

# Cambridge Handbook of Qualitative Digital Research

Big data and algorithmic decision-making have been touted as game-changing developments in management research, but they have their limitations. Qualitative approaches should not be cast aside in the age of digitalization, since they facilitate understanding of quantitative data and the questioning of assumptions and conclusions that may otherwise lead to faulty implications being drawn, and - crucially - inaccurate strategies, decisions and actions. This handbook comprises three parts: Part I highlights many of the issues associated with 'unthinking digitalization', particularly concerning the over-reliance on algorithmic decision-making and the consequent need for qualitative research. Part II provides examples of the various qualitative methods that can be usefully employed in researching various digital phenomena and issues. Part III introduces a range of emergent issues concerning practice, knowing, datafication, technology design and implementation, data reliance and algorithms, and digitalization.

BOYKA SIMEONOVA is Associate Professor of Innovation at the University of Leicester School of Business. Boyka is an expert in innovation, digitalization, knowledge and strategic management, has published in leading journals in these topics, and is a co-editor of the book, *Strategic Information Management: Theory and Practice*, 5th Edition.

ROBERT D. GALLIERS is the University
Distinguished Professor Emeritus and former Provost,
Bentley University, and Professor Emeritus and
former Dean, Warwick Business School. He received
the AIS LEO Award for exceptional lifetime
achievement in Information Systems in 2012 and was
the founding editor-in-chief of *The Journal of*Strategic Information Systems. His work on research
methods has been particularly well cited.



# Cambridge Handbook of Qualitative Digital Research

Edited by

BOYKA SIMEONOVA
University of Leicester, UK
ROBERT D. GALLIERS
Bentley University, USA
and
Warwick Business School, UK







Shaftesbury Road, Cambridge CB2 8EA, United Kingdom

One Liberty Plaza, 20th Floor, New York, NY 10006, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

314-321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi - 110025, India

103 Penang Road, #05-06/07, Visioncrest Commercial, Singapore 238467

Cambridge University Press is part of Cambridge University Press & Assessment, a department of the University of Cambridge.

We share the University's mission to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org

Information on this title: www.cambridge.org/9781009102780

DOI: 10.1017/9781009106436

© Cambridge University Press & Assessment 2023

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press & Assessment.

First published 2023

First paperback edition 2024

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

Library of Congress Cataloging-in-Publication data

Names: Simeonova, Boyka, editor. | Galliers, Robert D., 1947- editor.

Title: Cambridge handbook of qualitative digital research / edited by Boyka Simeonova, University of Leicester, Robert D. Galliers, Bentley University and Warwick Business School.

Description: 1 Edition. | New York, NY: Cambridge University Press, 2023. | Includes bibliographical references and index.

Identifiers: LCCN 2022060708 (print) | LCCN 2022060709 (ebook) | ISBN 9781009098878 (hardback) | ISBN 9781009102780 (paperback) | ISBN 9781009106436 (epub)

Subjects: LCSH: Qualitative research-Methodology. | Big data. | Digital media.

Classification: LCC H62 .C33633 2023 (print) | LCC H62 (ebook) | DDC 300.72–dc23/eng/ 20221219

LC record available at https://lccn.loc.gov/2022060708

LC ebook record available at https://lccn.loc.gov/2022060709

ISBN 978-1-009-09887-8 Hardback ISBN 978-1-009-10278-0 Paperback

Cambridge University Press & Assessment has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.



#### Contents

List of Figures page viii
List of Tables ix
List of Contributors x
Preface xvii

# PART I PHILOSOPHICAL, EPISTEMOLOGICAL AND THEORETICAL CONSIDERATIONS 1

- Introduction: The Need for Qualitative Research in the Age of Digitalization 3 Robert D. Galliers and Boyka Simeonova
- 2 A Philosophical Perspective on Qualitative Research in the Age of Digitalization 15 Allen S. Lee and Suprateek Sarker
- Data as a Contingent Performance and the Limitations of Big Data 28 Matthew Jones
- 4 Big Data, Little Understanding 43
  Rudy A. Hirschheim and David Whitchurch
- Power, Knowledge and Digitalization:
   A Qualitative Research Agenda 60
   Boyka Simeonova and Robert D. Galliers
- 6 Information Technology and Power 77 Boyka Simeonova and M. N. Ravishankar

## PART II METHODOLOGICAL CONSIDERATIONS 89

7 Human Values in a Digital-First World: The Implications for Qualitative Research 91 Hameed Chughtai and Michael D. Myers



