SUPPLY CHAIN MANAGEMENT (SCM) AS AN EFFECTIVE TOOL IN OPERATIONAL BUSINESS CONSULTING

by

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EXECUTIVE SUMMARY

Management consulting in general deals with assisting clients in developing operations strategies and improving production processes. In strategy development, the focus is on analyzing the capabilities of operations in light of the firm's competitive strategy. Market leadership can be attained in one of three ways, through: (1) product leadership; (2) operational excellence; or (3) customer intimacy.

Each of these strategies may well call for different operations capabilities and focus. The operations consultant must be able to assist management in understanding these differences and be able to define the most effective combination of technology and systems to execute the strategy. In process improvement, the focus is on employing analytical tools and methods to help operating managers enhance performance of their departments. One of these effective tools is for example the Supply Chain Management (SCM) process.

However, in the Retail and Consumer Products (RCP) industry, it is critical to have an efficient and effective supply chain. Presenting opportunities and risks, the supply chain is one of the last, best areas from which to reduce costs in a company's operations. Beyond that, flexible supply chains enable greater connectivity and collaboration between business partners. Done right, this can improve operational effectiveness, customer service and, ultimately, profitability.

But with greater connectivity comes greater risks. Data and application security are obvious risks, as is the risk of maintaining the availability, accuracy, and integrity of the data that is transferred between partners. Ensuring continuity in the event of business disruptions is another major risk area. Companies also take on financial risk when they invest in supply chain management tools and technologies, and they assume tax risk when they choose where and how to manufacture, distribute, and transport goods.

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ABBREVIATIONS

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Abbreviations

BPR – Business Process Reengineering

CAGR – Compound Annual Growth Rate

CRM – Customer Relationship Management

EBITA – Earnings before Income Tax and Amortisation

ERP – Enterprise Resource Planning

GDP – Gross Domestic Product

ICMCI – International Council of Management Consulting Institutes

ICT – Information and Communications Technology

IS – Information System

JIT – Just-in-Time

KSF – Key Success Factor

MCI – Management Consulting Industry

RCP – Retail Consumers Products

SAB – South African Breweries

SCM – Supply Chain Management

TQM – Total Quality Management Acknowledgements

CHAPTER 1
NATURE AND SCOPE OF THIS STUDY

1.1 Introduction

New Economies have transformed the world of business on a global scale and organisations are being forced to reinvent their activities. Flexibility, innovation and speed have become key business priorities for survival (Butcher, 2000:24). According to Oosthuizen (2003:15) when a storm hits, the natural instinct is to retrench until the outlook improves, but in business, an economic storm challenges organisations not only to simply weather the downturn, but also to emerge stronger. With this in mind, Management Consultants play an important role in exploring new business basics that provide organisations with survival tips for today and a blueprint for tomorrow's growth.

For any business activity, a consulting tool such as Supply Chain Management (SCM), which has strategic implications for any company, identifying the required performance measures on most of the criteria which is essential and it should be an integral part of any business strategy.

1.2 Problem Statement

An integrated supply chain model can generally be considered as containing three interrelated flow streams. The first is a **material flow stream** which itself has three distinct stages: purchasing, transformation, and distribution. Another flow stream in the supply chain, usually in reverse to the physical flow, is the **information stream** that specifies the needs and requirements of the purchasers, manufactures, distributors and clients. Finally, the third stream in the supply chain is the **financial flows**, which include the payment to suppliers and subcontractors for the goods and services and payment by the customer to the retailer for the final product (Waller, 2002:3).

Within each phase of the integrated supply chain there are numerous operations necessary to keep the activity **functioning effectively**. The three most important challenges to a firm are probably **quality products, promised**

delivery times, and acceptable costs (or prices). It is therefore obvious that poor management or control of any of these operations can have a considerable impact on the performance of the integrated supply chain. The link operations and supply chain is critical when one considers that most business firms today are international and may have perhaps between 80 and 90% of their work performed by subcontractors, many of those, furthermore, located in other countries. SABMiller is a Company that strives to perfection in its Supply Chain Process. This study will discuss this matter through the above view point.

