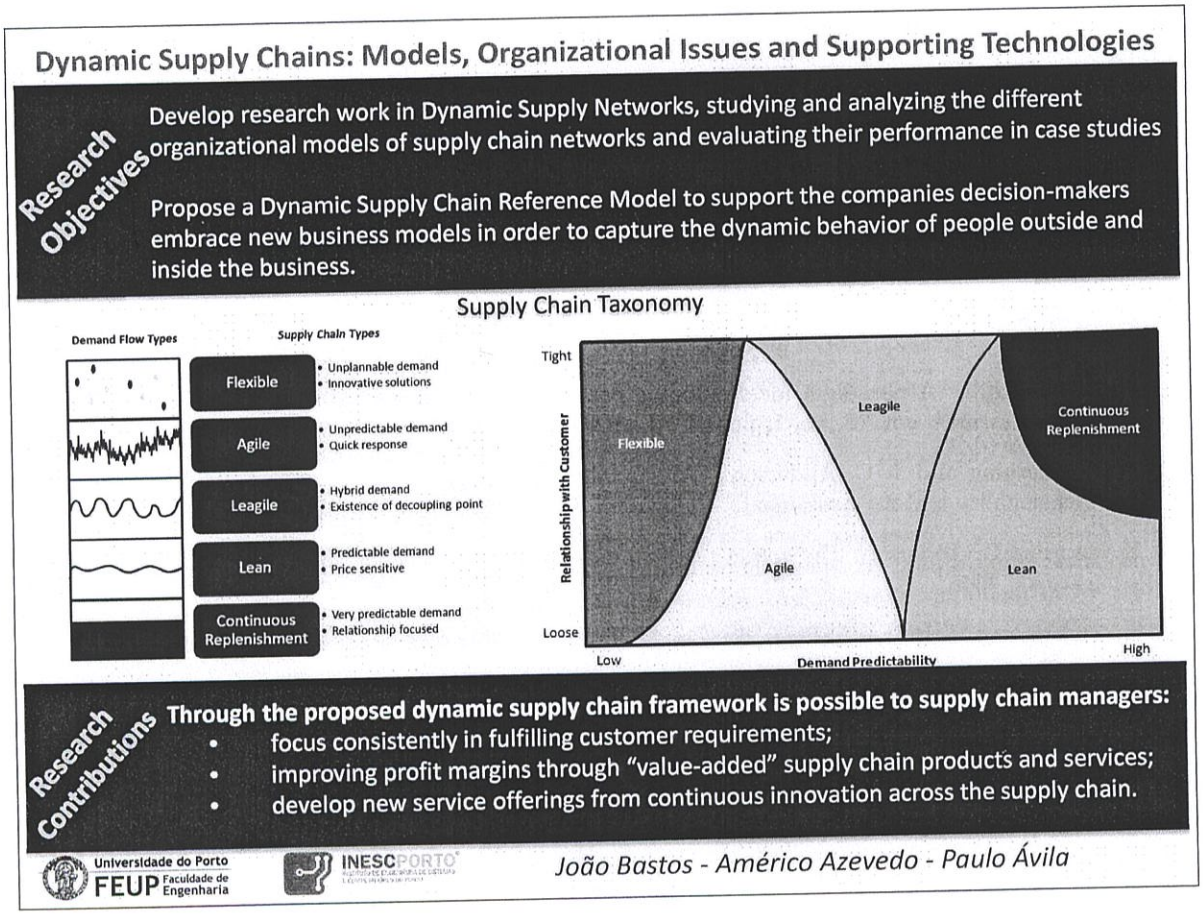
Dynamic Supply Chains: Models, Organizational Issues and Supporting Technologies

João Bastos*, Américo Azevedo*, Paulo Ávila†

* *Faculty of Engineering, University of Porto,* † *School of Engineering, Polytechnic Institute of Porto*



1 The Challenge

Over the past decades with the increasing globalization, the industrial enterprises were forced to update its supply chain strategy in line with the new and challenging circumstances of a globalized and competitive market. Thus, company managers have put a growing interest in developing strategies designed to provide companies with the resources and capabilities in order to compete successfully in the market [1].