#### vi Contents

- 8 One Picture to Study One Thousand Words: Visualization for Qualitative Research in the Age of Digitalization 104 Hani Safadi, Marie-Claude Boudreau and Samer Faraj
- 9 Demystifying the Digital: A Case for Hybrid Ethnography in IS 125 Nicola Ens, Mari-Klara Stein and Tina Blegind Jensen
- 10 Case Study Research Revisited 140 Boyka Simeonova and Guy Fitzgerald
- Social Media Qualitative
   Research Vignettes 160
   Alex Wilson, Josh Morton and Boyka Simeonova
- 12 Co-Inquiring in a Digital Age: Enhancing the Practice of Strategy Work in Government Organizations through Action Research
   Joe McDonagh, David Coghlan and Paul Coughlan

# PART III ILLUSTRATIVE EXAMPLES AND EMERGENT ISSUES 191

- Observing Artifacts: How Drawing Distinctions
   Creates Agency and Identity 193
   Sven-Volker Rehm, Lakshmi Goel and Iris Junglas
- 14 Algorithms as Co-Researchers: Exploring Meaning and Bias in Qualitative Research 211 Wendy Arianne Günther, Mark Thompson, Mayur P. Joshi and Stavros Polykarpou
- 15 Sensemaking about HRV Data of High-Performing Individuals: Crafting a Mixed-Methods Study 229 Stefan Klein, Stefan Schellhammer and Nathalie Mitey
- 16 The Rich Facets of Digital Trace Data 247 Jonas Valbjørn Andersen and Philipp Hukal
- 17 Balancing the Momentum of Datafication with Qualitative Researchers as
  Design Thinkers 268
  Gongtai Wang, Andrew Burton-Jones and Saeed Akhlaghpour



Contents vii

18 What Data Sharing in Government Tells Us about the Digitalization of Government Services:
 Lessons from the UK Digital
 Economy Act 282
 Edgar A. Whitley

Index 295



### **Figures**

3.1	Idealized data processing pipeline page 31	13.6 Exemplary forms resulting from an
5.1	Power-knowledge sharing framework 67	interpretation of IS
5.2	Power-knowledge-	research accounts 204
	digitalization framework 70	14.1 A reflexive dance of meaning and bias across
6.1	Power mechanisms and IT 82	the stages of algorithmic
7.1	The framework of computed	qualitative research 216
	human experiences 95	15.1 Antonovsky's own way of explaining the
8.1	The process of grounded	health continuum and the
	theory methodology 108	salutogenetic direction 231
8.2	Tasks enabled by visualization 112	15.2 An ECG heart rate trace 234
8.3	Topics extracted from the content of an open-	15.3 Cardiscope <sup>TM</sup> HRV dashboard 1 236
	source project's mailing list 116	15.4 Cardiscope <sup>TM</sup> HRV dashboard 2 240
8.4	ODIN system in action with a large data set	15.5 Sample of HRV rhythmogram 243
	of tweets 117	16.1 Steps in the creation of the relational facet of
8.5	The association among member groups	digital trace data 254
	and practices 118	16.2 Section of adjacency matrix MN 255
8.6	Using Overview to research a collection of	16.3 Generic categorical sequences 258
	scanned documents 118	16.4 Steps in the creation of the processual facet
10.1	The IS research	of digital trace data 260
	methodological landscape 143	16.5 Steps in the creation of the semantic facet of
13.1	The form 200	digital trace data 261
13.2	Re-entry 200	16.6 Term-document matrix 262
13.3	Exemplification for form and states 201	17.1 Technological momentum 269
13.4	Exemplification for form and states with	17.2 Forces driving datafication 270
	two contexts 201	17.3 Ideal implementation of design
13.5	Identity as a result of oscillation in the form	forensics principles 276
	of notation 201	



5.1

Cambridge University Press & Assessment 978-1-009-10278-0 — Cambridge Handbook of Qualitative Digital Research Edited by Boyka Simeonova, Robert D. Galliers Frontmatter **More Information** 

page 63

135

#### **Tables**

A power framework

9.2 Takeaways for

with examples

hybrid ethnographers

11.1 Types of social media and examples

11.2 Illustrative characteristics of digital texts

163

5.2	Effects of episodic power 64	collection, analysis and presentation
5.3	Effects of systemic power 65	of results 235
5.4	Effects of both episodic and	15.2 Main steps of engaging with participants and
	systemic power 66	collecting data 237
5.5	Qualitative research questions	15.3 Participation across the cohorts and the steps
	and agenda 71	of our research 238
8.1	Key challenges to grounded theorists relying	15.4 Comparison of $(N = 68)$ [all interviews] vs.
	on textual trace data 110	(N = 30) [interviews of individuals with
8.2	How proposed system implementation	HRV data] 238
	responds to challenges of using GTM with	15.5 Categorization of HRV results 239
	big data 113	15.6 Matching HRV and self-assessment 240
9.1	Sample configurations of	16.1 Analytical activities in computational
	hybrid ethnography 127	analysis of trace data 250

