

Riccardo Rialti · Giacomo Marzi

# Ambidextrous Organizations in the Big Data Era

The Role of Information Systems

palgrave  
macmillan

Riccardo Rialti  
Department of Economics and Management  
University of Florence  
Florence, Italy

Giacomo Marzi   
Lincoln International Business School  
University of Lincoln  
Lincoln, Lincolnshire, UK

ISBN 978-3-030-36583-7

ISBN 978-3-030-36584-4 (eBook)

<https://doi.org/10.1007/978-3-030-36584-4>

© The Editor(s) (if applicable) and The Author(s), under exclusive license to Springer Nature Switzerland AG 2020

This work is subject to copyright. All rights are solely and exclusively licensed 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.

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.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Cover illustration: © Melisa Hasan

This Palgrave Pivot imprint is published by the registered company Springer Nature Switzerland AG  
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

# Contents

<b>1</b>	<b>The Modern Organization, Data, and Better Performances</b>	<b>1</b>
	References	4
<b>2</b>	<b>Setting the Stage: BDA, Dynamic Capabilities and Ambidexterity, What We Know So Far?</b>	<b>5</b>
2.1	Big Data: A Revolution Arrived	6
2.2	What Is Big Data? Towards a Consensual Definition	8
2.3	BDA, Dynamic Capabilities, Ambidexterity and Performance	12
2.4	Exploring Existing Literature on Big Data, Dynamic Capabilities and Ambidexterity: Defining the Research Methods	16
2.5	Results of Bibliometric Analysis	20
2.6	Systematic Review of Literature	22
2.6.1	Blue Cluster: Big Data, Dynamic Capabilities, Supply Chain Management and Performance	23
2.6.2	Red Cluster: Big Data, Dynamic Capabilities, Production Processes, and Manufacturing	28

2.6.3	Green Cluster: Big Data, Dynamic Capabilities, and Strategy Making	29
2.6.4	Yellow Cluster: Knowledge Exploitation Through BDA Systems	30
2.6.5	Purple Cluster: BDA and Performance Related Outcomes	31
2.7	What's Next?	32
	References	33
<b>3</b>	<b>From Big Data to Performance: The Importance of Ambidexterity, Agility and BDA Integration in Business Processes—A Theory-Based Framework</b>	39
3.1	The Integration of BDA in Modern Organizations: Perspectives About Information Systems, Ambidexterity, and Agility	40
3.1.1	The Relevance of Agility and Ambidexterity in Modern Organizations	41
3.2	The Ambidextrous Organization in Big Data Era	43
3.2.1	The Ambidextrous Organization and Agility	43
3.2.2	Big Data, Business Process Management Systems and Ambidextrous Organizations' Agility	49
3.3	A Conceptual Framework on Big Data, Business Process Management Systems, and Agility	52
3.4	Insights Emerging from the Developed Framework	56
3.4.1	Theoretical Implications for Researchers	56
3.4.2	Preliminary Suggestions for Managers	58
3.5	Going a Bit Further, the Need for Empirical Evidence	61
	References	61
<b>4</b>	<b>Agility Through BDA and Ambidexterity: Some Empirical Evidence from Managers' Experiences</b>	69
4.1	The Need for Empirical Evidence	70
4.2	BDA Capabilities, Ambidexterity, Agility, and Organizational Performance	71

4.3	Validating the Theory and the Main Hypothesis by Empirical Investigation	75
4.3.1	Organizational Ambidexterity and BDA Capabilities	75
4.3.2	The Relationship Between Organizational Performances, Agility and, Ambidexterity	77
4.3.3	Proposed Model	79
4.4	Methods	80
4.4.1	Sampling	80
4.4.2	Measures	82
4.4.3	Statistical Analysis and Hypotheses Testing	83
4.5	Discussion and Managerial Implications	84
4.6	Conclusions, Limitations, and Suggestions for Future Research	88
	References	89
<b>5</b>	<b>Conclusion</b>	93
	References	95
<b>Index</b>		97

# List of Figures

Fig. 2.1	Manuscripts' temporal distribution	20
Fig. 2.2	VOSviewer result	27
Fig. 3.1	Market capitalizing agility and operational adjustment agility and their role in shaping an agile organization ( <i>Source Authors' elaboration</i> )	48
Fig. 3.2	The importance of BDA capable BPMS for ambidextrous organizations' agility	56
Fig. 4.1	Research model	79

## List of Tables

Table 2.1	Principal outlets for publications on big data and ambidexterity	21
Table 2.2	Most prolific authors	23
Table 2.3	Most relevant institutions	24
Table 2.4	Country of origin of the manuscripts	26
Table 3.1	Agile organization principles and ambidextrous organization paradigm	46
Table 4.1	Sample characteristics	82