioners, researchers, and students.

Professor Dimitrios Buhalis
Head of Department of Tourism and Hospitality, Bournemouth University, UK

This book is a welcomed addition to the travel, tourism, and hospitality literature. It discusses a timely and increasingly important issue of robots, artificial intelligence, and service automation and provides the readers with the most comprehensive collection of knowledge on these topics. The book looks at the issue from both theoretical as well as practical perspectives and provides a wide selection of current examples. With contributions from more than 30 authors from all over the world, this book is worth reading not just for tourism students, academics and practitioners, but also for anyone in service industries. Tourism and hospitality will drastically transform as the technologies discussed in this book develops, but so will many other service fields. Other service industries can also learn from the various artificial intelligence, service automation and robotic issues explored in this book.

Juho Pesonen, PhD
Head of e-tourism research, University of Eastern Finland

The book provides theoretical underpinning and practical evidence of the application and impacts of robots, artificial intelligence and service automation (RAISA) in various tourism sectors including hotels, restaurants, museums, events and tourism information centres. The book includes chapters contributed by international scholars, all recognised in their own field. The book chapters discuss the implications of RAISA from both the tourism demand and supply perspective such as technology adoption, tourists’ reactions and attitude towards RAISE, operators’ soft and hard benefits and costs. The book is a valuable reading for tourism scholars, students and professionals alike.

Professor Marianna Sigala
Director of the Centre for Tourism and Leisure Management (CTLM),
University of South Australia Business School, Australia

The book embraces the frontiers of robot development in hospitality and tourism, which can deliver useful insights to both academic researchers and university students. This book takes readers on a modern and advanced journey to conceptual frameworks of robot-related technologies and their applications to hotels, restaurants, travel agencies, tourist information centers, and other related fields. It is a must-read primer for anyone who would like to understand the latest changes brought by robots to the hotel and tourism industry. This book indeed does a good job to start the topic with conceptual frameworks, connecting theory with principles and practice.

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Robots, Artificial Intelligence, and Service Automation in Travel, Tourism and Hospitality

EDITED BY

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CRAIG WEBSTER
Ball State University, USA
To our loving families and our future robotic colleagues
S.I. and C.W.
Contents

List of Tables ix
List of Figures xi
About the Contributors xv
Acknowledgments xxii

Introduction: RAISA in Future Travel-related Industries
Craig Webster and Stanislav Ivanov 1

Section 1: Theoretical Issues of Robots, Artificial Intelligence, and Service Automation in Travel, Tourism, and Hospitality

Chapter 1 Conceptual Framework of the Use of Robots, Artificial Intelligence, and Service Automation in Travel, Tourism, and Hospitality
Stanislav Ivanov and Craig Webster 7

Chapter 2 Economic Fundamentals of the Use of Robots, Artificial Intelligence, and Service Automation in Travel, Tourism, and Hospitality
Stanislav Ivanov and Craig Webster 39

Chapter 3 Self-service Technologies in the Travel, Tourism, and Hospitality Sectors: Principles and Practice
Petranka Kelly, Jennifer Lawlor and Michael Mulvey 57

Chapter 4 Customer Attitudes Toward Robots in Travel, Tourism, and Hospitality: A Conceptual Framework
Velina Kazandzhieva and Hristina Filipova 79
Chapter 5 Making Sense of Robots: Consumer Discourse on Robots in Tourism and Hospitality Service Settings
Ulrike Gretzel and Jamie Murphy 93

Chapter 6 Chatbot Adoption in Tourism Services: A Conceptual Exploration
Dandison C. Ukpabi, Bilal Aslam and Heikki Karjaluoto 105

Chapter 7 The Impact of Robots, Artificial Intelligence, and Service Automation on Service Quality and Service Experience in Hospitality
Nikola Naumov 123

Chapter 8 Greggg: A Scalable High-performance, Low-cost Hospitality Robot
Sam R. Thangiah, Michael Karavias, Ryan Caldwell, Matthew Wherry, Jessica Setibert, Abdullah Wahbeh, Zachariah Miller and Alexander Gessinger 135

Section 2: Application of Robots, Artificial Intelligence, and Service Automation in Travel, Tourism, and Hospitality

Chapter 9 Robots, Artificial Intelligence, and Service Automation in Hotels
Georgina Lukanova and Galina Ilieva 157