162

15.1 Researchers' choices regarding data

16.2 Characteristics of selected digital

252

16.3 Unit of analysis and examples of relevant

research questions for each facet

trace facets

264



#### **Contributors**

Saeed Akhlaghpour is a senior lecturer in business information systems at the UQ Business School, University of Queensland. Previously, he held academic positions at Middlesex London (UK) and University University (Canada) - where he also obtained his PhD. Saeed conducts research on digital health transformation and data protection. He published in American Journal of has Sociology, Journal of the Association for Information Systems, Journal of Information Technology, Information and Organization, Journal of the American Medical Informatics Association and the Best Paper Proceedings of Academy of Management. He is currently a chief investigator in an Australian Research Council (ARC) funded project studying digital transformation of health services in Queensland.

Jonas Valbjørn Andersen is an associate professor of digital research methods and data in organizations at the IT University of Copenhagen. His research aims to contribute to insights on strategy, management and organizing related to digitally distributed information systems such as Blockchain, Internet of Things (IoT), algorithmic decision-making and digitally distributed organizations through digital trace data analysis, as well as complex systems modelling and simulation. He holds a PhD in Information Systems and Management from Warwick Business School, University of Warwick, UK.

Marie-Claude (Maric) Boudreau is Associate Professor and Head of the Department of Management Information Systems at the University of Georgia's Terry College of Business. Her research interests revolve around the organizational change induced by information technology, primarily leveraging qualitative approaches. More specifically, she focuses on how IT can transform social systems in the particular context of the workplace. She also has a keen interest in the role played by information systems to support environmental sustainability, and has co-developed the concept of Energy Informatics. Dr Boudreau received a PhD degree in Computer Information Systems from Georgia State University, a Diplôme d'Enseignement Supérieur Spécialisé from l'École Supérieure des Affaires de Grenoble (France) and an MBA from l'Université Laval in Quebec (Canada). She has published in many journals, including Organization Science, Information Systems Research, MIS Quarterly, Journal of Management Information Systems, The Academy of Management Executive, Journal of the AIS, and other journal outlets and conference proceedings.

Andrew Burton-Jones is a professor of Business Information Systems at the UQ Business School, University of Queensland. He has a Bachelor of Commerce (Hons 1) and a Master of Information Systems from the University of Queensland and a PhD from Georgia State University. Prior to his appointment at UQ, he was an associate professor at the Sauder School, UBC, Canada. He conducts research on systems analysis and design, the effective use of information systems and several methodological topics. He serves as Editor-in-Chief of MIS Quarterly and has served on the editorial boards of several other journals. For the past five years, he has been conducting an indepth longitudinal study of the digital



List of Contributors

хi

transformation of public hospitals. Prior to his academic career, he was a senior consultant in a big-4 accounting/consulting firm.

Hameed Chughtai is an ethnographer and Senior Lecturer (Associate Professor) Lancaster University, UK. His research lies at the intersection of information systems and critical social theory and ethnographically explores the everyday practices of digital work, body, gender, place and power. His current research interests include decolonial approaches to research and studying the ways in which marginalized populations such as Indigenous Peoples engage with, adapt and use information technologies in their practices. His research has appeared in journals such as the European Journal of Information Systems, Journal of Contemporary Ethnography, Information Computers in Human Systems Journal, Behavior and Communications Association for Information Systems, and in various conference proceedings. He currently serves as a guest associate editor of Information Systems Journal's special issue on Sustainable Visitor Economy and as Secretary of the International Federation of Information Processing (IFIP) Working Group 9.5 'Our Digital Lives'.

**David Coghlan** is Professor Emeritus and Fellow Emeritus at the Trinity Business School, Trinity College Dublin, Ireland. He is author of over 200 articles and book chapters. Recent books include *Collaborative Inquiry for Organization Development and Change* (2021) and *Doing Action Research in Your Own Organization*, 5th Edition (2019). He is coeditor of *The Sage Encyclopedia of Action Research* (2014).

**Paul Coughlan** is Professor in Operations Management at Trinity Business School, Trinity College Dublin, Ireland. His research explores collaborative strategic improvement of operations through network action learning.

**Nicola Ens** is a PhD fellow at the department of digitalization, Copenhagen Business School.

She works at the intersections of IS, organization theory and sociologies of work, using ethnographic methods to investigate the changing nature of work on digital labour platforms. She is currently conducting an ethnography of fashion resellers drawing on both traditional and digital ethnographic methods. She has presented her work at top conferences, including the European Group for Organizational Studies and the International Conference on Information Systems.

