

# THE APPLICATION OF SUPPLY CHAIN MANAGEMENT BEST PRACTICES BY SMALL BUSINESS SUPPLIERS

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## ABSTRACT

In this paper a synopsis of the application of supply chain management practices by small and medium-sized businesses (SMEs) will be presented and the position of the SMEs in major supply chains highlighted. This paper endeavours in particular to provide a perspective on the following questions: (1) What are supply chains and supply chain management? (2) Can SMEs successfully apply the approach of supply chain management? (3) To what extent are SME suppliers involved in the supply chain management practices of large organisations (clients) in supply chains? (4) What is the relationship between SME suppliers and large clients in supply chains? The study, which is exploratory, found that the relationship between SME suppliers and large clients is to some extent characterised only by a long-term agreement, open communication and joint problem solving. Risk and benefit-sharing are not always part of the relationship. Other supply chain practices such as multi-organisational teams, integration of information systems and joint planning were neglected in the relationship between small suppliers and large clients. Small suppliers are therefore not afforded the opportunity to fully cooperate and contribute in the supply chain. The results of this study can promote insight into the role of SMEs in supply chains, which might be of interest to educators and consultants, when developing training programmes and advising organisations (large and small) in supply chains. SMEs must fully understand the supply chain management approach and their role. Large organisations, however must realise that, despite their size, SME suppliers are important partners who can contribute substantially to savings in the supply chain.

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# INTRODUCTION

Globally, companies such as Wal-Mart, Proctor & Gamble, and Hewlett-Packard have saved millions of dollars in costs and decreased inventories while improving efficiency and customer satisfaction (Chapman, Lawrence & Helms, 2000, p. 31). Increasingly more large businesses in South Africa, implement or work towards implementing the strategic supply chain management approach and in South Africa, strategic supply chain management practices have resulted in cost savings of billions of ZAR (South African rand) (Raath & Van Kraayenberg, 2002, p. 1). This is a result of emerging trends such as intense global competition which demands businesses to be quick, agile and flexible; new technology available to any business willing to adopt it; and more advanced customer expectations. Management concepts that businesses adapt in their endeavour to implement the supply chain management approach include business process re-engineering, total cost of ownership, total quality management, just-in-time, electronic data interchange, e-business, global sourcing, multi-functional and multi-organisational purchasing teams and strategic partnerships.

The successes achieved by organisations that implement the strategic supply chain management approach will certainly have a positive impact on the popularity of the approach and a trend towards implementing the supply chain management approach by increasingly more organisations is to be expected. This trend will undoubtedly influence small and medium-sized businesses (SMEs). Many SMEs are already supplying materials, products and services to large organisations. Hence, the adoption of the strategic supply chain management approach by large organisations in supply chains will have a definite impact on them (SMEs).

## OBJECTIVES OF THE PAPER

In this paper an endeavour was made to provide a perspective on the following questions:

- What are supply chains and supply chain management?
- Can SMEs successfully apply the approach of supply chain management?
- Do large clients fully utilise their SME suppliers as partners in their supply chains?
- What are the characteristics of the relationship between SME suppliers and large clients?

Approaches pertaining to supply chain management vary substantially from organisation to organisation and even from one manager to another (Fawcett & Magnan, 2001:7). It is therefore important to define the concepts of supply chain and supply chain management to highlight the angle taken on these concepts in this paper.

### Defining a supply chain

According to Monczka, Trent and Handfield (2002:4), a supply chain encompasses all activities associated with the flow and transformation of goods from the raw material stage (extraction), through to end users, as well as the associated information flows both up and down the supply chain. It therefore comprises a physical element (the strategic partnering of various market-focused, responsive organisations involved in the transformation of

specific goods) and the information element (controlled sharing of business data and processes). A supply chain can therefore be viewed as the formation of a value chain network consisting of individual functional entities committed to the controlled sharing of business data and processes. Organisations in the supply chain focus on their core activities and outsource the remaining operations to other business partners (Lau & Lee, 2000:598). This results in strategic partnering of various segments of business.

Democker (2000:141) adds that supply chains consist of companies that build portals linking buyers and suppliers – providing a platform to exchange information about products, inventory, capacity, shipment and payment. This is achieved via the implementation of an efficient and effective information flow system – for the organisation and its business partners (Lau & Lee, 2000: 599).