1.3 Objectives of the Study

- The primary objective of this study is to understand the concepts, and the dynamics of supply chain management as a management consulting tool.
- The Secondary objectives of this study are to:
  - ⇒ understand the dominant driving forces in management consulting, and know how to use it to one's advantage during the consultation process;
  - ⇒ analyse the scope and different concepts/interpretations of supply chain management;
  - ⇒ describe and illustrate the supply chain of a manufacturing industry with specific reference to the brewing industry; and\
  - ⇒ setting benchmarks to assist the management consultant in selecting the most effective supply chain management system for a specific company (client).

1.4 Chapter Demarcation

The purpose of this study can only be achieved if the dynamics of management consulting is firstly understood. Chapter 2 gives a detail description of Management Consulting with specific focus on the main steps, focus areas and driving forces within the Management Consulting Industry.

Chapter 3 focuses on Supply Chain Management and the procedures for selecting a supply chain management project with an empirical research study

of SABMiller presented in Chapter 4 to explain the processes and effectiveness within the supply chain. The study is concluded with Chapter 5 where recommendations to the findings are provided.

CHAPTER 2

AN INTRODUCTION TO MANAGEMENT CONSULTING

2.1 Introduction

The Management Consulting Industry (MCI) is considered to be one of the most powerful forces shaping organisational strategy. However, from its major growth phase during the late 1980s into the 1990s, and until the present time, it now appears that the industry is in a mature consolidation phase. Perhaps even an early decline. The scope and nature of the MCI is global and, consequently, the South African industry is linked to, and integrated with global developments (Oosthuizen, 2003:15).

The local industry is large in absolute terms and high in value-adding propensity. Vertical integration is limited and little advantage appears to be taken of economics of scale. The industry moves in tandem with well established international driving forces and now an inflection point is expected. Nevertheless, it is considered to be under severe competitive pressures which impose a dampening effect on the overall level of industry profitability.

The competitive positions and rival of business strategic approaches display a degree of comparability in strategic typologies. Thus, the challenge for the "winners" in the MCI will be to differentiate themselves for both strategic and marketing positioning and even to consider redefining the business model in this turbulent and fragmented industry (Oosthuizen, 2003:15)

Insight into the dynamics of the MCI requires an understanding of different practices in management consulting. In other words, it is important that one first defines management consulting to understand the peculiarities of the domain. This chapter will first of all give an introduction to the development of the management consulting industry together with the main steps of the Management consulting process. This will be followed by a discussion of the dominant driving forces within the MCI and the current status of the consulting market.

2.2 Management Consulting Defined

According to Chase, Jacobs and Aquilano (2006:324) management consulting deals with assisting clients in developing operations strategies and improving production processes (e.g. supply chain management). In strategy development, the focus is on analyzing the capabilities of operations in light of the firm's competitive strategy. Market leadership can be attained in one of three ways, through: (1) product leadership; (2) operational excellence; or (3) customer intimacy.

Each of these strategies may well call for different operations capabilities and focus. The operations consultant must be able to assist management in understanding these differences and be able to define the most effective combination of technology and systems to execute the strategy. In process improvement, the focus is on employing analytical tools and methods to help operating managers enhance performance of their departments.

The International Council of Management Consulting Institutes (ICMCI) uses "the provision of independent advice and assistance of management to clients with management responsibilities" as a definition (ICMCI, 2007). The ICMCI stress the consultant's advisory role and independence.

Greiner and Metzger (1983:7) give a "old classic" more extensive definition: "management consulting is an advisory service contracted for and provided to organizations by specially trained and qualified persons, who assist, in an objective and independent manner, the client organization to identify management problems, analyze such problems, and help, when requested, in the implementation of solutions." This definition emphasizes, next to the independence and advisory role of the consultant, the special qualifications of the providers of the advice, and specifies the consulting work as the identification and analysis of problems and, in some situations, the implementation of solutions.

