Conclusions

This book makes significant progress in our understanding of the strategic Digital Transformation framework use within the Industry 4.0 and current Digital Transformation overall context for companies to ensure their current and future competitive advantage in the market, regardless of the sector in which they develop their activity.

This book presents as its main contribution the construction of a Strategic Digital Transformation operational framework, necessary and adaptable to any type of company and sector of activity.

The main purpose of this work was to define a simplified and integrated model of various tools and actions to allow for the integration of companies in the Industry 4.0 ecosystem. Over the course of the study, certain temporal and economic limitations were encountered which have impeded the technological development of the most complete tools (e.g., the type actions: integration of a scorecard based on analytics for assessment of the Digital Strategy in accordance with the training plan inherent in the new digital-professional competency context, the generation of a strategic business case adapted to the digital context and the generation of a benchmarking map allowing for analysis of the external context of the emerging technologies adapted according to the sector of activity of the company with respect to Industry 4.0).

While we have generated a number of new and redesign patterns, actions, approaches and several measures, useful tools, given the in-depth sampling strategy focused on exploring the literature and, very little can be

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said of the nature of Digital Transformation strategy for increasing businesses' competitiveness nowadays.

Further, Digital Transformations are often accompanied by changing skill sets that are not only necessary for the transformation itself, but also for regular operations thereafter. While current staff members may have a different, less tech-savvy mindset and may lack the required technological capabilities to cope with the upcoming changes, new highly skilled and focused staff members might be difficult to find, given the particular location of a firm. Research could support firms by providing guidance on the assessment of their existing technological capabilities and on procedures to weigh up their current options, as well as guidance on the design of training procedures for current employees and new hires.

This calls for concrete recommendations for procedures for the continuous refinement of Digital Transformation strategies, such as how to observe and evaluate technological developments and how to test their impacts in controlled environments within the company. Other key questions include the desired extent of Digital Transformation

Integrating Digital Transformation Strategies into Firms

As noted, Digital Transformation strategies have a cross-functional character and need to be aligned with other functional and operational strategies. However, the alignment of IT strategies with other strategies has remained a difficult and controversial endeavor. Given the rather recent appearance of Digital Transformation strategies, further evidence is needed as to how this alignment can be conducted in practice—not only related to IT strategies, but also from an organisational perspective. In this respect, the interaction of Digital Transformation strategies with business development and business models also needs to be assessed from a management perspective. Since Digital Transformation strategies cut across various other strategies at the same time, complex coordination efforts might be needed. Research should provide guidelines for firms to help structure these processes in order to achieve shared goal setting, the alignment of different strategies, and cooperation between various people and entities throughout a firm.

Therefore, to resolve several theoretical and methodological issues will be required.

The first issue is the need for adopting exponential technology functions such as

- Favour corporate entrepreneurship: offering companies good opportunities to invest in new trends at an early stage and to benefit from disruptive innovation and exponential technologies.
- Foster the generation of learning organisations: companies must become learning organisations if they want to take full advantage of exponential technologies to achieve Digital Transformation (Industry 4.0).
- Improve efficiency in the management of innovation: the successful management of innovation covers the entire company and the strategy, the organisation and administration of the portfolio of products and product development. The Digital Transformation of Industry 4.0 allows for us to even further improve the efficiency of innovation management in all these areas.
- Generate an interactive and adapted curriculum: this will make individual learning possible, thus accelerating strategic implementation and organisational development.
- Adopt the most appropriate technological solutions and carry out continuous benchmarking actions when faced with changing behaviour and the constant emergence of new technologies associated with the business ecosystem of Industry 4.0.

The second issue is associated with skill requirements in the digital world and talent development practices for Industry 4.0:

- Foster the generation of learning organisations: companies must become learning organisations if they want to take full advantage of current and emerging technologies to achieve Digital Transformation (Industry 4.0).
- Design an interactive curriculum adapted to the company's strategic plan: this will facilitate individual learning and the design of ad hoc training activities.
- Adopt more appropriate technological solutions and carry out continuous internal training activities when faced with changing behaviour and the constant emergence of new technologies associated with the business ecosystem of Industry 4.0.

- Consider the evolution-transformation of the labour market; the reinvention arising from future typology of the workforce, emerging digital professions and new forms of work.
- Assess the impact on productivity and the commitment of employees. Analysing the different combinations of the digitalisation of the workplace and the workforce, with the entry of a broad group of new internal departments or functional units and/or the adaptation of it to ICTs, including (but are not limited to R&D&I) the pairing of Senior Management and Human Resources.

Accordingly, the principal conclusions drawn in entrepreneurial and technological terms are the following:

In Business Terms

The development of a digital culture is one of the key pillars of the Digital Transformation of companies. The Digital Transformation requires new behaviours on the part of directors and managers to lead the transformation and ensure that full advantage is taken of digital technologies and platforms.

The Digital Transformation and the process require perfect alignment with the company's strategy throughout the different levels of maturity.

The Digital Transformation requires an interdisciplinary and multidimensional model that redefines the bases and premises upon which the organisation competes and meets and satisfies the needs of their customers, interrelates with partners in organisational ecosystems and generates income and profit for shareholders and/or investors.

The need for greater involvement on the part of the general management in SMEs who must tackle the challenge from three perspectives: the individual/organisational, the functional and the industrial.

At the individual level, the technological capacity of employees to adopt digital resources is necessary. Moreover, they must ensure that the organisation has resources that support Digital Transformation. In this sense, management must integrate and communicate a clear digital vision to the entire organisation.

The organisation must provide its employees with some directives on how to use resources to take full advantage of digital technologies. Ultimately, the general management of SMEs must employ competent

workers with the right skills to help the company in its Digital Transformation.

At the industrial level, the general management of SMEs must pay attention to emerging trends and technologies to quickly identify the right opportunities for their organisation.

Managers must be conscious of these changes and capable of acting ahead so as not to be left behind by competitors. Consequently, it is essential that every manager ensure that their division understands that adapting to the Digital Transformation is a business project and not an information technology project.

In Technological Terms

The existence of emerging technologies must lead to detailed analysis of their foreseen application: the models of digital maturity are emerging as an integrated framework that allows organisation to evolve progressively in the development of capacities to be successful in the new digital era.

The maturity models show capacities relevant to all sectors and, in some cases, provide specific capacity for certain sectors.

Finally, it is imperative that practioners understand how this important resource best be used within the complex contextual relationships within the firm. It is important that relationships that affect the success of strategic Digital Transformation framework planning be studied and the results presented for increasing the understanding of both executives and researchers. This book has attempted to add and extend the body of knowledge surrounding strategic Digital Transformation ecosystems (business, research and innovation). It lays the groundwork for both practice and future research.

At the close of this edition, we cannot neglect to mention the Covid-19 pandemic. The themes of the book are perhaps more relevant now than ever, with the digitalisation of the business fabric becoming an imperative as the Covid-19 crisis has forced many businesses to accelerate their digitalisation plans.

The pandemic has disrupted the business model and operations of many companies and institutions, requiring constant innovation and the ability to anticipate in a context of uncertainty.

A key aspect of the transformation has been increased digitalisation and the accelerated implementation of existing trends such as Online Shopping and Robot Deliveries, Digital and Contactless Payments, Remote Work,

Distance Learning, Telehealth, Online Entertainment, Supply Chain 4.0, 3D Printing, Robotics and Drones and 5G and Information and Communications Technology.

The Covid-19 crisis is therefore likely to significantly accelerate the shift to digital and fundamentally alter the business landscape. Staying current in the latest technology will be essential for any business looking to remain competitive in a post-Covid-19 world.

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