

CHAIN MANAGEMENT - AN IMPORTANT STEP FOR A SUCCESSFUL BUSINESS IN THE COVID-19 CONDITIONS

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Abstract

Chain management is an important aspect of running any business. In this article, we look at advances in chain management. At the beginning we present basic definitions and key issues related to the types of channels, followed by a discussion of the degrees of complexity of the chain. We then discuss chain flows - a step forward in chain management, supply chain efficiency indicators and so on. Finally, a brief summary of research to date and a discussion of future challenges for supply chain management are presented. The outbreak of COVID-19 introduced an unprecedented and extraordinary situation of supply chains whose survival requires a large-scale resilience.

Key words: management, supply chain,, business, complexity

INTRODUCTION

In the globalized age, when business organizations are involved in various business activities, it has become inevitable that most of them perform all functions on their own. Companies do not manage supply chains themselves and rely on other companies. The successful and efficient combination of the operations of these companies provides the company with a competitive advantage in the market [2].

[8] emphasize the need for managers to understand the performance of all joint stock companies in the supply chain.

According to [10], this insight into the work of any company will allow managers to develop measures to meet customer requirements.

What is a chain?

A set of three or more organisations directly involved in the upstream and downstream flows of products, services, finances, information and/or knowledge from a source to a customer [9].

Direct chain: consists of a company, supplier and customer involved in the flow of product,

service, finance, information or knowledge chains;

Extended chain: in addition to the above, it includes direct supplier suppliers and direct customer customers;

End-chain: includes all organizations involved in all flows in the chain of products, services, finance, information or knowledge from the end supplier to the end user.

This article presents one of the many business models for supply chain management, which is also a strategic position of modern companies. The authors review the development of the supply chain in business practice.

Supply chain management with their integration, responsiveness, financial complexity and globalization as drivers that drive the emergence of supply chain logic are also considered.

The article also provides an overview of current supply chain management issues. The overall goal is to provide a research framework that describes the logistical requirements for 21st century supply chains.

The outbreak of COVID-19 introduced an unprecedented and extraordinary situation for

the resilience of SC [4], during which the survival of Supply Chains requires large-scale resilience.

In this context, the purpose of the paper is to provide an overview of current supply chain management issues. The overall goal is to provide a research framework that describes the logistical requirements for 21st century supply chains.

MATERIALS AND METHODS

The motivation for this study comes from the rapid changes in the business environment caused by disruptions in global business that have a strong impact on Supply Chains (SC). The situation requires a good knowledge of SC theory and practice.

This study examines a number of articles dealing with SC, their nature, types, connectivity and their manifestation during a pandemic. The study seeks to answer key research questions, namely: What are the factors that affect the efficiency of the supply chain, cause supply disruptions and SC flows and strategies for building SC capacity? How can decision makers use key interrelated factors to overcome this challenge?

Comparison is one of the main methods for learning about the surrounding reality and is used in the present study. The basis of this method is the definition and comparison of individual phenomena of social, economic, political or other nature in order to identify distinctive similarities and differences. The method of comparative analysis is directly related to the above and derives from the general scientific method of analogy. However, unlike the latter, the comparison uses elements of other methods, including analysis, methods of thinking, modeling, synthesis, induction, deduction and others. The purpose of the comparison is to obtain new facts different from the properties of the compared objects or phenomena, but also to analyze the existing relationships. Based on this, a general trend for their subsequent functioning and development can be outlined.

RESULTS AND DISCUSSIONS

It is crucial for business that managers continue to measure the effectiveness of different parts of the supply chain [3]. It is a proven fact that improving the performance of a company cannot be undertaken without improving the performance of its suppliers [8]. Planning and information gathering activities can be easily performed by operations managers and senior executives if they have up-to-date information on the work of different companies and stakeholders in the supply chain and the resources available to the company. The authors [6, 7 and 9]. view the supply chain as a set of firms involved in upstream and downstream products, services, information and/or finance. [9] describes the supply chain as "a set of three or more organizations directly linked by one or more of the upstream and downstream flows of products, services, finance and information from source to customer".

Thus, the nature of the supply chain is exhaustive, so that membership is not limited to a supplier, manufacturer and distributor, but is open to any company that provides different flow-related services [9].

The terms: logistics; supply chain (management); demand chain (management); value chain (management) are used interchangeably and confusingly.

They overlap and different actors define them in their own way.

Logistics: The process of planning, implementing and controlling the efficient flow and storage of products, services and related information through a business.

Activities: transportation, warehousing, purchasing and distribution.

Focus: individual company First generation of supply chains were viewed as individual companies, customers and suppliers focusing on logistics integration.

Chains can focus on the effective physical supply of products or services (in this case, the risk of producing products that are not in demand on the market) = supply chain.

Market intermediation (adjustment of production to actual demand, which leads to a decrease in production efficiency) = supply chain.

Therefore demand chain means a shift in emphasis from efficient supply to meeting the needs of the customer.

A demand chain is a supply chain that emphasizes market mediation to a greater degree than its role of ensuring efficient physical supply of the products/services. Demand chain reflects the fact that the chain should be driven by the market, not by suppliers.