Samer Faraj is a professor at McGill University's Desautels Faculty of Management, where he holds the Canada Research Chair in Technology, Innovation, and Organizing. His current research focuses on complex collaboration and on how emergent technologies are allowing new forms of coordination and organizing to emerge. He has published in outlets such as Organization Science, Management Science, MIS Quarterly, Academy of Management Journal and Annals of Emergency Medicine.

Guy Fitzgerald is Emeritus Professor of Information Systems (IS) at Loughborough University. Previously he has worked at Brunel, Birkbeck, Oxford and Warwick universities. He has also been a practitioner with companies such as British Telecom, Mitsubishi and CACI Inc., International. His research interests are concerned with the effective management and development of IS, undertaking research in the areas of IS development methodologies, IS strategy, outsourcing, flexibility and agility, publishing widely in these areas. Guy was elected an AIS (Association for Information Systems) Fellow in 2014 and is a member of the AIS College of Senior Scholars. He is cofounder and was for twenty-five years joint Editor-in-Chief of the Information Systems Journal. He is the author (with David Avison) of a major text titled Information Systems Development: Methodologies, Techniques and Tools. He has been President of UKAIS and Vice-President (Publications) of AIS. He was a Evaluation Exercise member responsible for IS (2014–2020).



#### xii List of Contributors

Robert D. Galliers is the University Distinguished Professor Emeritus and former Provost, Bentley University, and Professor Emeritus and former Dean, Warwick Business School. He has received the Association of Information Systems AIS LEO Award for exceptional lifetime achievement Information Systems in 2012 and was the founding Editor-in-Chief of The Journal of Strategic Information Systems until December 2018. He has published in excess of 100 journal articles and fourteen books and his work on research methods is particularly well cited.

Lakshmi Goel is a professor of Information Systems at the Coggin College of Business, University of North Florida. She received her PhD in Decision and Information Sciences from the University of Houston. Her research works are published in various conferences such as on International Conference Information Systems, Americas Conference on Information Systems, Academy of Management, Hawaii International Conference on System Sciences and European Conference on Information Systems; and journals such as Management Information Systems Quarterly, Journal of the Association of Information Systems, Decision Support Systems, Information Management, Information and Organization and Information Systems Journal.

Wendy Arianne Günther is a researcher at the KIN Center for Digital Innovation, Vrije University Amsterdam (VU). She holds a Bachelor's degree in Computer Science from the University of Amsterdam, a Master's diploma in ICT in Business from Leiden University and a PhD from the VU, School of Business and Economics. Her research focuses on how organizations can successfully leverage data as strategic resources. This includes studying how organizations develop and implement datadriven strategies; how traditional organizations transform into data-driven organizations, and how organizations can develop, manage and integrate data-driven solutions effectively and responsibly.

Rudy A. Hirschheim (PhD, University of London; Dr hc University of Oulu; University of Bern) is the Ourso Family Distinguished Professor of Information Systems at Louisiana State University. He has previously been on the faculties of the University of Houston, the London School of Economics and Templeton College of the University of Oxford. He is past Senior Editor for Information and Organization and Journal of the Association for Information Systems. He is on the editorial boards of Journal Management Information Systems, Information Systems Journal, Journal Technology and Journal Information Strategic Information Systems. He was the LEO Award for lifetime achievement recipient in 2013 and Fellow of the Association for Information Systems in 2007.

Philipp Hukal is an assistant professor at Copenhagen Business School, Denmark. His research examines digitally enabled innovation within and across organizations, covering topics such as digital platforms, open source software development and digital ventures. He holds a PhD in Information Systems and Management from Warwick Business School, University of Warwick, UK.

Tina Blegind Jensen is a professor at the department of digitalization, Copenhagen Business School. Her research focuses on organizational and managerial issues of information systems, with a particular interest in the impact of digital technology on people in organizations. She has published articles in leading journals and frequently presents her work at major conferences on topics such as digital transformation of work, people analytics, sense-making practices and institutional structures. Tina is an editorial board member of leading IS journals and serves in various organizing capacities for major international conferences on management information systems.

**Matthew Jones** is a reader in Information Systems at the Judge Business School and the Department of Engineering at the University of Cambridge. He previously held postdoctoral



List of Contributors xiii

positions at the University of Reading and the University of Cambridge, where he was involved in the development of computer-based models for public policy decision-making. His current research interests are concerned with the relationship between information systems and social and organizational change and theoretical and methodological issues in information systems research.

