

DIGITAL EFFECT *Visions of business and Industry 5.0*

Dialogues about the difficult relationship between innovation, society and industry

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Digital Effect: Visions of business and Industry 5.0 is a new book on digitization and innovation and the importance of applying decision making models.



Figure 1 Digital Effect: Visions of business and Industry 5.0

The increase in global competitiveness challenges the manufacturing sector to integrate design and product in order to improve quality and process. This means that in today's market, even large companies need to be flexible. Thus, in recent years, the focus on smart manufacturing systems has pushed companies toward a new variety of highly specific technical solutions. These solutions are characterized by an integrated approach to manufacturing termed "*digital manufacturing*". In fact, digital manufacturing systems often incorporate optimization capabilities to reduce time and costs and improve the efficiency of most processes. Despite the recognition of the importance of digital manufacturing, most organizations do not have the necessary capabilities. This is a serious issue because the digital revolution is happening now; it is the "present", not the future!

Therefore, the priority for every company should be to adapt each digital technology to their business. There are many different tooling processes that digital manufacturing utilizes such as artificial intelligence, automation and robotics, additive technology, human-machine interaction, IoT (Internet of Things), etc. These tools are helping create innovations that will change the nature of manufacturing itself.

Industry and academic leaders agree that digital manufacturing technologies will transform every "link" in the manufacturing value chain, from research and development,

supply chain, and factory operations to marketing, sales, and service. This transformation is known as the fourth industrial revolution, also referred to as Industry 4.0. However, the newest trend is called Industry 5.0, which is the future, the already penetrating trend of process change that is directed towards closer cooperation between man and machine, and systematic prevention of waste including industrial upcycling.

The transformation towards digitalization for all must be harmonized with the threats, opportunities, and dynamics of the industry revolution. In this context, management plays a crucial role, i.e., people, including entrepreneurs, managers, and middle managers in each company who exercise a *decision-making* function. Therefore, managerial decisions can contribute significantly to the management of complex systems such as the implementation of the link between the principles of the economy and a digital approach characterizing smart manufacturing.

Identifying and outlining the technological, cultural, organizational, social, and managerial changes underlying the digital transformation that are underway is the aim of the new book by Fabio De Felice and Antonella Petrillo titled, “*Digital Effect: Visions of Business and Industry 5.0*,” published by McGraw-Hill. In seven chapters, the authors address digital transformation through an analysis of enabling technologies (e.g., artificial intelligence, quantum computing, robotics, etc.) as well as the impacts of new forms of work organization, from the need to reform training courses to the dangers of new forms of authoritarianism and social inequality.



Figure 2 Authors of the book

These issues are not exclusively the prerogative of scientists or philosophers, but are topics that concern us all. The aim of the book is to combine the technical aspects related to technology with depictions and visualizations of changes connected to digitalization, that affect our daily life and the transformation of the world around us.

In summary, this book aims to provide an overview of the new industrial revolution; it is intended to be a useful resource for anyone dealing with this issue. This broad theme not only affects the world of work in the strict sense, but in a global sense, and is a theme that also represents a challenge for the academic, professional and industrial worlds.

As Professor Enrique Mu, *IJAHP* Editor-in-Chief, pointed out in a recent interview with the authors of the book, digitization and innovation are two processes that guide today's companies. Obviously we cannot ignore the COVID pandemic that represents a strong “technological accelerator”. Let’s continue to explore the topic further!



Figure 3 Interview with Professor Mu

Q#1 | Digitization and innovation are two processes that guide today's companies. In your opinion, what are the drivers and obstacles to digital transformation?

R#1 | Digital transformation is, basically, a disruptive type of innovation. The presence of an extensive threat, such as the current pandemic, is an important driver to lead us to a complete digital transformation. Successful organizations that have optimized processes between customers and suppliers may see these same processes as a possible obstacle to their digital transformation, since it is really difficult for them to change them drastically.

Q#2 | Do you think the COVID pandemic will be a strong “technological accelerator”?

R#2 | Yes, absolutely. The pandemic has accelerated digital transformation exponentially. For example, the pandemic has literally led 100% of universities and students to embrace distance learning. Similarly, many conferences were canceled at the start of the pandemic, but now most of the conferences are offered in a “virtual” format. My opinion is that “hybrid” education and “hybrid” academic conferences will be the norm from now on.