Christiaanse and Kumar (2000:270) are of the opinion that in order to compete successfully, a supply chain needs to be responsive to the customer's demands, provide mass-individualised products or services at the lowest cost and response time at an acceptable level of quality.

Essentially, supply chains are series of linked suppliers and customers - every customer is in turn a supplier to the next downstream organisation until a finished product reaches the ultimate end user.

## **Defining supply chain management**

Management of the supply chain, according to Gattorna (1998:18), has evolved over the last two decades from an emphasis on integrating logistics and lowering costs to providing better products and services to customers, quickly and cheaply. Handfield and Nichols (1999:1) agree to a certain extent, defining supply chain management as a dynamic enabler for organisations to realise the challenge of getting products to consumers when, where, how and in the quantity required in a cost-effective manner.

Monczka *et al* (2002:5) regard supply chain management as the integration of all activities associated with the flow of goods from the raw materials stage through to end users, as well as the associated information flows both up and down the supply chain. These activities include systems management, operation and assembly, purchasing, production scheduling, order processing, inventory management, transportation, warehousing and customer service.

Pooler and Pooler (1997:37) indicate that supply chain management focuses on control of the entire supply chain – placing strategic emphasis on value-added activities and total cost savings. Gattorna (1998:18) takes it a step further by suggesting that corporate and supply chain goals should be united, to improve profitability and growth – thereby increasing shareholder value.

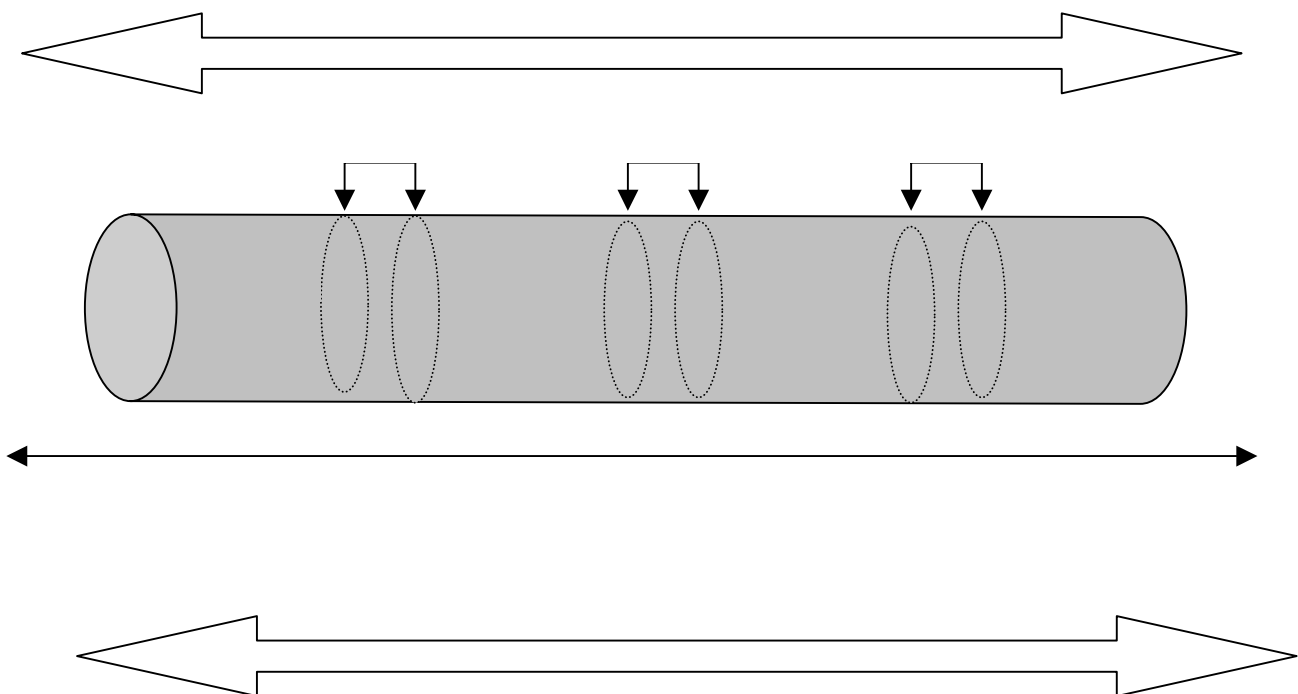
The increasing importance of supply chain management is forcing businesses to adopt the new management approach. Fawcett and Magnan (2001:7) studied the various definitions of the concept of supply chain management in depth. They concluded that to successfully implement supply chain management, businesses must possess the following characteristics:

- They must be relentlessly customer centric.
- They must be driven to improve asset efficiency.