Mayur P. Joshi is an assistant professor (lecturer) in FinTech at Alliance Manchester Business School, University of Manchester, UK, and he recently finished his PhD in business administration from Ivey Business School, Western University, Canada. His research examines the phenomenon of organizing for and in - the digital age, with a focus on data science, AI-enabled analytics tools and other digital innovations in the context of financial and information technology industries. He worked as a banker for several years prior to joining academia, where he was engaged with functions and initiatives such as technology implementation, process improvement and branch banking operations.

Iris Junglas is the Noah T. Leask Distinguished Professor of Information Management and Innovation in the Department of Supply Chain and Information Management at the College of Charleston. Over her twenty-five-year career, she has worked for a variety of consulting firms, as well as academia. Her research sits at the intersection of technology innovation and business analytics. Iris has published more than fifty refereed journal articles in outlets, including European Journal of Information Systems, Information Systems Journal of the Association of Information Systems, Journal of Strategic Information Systems and Management Information Systems Quarterly.

**Stefan Klein** is Professor for Interorganizational Systems at the School of Business and Economics, University of Münster, Germany, where he is Vice Dean for Internationalization. His current research areas are information infrastructures, network governance, digitization and

risk, and transformation of work. He studies practices of technology use and organizational transformation from an individual to an industry level. Previously he held teaching or research positions at University College Dublin, Ireland; University of Linz, Austria; University of Koblenz-Landau, Germany; University St Gallen, Switzerland; Harvard University; the German Research Center for Computer Science; and University of Cologne, Germany.

Allen S. Lee is Professor Emeritus of Information Systems at Virginia Commonwealth University. He served as Editor-in-Chief of MIS Quarterly and as a founding senior editor of MIS Quarterly His research programme has Executive. involved showing not only how qualitative research can be done rigorously and scientifically, but also how quantitative research equally needs to live up to the requirements of science. He is a fellow of the Association for Information Systems, a LEO Award recipient and a member of the Circle of Compadres of the Information Systems Doctoral Students Association of the KPMG PhD Project.

**Joe McDonagh** is Associate Professor of Business at Trinity Business School, Trinity College Dublin, Ireland. His research, teaching and advisory work focus on the process of leading large-scale strategic, organizational and technological change programmes in civil and public service organizations.

Nathalie Mitev, after thirty years in several UK universities, and for seventeen years at the London School of Economics, now teaches workshops on qualitative research methods, thesis writing, epistemology and technology management to doctoral students in various universities and institutes in Europe. Dr Mitev evaluates research programmes in management for funding agencies and articles for academic journals and conferences, and participates in doctoral supervision and assessment. She has published in a range of management and information systems journals and conferences, and has edited several books on sociomateriality



xiv List of Contributors

and management based on the Organizations, Artefacts and Practices workshops, and a handbook on research methods.

Josh Morton is a lecturer in Strategy and Innovation at Leeds University Business School, University of Leeds, UK, and the programme director for the school's MSc in Global Strategy and Innovation Management. He teaches strategy and innovation at different levels of study, including to business leaders. His research focuses on the work of strategists and top managers in organizations, with a particular interest in strategic agility, open forms of strategy and digital innovation.

Michael D. Myers is Professor of Information Systems at the University of Auckland Business School, New Zealand. His research interests are in the areas of digital transformation, the social, organizational and cultural aspects of digital technologies, and qualitative research methods in information systems. He won the Best Paper award (with Heinz Klein) in MIS Quarterly in 1999 and the Best Paper Award (with Simon Chanias and Thomas Hess) in Journal of Strategic Information Systems in 2019. Michael served as a senior editor of MIS Quarterly from 2001 to 2005 and as a senior editor of Information Systems Research from 2008 to 2010. He also served as President of the Association for Information Systems (AIS) in 2006 and 2007 and as Chair of International Federation of Information Processing Working Group 8.2 from 2006 to 2008. He currently serves as Editor-in-Chief of European Journal of Information Systems. Michael is a fellow and LEO Award winner of AIS.

**Stavros Polykarpou** is Lecturer (Assistant Professor) in Science, Innovation, Technology and Entrepreneurship at the University of Exeter Business School and Initiative for the Digital Economy (INDEX). His research lies at the intersection of technology, digital innovation, work and organizing. He examines the broader question of how to organize for emerging and algorithmic technologies along with associated societal and organizational implications for

digital creating value in the Methodologically, he employs ethnographic, in-depth qualitative methods to explore these topics. His research awarded was 2020 Organizational Communications Information Systems Division Best Paper Award, at the Academy of Management Conference (Vancouver, Canada; held virtually), for his ethnographic study of implementing 3D printing in healthcare. Stavros's research has been published in Information and Organization and conditionally accepted at Information Systems Research.

