

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

PRAISE FOR 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 RAISA, 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

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Emerald Publishing Limited
Howard House, Wagon Lane, Bingley BD16 1WA, UK

First edition 2019

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British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

ISBN: 978-1-78756-688-0 (Print)

ISBN: 978-1-78756-687-3 (Online)

ISBN: 978-1-78756-689-7 (Epub)



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INVESTOR IN PEOPLE

*To our loving families and our future robotic colleagues
S.I. and C.W.*

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Acknowledgments

The editors would like to thank all the authors who submitted their high-quality chapters and made this book possible. Special thanks go to the reviewers of the chapters who provided valuable feedback to improve the manuscripts. They also thank the robotics companies that provided photos and interviews to inform some of the chapters. The publishing team at Emerald provided invaluable support and guidance throughout. Of course, nothing would have been possible without the help of our loving families who lived through this project with us.

Thank you!

Introduction: RAISA in Future Travel-related Industries

Craig Webster and Stanislav Ivanov

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.

**Robots, Artificial Intelligence and Service Automation in Travel,
Tourism and Hospitality, 1–3**

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doi:10.1108/978-1-78756-687-320191017

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 Karjaluo 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 Gregg 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.