Demand chain starts with the customer and work backwards, instead of starting with the supplier/manufacturer and working forward.

Value chain: search for strategies that will provide superior added value for customers. First, the value can be created internally at company level, then via the chain.

The value is created not just by one company, but by several companies in the chain.

Figure 1 presents the complexity of the supply chain.

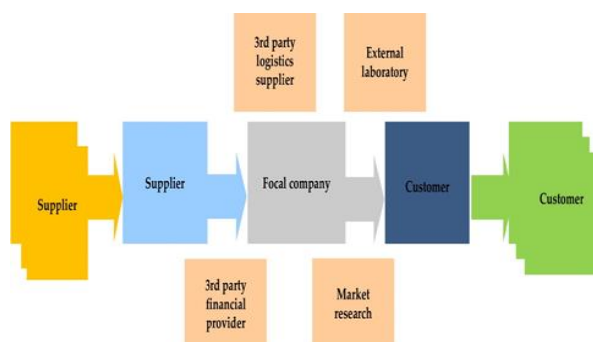


Fig. 1. Degrees of chain complexity
 Source: [7].

The metrics for measurement of supply performance are:

Delivery reliability - describes supply chains' capability on delivering;

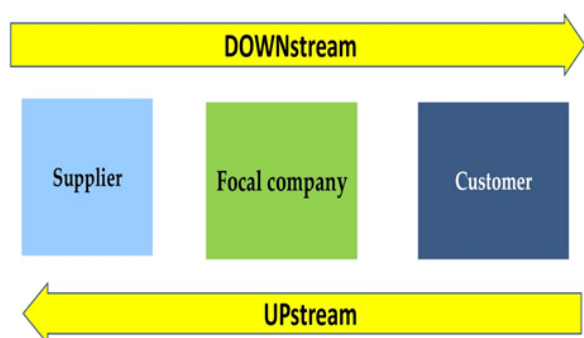


Fig. 2. Chain flows - a step forward to chain management
 Source: [3].

Inventory - often described by the metrics inventory turnover (ITO) and inventory days on stock (DOS);

Cycle times - order cycle time (OCT) and supply chain cycle time (SCCT);

Capacity utilization - it sets the used capacity in relation with total installed capacity;

Supply chain cost - logistic costs + production costs + coordination costs.

The schema of chain flows is shown in Figure 2.

Supply Chain Management(SCM) is strategic thinking: Effective SCM improves both efficiency and effectiveness in a strategic context [11].

The supply chain management is presented in details in Figure 3, starting from shareholders, sales and product procurement, suppliers, manufacturing, warehousing, logistics, and finally consumers.



Fig. 3. Supply Chain Management Flow
 Source: [12].

Chain flow

Product flow

The product flow represents the value-added movement and transformation of goods into the finished product from a supplier of raw materials to the end customer;

The product flow represents the organizations being involved in the upstream and downstream value added movement of products;

Traditionally it is rather downstream (from raw material to final product), but it also integrates customer returns (upstream);

Product flow activities include: transportation, logistics, inventory, enhancement and maintenance of quality, conversion into

final products, handling (e.g. cooling, sorting) etc.

Product flow covers: raw materials, work in progress, finished products, by products and all related inventories.

Service flow

The service flow represents the organizations being involved in the upstream and downstream flows of services;

Traditionally the service flow is very tightly tied to the product flow;

Service flow activities include: pest control, waste disposal, quality certification, laboratory testing, marketing support, market research, external R&D.

Services: intangible but provide value designed to be used (sold) in exchange for revenue (e.g. consulting service).

Information flow

Information flow represents the bi-directional exchange of transactional information among chain members;

Information flow activities include: forecasts, purchase orders, order acknowledgments, shipping and inventory information, invoices, replenishment requirements, status of delivery, demand, price, quality.

Link information systems between chain members in the area of product flow, service flow and financial flow.

Support the selling of products or services e.g. in the area of product flow: tracking and tracing.

Financial flow

The financial flow generally moves in the reverse direction of the value added activities (upstream)

Financial flow activities include: credit terms, payment schedules, and consignment and title ownership arrangements, sharing financial performance information across the stages or processes and participants in the chain. The financial flow indicates the payment in exchange of products, services and information [13].

Chain management

Chain management - involves coordinating and integrating flows in a chain consisting of a focal company, a supplier and a customer. The management of multiple relationships (accompanying products, services, finances,

information and/or knowledge flows) – focusing on harmonizing the use of resources capabilities competencies along the entire food chain (instead of focusing on only on the individual steps) to deliver higher added value by improving the quality of chain relationships.

Resources at firm level

Resources: Inputs into a firm's production process (capital equipment, skills of individual employees, patents, finance, and talented managers);

Tangible Resources – financial, physical, technological, organizational (assets, that can be seen and quantified);

Intangible Resources – human, innovation, reputation;

By themselves, resources do not create a competitive advantage for the firm.