M. N. Ravishankar is Professor and Dean of the Management School, Queen's University. He works with a range of start-ups, multinational companies and public sector organizations globally. He has published peer-reviewed articles on the management of digital innovations, social entrepreneurship and global technology sourcing. His research has appeared in scholarly journals such as Information Systems Research, Journal ofWorld Business, Information Systems Journal, European Journal of Information Systems and Journal of Strategic Information Systems.

**Sven-Volker Rehm** is an associate professor of Information Systems at EM Strasbourg, the business school of the University Strasbourg. He held previous positions at WHU Otto Beisheim School of Management. He holds a diploma in cybernetics and a doctorate in engineering sciences from the University of Stuttgart, along with a habilitation degree in business administration from WHU. His research sits at the intersection of communication, technology and organizing, with a focus on digital platforms and business ecosystems. He has published in journals such as Information and Management, Information and Organization, Journal of the AIS and MIS Quarterly Executive.

Hani Safadi is an associate professor at Terry College of Business, University of Georgia. He received his PhD from the Desautels Faculty of Management, McGill University. He is



List of Contributors

XV

interested in online communities, social media, healthcare information technology, mixed-methods research and the application of computational linguistics in studying qualitative data. His research is published in outlets such as MIS Quarterly, Information Systems Research, Organization Science and Journal of Medical Internet Research.

Suprateek Sarker is Rolls-Royce а Commonwealth Commerce professor (Information Technology) at the McIntire School of Commerce, University of Virginia. He currently teaches courses on data management and business intelligence, and global immersion in India and the United Arab Emirates. He is interested in applying different qualitative research approaches to study IS phenomena. He has published in many high-quality journals and has served on editorial boards of journals such as MIS Quarterly, Information Systems Research, Journal of MIS, Information & Organization, Decision Sciences, IEEE Transactions on Engineering Management and Journal of the AIS. He is a fellow of the AIS. He is also a former student of the first author of Chapter 2, Allen Lee.

Stefan Schellhammer is Tenured Lecturer and currently serves as Vice Dean for Teaching and Learning at the School of Business and Economics at the University of Münster, Germany. He received his PhD from the University of Münster in the subject area of Interorganizational Information Systems. His research focuses on studying the emergence of information infrastructures, as well as the implications of the changing nature of work to the well-being of individuals. His research has appeared in various books and conferences, and in MIS Quarterly.

**Boyka Simeonova** is Associate Professor of Innovation at the University Leicester School of Business. Boyka is an expert in innovation, digitalization, knowledge and strategic management, has published in leading journals in these topics, and is a co-editor of the book, *Strategic* 

*Information Management: Theory and Practice*, 5th Edition (2020).

Mari-Klara Stein is a professor at the Department of Business Administration, TalTech, and an associate professor at the Department of Digitalization, Copenhagen Business School. Mari-Klara holds a doctoral degree from Bentley University (USA). Her research is focused on digital transformation of work. She has published her work in top management and IS journals (e.g., MIS Quarterly, Journal of Management Studies). Mari-Klara is the recipient of the European Research Paper of the Year award from CIONET, as well as the recipient of the Association for Information Systems (AIS) Early Career Award.

Mark Thompson is Professor of Digital Economy within the Initiative for the Digital Economy in Exeter (INDEX), part of Exeter Business School. His research interests include digital platforms and the public sector, and the affective dimension within organizational practice. Mark has undertaken technology policy development roles on a pro bono basis for a range of organizations, such as the UK National Audit Office, the Cabinet Office and the Scottish government, and is a board member of technology trade association TechUK. Mark combines his academic work with running London-based digital transformation organization Methods Group.

Gongtai Wang is Assistant Professor at the Smith School of Business, Queen's University. He earned his PhD from Warwick Business School, University of Warwick, and worked as a postdoctoral researcher at the UQ Business School, University of Queensland. His research focuses on the fundamental rethinking and strategic redesign of traditional products, services and business models with emerging digital technologies such as IoT, mixed reality, AI and blockchain. His research has been published in MIS Quarterly, the Journal of Product Innovation Management and proceedings of flagship Information Systems conferences.



#### xvi List of Contributors

David Whitchurch currently serves as the Business Analytics Manager at the Center for Analytics and Research in Transportation Safety at Louisiana State University, where he manages the development, updates and maintenance of data analytics applications, visualizations and reporting services solutions for a variety of highway safety stakeholders. He also works with clients as an analytics consultant for both US federal and state projects related to highway safety. He previously worked in the private sector in a variety of roles, including operations, human resource development, information technology and business application development. He received his MS Analytics from Louisiana State University and is currently pursuing a PhD in Information Systems and Decision Sciences.

