

EXPLORATORY QUALITATIVE STUDY OF THE SUPPLY CHAIN MANAGEMENT PRACTICES IN THE MOROCCAN COMPANIES

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Abstract:

Nowadays, the competitive, fast-moving business environment has permanently transformed the supply chain and the management of its functions. Convinced of new opportunities offered by the global economy, Morocco has opted for a new industrial strategy based on Supply chain management practices aimed at improving the performance and making the country an attractive space for global value chains. The main aims of this paper are to evaluate the literature on the different definitions, approaches, trends and practices of the supply chain management, and presents results of a semi-directive qualitative study conducted in Morocco in order to obtain a deeper understanding of the supply chain management practices implemented in the Moroccan context. The results indicate that the practices of companies based in Morocco are highly linked to the management of the supplier and customer relationship and internal integration among the internal functions of the firms.

Key words: *Practices, Supply chain management, qualitative study, Supplier relationship, Customer relationship*

INTRODUCTION

The supply chain management (SCM) is a multidisciplinary concept in the contemporary trade and research to bring organizational performance to manage the business through delivering goods and services to the end customers [1].

In the face of a competitive global market, organizations have downsized, focused on core competencies, and attempted to achieve competitive advantage by more effectively managing all internal and external value-adding activities.

The supply chain management represents a central area of focus for many businesses today. Although the extraordinary growth of SCM attests to its robustness and practical importance, the field is diffuse and complex.

In recent years, Morocco has seen considerable progress and remarkable achievements, particularly in terms of infrastructure and services. Its strengths allow it to become an African logistics model and a leading logistics platform in the Mediterranean and African environment. Thus, understanding SCM and its practices has become a prerequisite for staying competitive in the global race and improving performance for companies based in Morocco.

The ambition of this paper is first to present a literature review and analysis of the various definitions, practices and trends of the SCM. Then, to present data from a qualitative

study carried out in Moroccan companies to investigate the SCM practices adopted in the Moroccan context.

LITERATURE REVIEW

Supply Chain Management: definitions, approaches and trends

Despite the popularity of the term Supply Chain Management (SCM), both in academic and practice fields, there is still a lot of confusion about its meaning. Some authors define SCM in operational terms related to product flows, some consider it to be a management philosophy, and others consider it in terms of process management [2].

A normal supply chain basically is a network of services, information and material processing link with the features of demand, transformation and supply. In order to explain the activities related to supply chain, flow of information, control of material, planning, and activities related to logistic, the term, supply chain management is used [3].

Mentzer et al [4] define the SCM as the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole. Some researchers conceive the SCM from a purchasing and supply function perspective and define it as the integration

of the supply base and all purchasing decisions and activities related to purchasing and supplier management [5]. This approach considers procurement policies, supply management, and supplier development, evaluation and coordination as fundamental elements of the SCM [6].

We consider that the definition of SCM only in terms of a company's involvement in the management of its supplier is a narrow perception as the company interacts with other business partners to achieve supply chain integration.

A second approach considers SCM from a logistics and transport perspective and defines it as the management of all flows of material, products and information throughout the supply chain [7]. This approach remains partial since it considers the SCM as a concept relating to the logistic function [6].

Beyond the focus on traditional functions, SCM can be perceived from a process perspective with a focus on managing and integrating processes across the value chain [8, 9]. This vision was adopted by the Global Supply Chain Forum (GSCF) which defined SCM as follows: "The integration of key business processes from end user through original suppliers that provides products, services, and information that add value for customers and other stakeholders" [10]. We note that this definition explicitly emphasizes the notion of management and integration of key processes that is more inclusive than the perspectives related to traditional activities and functions.

The paradigm of the supply chain has metamorphosed into a nonlinear complex network which allows efficient interactions among suppliers and partners regardless their size, location or number of products [11]. Thus, the SCM can also be approached through the networks approach by focusing on the different forms of linkages between the supply chain partners, namely coordination, integration and collaboration. B. Fugate et al. [12] point out that the supply chain is composed of trading partners that are interconnected by financial, information and product/service flows. Effective management of these flows requires the creation of synergistic relationships between supply and distribution partners with the goal of maximizing value for the customer and providing a profit for each member of the supply chain.

