Knowledge transfer in the field of Supply Chain Management

Manuel DUMITRAȘCU
“Lucian Blaga” University of Sibiu, Faculty of Engineering, Sibiu, Romania
manuel.hila@gmail.com

Claudiu Vasile KIFOR
“Lucian Blaga” University of Sibiu, Sibiu, Romania
claudiu.kifor@ulbsibiu.ro

ABSTRACT

This paper aims to analyse the actual state of research in the field of supply chain management and to identify eventual gaps of knowledge and potential research directions in the field concerned.

The research has been accomplished using various bibliographical sources, books, scientific reports, internal reports and information material.

This paper analyses different national and international studies in the field of supply chain management, converge to identify eventual differences concerning authors’ opinion, problems and research gaps.

It has been found that the specialty literature analyses in general subjects such as supply chain management, supplier performance, suppliers’ selection and evaluation, suppliers’ development, performance management and do not take into consideration also the supply chain management performance, so that various gaps concerning the specialty literature in the field of supply chain management performance evaluation have been identified.

It is thus proposed that these research results are disseminated with the aid of a knowledge transfer eLearning platform within the “Lucian Blaga” University of Sibiu. This platform allows university personnel and its students gain access to specific academic findings.

Keywords: Supply Chain Management, Suppliers’ Evaluation, Suppliers’ Development, Performance Management

INTRODUCTION

The principle of creating an effective flow of materials and information to meet the requirements of a customer has been subdued to many changes. (Christopher, 2016) It is recently that companies recognise the crucial impact that supply chain management has in gaining a competitive edge. Thus, supply chains have become more fluid and companies are looking to continuously fine-tune their changes in supply and demand for the products they handle.

The need to create value for their customers is of a higher importance for companies nowadays and the paradigm shift from a logistics management, which is represented mainly by the planning framework that seeks to create a single plan for the flow of products and information through a business with a sole purpose of satisfying its customers, has now evolved to the concept of supply chain management which goes beyond this framework and seeks to achieve coordination and
linkages between the processes of other entities in the pipeline with the objective of creating a competitive advantage for the organisation.

To obtain the desired level of supply chain performance requires a company to constantly monitor and control their operations, ensure their processes exist and function at optimal desired levels, develop an own knowledge data base that distinguishes themselves from others, create and follow a clear plan that secures the timely deliverability of each milestone of each project and to efficiently and effectively display all their information to empower management to take smart decisions based on the collected information.

This paper aims to analyse various national and international studies in the field of supply chain management, identifying certain differences between authors’ opinions, problems and research gaps. The academic findings resulting from this analysis are proposed to be part of a knowledge transfer eLearning platform to serve within the “Lucian Blaga” University of Sibiu.

The goal is to develop the intellectual capital gaps due to the discrepancy between stakeholders' knowledge in this specific field, to raise the level of expertise of all university professors/students and to provide the opportunity for personal training. The platform serves to store the intellectual capital available to subject experts and eliminates losses over time.

**METHODOLOGY**

As research methodology, the bibliographic research of exploratory type, from secondary sources is used. This is a quick and less expensive method, which entails the use of available data from different sources such as books, scientific reports, internal reports, information materials.

The bibliographic study was conducted from secondary sources that facilitate the knowledge of the approached field, of the specific terminology, which is necessary for the identification of future research elements.

Specific terms, concepts and areas related to the approached field from different perspectives are explained, using bibliographic studies from various authors. Opinions and comparisons of different opinions are exposed. Therefore, problems, discrepancies of views, different approaches are identified.

The exposure of theoretical concepts related to supply chain management, purchasing management, performance management and data visualisation will help identifying performance evaluation factors influencing the supply chain management.

**MANAGING KNOWLEDGE IN THE FIELD OF SUPPLY CHAIN MANAGEMENT**

In the conducted bibliographical study, the current state of knowledge is analysed and possible knowledge lacks are identified. Various studies from the international and national literature, scientific articles and books deal on the one hand analysing the influence factors on the supplier development and the aspects of supplier selection and on the other hand presenting the goals and advantages of supply chain management.

