

Vincenzo Morabito

The Future of Digital Business Innovation

Trends and Practices

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Foreword

The Digital Revolution is one of the *buzzwords* in 2015 among both academics and practitioners. Coping with the Digital Revolution requires members of an organization to adapt to new measures, something individuals do not always find easy. The challenges of innovation in increasingly digitized businesses require a clear understanding about the role of IT in the definition of business models—what are the (possibly new) targets, which resources should be involved, and where should investment be centralized?

A strong understanding of *what's out there* and an intelligent use of appropriate business models are necessary to enable the alignment and convergence among vision, strategy, and resources of any company to then clarify and simplify governance choices, to weigh up the value of resources, and to define the correct policies that complement the organization's operations.

This book identifies the challenges, ideas, and trends to provide a “management toolkit for survival” in the Digital Revolution. The first part deals mostly with the technological trends emerging from the increased use of intelligent computers and advanced IT platforms and discusses topics like wearables, machine-to-machine communication, the emergence of digital currency, and data visualization and security.

The Internet of Things or *smart objects linked to the Internet* and in particular the proliferation of wearables are extremely interesting and insightful to understand seemingly irrational consumer behavior. Machine-to-machine communication complements and, in part, substitutes the human factor in manufacturing and is likely to represent a USD200 billion industry by 2020.¹ The opportunities of this phenomenon seem limitless.

Digital currency destabilizes the concept of money dating back to the beginning of civilization. Virtual currency was defined only 3 years ago—in 2012—by the European Central Bank as “a type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community” and may soon replace traditional

¹ Source: <http://www.statista.com/statistics/295685/m2m-total-industry-size-worldwide/>

currencies even without a legal tender. Finally, digital transformation also requires dealing with much more data than ever before but not with more value de facto.

Everybody talks about volume, velocity, variety, and veracity, but few deal with the business relevance of data visualization, which is also discussed in the first part. Finally, Part I closes with the discussion of one of the most challenging and social aspect of digital business: the protection of organizations by malevolent attacks through an improved attention to digital security.

The second part highlights the main managerial trends that effectively address the trends identified previously. It takes the reader on a journey through neuro-information systems, IT ambidexterity, and IT-Business alignment evolution. Recent progresses in cognitive neuroscience are exposing the neural bases of cognitive, emotional, and social processes and give new insights into the complex interplay between IT and information processing and decision making in business-related situations. The importance of ambidexterity and the use of market information to obtain competitive advantage also represent an important tool of successfully dealing with Digital Transformation and can eventually form a new basis for a better development of the IT role in the company.

Finally, the third part of the book discusses, through structured case studies and business evidence, global innovation initiatives in 2015. This last chapter provide a guideline for different possibilities of innovation practices in the digital context.

This book provides a uniform understanding of the challenges and opportunities of trends and practices in digital business innovation, and most importantly, it provides readers with the right stimuli to take a first step towards change.

Ludwig-Maximilians-Universität München

Tobias Kretschmer

Preface

In this book, we aim to discuss and present the main challenges and trends for the future of Digital Business Innovation to a composite audience of practitioners and scholars. This volume follows the one published in 2014 for Springer, aiming to fill a similar gap [1]. Indeed, looking at the state of the art, we believe that it is still yet difficult, as actually it was two years ago, to find a unified survey of current scientific and managerial work having an impact on future business, which also considers the diverse perspectives characterizing the Information Systems research (from management to computer science and engineering, among others). Such a summary should be suitable to be used by practitioners in their day-to-day activities or simply as an update on what the state of the art in academia and managerial contributions may offer with regard to future IT strategy as well as business value propositions in different industries. Indeed, it is worth noting that today as in 2014, notwithstanding journals such as MIT Sloan Management Review, IEEE Spectrum, or the Communications of the ACM (CACM) have such a mission of connecting research and industry practices, to the best of the author's knowledge they do not provide a yearly integrated review, encompassing all their respective areas (management, engineering, and computer science).

However, these publications are going to be part of the usual large body of knowledge together with journals, such as Management of Information Systems Quarterly (MISQ), Journal of Association of Information Systems-JAIS, Management of Information Systems Quarterly Executive (MISQE), Information Systems Research, European Journal of Information Systems, Journal of Information Technology, and the Journal of Strategic Information Systems, and conferences, such as International Conferences of Information Systems (ICIS), European Conferences of Information Systems-(ECIS), Americas Conferences of Information Systems (AMCIS), among others (just to mention the Management of Information Systems research sources), which this book aims to consider for identifying the challenges, ideas, and trends, that may represent “food for thought” to practitioners. Accordingly, each topic considered is analyzed in its technical and managerial characteristics, also through the use of case studies and examples.

Outline of the Book

The book's argument is developed along three main axes, following the same macro structure adopted in [1, 2]. In particular, we consider first (Part I) Digital Systems Trends issues related to the growing relevance, on the one hand, of machine intelligence (Chap. 1), wearable technologies (Chap. 2), digital currencies, and distributed ledgers for business (Chap. 3); on the other hand, a specific attention is devoted to data visualization (Chap. 4) and digital security (Chap. 5) trends and challenges for understanding organizations and user behavior, needs, and digital services/products requirements.

Subsequently, Part II considers Digital Management Trends, focusing on the impact of neuroscience for management of information systems, with a focus on the area of Neuro-Information Systems (Chap. 6), the role of IT ambidexterity in managing digital transformation (Chap. 7), and how IT strategy and alignment are reconfigured by digital business (Chap. 8). Finally, Part III of the book presents and reviews cases of Digital Innovation at a global level in a section called Innovation practices. Thus, the book adopts a scientific approach as for methodological rigor; however, it is also concrete and describes problems from the viewpoints of managers, adopting a clear and easy-to-understand style for the flow of the discussion as well as the arguments treated, in order to capture the interests of managers.

In summary, this book and the other former volumes on digital trends and Big Data and analytics [1, 2] are ideally connected as subsequent stages of a journey across digital business innovation; consequently, in line with the former stages' value propositions for the reader, this book also aims to be unique for its intention to synthesize, being a simple yet ready to consult scientific toolbox for both managers and scholars.

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