

THE IMPACT OF THE COMPETITIVE INTELLIGENCE FUNCTION IN THE INDUSTRY 4.0

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Abstract

The current times are marked by a process of transition from digital transformation to digitization in almost all global businesses. The transition to digitalization affects the entire organizational ecosystem by integrating with digital solutions the entire value chain of global business. Industry 4.0 is a relatively new concept that was introduced in 2011 in Hannover, during one of the largest trade shows in the world. Its inauguration represented, in other words, the start of the fourth industrial revolution. The first industrial revolution or Industry 1.0 took place during 1780-1870 and it was marked by the power of steam; the second industrial revolution or Industry 2.0 developed along with chain production and electrical power in the period of time between 1870 and 1950. From the year 1950 until 2010 was the third industrial revolution which involved high levels of automation, digitization and IT. After 2010, our societies have witnessed the fourth industrial revolution. Industry 4.0 represents the smart industry that is characterized by concepts such as Internet of Things, Hyper connectivity, Cyber-Physical Systems or Big Data (Hitpass & Astudillo, 2019).

Keywords: *Competitive Intelligence, Competitive Advantage, Industry 4.0, Digital Economy, Business Strategy*

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Introduction

Industry 4.0 has the main purpose of creating digital production enterprises which, besides being interconnected, they communicate, analyse and use information in order to drive intelligent actions back into the physical world. It leads the physical act of design, manufacture, distribution and performance in a continuous cycle with real-time access to data and information that depends on the exchange of information between the physical and digital worlds. But the essence of Industry 4.0 is actually the leap from digital technologies connected back to action in the physical world. The Industry 4.0 prospers in a connected environment – an integrated

ecosystem where people, data, processes, systems and capital assets can converge to create Cyber-Physical Systems and drive IoT. Such integration of processes and information flow in the era of Industry 4.0 requires a collaborative mode of operation. This electronic collaboration or e-collaboration includes both the exchange of information and resources as well as the creation of common knowledge in order to optimize processes and increase the added value. The dimensions of the electronic collaboration have a positive impact on the competitive priorities and, as a result, “suggest that value creation in supply chain electronic system is contingent on mutual resource synergy and joint collaboration among trading partners” (Alsaad *et al*, 2018).

Competitive Intelligence is a process that involves the collection, processing, analysis and use of information regarding the environment in which the company operates (Adidam *et al*, 2012) and aims to transform this information into valuable intelligence (Kim *et al*, 2015). The expansion of the Competitive Intelligence field in the last decades has started from the need for technological improvements, the reduction of costs and the alignment of the business strategy with the competitive environment (Fleisher, 2004; Cassia & Magno, 2019).

The impact of the Competitive Intelligence Function in the Industry 4.0

The Competitive Intelligence function is a business tool that supports organizations enabling them to increase business performance by improving their knowledge, internal communications and quality strategic plans (Rezaie *et al*, 2011). In addition, due to the formal and systematic development of Competitive Intelligence, managers are able to make better informed decisions about future events (Dishman & Calof, 2008; Yaghmaie & Vanhaverbeke, 2019).

The impact of the Competitive Intelligence function on organizations within Industry 4.0 is significant because at the organizations level it enables decision makers to detect new opportunities, create value and improve performance (Salguero *et al*, 2019). It also gains significance as a process that allows companies to have an advantage in the market - sustainable competitiveness (Hill & Jones, 2009). Also, the Competitive Intelligence function allows managers to understand the competitive forces in order to adapt their strategies to the rapidly changing industry and to develop sustainably (Trong, 2017).

In order to increase the efficiency of operations in the global corporate market and to create the competitive advantage in the era of Industry 4.0, enterprises must begin to identify, recognize and gradually meet the requirements. The first step in this process should be to understand the specifics and needs of the Industry 4.0 age. Among these needs, where the function of Competitive Intelligence can have a significant impact on global companies, one can identify:

- Assessing current needs: to determine when and where automation can help with Industry 4.0 and where it can be worth the wait. The Competitive Intelligence function can help managers consider what technologies are already available to significantly reduce costs and risks and what investments might be worth waiting for later, when technological advances can lead to significant upgrades to current capabilities.
- Develop a talent strategy to meet the new talent needs created by the technologies based on Industry 4.0: Competitive Intelligence can help decision makers continually evaluate the evolving needs of the organization to proactively prepare for the talent needs that may exist in the future, especially those focused on maintaining and managing the assets activated by Industry 4.0 (Vasquez *et al*, 2016).
- Monitoring emerging trends: Competitive Intelligence allows managers to make efficient planning and decision-making in an area that is evolving rapidly over the next decade. The Competitive Intelligence function can examine new opportunities to improve distribution operations by gathering competitive information for benchmark performance and monitoring potential market threats.
- The planning, management, reliability and security of data in an increasingly complex system: Data management systems are a major part of the implementation and operation of Industry 4.0 technologies and should be considered critical to the success of the effort. The ability of management to implement a Competitive Intelligence function within the company to collect, analyse, and protect information is essential to the success of a global business in Industry 4.0.

Recommendations

In the context of Industry 4.0, the competitive environment has become more volatile, uncertain, complex, and ambiguous and the function of Competitive Intelligence has become a necessity. Industry 4.0 refers primarily to digital transformation which allows organizations creating and developing their products, services and processes, whose differentials will be essential to remaining on the marketplace. Digital technologies generate a large amount of data but creating value resulting from the use of data requires further investigation (Bordeleau *et al*, 2018). In order to improve the decision-making process and to better orient the business strategy, the managers and especially the decision makers involved in this Industry 4.0 must know how to access, evaluate and intelligently use data, information and intelligence in the Competitive Intelligence process (Ottonicar & Mosconi, 2018). All information indicates that the benefits created in the era of Industry 4.0 will be not only intangible, but temporary, quickly “outdated”

competitors. Industry 4.0 will be more of a “system” of highly technological and organizationally advanced competitive advantages than a clearly identifiable single activity that distinguishes a particular company (Adamik & Nowicki, 2018).

It is essential for business leaders to proactively evaluate the impact of trends along with the potential benefits of using Industry 4.0 technologies, as this can allow managers to plan effectively to meet future business goals in all areas that will change radically and quickly in the next decade.

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