Cooke [13] defines the SCM as the coordination and successful integration of all the activities of the supply chain from the raw material stage to the final customer in order to offer a competitive advantage. The coordination within a supply chain is a strategic response to the problems caused by inter-organizational dependencies within the chain. With the deployment of the information systems, the mechanisms of coordination between the firms are stronger [11].

In addition to the definitions given above, we present a sample of other SCM definitions in the literature [14]:

"Supply chain management is envisaged as an extended enterprise connecting business in different places and facilitating allies to propel competitive advantage in the era of globalization" [15].

"Supply chain management encompasses materials/supply management from the supply of basic raw materials to final product (and possible recycling and re-use). Supply chain

management focuses on how firms utilize their suppliers' processes, technology and capability to enhance competitive advantage. It is a management philosophy that extends traditional intra-enterprise activities by bringing trading partners together with the common goal of optimization and efficiency" [2].

"A set of value-added relationships of partially discrete but interdependent units that co-operatively transform raw materials into finished products through sequential, parallel and / or network structures" [16].

"Supply chain management is simply the management of transport or flow of goods and services, it also includes storage, shelf life, analysis of goods procured, and goods sold logistics, etc. Supply chain management helps in planning and executing various supply chain activities of a particular organization to build up a net value of the organization, determining the current market trend related to the demand and supply of any goods or services and synchronizing the same for measuring the performance of the organization" [17].

"SCM known as the integration of business processes from end users through original suppliers that provides products, services, and information to add value for customers, SCM has become a source of competitive advantage for companies from various industries" [18].

"The process of planning, implementing and controlling the operations of the supply chain with the purpose to satisfy customer requirements as efficiently as possible. Supply chain management spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point-of-origin to point-of-consumption" [19].

We confirm that SCM definitions encompass aspects of managing different flows within the organization network to create value for companies and the customer.

We notice that there is no consensus on the definition of Supply Chain Management, this is due to the multidisciplinary origin of the concept, its evolution as well as its emerging character in the practice and the academic field [20]. Nevertheless, most definitions have at least one feature in common that lies in the focus on the organization's external environment.

We find that SCM approaches differ from a partial vision to a more global vision. Partial approaches summarize SCM in relation to a specific traditional function, such as purchasing or distribution. These approaches remain limited by comparing them to global approaches that address SCM in a broader perspective. Indeed, global approaches represent SCM as an integration of processes involving all members of the supply chain and all activities related to upstream and downstream flows. These approaches are based on the coordination and integration of different stakeholders to create value for them and for the customer, thereby ensuring better performance and competitive advantage.

Besides the definitions and approaches, the supply chain management is characterized by different trends which have impact on the way the organization work. We present some key trends in the SCM:

Collaboration

Collaboration enables close working relationships and removes organizational boundaries. It allows building alliances between organizations, sharing risks and rewards with open sharing of data and ideas [21]. These initiatives have a strategic significance for general managers rather than simple tactical gains [20]. The SCM emphasizes the development of appropriate “win-win” relationship with key suppliers and customers and enhances the autonomy and viability of each one of them.

Outsourcing

Outsourcing can be defined as “the procurement of products or services from sources that are external to the organization” [22]. The outsourcing helps organization to concentrate on their core operations and business and use specialized companies to perform tasks that are not core competencies of the organization. The outsourcing is considered as an important part of the corporate strategy and has several benefits such as cost reduction and expansion of services and expertise [22].

Mass customization

The mass customization challenges the supply chain management by adopting mass production approaches to accommodate “high-variety-low-volume” production [23]. Indeed, the combination of the benefits of mass production with the customized products flexibility enables the personalization of products to individual customer demands. Mass customization is considered as competitive strategy by many companies [24].

Postponement

The postponement plays an important role in the supply chain organization as it raises the question of which production stage the diversification of products should be applied [25]. Thus, the intent of most supply chains is to keep the inventories as generic products and postpone the differentiation until the latest possible moment. This strategy reduces demand variability and safety stock requirement [26].