Martin M. highlights the difference between logistics and supply chain management. Logistics is a planning framework for the products and information flow in a company. Supply chain management tries to reorganise this framework in order to achieve coordination between specific entities, such as suppliers, customers, and the company itself.
The aim of supply chain management focuses on the relationships management in order to accomplish a more profitable result for all parties included in the chain. (Martin, 2011) Various studies highlight the advantages and disadvantages of Supply Chain Management and its importance.

The importance of supply chain management is pointed out also in the report “The profitable Supply Chain”. This can be attributed to a diverse production, globalisation or the change toward offshore and outsourced manufacturing. (Ganesan, n.d.)

Some studies highlight the fact that the supply chain management is a major strategic goal for industrial and commercial enterprises. This represents a significant potential in order to create value for the customer, in terms of service quality, performance or responsiveness. It also influences the company’s profitability by streamlining supply chain management costs or by focusing on new distribution channels.

To provide a brief description of the current state of research, the “26th Annual State of Logistics Report” by the Council of Supply Chain Management Professionals (CSCMP), has shown that the supply chain management industry has experienced its best year since the Great Recession in terms of business logistics costs rising with around 3% from the 1.45 trillion dollars from 2014. (CSCMP State of Logistics Report, 2016)

A conceptual framework is presented by Agus (2011) which incorporates the program theory, as well as empirical findings to enhance the understanding and importance of implementing SCM and its influence on business performance. The philosophy of supply chain management seeks to augment performance by integrating and coordinating all linked internal functions within an organisation and effectively connecting them with the external operations of suppliers and customers. It is only through a high degree of integration, coordination and collaboration that an organisation can achieve a successful and performing supply chain management system. (Agus, 2011)

As companies grow bigger and expand their production facilities also in low-cost countries there is a high inclination to transfer their competitively gained know-how and designed working processes to the other locations. In their quest of global standardisation there is always the question of adherence of the designed process and the need to create special processes strictly for a particular location. In our view, this is directly impacted by a number of factors, including quality maintenance or improvement, laws and regulations of that specific location, workforce culture and habits, requirements from both suppliers and customers.

As Christopher (2016) argues, during the last few decades, new approaches and systems have emerged such as flexible manufacturing systems (FMS), new approaches to radio frequency identification (RFID) inventory management, enhanced materials requirements planning (MRP) and just-in-time (JIT) methods and, perhaps most important of all, a sustained emphasis on total quality management (TQM). (Christopher, 2016) Therefore, we can distinguish another research direction, the one of finding new approaches of supply chain methods.

In the author’s point of view, the entire performance management system should follow a ‘one-plan’ mentality within the organisation which seeks to replace the conventional stand-alone and separate objectives of logistics, procurement, production, material resource planning, sales, marketing and distribution. This should represent the mission of supply chain management.

Another research direction focuses on the supplier development. This depends on its past performance, quality, cost saving, buyer-supplier relationship and long-term profitability.
Aspects such as of knowledge, experience, skills, strong collaboration with suppliers will improve the overall performance of supplier. Also, the supplier’s involvement in developing new products plays an important role. (Dalvi and Kant, 2015)

The development of suppliers and supply chains is analysed also by Larsson (2005). He shows that supplier development is an important activity, aspect that is highlighted also by large firms and academia. It can also be noted that the specialty literature in the field of supplier development is quite narrow and it partially excludes the purchasing research. The purchasing function plays an important role in supplier development, so that it is recommended to develop diverse studies also in this direction. Studies in the field of buyer-seller relationships may contribute to the area of supplier development. It is an increased focus on the entire process, on the entire chain, not only on supplier development, but rather on supply chain development. (Larsson, 2005)

