

HABILITATION THESIS

Digital Transformation The Foundation of Business Excellence Professor Irina- Bogdana Pugna

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Introduction

In an era where technology permeates every aspect of life, digital transformation is fundamentally reshaping the business landscape, driving organizations toward unprecedented levels of excellence. This Habilitation thesis examines the pivotal role of digital transformation in fostering innovation, enhancing competitive advantage, improving operational efficiency, and ensuring long-term success, positioning it as the cornerstone of business excellence.

This thesis is structured as follows. After the introduction, the first major section delves into the central themes of my research on digital transformation and data-driven strategies for business optimization and innovation, accumulated throughout my career. This section is organized under three sub-themes, which I summarize below: data-driven business models, technological innovations in business, and customer engagement alongside corporate social responsibility.

Section 2 presents a detailed account of my career, including my scientific, professional, and academic experiences. It encompasses my educational background and achievements, as well as my extensive teaching responsibilities across undergraduate and graduate levels in multiple faculties, including a key role in the French-Romanian collaborative Master of Business Administration program (INDE), established between the Bucharest Academy of Economic Studies (ASE) and CNAM Paris in 1993. These responsibilities also involve the development of new academic disciplines at both course and program levels. I reflect on my teaching philosophy, encompassing both taught courses and the supervision and assessment of student research. A crucial aspect of my academic work has been extensive collaboration with external business partners. This exposure has been instrumental in enhancing the quality of my teaching and curriculum development and has played a vital role in shaping my research. It has ensured that my research activities remain timely and relevant while fostering a strong research-teaching nexus that enhances student learning, skill development, innovation, and employability.

My research on digital transformation and data-driven business strategies, while broad, is unified by an underlying awareness that the term “digital transformation” is itself contested, continually evolving, and requires careful examination. What remains undisputed is that digital transformation is disruptive, presenting extraordinary opportunities while simultaneously raising significant challenges for businesses in terms of organizational structures and cultures. Addressing these opportunities and challenges forms the foundation of the three themes that organize my research.

Data-driven business models enhance decision-making and operational efficiency, yet their implementation introduces organizational and cultural challenges. Consequently, I have investigated the management of digital transformation, exploring leadership culture, vision, and skills necessary for successful strategic change. Alongside earlier works, I examine two recent articles: one analysing corporate attitudes towards big data and its impact on performance management, and another discussing management perspectives on data-driven organizations in the energy sector.

Focusing on technological innovations in business, I have explored the adoption of disruptive technologies such as artificial intelligence, machine learning, blockchain, and big data analytics. While these innovations drive agility, competitiveness, and creativity, they also present significant challenges for leaders, technicians, and operations professionals. In addition to referencing earlier works in this area, this thesis highlights two key articles: one on the use of machine learning in predicting financial and economic performance, and another on the deployment of business intelligence and data analytics, with particular emphasis on descriptive analytics and Datawarehouse ontologies.

The third and final theme addresses the relationship between businesses, their customers, and the wider community in which they operate. This theme highlights both the opportunities and challenges that arise. While innovative customer engagement strategies, driven by big data, can increase profitability and positively impact the community, they also raise ethical concerns that require careful attention. In addition to referencing earlier works in this area, I examine two recent articles: one on corporate social responsibility communication through social media, and the other on managing artificial intelligence and new market interactions to enhance customer experience.

My future research plans build upon these thematic areas and are summarized in Section 2, which outlines four future research directions:

- I aim to explore sustainable, ethical, and efficient business practices, focusing on strategic alignment and operational change, and the reshaping of traditional business models under the overarching theme of twin transformation—digital transformation enabling Environmental, Social, and Governance (ESG) transformation.
- I plan to further investigate digital transformation and organizational culture, focusing on change management strategies, leadership, and employee engagement.
- In the realm of technology integration and innovation, I will delve deeper into the integration of emerging technologies (such as artificial intelligence, the Internet of Things, and blockchain), strategies for adopting new technologies, and best practices derived from business experiences.
- Lastly, I intend to continue exploring customer engagement, specifically enhancing customer experience through data analytics, gaining insights into customer behaviour, and leveraging digital channels for engagement.

Finally, I present the bibliographical references, which include both my own publications discussed in detail and other sources referenced throughout the thesis.