Especially in the last decade, with globalization, the global financial crisis and the emergence of new technologies that allow the access of new competitors to the markets, the organizational paradigm has changed, leading to a greater tendency for companies to focus on activities where they are really competitive. This concentration trend led to an increasing need for integration and interconnection of market players in all sectors of the economic activity [2, 3, 4].

Also, with the increasing difficulties in the flow of money and the consequent obstacles for the goods and

services flow, companies must embrace new business models in order to reinvigorate moribund supply chains by capturing the dynamic behavior of people outside and inside the business [5].

2 The Approach

The recent business reality have shown that companies competitive advantage becomes increasingly dependent on the: development of new organizational structures, namely through the establishment of cooperation networks with all entities involved in the value chain [6]; new management methods strongly supported by ICT (information communication technologies) that enables the companies to take advantage of effective skills of each of business partners in order to achieve efficiency, effectiveness and ultimately increased competitiveness [7, 8] , but also in aligning the operating enterprise supply chains with the customers and customer behavior [5, 9].

The latest research in supply chain management strategy has highlighted the company's need through segmentation of the different market behaviors to design, align and operate different supply chain configurations at the same time [5, 10, 11]. Since Marshall Fisher in mid-90, several authors have defined and explored the concept of multiple supply chains through different frameworks in order to capture this multi-dimensional problem [5, 12, 13, 14, 15].

The present research work, based on the available bibliographic research and the undergoing exploratory work proposes the existence of five different types of supply chain configurations in order to cover up the majority of market behavior.

Each of the five types of supply chain depicted in Figure 1 can be characterized as different laminar flows, outline by a combination of customer buying behaviors and internal company culture-driven activities.

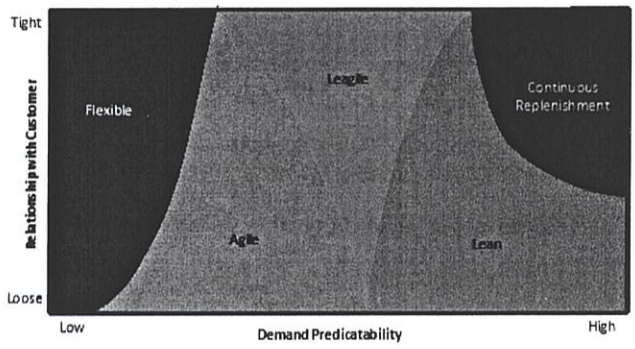


Figure 1: Generic supply chain types

Due to the competitive constraints and the dynamic behavior of the markets, it is also increasingly visible the tendency of mass-customization and small series production for effective consumer demand fulfillment [16, 17].

Therefore, the present research aims to develop knowledge and insights for the challenges posed to innovative products and small series supply chains. Namely, this project seeks to obtain a better understanding of an organizational and technological framework that will support the next generation of supply networks.

Since the main objective on this research is not to collect data and measure the behavior of a specific variable, but to analyze the different structures and knowledge that people place upon their business activities. In view of the fact that it deals with understanding the subjectivity of social phenomena, requires a qualitative approach and specifically a Case Study approach.

The case study research method is the most widely used qualitative research method in information systems research, and is well appropriate to understanding the interactions between information technology related innovations and organizational contexts [18].

The present research project is framed in the CoReNet project (funded by EU 7th Framework Program) and is currently undergo through an intensive investigation of particular set companies belong to clothing and footwear supply chain industry. Specifically, the object of the current case study method is to locate the factors that account for the behaviour-patterns of the given unit in the network and transpose it to integrate whole providing the supply managers with a valid reference model in their decision making.

3 The Value

The current business reality have shown that the alignment of the fitting value proposition with the customer's real needs and expectations significantly improves operating and financial performance and this is only possible when companies design and operate multi-align and multi dimensional customer-focused supply chains [5, 15].

Through the proposed dynamic supply chain framework is possible to supply chain managers and stakeholders to: focus consistently in fulfilling customer requirements; improving profit margins through "value-added" supply chain products and services; achieve functional excellence in addressing the different customer segments from high value segments to lower cost-focus customers; develop new service offerings from continuous innovation across the different supply chain types.

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