Another research direction focuses on performance evaluation. Some studies focus on supplier performance evaluation and selection. Schmitz and Plattz (2004) indicate the importance of performance evaluation of suppliers. (Schmitz and Plattz, 2004) Sai, Cohen, Steele and Sairamesh (2008) provide many effective decision support information with the purpose of supplier improvement. They implemented a system that can qualify suppliers, can monitor supplier performance and can be used by supply chain stakeholders. The presented solution it’s based on specific information from diverse lifecycle stages, organisations or functions. Like this, process information, supplier and products can be connected. The implemented scoring model takes both objective and subjective information as input aspects from specific departments such as engineering, warranty data, manufacturing and service. (Sai, Cohen, Steele and Sairamesh, 2008)

In order to approve a supplier, specific aspects are taken into consideration, such as Environmental and Purchasing assessment, diverse requirements and specifications concerning the production capacity, deadlines, packaging, reports, certificates and others. (Johnson Controls- Power Solutions, 2010)

Gosling, Ourvis and Naim (2009) provide a different approach concerning the suppliers’ evaluation and selection, by discovering the importance of the supply chain flexibility. Supply chain flexibility is based on sourcing and vendor flexibility. Concerning their flexibility, suppliers can be grouped under three categories, framework agreement suppliers, suppliers that are preferred and suppliers that are approved. (Gosling, Ourvis and Naim, 2009)

Sanchez and Perez (2005) highlight a positive relation between supply chain flexibility and firm performance. Companies might miss competitiveness improvement opportunities by underestimating the flexibility between customer and supplier. The research indicates a positive relation between supply chain performance in flexibility capabilities and company’s performance. (Sanchez and Perez, 2005)

In a competitive environment, an efficient supply chain and purchasing process could bring an important contribution to a company’s income, its performance and efficiency. This requires improving collaborations with suppliers that conduct to lead-time drops and just-in-time deliveries, with a positive effect on an increased value to the end customer.

The new approach focuses on finding a single supplier, or a few suppliers with whom to maintain a long-term collaboration, based on continuous improvement. This strategy reduces the cost of supplier selection, can increase quality, obtain economies of scale and provides stability to the supplier. This can ensure an increased competitiveness of the supplier.
Rippa P. analyses the performance in buyer-supplier relationships by means of information flows effectiveness and intensity occurring between two or more entities involved in a supply chain. He elaborates a management model, a tool to evaluate and measure the effectiveness of buyer-seller relationships, by means of specific key performance indicators. The presented model is based on the evaluation of more activities. In order to evaluate the performance of inventory levels and downstream activities, the order-lead time, the order entry method and the customer order path are measured. The evaluation of competitiveness level regarding the supply chain partnership is based on specific indicators, such as buyer-vendor cost savings initiatives, cooperation or level of information sharing. The evaluation of the production process is based on the evaluation of the capacity utilisation, effectiveness of scheduling techniques and range of services and products. The delivery link performance is based on measuring the delivery performance valuation and total distribution cost. The customer satisfaction is evaluated by means of customer query time and post transaction of customer service. The performance of logistic system is evaluated by means of total inventory cost, return on investment and return on assets. (Rippa, n.d.)

Gustafsson J. and Karlsson E. proposed a supplier performance dashboard in order to evaluate suppliers’ performance. This should include operational, financial and core value key performance indicators. The operational ones should measure transport quality, delivery precision, pick-up precision, lead-time and reporting quality, the financial ones should focus on invoice quality, spend and financial ranking and the ones based on core value should include quality standards such as ISO 9001 and ISO 14001, average motor class and clean shipping index. (Gustafsson and Karlsson, 2012)