Chapter 10 Robots, Artificial Intelligence, and Service Automation in Restaurants
Katerina Berezina, Olena Ciftci and Cihan Cobanoglu 185

Chapter 11 Robots, Artificial Intelligence, and Service Automation in Travel Agencies and Tourist Information Centers
Maya Ivanova 221

Chapter 12 Robots, Artificial Intelligence, and Service Automation to the Core: Remastering Experiences at Museums
Nuria Recuero Virto and Maria Francisca Blasco López 239

Chapter 13 The Role of Robots, Artificial Intelligence, and Service Automation in Events
Alfred Ogle and David Lamb 255

Index 271
List of Tables

Chapter 1

Table 1. Impacts of RAISA Introduction on Business Processes of TTH Companies 25

Chapter 2

Table 1. Sample Monetary and Non-monetary Variables Used to Measure Input, Output, and Productivity in Travel, Tourism, and Hospitality 50

Chapter 3

Table 1. Examples of SSTs 61
Table 2. SST User Roles and Perceptions 70

Chapter 5

Table 1. Exemplary Technology Ideology Comments 99

Chapter 6

Table 1. Literature on Chatbots in Different Contexts 108

Chapter 9

Table 1. Main Examples of RAISA Adoption in Hotel Companies 161
Table 2. Key Features of NSCI Technologies in Hospitality 166

Chapter 10

Table 1. Chatbot Capabilities for Different Stages of the Guest Cycle 187

Chapter 11

Table 1. Tourist Consumer Behavior Activities 223
Table 2. Current Technologies Application 225
This page intentionally left blank
List of Figures

Chapter 1

Fig. 1. Self-check-in Kiosk at Brussels Airport, Belgium
Fig. 2. Baggage Self-drop-off Counter at Brussels Airport, Belgium
Fig. 3. Communication Kiosk, Munich Airport, Germany
Fig. 4. Self-service Kiosk at McDonalds, Porto, Portugal
Fig. 5. Table Menu Kiosk at Olive Garden Restaurant, Kissimmee, FL, USA
Fig. 6. Conveyor Belt, Incanto Restaurant, Bourgas, Bulgaria
Fig. 7. Automated Sleeping Cabins at Munich Airport, Germany
Fig. 8 a, b. Kiosk for Automated Donations at Guildford Cathedral, UK
Fig. 9. Self-check-in Kiosk for Hotels
Fig. 10. Self-boarding Facilities with Facial Recognition at Gatwick Airport, UK
Fig. 11a–d. Plovdiv City Concierge Chatbot by Umni.co
Fig. 12. Digital Receptionist, Hotel Aqua, Bourgas, Bulgaria
Fig. 13. Pepper Robot, Munich Airport, Germany
Fig. 14. Amy Food-serving Robot
Fig. 15. Robotic Lawnmower
Fig. 16. Conceptual Framework of the Use of RAISA Technologies in TTH
Fig. 17. Solutions to the Labor Force Crisis

Chapter 2

Fig. 1. Economic Framework of RAISA Adoption in TTH

Chapter 3

Fig. 1. Conceptual Framework of Customer SST Adoption

Chapter 4

Fig. 1. Interactions Between the Components of Consumer Attitudes Toward Robots in TTH
Fig. 2. Dynamics of Consumer Attitudes and Behavior Toward Robots in TTH
xii  List of Figures

Chapter 5
Fig. 1. The Ideological Field of Technology 97

Chapter 6
Fig. 1. Conceptual Framework of Tourism Bot from Input Query to Output Reply 111
Fig. 2. Sample Conversation with a Hotel-booking Chatbot 112
Fig. 3. Sample Conversation with Restaurant Chatbot 112
Fig. 4. Sample Conversation with a Flight-booking Chatbot 113
Fig. 5. Conceptual Framework of Chatbot Adoption 116

Chapter 7
Fig. 1. Impacts of RAISA on Service Quality in Hospitality 125

Chapter 8
Fig. 1. High-level Components of Greggg 139
Fig. 2. The Base Hardware Architecture of the Greggg Robot 140
Fig. 3. UML Diagram for the Greggg Hardware 141
Fig. 4. The Greggg Robot 142
Fig. 5. Use Case Diagram for the Greggg Robot 143
Fig. 6. Sensor Diagram for Greggg 144
Fig. 7. The Greggg Dashboard with Vision Recognition 145
Fig. 8. UML Class Diagram of the Flow of Information Used for Image Processing 146
Fig. 9. Greggg’s Tour Route on Campus 147
Fig. 10. Waypoints Used by Greggg 148
Fig. 11. A NARF Image of a Room 149