- They must recognise inter-business collaboration as critical.
- They must focus on processes rather than functions.
- They must view open communication as a must.
- They must factor people into every decision.
- They must invest in information technology as an enabler.
- They must be obsessed with performance measurement.

Supply chain management, therefore enables organisations to identify formal processes to integrate all activities associated with the flow of goods from extraction to the final consumer by strategically establishing interbusiness collaboration and information sharing, with the emphasis on value-added activities and total cost savings – as illustrated in exhibit 1.

**Exhibit 1 A supply chain model (Hugo, Van Rooyen & Badenhorst, 2002:29)**



**How SMEs can benefit from best supply chain management practices**

Chapman et al (2000: 31) are of the opinion that SMEs can take advantage of the supply chain management strategy for various reasons:

- SMEs are critical links in many supply chains.
- SMEs are very flexible. Many SMEs are still young and developing and it is therefore easier for them to re-engineer existing business processes and adopt a supply chain management approach than for large organisations with a long-standing organisational structure and culture. The integrated approach is inherently part and parcel of SMEs.
- SMEs follow an integrated approach by nature. Various business functions are usually performed by one or a few persons working together.

- Computer software programmes are more SME friendly. IBM, for example, started the service Smart Start, which allows SMEs to use IBM's expertise with information systems along with their own business expertise to find and implement ERP system solutions that work for their business.
- SMEs can also benefit from global competition. Supply chain management provides a method of addressing the competitive challenges facing business today.

Small businesses are therefore already vital links in the supply chains in which they participate. By virtue of their size, flexibility and expertise they possess advantages that they can use to benefit their supply chain and strengthen their own businesses. Technology is increasingly affordable and available to help SMEs take advantage of supply chain strategies. Because of the competitive pressures facing small businesses it is critical for them to use supply chain perspectives and associated strategies to create synergies with supply chain partners in order to succeed in the global competitive environment (Chapman et al, 2002: 34). Despite the optimism of Chapman et al (2002: 31-34) there is reason to doubt the general implementation of the supply chain management approach and willingness and ability to implement the approach by small businesses.

## **Supply Chain Management: best practices and relationship issues identified**

Various focus group workshops with two large multinational corporations and a literature research were conducted to identify supply chain "best practices" and supply chain relationship characteristics. The following synopsis of practices and relationship issues can be regarded as necessary for a supply chain to function properly (This cannot, however, be regarded as all the practices and relationship issues involved in the supply chain management approach):

- *Cross-organisational integration* focuses on the integration of supplier and customer network processes. The purpose is to create an optimised material flow pipeline, free of all obstruction and wasteful activities (Hugo, Badenhorst-Weiss & Van Biljon 2004: 70).
- Collaboration between supply chain partners will reduce risk and greatly improve the efficiency of the overall pipeline. Supply chain efficiency therefore relies heavily on successful *long-term relationships* (partnerships) where *information sharing*, *joint problem solving*, and *trust* are key success factors (Hugo, et al, 2004: 11).
- *EDI* makes it possible for different firms to *integrate their systems and databases* despite differences in compatibility. It is increasingly replaced by more flexible, cost effective e-commerce (and other web-based systems) (Hugo, et al, 2004: 81).
- *Total quality management* (TQM) and continuous improvement (CI) encompasses quality management of the entire supply chain and include all the suppliers and customers in the supply chain down to the final customer.
- The aim of *just-in-time* (JIT) is zero inventory and waste reduction. JIT aims to reduce inventory and waste to zero and will ultimately ensure that the objectives of supply chain management are met. A great deal of trust and cooperation in the various links between firms are required.
- *Supplier development* and the *evaluation of the supplier's performance* is the first issue of managing the supplier relationship. If the supplier's performance is perceived as inadequate, it should be assisted to enhance its performance by means of training and continuous improvement teams (Gadde & Håkansson, 2001: 145-152).

