

## Chapter 2

# Digital Transformation Towards a New Context of Labour: Enterprise 4.0

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### ABSTRACT

*Information Systems are the core of every business and cut across almost all aspects of organizational life. The adoption of technology enablers, by itself, does not guarantee such an organizational transformation. The new technology enablers allow the production, sharing and management of information and knowledge within the organization between peers and other stakeholders, and they also allow the improvement of organizational processes, requiring the updating of the supporting IS. Taking advantage of these technologies for organizations within the context of digital transformation requires a comprehension exercise in how to demonstrate their usefulness with regard to the creation, access and sharing of contents and IS improvements in a safe way. To this end, this chapter provides a comprehensive view of a new context of labour faced by the DT of organizations, which we term Enterprise 4.0 and which we propose to be implemented through the m\_CSDIT framework, so as to improve the organizational well-being considering the collective intelligence and agility dimensions.*

## INTRODUCTION

It is widely acknowledged that organizations have suffered a large evolution at the social, economic and technological levels where the traditional barriers of transferring information and knowledge have been progressively eliminated. This evolution allowed the elimination of silos, the breaking down of hierarchies, the connection of internal and external stakeholders and the empowering of employees (Berkman, 2014). Furthermore, the use of technology enablers such as Big Data and associated analytics, Cloud Computing, Mobile Connectivity, and Social, the four pillars of digital transformation (DT), within business practice can enable significant organizational competitive advantage (Uhl, & Gollenia, 2016).

According to Earley Information Science (2016) digital transformation (DT) is today a top priority for executives, being that (1) 125000 enterprises expect revenue from their digital initiatives to increase by 80% by 2020; (2) DT initiatives will more than double by 2020, from 22% to almost 50% and, (3) only 27% of businesses have a coherent digital strategy for creating customer value in place.

From the organizations' point of view, DT can be seen as a deep and accelerating transformation with regard to processes, activities, competencies and models, in order to take advantage of the changes and opportunities offered by the inclusion of digital technologies into an organization. However, this advantage is only possible if the information systems of the organizations are also aligned with these new technologies. The main purpose of digital transformation is to redesign the organizational business through the introduction of digital technologies, achieving benefits such as productivity improvements, cost reductions and innovation (Hess et al., 2016). Nevertheless, as stated in Miller (2016), for these results to be achieved, a total organizational commitment is required. To this extent, Hinchcliffe (2016) points out that "...because digital itself is so intangible.... It's often even harder to understand the diverse needs, perspectives, and skill gaps of the people that have to change along with the technology". Hence, it may be assumed that continuous education/training is an imperative in this transformation organizational context.

In parallel with digital transformation and often referred as a major opportunity for promoting digital transformation in manufacturing, the paradigm of industry 4.0 has also arisen, whose goal is to achieve a higher level of operational efficiency and productivity, as well as a higher level of automatization (Thames & Schaeffe, 2016). Industry 4.0 facilitates inter-connection and computerization into the traditional industry (Lu, 2017). Following this line of reasoning, in our research contribution we propose a framework to drive organizational digital transformation, where the former concept applied within the context of manufacturing is applied to any type of organization – Enterprise 4.0.

On the other hand, Information Systems (IS) are the core of every business and cut across almost all aspects of organizational life. They are used to support and improve all aspects of organizational functions and activities. In particular, under this context, the perception of increased product and services customization as a competitive advantage is universally shared (Kadiri et al., 2016).

Thus, it can be claimed that in order for DT to be successful in an organization, IS needs to be adapted/updated as well. IS must accommodate DT and must be aligned with the business in order to create value for the organization/business.

In this chapter, we provide a comprehensive view of the prevalent issues of a new context of labour faced by organizations on a digital transformation process: Enterprise 4.0 supported by mobile IST – m\_CSDIT. Furthermore, we argue that this context will improve the well-being of these organizations through the collective intelligence and agility dimensions. The m\_CSDT framework was formerly proposed in Ferreira, et al. (2014; 2015) at that stage, the framework was used as a basis to introduce and/

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