**Edgar A. Whitley** is an associate professor in Information Systems in the Department of

Management at the London School of Economics and Political Science. Edgar has a BSc (Econ.) and PhD in Information Systems, both from the LSE. He is the co-editor of Information Technology and People, Senior Editor for the Journal of Information AIS **Technology** and **Transactions** Replication Research. He has served as research co-chair for the European Conference on Information Systems and track co-chair for the International Conference on Information Systems, and was previously an associate editor for the European Journal of Information Systems and MIS Quarterly.

Alex Wilson is a reader at the Management School, Queen's University, has been Chartered Association of Business Schools Research Fellow, and has held visiting roles as Lim Kim San Research Fellow at Singapore Management University.



#### **Preface**

#### **Rationale and Overview**

Academic interest in the digitalization phenomenon is pervasive and growing. Programmes dealing with the technical aspects of the topic, such as in Data Analytics and Data Science, are now commonplace, being provided the world over by higher education institutions and major commercial companies and consultancies alike. Similarly, research output and scholarly publications abound, and have been growing for a decade or so (e.g., Waller and Fawcett, 2013; Chen et al., 2016). The management, societal and ethical implications of digitalization have as yet to be considered to the same degree, however, although researchers in the Information Organization Studies, Systems, Management and cognate fields are considering these topics and issues (e.g., Constantiou and Kallinikos, 2015; Erevelles et al., 2016; Galliers et al., 2017; Legner et al., 2017; Stein et al., 2019) - broader methodological considerations, especially concerning the use of qualitative methods in this domain, are largely missing given the heightened interest in (quantitative) data analytics (Ardito et al., 2019).

Given the rapid expansion in research on various aspects of digitalization, this handbook is set to be of considerable interest within these research communities, taking as it does a transdisciplinary perspective (Galliers, 2004). Importantly, and increasingly, as the issues – negative as well as positive (Newell and Marabelli, 2015) – and impacts (Günther et al., 2017) become apparent, questions of research *method*, as well as specific emergent topics, will increasingly arise. Given the need for a more critical approach to our research (cf. Howcroft and Trauth, 2005), the emphasis of this handbook is thus on research that applies

qualitative methods set alongside the more commonplace data-analytical, quantitative approaches.

#### Handbook Structure

The book is divided into three parts that in turn provide a theoretical foundation, consider methodological approaches and implications and reflect on illustrative and emergent issues.

Part I deals with Philosophical, Epistemological and Theoretical Considerations, setting the scene for the remainder of the handbook. Many of the issues associated with digitalization are highlighted, particularly concerning the over-reliance on algorithmic decision-making and the consequent need for qualitative research. The various contributions provide a critique of 'big data' empiricism and introduce theoretical considerations that open up opportunities for the qualitative researcher by assisting in the identification of a range of limitations associated with data analytics, most importantly with regard to understanding what those data are actually demonstrating. Broader societal issues are also considered (e.g., Loebecke and Pinot, 2015).

As presaged above, Part II deals with *Methodological Considerations*. It provides examples of the various qualitative methods that can usefully be employed in researching various digitalization phenomena and issues. Included in this section are chapters concerning hermeneutics, the use of multi-methods, mixed-methods, text mining and visualization, revisiting the case study approach in the current era, ethnographic approaches and action research. It also includes a comparison of qualitative, quantitative and algorithmic research approaches.

xvii



xviii Preface

Part III discusses a number of *Illustrative Examples and Emergent Issues*. While by no means comprehensive, the chapters in this section of the handbook delve into the subject matter by introducing a range of issues concerning, inter alia, practice, knowing, implementation, rich facets of digital trace data, data reliance and data sharing. Implications for theory and practice (cf. Smith, 2006; Mingers et al., 2013) and society (cf. Loebecke and Pinot, 2015) are also highlighted.

#### **Target Audiences**

The pervasive nature of the digitalization phenomenon, and the transdisciplinary nature of the research that is and will (need to) be undertaken, mean that the handbook has been designed to be accessible to researchers in a variety of academies. While the handbook's contributors are, for the most part, from the international Information Systems (IS) field, the content is entirely relevant for these other communities. Thus, while our chapter authors have particular interests and expertise in qualitative research methods as applied to IS topics, those from cognate fields such as, inter alia, Organization Studies, Strategic Management, Marketing, Engineering Management, Finance, Operational Research and Operations Management, have strong and growing interests in the subject matter and the means by which the phenomena in which they are interested may be appropriately studied - mixed, pluralistic or complementary approaches being a key consideration (cf. Galliers et al., 1997; Mingers, 2001). Indeed, colleagues in other fields of study, such as Strategy, are also calling for research collaborations with the IS community (e.g., Whittington, 2017) – it is, therefore, not a 'one way street'.