- Planning for the supply chain implies *planning collaboratively* with the external environment consisting of customers, suppliers and other role players in the supply chain (Hugo, et al, 2004: 16).
- Cost transparency, open-book negotiations and *risk and benefit sharing* are an integral part of the supply chain management approach and entail a two-way sharing of cost data. The more holistic approach of *total cost of ownership* (TCO) examines the cost associated with purchased goods and services throughout the supply chain. It considers cost all the way from the generation of a new idea to product development – typically a joint effort between supplier and customer (Hugo, et al, 2004: 80).

## RESEARCH FINDINGS

In this section the research conducted amongst SME suppliers and large organisations in South Africa is explained after which the general business information and the nature of the relationships between these SMEs and large organisations in South Africa is revealed. Secondly, the supply chain management best practices that were identified in supply chains in the United Kingdom and the results of the study conducted in South Africa are compared.

### **The general background information of the research conducted in South Africa**

A questionnaire was compiled after focus group workshops with two large multinational corporations were held and literature research was conducted to identify supply chain “best practices” and supply chain relationship characteristics. The questionnaire consisted of two sections. The purpose of section A was to solicit information from large corporations. In section B information was collected from these large organisations’ SME suppliers that formed part of their supply chains. Section A of the questionnaire solicited information on (1) the nature of the business, (2) supply chain management practices that were used in the supply chain of the organisations and (3) various other elements that do not fall within the ambit of this paper. Section B solicited information on (1) the nature and scope of SME suppliers, (2) a number of relationship issues between SMEs and larger organisations and (3) the involvement of SME suppliers within the supply chain management practices of their large clients. This paper will report in particular on the findings of this part (section B) of the investigation.

A total of 451 (continuous education) students (employed in the supply field by large corporations which have either fully implemented the supply chain management approach or are progressing well with the implementation thereof) were given an assignment to *firstly* complete the first section (A) of the questionnaire dealing with the situation in their own company (large client), and *secondly*, to identify and interview, with the aid of section B of the questionnaire, a SME supplier who had been supplying materials and services to the core business processes of the company for a while. The sampling method can therefore be regarded as purposive. A total number of 257 questionnaires were received and 219 questionnaires could be used for analysis.

## The nature and size of the business operations in South Africa

The majority of operations included in the research were in the manufacturing sector. More than thirty percent of the large organisations were in the manufacturing sector. The rest of the findings are indicated in table one. More than two thirds of the large organisations involved in the research had an annual spend of more than R100 million on purchases from suppliers. A further 11 percent of these organisations spent between R50 million and R100 million on purchases. It is therefore quite clear that the large organisations involved in this study were huge in South African terms.

**Table 1: Large organisations- the core nature of the business**

Industry/ sector	% of large organisations
Manufacturing	32
Services	23
Mining	16
Communication	10
Logistics	10
Other	9

Forty one percent of the SMEs interviewed were in the manufacturing business while thirty percent were in the services sector. These results are depicted in table two. In contrast with the large organisations twenty percent of the SMEs interviewed had an annual turnover of less than R1 million. Thirty percent of the SMEs had an annual turnover of between one and five million rand. Sixteen percent had an annual turnover of between five and ten million rand and the rest of the SMEs interviewed had a turnover of more than R10 million.

**Table 2: SMEs- the core nature of the business**

Industry/ sector	% of SMEs
Manufacturing	41
Services	30
Agents/ wholesalers	28
Other	1

The research also indicated that the majority of SMEs were not dependent on a sole large organisation. Seventy two percent of the SMEs interviewed indicated that they received less than 50 percent of their annual turnover from one large organisation. Only 10 percent of the SMEs received more than 80 percent of their annual turnover from one large organisation. Seventy percent of the SMEs interviewed stated that they were a supplier to the large organisation's core business. It would therefore be expected that these organizations would be included in the supply chain management best practices.

### **A comparison between the supply chain management best practices identified in the United Kingdom amongst SMEs and large organisations and the research conducted in South Africa**

In this section of the paper a comparison is made between the supply chain management best practices identified in a research conducted by Jenner and Johnson (2002: 342-354)

in the United Kingdom and empirical research conducted in South Africa. A study by Jenner and Johnsen (2002: 342-354) in the UK indicated that SMEs find it difficult to implement supply chain management best practices, mainly because of lack of influence, resource commitment and knowledge. Regarding the implementation of best practices in supply chain management by SMEs, Jenner and Johnsen (2002: 345-350) report the following findings (which are highlighted in bold):

- **The business and supply chain strategies of SMEs and large organisations are not aligned.**

In South Africa, this was not the finding. More than 60 percent of the SME suppliers stated that their business strategy was aligned with that of the supply chain. This was in contrast to the findings of the UK research. Further research will indicate the reasons for this finding. A possible reason could be that nearly 70 percent of the SME suppliers delivered a core product to the large organisation and that it was therefore important that the supply chain strategies be aligned.