Information systems

Advances in information technology promotes supply chain management and can lead managers to make investment that improve the supply chain management. Indeed, the connectivity through electronic data interchange or ERP systems can be considered as enablers for the supply chain management [26]. Thus, the information systems and new technologies increase the efficiency and flexibility of the supply chain.

Supply chain management practices

Adopting a supply chain orientation requires its operationalization through the implementation of a set of practices within the company and through the logistics chain. SCM practices are defined as the set of activities undertaken by an organization to promote effective supply chain management [27].

The literature portrays SCM practices from a variety of perspectives. Table 1 presents the SCM practices discussed in the literature.

Table 1
SCM practices in the literature

Source	SCM practices
S. Min et al. [28]	Behavioral integration, mutual information sharing, mutual sharing of risks and rewards, co-operation, same goals and same willingness to serve the customer, integration of processes, building and maintaining long-term relationships between partners, leadership.
K. C. Tan [5, 29]	Supply chain integration, information sharing, supply chain characteristics, customer service management, geographical proximity between partners, just-in-time practices.
U.Y. Alvarado et al. [9]	Focus on core competencies, use of inter-organizational coordination systems (EDI for example), reduction of intermediate stocks by delayed differentiation.
I. J. Chen et al. [30]	Reduced number of suppliers, long-term relationships, communication, existence of inter-functional teams, commitment of suppliers.
S. Li et al [27]	Strategic partnership with suppliers, customer relationship, level of information sharing, quality of information sharing.
H. Shin et al. [31]	Long-term relationships with suppliers, reduction in the number of suppliers, quality of suppliers, involvement of suppliers in the design and production of the offer.
D.L.Anderson et al. [32]	Segmentation of customers according to the needs of the service, customization of the logistics network according to the service requirements, assembly of the final product as close as possible to the final market, strategic sourcing management to reduce total cost, develop a broad supply chain technology strategy, adopt performance measures of the supply chain to measure the collective success.
H. Zhou et al. [33]	Inter-organizational coordination, just-in-time production, delivery practices.
W. S. Chow et al. [34]	Customer relationship management, supplier partnership, information sharing, customer contact development, communication and speed.
S. Croom et al. [2]	Development of closer partnership with major suppliers, centralized coordination of data.

The SCM practices are proposed to be a multi-dimensional concept including the upstream and downstream part of the supply chain. In this perspective, we retain the following practices: Integration, strategic supplier partnership, customer relationship management and information sharing.

The integration

The main objective of managing the supply chain is to integrate both the flow of material and information throughout the supply chain as an effective weapon of supply chain [3]. The integration of the supply chain can be defined as the integration of upstream suppliers and downstream customers as well as horizontal integration which is the integration of different internal functions [35]. The integration of the logistics chain is a relevant coordination mechanism that simplifies internal and external business processes [36].

Given the increasing complexity, dynamism and internationalization of supply networks, the importance of supply chain integration is well recognized in both practice and theory today [37].

The integration of the supply chain involves manufacturers' collaboration, strategic partnerships, collaborative management and cross-organizational processes.

There are two types of integration: internal integration and external integration.

The internal integration refers to a transversal strategy system and the responsibility for inter-functional collaboration. This integration involves collaborative product design, purchasing, production, marketing and distribution to meet customer needs at the lowest cost. The efforts made for internal integration contribute to overcome the barriers of functional silos and to promote capabilities between essential functions through communication [38].

External integration involves integrating suppliers and customers through a set of practices including information sharing, supplier involvement in decision making, collection of customer information and its use for products improvement and service innovation [38].

The importance of the integration in SCM philosophy rely on the recognition that the supply chain is only strong as its weakest link. The development of strong relationships between customers and suppliers lead to higher levels of supply chain integration [39].

Strategic supplier partnership

The strategic partnership with suppliers is defined as a long-term relationship between the organization and its suppliers. This type of relationship is designed to take advantage of the strategic and operational capabilities of individual organizations to help them achieve significant benefits [27].

Purchasers team up with suppliers to guarantee that input materials meet quality requirements. Great information sources, furnished at the ideal time with the required amount, causes firm to stay away from downtime occurrences, to decrease change in processes and the rate of harmed materials [40].