Resources at firm level – examples

Financial: borrowing capacity, ability to generate internal funds;

Physical: firm's plant and equipment, access to raw materials;

Technological: technology, patents, trademarks, copyrights, trade secrets etc.;

Organizational: formal reporting structure and formal planning, controlling, and coordinating systems;

Human: knowledge, trust, managers, organizational routines;

Innovation: ideas, scientific capabilities, capacity to innovate;

Reputational: reputation with customers, brand name, perceptions of product quality, durability, and reliability, reputation with suppliers.

Capabilities at firm level

Capabilities: Capacity to deploy resources that have been purposely integrated to achieve a desired end state;

Primary base for the firm's capabilities is the skills and knowledge of its employees;

Just because the firm has a strong capacity for deploying resources does not mean it has a competitive advantage.

Capabilities at firm level - examples

Distribution: Effective use of logistics management techniques

Human resources: Motivating, empowering, and retaining employees

Management information systems: 1) Effective and efficient control of inventories through; point-of-purchase data collection methods, 2) Acquiring market information

Marketing: 1) Effective promotion; 2) Effective customer service; 3) Innovative merchandising.

Management: 1) Ability to envision the future of business; 2) Effective organizational structure.

Manufacturing: 1) Production skills yielding reliable products; 2) Product quality.

Research and development: Innovative technology.

Core competencies at firm level

Core competencies: Resources and capabilities can serve as a source of competitive advantage for a firm over its rival.

Not all resources and capabilities are core competencies.

Core competencies are the firm's innovatively bundled and leveraged resources and capabilities.

Core competencies may be in any area but are most likely to develop in the critical, central areas of the firm where the most value is added to its products, such as: Inbound Logistics, Operations, Outbound Logistics, Marketing and Sales, Service, Procurement, Technological Development, Human Resources, Firm Infrastructure.

Core competencies must be distinctive:

- do better than competitors;
- be critical to long term growth;
- be competitively unique;
- not be easily duplicatable (costly to imitate);
- be valuable;
- be rare;
- not be substitutable.

Why core competencies?

-Your resources and your suppliers'/customers' capabilities can be a basis for a core competency of your relationship;

-Your capabilities and your suppliers'/customers' resources can be also a basis for a core competency of your relationship;

Chain management allows a company to rethink their and their suppliers' and

customers' resources, capabilities and core competencies and to harmonize them.

Supply chain management (SCM)

Supply chain management is the management of the flow of goods and services and includes all processes that transform raw materials into final products.

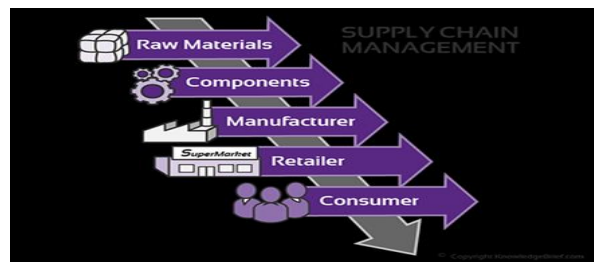


Fig. 4. Supply Chain Management

Source: [6].

SCM represents an effort by suppliers to develop and implement supply chains that are as efficient and economical as possible. Supply chains cover everything from production to product development to the information systems needed to direct these undertakings.

Supply Chain Management (SCM) is the "process of strategically managing the movement and storage (if necessary) of materials, parts and finished product from supplies, through the manufacturing process and on to customers or end user, as well as the associated information flows" [14].

"SCM is strategic thinking: Effective SCM improves both efficiency and effectiveness in a strategic context [11]".

An apart approach regards agri-food supply chains which have to be oriented towards a sustainable development, which means to ensure a balance between environmental factors and agricultural practices resulting the maintenance of ecosystems. Therefore, along the agro-food chain a special attention has to be paid to primary production, processing, distribution and retailing [5].

To improve the sustainability of rural areas, "regional differences between actors in supply chains, different types and organizational forms of SFSCs, as well as the requirements of consumers regarding the delivered food" must be taken into consideration [12].

From the consumers' point of view, short food supply chains have the advantages of "product quality, freshness, authenticity, traceability, which result in producer confidence" [1].

CONCLUSIONS

Supply chain management plays an important role in the success of any business. If companies want their products to reach consumers quickly and efficiently, they need to master supply chain management. Some advantages of supply chain management are:

The supply chain management process is important because it can help businesses be more efficient. It can reduce storage costs as well as the spread of waste that results from damage. If the goods arrive late, production and deliveries are stopped. When organizations manage their supply chains efficiently, it not only reduces delivery time, but also increases customer satisfaction, who will now receive items faster than expected.

Another advantage of supply chain management is that companies can buy products with the lowest price and highest quality. Taking the time to plan also means that you may be able to integrate recyclable materials such as paper, cardboard, plastic, which is good for the end result and the environment.

Supply chain management helps to avoid delays that may occur during product transfer. When delays start at one point in the chain, this tends to have an impact effect. If companies fail to meet delivery dates, they will eventually lose buyers, which will affect their profits.

The supply chain management process allows for efficiency in supply and transport, which are key business costs. It can also allow more secure shipments.

Supply chain management is gaining a particularly important role in the context of Covid-19 and helps organizations reduce the rate of errors and damage.

Without an effective supply chain management system, there is no way to ensure timely delivery of goods.

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