Given that we are attempting to deal with these broader and emergent issues, researchers from these fields of study who take a more holistic, critical stance and who consider different epistemological and methodological approaches would doubtless find the handbook of particular interest. Doctoral and Master level students in Business Schools and Faculties of Social Science and Engineering may also find the book to be a key

reference source, not just those taking courses on research methods (cf. Galliers and Huang, 2012).

#### **Contributors**

As noted above, we have invited contributions from experts in applying qualitative methods to digital phenomena. These contributions were originally sought in 2020 so that, in certain instances (as noted, for example, in Chapter 14), more recent publications of relevance to the subject matter have appeared in the literature. The contributors hail from universities located in Europe, North America and the Asian Pacific region. Each was invited not just for their undoubted expertise and considerable experience in researching and teaching in this domain, but also for their open, questioning, critical and flexible approaches to undertaking research on emerging digital phenomena. Brief biographical summaries can be found before this Preface.

#### References

- Ardito, L., Scuotto, V., Del Giudice, M. and Messeni Petruzzelli, A. (2019). A bibliometric analysis of research on big data analytics for business and management. *Management Decision*, 57(8), 1993–2009.
- Chen, Y., Chen, H., Gorkhali, A., Lu, Y., Ma, Y. and Li, L. (2016). Big data analytics and big data science: A survey. *Journal of Management Analytics*, 3(1), 1–42.
- Constantiou, I. and Kallinikos, J. (2015). New games, new rules: Big data and the changing context of strategy. *Journal of Information Technology*, 30(1), 44–57.
- Erevelles, S., Fukawa, N. and Swayne, L. (2016). Big data consumer analytics and the transformation of marketing. *Journal of Business Research*, 68(2), 897–904.
- Galliers, R. D. (2004). Trans-disciplinary research in Information Systems. *International Journal of Information Management*, 24(1), 99–106.
- Galliers, R. D. and Huang, J. (2012). The teaching of qualitative research methods in Information Systems: An explorative study utilising learning



Preface xix

- theory. European Journal of Information Systems, 21(2), 119–134.
- Galliers, R. D., Jackson, M. C. and Mingers, J. (1997). Organization theory and systems thinking: The benefits of partnership. *Organization*, 4(2), 268–278.
- Galliers, R. D., Newell, S., Shanks, G. and Topi, H. (2017). Datification and its human, organizational and societal effects: The strategic opportunities and challenges of algorithmic decision-making. *Journal of Strategic Information Systems*, 26(3), 187–190.
- Günther, W. A., Rezazade Mehrizi, M. H., Huysman, M. and Feldberg F. (2017). Debating big data: A literature review on realizing value from big data. *Journal of Strategic Information Systems*, 26(3), 191–209.
- Howcroft, D. and Trauth, E. M. (eds). (2005).

  Handbook of Critical Information Systems
  Research: Theory and Application.
  Cheltenham, UK and Northampton, MA:
  Edward Elgar.
- Legner, C., Eymann, T., Hess, T., Matt, C., Böhmann, T., Drews, P., Mädche, A., Urbach, N. and Ahlemann, F. (2017). Digitalization: Opportunity and challenge for the business and information systems engineering community. *Business & Information Systems Engineering*, 59(4), 301–308.
- Loebecke, C. and Pinot, A. (2015). Reflections on societal and business model transformation

- arising from digitization and big data analytics: A research agenda. *Journal of Strategic Information Systems*, 24(3), 149–157.
- Mingers, J. (2001). Combining IS research methods: Towards a pluralist methodology. *Information Systems Research*, 12(3), 240–259.
- Mingers, J., Mutch, A. and Willcocks, L. (2013). Critical realism in information systems research. *MIS Quarterly*, 37(3), 795–802.
- Newell, S. and Marabelli, M. (2015). Strategic opportunities (and challenges) of algorithmic decision-making: A call for action on the long-term societal effects of 'datification'. *Journal of Strategic Information Systems*, 24(1), 3–14.
- Smith, M. L. (2006). Overcoming theory-practice inconsistencies: Critical realism and information systems research. *Information & Organization*, 16(3), 191–211.
- Stein, M. K., Wagner, E., Tierney, P., Newell, S. and Galliers, R. D. (2019). Datification and the pursuit of meaningfulness in work. *Journal of Management Studies*, 56(3), 685–717.
- Waller, M. A. and Fawcett, S. E. (2013). Data science, predictive analytics, and big data: A revolution that will transform supply chain design and management. *Journal of Business Logistics*, 34(2), 77–84.
- Whittington, R. (2017). Information systems strategy and strategy-as-practice: A joint agenda. *Journal of Strategic Information Systems*, 23(1), 87–91.