

Chapter 7

Information Management in a Relational Context Innovation and Digitalization

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ABSTRACT

Digitalization is changing the way we live, work, our relationships, and it couldn't be otherwise if we talk about competitiveness in the maritime transport sector. The world faces considerable technological challenges; so does the maritime sector, turning information technologies into opportunities by using countless data inputs, thus allowing more control, better planning, and a reduction in operational costs while enhancing environmental sustainability. According to Carbone and Martino, ports have been naturally used for transshipment, consisting of the transference of cargo from one mean of transport to another, which has led to a series of new demands and challenges in port management concerns, since goods temporarily remain within the area under the influence of the port. Before its expedition, port activity faces diverse challenges in the management of storage, availability, and handling, among other issues.

INTRODUCTION

Digitalization is changing the way we live, we work, our relationships, and it couldn't be otherwise if we talk about competitiveness in the maritime transport sector. The world faces considerable technological challenges; so, does the maritime sector, turning information technologies into opportunities by using countless data inputs, thus allowing to have more control, a better planning and a reduction in operational costs while enhancing environmental sustainability.

According to Carbone & Martino (2003), ports have been naturally used for transshipment¹, consisting on the transference of cargo from one mean of transport to another, which led to a series of new demands and challenges in what port management concerns, since goods temporarily remain within the

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area under the influence of the port, before its expedition, port activity faces diverse challenges in what regards the management of storage, availableness, and handling, among other issues.

Historically, ports were endowed to provide a connection between maritime, inland, rail, road, and river transport. Nowadays, ports play an essential role in the management and co-coordination of both the goods and internal information flows, within its area of influence and outwards since transport is part of the whole supply chain. In this manner, it is now needed to promote synergies among the diverse interests of the stakeholders thus associated to the port community, in order to guarantee the continuous improvement of the services while assuring high production levels.

We also mustn't forget that not only the port's internal strengths deriving from cargo handling efficiency and connections to the hinterland determine its competitiveness, since it is equally influenced by the connections to the supply chain. Consequently, ports risk to lose important clients not only due to flaws on the port infrastructure, port operators and land connections, but also due to the reorganization of network services and incoming services' rendering partners, who might always use a different hub. In other words, ports' competitiveness is becoming more and more reliant on the coordination and control of the whole supply chain.

Carbone & Martino (2003) comprehends the port as a member of the supply chain. Ports are considered as a cluster of organizations where different transport and logistic operators are committed in adding value to the final consumer. Porter (1993, cit João, Belmiro, N., M., 2008) considers that the approach of the so-called industrial clusters, supported on the Diamond Model concept, endows a new dynamic for converging to the achievement of the nations' competitive advantage, in a broader way. Porter (1998, cit João, Belmiro, N., M., 2008.) states that the competitiveness of a nation depends on its industry capacity to innovate and develop and recognizes that clusters' comprehension cannot be dissociated from a broad understanding of the competition theory and the influence of location in global economy.

In this scope, Porter (1998, cit Belmiro (2008) considers that a cluster derives from the Diamond Model and influences competition in three levels: firstly, by increasing companies and industries' productivity; secondly by enhancing innovation capacity, thus increasing productivity and thirdly, by stimulating new businesses supporting innovation and expanding the cluster. Competitive advantage is achieved whenever demand provides a clearer view to organizations, thus anticipating both its emerging needs and the buyers'.

Besides, the most demanding clients pressure enterprises to quickly innovate, thus achieving more sophisticated competitive advantages towards external competitors; ports are no exception under this perspective.

Belmiro (2008) comprehends corelated industries as the ones in which organizations may coordinate or share activities within the value chain, while competing, or those comprising complementary products or services. This fact allows for an information flow and an extremely advantageous technological exchange for the innovation and modernization of organizations, and the country.

Maritime logistics is thus a key sector for digital transformation, taking into consideration the high network level and its diverse interfaces, offering a wide range of applications for digital technologies. Digitalization and logistics 4.0 endow maritime transport enterprises with a high potential (Binder, 2016c). Traffic and port logistics and just in time delivery will change due to electronic revolution, shaping up with Big Data and the increasing technology network (Berg & Hauer, 2015).

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