Chapter 9
Fig. 1 Guest Cycle 160

Chapter 10
Fig. 1. Employee Clocking in on a Biometric Device 192
Fig. 2. Robot Working as a Concierge at a Japanese Sushi Restaurant 195
Fig. 3. Robotic Arm Preparing Sushi 197
Fig. 4. Robotic Host from Tanuki Restaurant in Dubai, UAE 199
Fig. 5. Robot Penny Delivers Food at a Restaurant 200
Fig. 6. Mr Juan Higueros, Co-founder and COO of Bear Robotics 201
Fig. 7. Bionic Bartenders on Symphony of the Seas Cruise Ship 205
Fig. 8. Customer Ordering Food on a Tablet at a Restaurant 207
Fig. 9. Self-ordering Kiosk with a Touch-screen at a Restaurant 208
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Figures</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 11</td>
<td>Fig. 1.</td>
<td>Self-services Information Kiosk in Front of a TIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>230</td>
</tr>
<tr>
<td>Chapter 12</td>
<td>Fig. 1.</td>
<td>The Use of Drones to Record Endangered Archaeological Sites in Peru</td>
</tr>
<tr>
<td></td>
<td></td>
<td>240</td>
</tr>
<tr>
<td></td>
<td>Fig. 2.</td>
<td>Berenson</td>
</tr>
<tr>
<td></td>
<td></td>
<td>245</td>
</tr>
<tr>
<td></td>
<td>Fig. 3.</td>
<td>RAISA Examples in the Design of the Museum “Visitor Journey Map” Experience</td>
</tr>
<tr>
<td></td>
<td></td>
<td>245</td>
</tr>
<tr>
<td></td>
<td>Fig. 4.</td>
<td>RAISA Approach to Preservation Management of Heritage Resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td>247</td>
</tr>
<tr>
<td>Chapter 13</td>
<td>Fig. 1.</td>
<td>Event Stakeholders-event Experience (EE) Linkage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>258</td>
</tr>
<tr>
<td></td>
<td>Fig. 2.</td>
<td>Internet of Things Events Applications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>260</td>
</tr>
</tbody>
</table>
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Thank you!
A zeitgeist was the instigator of this book. While humans seem to have a fascination with robots, the incorporation of robots, artificial intelligence, and service automation (RAISA) into the economy in recent years has accelerated. In just a few years, technologies have increased their effectiveness and the technologies have entered into the economy in effective ways. While robots have been used extensively in manufacturing for decades, it has only been in the past few years that the service industries have seen a massive incursion of new technologies, changing the ways in which many of us do business or interact with businesses. Robots and artificial intelligence fascinate humans and are now advanced enough to replace human labor or augment human labor in the service sector, namely the travel, tourism, and hospitality sectors.

In 2015, the Henn-na Hotel opened in Japan, making it the first hotel to be almost entirely staffed by robots. This meant that the technologies that would enable hotels to function mostly using RAISA were a pragmatic possibility, even if the first hotel of its kind was marketed in ways as a novelty to attract the market of robot enthusiasts. Karel Čapek had invented the concept of the robot shortly after World War One and about a century later, a hotel was staffed almost entirely by robots. In less than a century, robots went from a concept to a pragmatic labor force, even if the current version of robots we use will seem clunky, unintelligent, and awkward just a few years from now. The technological ability to make a hospitality enterprise run using mostly mechanized labor and artificial intelligence has been realized. In this edited book, we deal in depth with various issues related to this, the massive replacement and augmentation of human labor by RAISA.