- **It seems as though dominant supply chain partners may put pressure on small partners to share more benefits and take more risks. SMEs, however, did not regard this as a problem.**

In the empirical research conducted in South Africa, 42,4 percent of the SMEs interviewed in the South Africa indicated that they were included in risk and benefit sharing. The extent to which the risks and benefits are shared will have to be determined with further research.

- **There was a restriction to openness and transparency with regards to communication between the SMEs and larger organisations.**

The research in South Africa initially seems to have a different finding until it is investigated more closely. Nearly 85 percent of the SMEs interviewed indicated that there was open communication between them and the larger organisations. From this finding it would seem as though open communication is being applied within supply chains. However, only 34,6 percent of the SMEs indicated that there was an integration of operational, information and communication tools between themselves and the large organisations. Only 29,1 percent of the SMEs felt there was cost transparency and that the concept of total cost of ownership was being applied of which they were part.

- **According to this research joint problem solving was functioning well.**

This was also the case as experienced by SMEs in South Africa, where 72,8 percent indicated that they were included in joint problem solving.

- **There was little evidence of a structured programme of assessing supplier performance.**

In the South African research however, 57,6 percent of SMEs felt that supplier performance assessment was being implemented and 55,8 percent of the SMEs felt that there was an assessment of supplier relationships. Nearly 57 percent (56,9%) stated that they were involved with total quality management and continuous improvement that was applied by the large organisation. Nearly 46 percent of the SMEs indicated that the large organisations were involved with developing them.

- **JIT was not regarded as a realistic proposition by the respondents in the UK study.**

Approximately 47 percent of the South African SMEs indicated that they were involved with JIT inventory management processes with the large organisations.

- **Multidisciplinary teams were used mainly for new product development.** These findings are similar to the findings of the research conducted in South Africa. Only 18,5 percent of SMEs felt that they were involved with cross-organisational process teams of large organisations. Nineteen percent stated that they were included in cross-organisational sourcing teams.
- **Although many SMEs are starting to use elements of e-commerce, it is clear that information technology can be regarded as a hurdle that SMEs will have to overcome to successfully participate in supply chains.** Important reasons for a lack of IT application in small businesses are limited funds, inadequate time to invest and lack of knowledge and skills (Caldwell et al, 2002: 123-134 & Wagner, Fillis and Johansson 2002: 721-733). The research indicated that only 20,8 percent of the SMEs in South Africa were involved with EDI and e-commerce with the large organisations.

The study of Jenner and Johnsen (2002) indicated that SMEs experience problems in the supply chain because of a lack of resources and influence over larger, more powerful suppliers and customers. The result is a “coping” approach rather than strategic control by SMEs. A final problem that was identified was the resistance to change culture throughout the supply chain. A lack of knowledge and experience may explain why some “best practices” are seen as less appropriate. The SMEs did not regard open communication between supply chain partners, risk and benefit sharing and joint problem solving as problems.

## CONCLUSIONS

In this exploratory study, conducted in Southern Africa, it was found that large suppliers prefer long-term relationships with SME suppliers in supply chains. The large suppliers who have adapted the JIT approach expect and involve their small suppliers in this approach, in contrast to the findings of the other studies previously mentioned. According to the findings of this study, joint problem solving, open communication and timely information are an integral part of the relationship. Risk and benefit sharing and the integration of systems were seldom part of the relationship. Supplier performance assessment and relationship assessment were applied to some extent. SME suppliers experienced problems integrating their systems with those of large clients. These findings are therefore in line with the findings of the studies conducted in the United Kingdom.

On basis of the findings of this study it is suggested that an additional study be conducted with a more detailed questionnaire to make advanced statistical analysis possible. It is also suggested that focus group discussions be held in addition to the interviews to enhance the understanding of the underlying reasons for these findings.

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