The involvement of suppliers in the design and production of the offer can have different levels, ranging from minor design suggestions to being responsible for the complete development, design and engineering of a part [30].

The suppliers who participate at the beginning of the product design process can offer more cost-effective design choices, help select the best components and technologies, and assist in design evaluation. Firm's ability to establish long-term relationships with their key suppliers enable

them to manage their raw material supplies on time and in required quantity and quality to gain competitive advantage [41].

Customer relationship management

Customer relationship management is an important element of SCM practices that can affect the success of the supply chain and its performance [42, 43]. It includes all the practices used to manage customer complaints, establish long-term customer relationships, and improve customer satisfaction [27]. The growth of personalized production is leading companies to develop their ability to listen and understand customers' expectations in order to respond in a personalized, fast and adapted way to their demands [44]. Customer orientation involves the integration of downstream customers and a common agreement in terms of visions and objectives to serve them [4]. To operationalize the practices of the customer relationship, seven elements of customer service were identified namely: the evaluation of customer complaints, the follow-up with the customers for the feedback, the improvement of the customer support, predicting the key factors influencing customer relationships, predicting future customer expectations, interacting with customers to set standards, and measuring customer satisfaction [42, 43].

Information sharing

The Global Logistics Research Team at Michigan State University defines information sharing as the willingness to make strategic and tactical data available to other members of the supply chain [4]. Information sharing is considered one of the five building blocks that characterize a strong relationship of the supply chain [45]. The information exchanged is characterized by a quantitative aspect and a qualitative aspect.

Quantitative aspect refers to the intensity of shared information that refers to the extent to which essential and exclusive information is shared with supply chain partners [27]. Open sharing of information such as inventory levels, forecasts, sales promotion strategies and marketing strategies reduces uncertainty between partners and improves performance [4]. The regular exchange of information in a formal or informal way allows partners to better understand the customers' needs and to adapt quickly to the market. In addition, it ensures better coordination and planification of the chain [28].

The qualitative aspect refers to the quality of sharing of information that refers to the accuracy, timeliness, relevance and credibility of the information exchanged [27].

The quality of shared information is critical to effective SCM as organizations are increasingly reluctant to disclose more than a minimum of information, which can be perceived as a loss of power [27]. Indeed, each partner is wary of the possibility that other partners will misuse the information and reap the full benefits of sharing. Such mistrust should not prevent organizations from ensuring data flow with minimal distortion. The sharing and visibility of information throughout the chain is above all the key to an integrated and efficient supply chain [46].

METHODOLOGICAL APPROACH

The methodology adopted is an exploratory study, conducted through a qualitative approach, to gain an understanding of the practices of the SCM in the Moroccan context. This approach helps to develop hypotheses for the quantitative study, uncover trends in thought and opinions, and dive deeper into the problem

The Qualitative methods have the advantage of allowing people to express what is important to them in their own words. Most of the research conducted on mode choices employs researcher-selected variables, so tends to focus on just a few attributes. In this regard, qualitative methods can be a valuable way to allow respondents to specify which factors are important to them [47].

Indeed, the following steps are followed to ensure this exploratory study:

- Sampling and elaboration of the interview guide
- Interviewing procedure and analysis

The study was based on 9 in-depth interviews with companies operating in different fields and based in Morocco.

Sampling and interview guide

The sample was stratified to ensure a larger view of the Moroccan context including companies operating in different fields of activity and having a set of different practices in their supply chain.

The sample was composed of 9 companies operating in automotive, aeronautics, logistic transport, and cosmetics.

The choice of these companies was made based on two main reasons:

The first reason concerns the diversification of the type of company and the position of the company in the supply chain. In fact, on the one hand, we have chosen production companies belonging to the automotive and aeronautical sector and on the other hand service companies including logistics transport providers and cosmetic products distribution companies.

The second reason is the importance of these industries in the Moroccan economic context:

Indeed, the Moroccan automotive industry has recorded remarkable growth over the past ten years and has managed to gradually establish itself as a flagship business sector within the national economic landscape. The strategy dedicated to this branch has proven to be opportune to lay the foundations for an efficient and competitive automotive industry, sufficiently integrated into global value chains. As proof, this sector has become the leading exporting sector, representing, in 2018, 26% of national exports and enjoys a prime position in terms of contribution to industrial employment with 27% of the total employment rate [48].