In the specialty literature, the performance evaluation in the field of supply chain management is adjacent approached. Some specific methods used in the supply chain management are presented, such as SCOR and Bullwhip methods. The SCOR method aims to present some descriptive elements and standard of evaluation elements flow within a supply chain. It contains several sections and is organized around five key management processes: planning, procurement, production, delivery and return. (Popa, 2009.) The SCOR model aims to facilitate communication between various participants in the same supply chain, can improve inventory turns, can increase system implementations speed or can support learning goals in an organisation. The model includes indicators such as upside supply chain flexibility, perfect order fulfilment, overall value at risk, return on working capital, total cost to serve or others. (What is the SCOR Model), (Studiu de caz Servicii in gestiunea lanturilor de aprovizionare- Study case Services in Supply Chain Management)

In essence, the bullwhip effect represents the variance amplification of the purchases as they are transmitted to the suppliers from retailer to wholesaler, distributor, manufacturer, supplier of raw materials and others. This effect results from the coordination lack between supply and delivery. It affects the profit of all organisation members of the network. The coordination lack has mainly two causes, on one hand the conflict between the organisation’s goals that act at every level of the supply-delivery chain and on the other hand, the effect is caused by delays and distortions that occur on information flows between the subsequent stages of the supply chain. The bullwhip effect is amplified with increasing number of levels with increasing network and product portfolio diversity of organisations. (Bălan, 2008)

Țigu and Călărețu (2013) try to evaluate the supply chain management performance in tourism, both through financial indicators, and by non-financial. Thus, beside profit size, low cost or market share, it is required to achieve also performance objectives in terms of consumer satisfaction, internal process efficiency, innovativeness, employee satisfaction, and other indicators related to tourism. (Țigu and Călărețu, 2013)

In order to obtain the desired supply chain performance a company needs to monitor and control its activities. That can be done by monitoring and measuring their key performance indicators, that
most organisations are ignoring. Key performance indicators help senior management in the decision taken process and hence performance results. (Sayed, 2013)

As it is shown in various bibliographical sources, considerably sizeable investments have been made by companies both in time and effort to develop performance management systems to report their key performance indicators (KPI’s) and control an increasingly list of supply chain metrics. In a benchmark study conducted by the Supply Chain Digest, generating about 200 valid responses from various companies, it is shown that almost 62% of the responding companies rate their traditional KPI systems and capabilities as good and excellent. (Supply Chain Digest, 2015) This is a clear indication of the maturity of the area and focus on further development.

CONCLUSIONS

In the author’s point of view, it can be concluded that the supply chain management is therefore essentially an integrative concept that seeks to develop a system-wide view of the organisation. It is fundamentally a coordination and management concept that seeks to create a framework through which the needs of the customer can be translated into a manufacturing strategy and plan, which in turn links into a strategy and plan for all related divisions of an organisation.

Various studies both from the international literature and also from the national studies, books and scientific articles deal on the one hand presenting supplier performance, suppliers’ evaluation and on the other hand analysing the concept of supply chain management.

In our point of view, the international specialty literature presents also some gaps concerning the performance evaluation of the supply chain management. Several studies in the field of supply chain management, in the field of supplier selection, supplier development or performance management can be found in the literature of the research field. In order to obtain an overview and to analyse all the fields that where approached until now in one whole, it is recommended to develop the specialty literature in the field of performance evaluation of the supply chain management. In our opinion, key performance indicators, dashboards and scorecards in the field of supply chain management should be defined and linked to the evaluation performance.

Certain studies in the field of supplier development including the purchasing research and regarding key performance indicators, scorecards and dashboards in the field of supply chain management are recommended.

All research results are disseminated among academic staff but also students with the aid of the knowledge transfer eLearning platform. This will bring advantages such as knowledge development, exchange of ideas and contact with subject experts.

The general objective of the future research is to bring new contributions regarding the performance evaluation of the supply chain management system, with a positive effect on improving the standardisation of the processes, all made available through the knowledge transfer eLearning platform available to every stakeholder within the university. As a future perspective, it is recommended to extend the platform in partnership with other subject experts in the field within the university with the purpose of increasing the stored and available intellectual capital in the field of supply chain management.
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