The book is divided into two major sections. The first section concentrates on the theoretical issues of RAISA in travel, tourism, and hospitality. The second section of the book delves into the practical applications of RAISA in travel, tourism, and hospitality. As such, the first section of the book gives insights into how new technologies can and should be applied in the economy in theory and the second section gives insights into the practicalities of such technologies in specific subsectors of the travel, tourism, and hospitality industries.
In the first theoretical section, Ivanov and Webster’s Chapter 1 introduces the most basic of concepts of RAISA and their incorporation into travel, tourism, and hospitality companies, illustrating the major theoretical and practical issues in their creeping incorporation into travel-related industries. In Chapter 2, Ivanov and Webster focus upon the economic fundamentals of the incorporation of RAISA into travel, tourism, and hospitality. In this chapter, the authors delve into the financial and nonfinancial costs and benefits to be considered in terms of using RAISA for the substitution and enhancement of human labor and the implications of the changeover to a more automated labor force. Kelly, Lawlor, and Mulvey discuss the basic principles of self-service technologies in tourism-related industries in Chapter 3, highlighting the benefits and drawbacks that such technologies to service providers and customers. In Chapter 4, Kazandzhieva and Filipova delve into the attitudes and concerns of customers in the travel, tourism, and hospitality industries, presenting a theoretical framework for understanding how customers perceive and interact with robots in tourism-related industries. On a somewhat related note in the first section of the book, in Chapter 5, Gretzel and Murphy discuss the ideologies of technology and find that there is empirical evidence that certain ideologies prevail in the discourse on robots in the application of robots in service industries. In Chapter 6, Ukpabi, Aslam, and Karjaluoto concentrate upon a very specific technology, the chatbot, and theoretical issues linked with the application of the chatbot in supplying services in the tourism industry. Chapter 7 by Naumov gives a comprehensive overview of the academic literature on RAISA and industry to discuss the consensus of the academic findings and discuss the issue of the difficult balance business have to make in finding the right mix of human and digital interactions. In the final chapter in the first section, Chapter 8, Thangiah and his co-authors discuss the creation of and the capability of the Greggg robot, a robot with the capability to work within the hospitality industry. This should be a very interesting chapter for those interested in some of the key practical and theoretical issues of building a robot to satiate customer demands.

In the second part of the book, the section delving into the application of RAISA in travel, tourism, and hospitality, authors deal with practical issues of incorporating RAISA technologies into industry. The chapters discuss the academic literature, the practical issues, and suggested strategies for incorporating RAISA into hotels, restaurants, travel agencies, and tourist information centers, museums, and events. The second part begins with Chapter 9 by Lukanova and Ilieva, a chapter focusing upon the incorporation of RAISA in hotels. Chapter 9 examines the academic literature and case studies linked with the implementation of RAISA in service industries to examine how hotel companies will have to consider the incorporation of RAISA technologies during each of the five stages of the guest cycle (pre-arrival, arrival, stay, departure, and assessment) to satisfy hotel customers. Chapter 10 by Berezina, Ciftci, and Cobanoglu, in comparison, focuses upon the incorporation of RAISA in restaurants by reviewing the academic literature and interviewing Juan Higueros, Chief Operations Officer of Bear Robotics. The findings discuss the possibilities of the implementation of robotics and how they can be and will be incorporated into all aspects of the
restaurant (front and back of house) and which tasks will be soon relegated to robotic labor. In contrast, in Chapter 11, Ivanova discusses the current usage of RAISA in travel agencies and tourist information centers and discusses the potential for such technologies and how they will be incorporated into such establishments in the near future. In Chapter 12, Recuero Virto and Blasco Lopez focus upon RAISA and how it will increasingly be incorporated into museums, showing that the increasing use of RAISA in museums will change the museum experience and change some of the skills of the workforce that will be working in museums in the near future. The concluding chapter, Chapter 13 by Ogle and Lamb, focuses on the event industry and the incorporation of RAISA into that industry.

All in all, this book should give those in academia and industry a good background in the incorporation of RAISA into travel, tourism, and hospitality. The first eight chapters, those comprising the first section of the book, should give readers good insight into the current state of the art in industry and academia on RAISA and its incorporation into industry, in general, and travel and tourism-related industries, in particular. The final chapters (Chapters 9–13) deal more specifically with how RAISA will be incorporated into specific subsectors of the industry (hotels, restaurants, travel agencies and tourist information centers, museums, and events) that have somewhat different characteristics and expectations from customers. As such, the second part of the book should be especially interesting and useful for practitioners in the field who may want to see guidance from the consensus of those who consider such issues and insight into what the authors’ see as possibilities and practical elements of the incorporations of the technologies into industry in the near future.

It has been a pleasure for us to create this book and we are thankful to those who contributed to it. We expect that the book can inform readers about the current state of the art and give some insight into how RAISA will be incorporated into operations in the near future. We expect that the readers will see the value in the contributions and hope that the components of the book are informative, interesting, and give readers an opportunity to envision a future in which RAISA is much more prolific in our lives and workplaces, especially in travel, tourism, and hospitality.