The aeronautic sector has a strategic character in the Moroccan industrial policy. Indeed, this sector has experienced, in less than 10 years, a remarkable progress achieving, in 2011, an export turnover of more than 5.2 billion dirhams and employing 7369 highly qualified people [49]. The industry based in Morocco has become the main exporter of aeronautical equipment, parts and components of the African continent.

The logistics sector in Morocco has experienced considerable growth over the past years, which has resulted in an increase in the size of the logistics services market. In fact, the turnover of logistics and road freight transport companies in 2014 reached nearly 21 billion dirhams, an average annual growth of 5.2% during the period 2010-2014.

The logistics market is marked by the multiplication of operators and the diversification of the offer ranging from the simple transport service to the full support of the logistics function and the supply chain of the customer. The diversification and evolution of services / benefits has been driven in part by service providers (3PL), freight forwarders and courier operators [50].

The cosmetics market in Morocco is estimated at 1.09 billion in 2017. The market will experience a sustained rise over the next few years. It would reach 1.93 billion dollars by 2025, according to a research unveiled by the Irish firm Research & Markets, and its average annual growth is expected to be 7.5% [51].

The respondents of the interview have the following functions: supply chain manager, logistic manager, purchasing manager and general manager. We have 9 respondents representing the 9 companies.

Since all our respondents were corporate managers familiar with their company's supply chain activities, it is reasonable to expect that the respondents could offer a deep insight into the supply chain activities and be knowledgeable about the content of the inquiry

According to Miller et al [52], two criteria where subjective data may be reliable and valid are: (a) questions do not require recall from the distant past, and (b) informants are motivated to provide accurate information. We promised confidentiality of data and highlighted the usefulness of the project.

The interviews were semi-structured, based on a predefined interview guide and took 45 min to one hour on average.

The interview guide was designed to collect the most and accurate information related to the different practices related to the supply chain management. Indeed, the questionnaire was drawn up mainly based on the literature review and contained closed questions.

The first section of the questionnaire was dedicated to the general presentation of the company and its activity. The second section highlighted the role that the SCM plays in the company. The third section was intended to describe the general practices that are implemented to manage the chain of value.

INTERVIEWING PROCEDURE AND RESULTS ANALYSIS

The interviews were held in the company's facilities. The sample is structured as shown in Figure 1 by field of activity and by region. The 3 automotive companies are based in Rabat-Salé-Kenitra region while all the other companies (3 aeronautics, 1 logistics transport and 2 cosmetics distribution) are in Casablanca region.

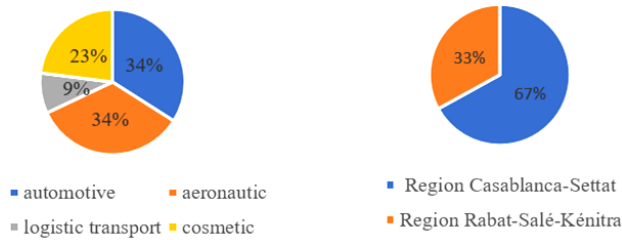


Fig. 1 Sample repartition par sector and region

The interviewees were asked to talk about the role of the supply chain management in their companies. 88.88% (8 companies) of the responses confirmed that the supply chain covers the supply of the raw material from suppliers to the product delivery to the final customers including the management of the relationship with suppliers and customers. While the rest consider the SCM as a logistic activity attached to the transport and distribution.

The interviewees emphasize the importance of the coordination between the departments (purchasing, logistics, production, quality) to allow a better management and achieve the company's goals.

In order to investigate the practices related to the upstream process, the respondents were brought to answer questions related to the supplier relationship.

All the respondents confirmed the regular communication with their suppliers thru emails, phone/conference calls. Some suppliers have a regular visit to the company's facility to provide technical support. The face-to face communication was also described as an important factor during commercial negotiations and establishment of the contracts. The high corporate level communication on important issues with key suppliers helped the companies to produce significant benefits.

