

Chapter 3

The New Concept of Logistics Platforms 4.0: Creating Competitiveness Within the Paradigm of Global Sustainable Logistics

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ABSTRACT

This chapter aims to address a review of the new concept of Logistics Platform 4.0 for the improvement of global competitiveness, which is supported, within the scope of global sustainable logistics, in the development of the new Omnichannel and Synchromodality Logistics 4.0, and the global value networks driven by intra-industrial trade. The development of the new Logistics Platforms 4.0 induces public-private actions that lead to a new territorial planning and integration of routes, corridors, logistics centres, and commercial areas, in which the metropolitan area stands out as a main actor, leading to the creation of chains of connected and intelligent logistics platforms worldwide. The new urban logistics, which is more effective and efficient, is analyzed as an essential vector for the development of the new logistics platforms. Likewise, the most important logistic problems and metropolitan restrictions that arise for the development of more sustainable and intelligent cities, and the applicable concept of aerotropolis are analyzed.

INTRODUCTION

It is well known that the phenomenon of globalization has generated radical and visible changes in the commercial structures of organizations, promoting a new global strategic mentality that tries to deal with new competitors as well as search for new markets. All this is inducing the development of logistics as an essential support to be able to respond to the increasingly demanding needs of customers worldwide. In this increasingly global, dynamic, complex and uncertain environment, logistics has experienced rapid growth and evolution in almost all industrial sectors. It has become an essential element of business

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strategy, a true source of competitive advantage, giving rise to the polysemic and polyhedral development of the so-called New Logistics (Fernández-Villacañas, 2018).

The sustainability of global logistics and supply chain management represents a strategy of integration in a transparent way of the social, environmental and economic objectives of the organization, within the coordination system of the main inter-organizational business processes. Its purpose is to improve the long-term economic results of each company and its supply chains.

The logic of the principle of productive specialization and the processes of industrial relocation based on the labor factor, which have been raised so far in a general way, should be reviewed taking into account the increasingly significant weight of logistics costs. The concept of sustainability, which had been related by many socio-economic actors exclusively with practices of respect for the environment, evolved a few years ago to include other dimensions such as the responsibility and ethics of social behavior, the new demands of consumers or sustainable economic well-being, understood globally in terms of the analysis of international competitiveness. Increasingly, society requires industries to develop sustainable practices throughout their manufacturing, supply and distribution operations (Persdotter et al, 2019)

Consequently, many multinational companies have reviewed their manufacturing and transport processes as well as the configurations of their logistics chains based on these predicaments. However, it is still necessary to better understand the role of sustainability in the development of logistics activities as well as to still continue with a rigorous discussion of applicable multidisciplinary science and at the governmental level (Bask et al, 2018).

On the other hand, the digital transformation can conceptually be defined as the process of organizational, cultural and strategic reinvention of both companies and public entities necessary for the integral application of the technology we call digital (Fernández-Villacañas, 2018). This generates, processes, stores and uses data, information and intelligence to improve its performance as well as its ability to adapt quickly to the disruptive or radical changes generated in the environment. This new digital technological scenario, which is due to the turbulence of a strongly disruptive environment, is inducing the emergence of increasingly shorter management cycles, in which the environment changes continuously and rapidly, with a rhythm that we assume will continue to increase exponentially in the future. The main catalyst for change and the cause of this continuous acceleration is the digital revolution, motivated by the expansion of the Internet, information and communications technologies, as well as the universalization of its use, which is in turn involving the transformation of our style of life.

The response in the business field has led to the emergence of the so-called Industry 4.0 that translates into a new integrated production scenario by incorporating innovative solutions, optimizing and connecting production, logistics, commercial and management processes (Borda, 2016). The hybridization of the physical and digital world is taking place; products, machines, tools, factories, warehouses and vehicles are interconnecting with each other and working automatically, an interconnection of all the elements of the value chain that is becoming intelligent and taking place, as already envisioned by the new logistics, to the creation of authentic customer-centric networks (Navarro & Sabalza, 2016). In this way, the environment is changing, interdependent, competitive, global, hybrid and hyper-connected. The result of all this will allow us to achieve immediate responses in decision-making based on information captured in real time, through intelligent systems and processes, without variability, without errors, with full traceability in the process chains and total sustainability. This leads us to a new situation that will affect the way of producing and controlling processes, of applying logistics models, and of developing marketing and marketing strategies.

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