Most of the companies interviewed have some strategic contracts and alliances with their key suppliers. The reason is to build and maintain a strong relationship and benefit from the capability of the supplier. However, 2 companies stated that they had to give up some strategic suppliers due to quality issues and delivery speed.

All the interviewees confirmed the importance of the supplier's reactivity in terms of goods delivery and problem solving. The geographic proximity of some suppliers (tooling makers as example) is important to 5 of the companies interviewed because of the operational risks related to equipment failure during production.

During the supplier selection, all the companies focus on criteria of the price, delivery time and quality. The companies interviewed emphasize the importance to have multiple suppliers to avoid the problems of loss of key suppliers and insolvency.

The companies operating in the automotive and aeronautic industry always inform their supplier of any change that can affect the product or process. Thus, the suppliers are involved in the products/process development and the company can use their feedback for making improvement.

Additionally, the interviewees were asked if the internal integration is one of the practices that the firm apply. All the

companies confirmed that the strategic goals of the company can't be achieved without a collaboration and integration of all the company's functions.

Internal integration facilitates satisfying customer needs through the timely integration of departments within the firm (from raw material management and production to logistics and sales) forming a continuous and compact flow. Indeed, the utilization of periodic interdepartmental meetings among internal functions allow a smoother coordination and help to solve problems jointly. Most of the production firms interviewed organize daily meeting in the morning where all the functions are present. This approach has helped in decision-making and achieving a better productivity and reactivity. Also, 6 companies out of 9 are using the ERP as data integration among internal functions.

The third section of the questionnaire was related to the downstream process and customer relationship management. Several firms are outsourcing the activity of delivery and transportation. Distribution logistics is largely entrusted to intermediaries, hence the need for their diversification to reduce the risks of dependency. The externalization of this activity allows the company to focus on their core competencies to ensure a competitive advantage.

All the companies have a customer orientation and are working on building customer loyalty. All the interviewees confirmed that they are doing the follow up of the customers complaints and some of them organize taskforces to solve the issues especially if they are related to a product deficiency. Customers complaints are collected both in formal way (e.g. email) and informal way (e.g. social media). Unanimously, respondents confirmed that client satisfaction is a priority of the firm. Customer satisfaction for some companies are measured by the claim rate and sell out analysis. The relationship with customers deserves all the attention in all the companies in this study.

The last section of the questionnaire was dedicated to the practices related to the information sharing. All the respondents share information with their partners that help establishment of business planning. Moreover, they keep their partners informed about any changing needs. In some cases, the companies share with their supplier proprietary information in order to develop the products and processes. All companies use formal way for information exchange.

The Figure 2 presents a summary of the practices used by the companies interviewed in Morocco.

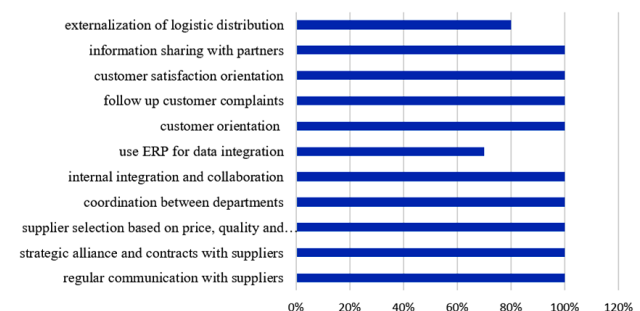


Fig. 2 Practices adopted by companies interviewed

CONCLUSION

In this paper, we have been able to identify and analyze the difference between the definitions and approaches of SCM as well as the practices that constitute it. We have selected four practices in the literature that present a balanced view of SCM, namely: integration, strategic supplier partnership, customer relationship management and information sharing. The qualitative study has highlighted some key practices adopted by 9 companies in Morocco. All the companies studied apply the practices of the SCM in different levels depending on the field of activity.

This study will be used to design a survey questionnaire that will be administrated to a large panel of Moroccan companies and provide an empirical evidence.

Based on the present study, some suggestions for future research can be considered. Indeed, the impact of SCM practices on the overall performance can be investigated. Future research can also study potential influence of the social and cultural context on the SCM practices and their impact on the global performance.

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