2.3 The Historical Background and Development of the Management Consulting Industry

Frederick W. Taylor (1856-1915) was the first to make management consulting his full-time occupation. From 1893 to 1898, he advertised himself

as consulting engineer, systematizing shop management and manufacturing costs a specialty' (Kanigel, 1997:69). During these years, Taylor travelled along the industrial cities of the USA, living in hotels and doing all kinds of jobs in various industries, for a daily fee of US$35- 40 dollars. Mostly, he was hired as an outside expert to change inefficient work practices on the shop floor or in the back office. He implemented, in different contexts, elements of what would later become known as 'scientific management'.

The roots of management consulting date back to the early 1900s. At the time it had a strong engineering orientation and independent organisations used consultants and their methodologies to problem solving in many different ways (Greiner & Metzger, 1983:9-10). By the early 1930s firms such Booz and Hamilton and McKinsey & Co. have been founded. General management tended to be the most dominant consulting service, and specialists such as accountants came to realise their prime position to provide advisory service, especially in financial matters.

Industry became more complex prior to World War II and thus a broader overview was needed. At this stage human relations emerged as a trend in consultancy. The post war years also witnessed the emergence of consultants in such areas as purchasing, traffic, production control, personnel administration, systems and procedures, budgets, public relations and marketing.

Greiner and Metzger (1983:10) assert that, by the 1950s, consultants were promoted to use new and sophisticated techniques, such as capital budgeting, market research and data processing, due to the advent of computers and management science. Nevertheless, it was not until the 1960s and 1970s that management consulting as an industry started to gain recognition and to grow, albeit in an unspectacular way.

During 1980s, however, three factors started to change this somewhat staid namely, information technology, globalisation and outsourcing. These factors were together responsible for the phenomenal growth of the industry during the 1999s. The entire nature and contents of the consultancy changed, and

this turbulence in itself presented a continued uncertainty and unpredictability about the future of the industry (Czerniawska, 1999:5).

2.3.1 The Consultant versus the Manager

Management consultancies are 'knowledge intensive firms' and consultants are 'knowledge workers', who develop and transfer knowledge to organizations. They study state-of-the-art management theory and best practices in all kinds of contexts, and develop methods, models, and techniques to implement these practices in their clients' organizations. Based on their expertise, they can assist managers in framing complicated problem situations, in designing solutions, and in implementing these solutions in order to effect changes (Oosthuizen, 2003:16).

Maister (1993:17) describes clients as feeling insecure, threatened, taking a personal risk, impatient, worried, exposed, ignorant, sceptical, concerned, and suspicious. Managers therefore feel uncertain about what is going on in their organisation, how they should improve the situation, and what this will do to them personally. Consultants are said to make use of this by tricking insecure managers into the latest management fashion. They convince them that these fashions can bring the solution to all their problems.

Management fashions are typically too generic and too open for different interpretations to be implemented right away. Therefore, consultants are needed as intermediaries, "commodifyers" (Fincham, 1995:707) or "translators" (Czarniawska & Sevón, 1999:43) between the management fashion and the client organization. They provide the expertise, methods, and techniques to tailor the concept to the situation and to make the implementation successful.

Consulting has however grown since consultancies have succeeded in continuously opening up new fields of consulting expertise, sought after by managers. Kipping (2001:110) describes this development in three waves, namely:

- The first wave contains the time-and-motion studies and the implementation of scientific management at the beginning of the 20th century.
- The second wave encompasses strategy and organizational structure design.
- The most recent wave concerns Information and Communications Technology (ICT)-related fields (Anon, 2000:9).

The expansion of management consulting may partly be explained by the growing complexity of managerial work over the last century, which has led to more specialization in management and thus to more potential fields for management consulting. It also has to do with management guru platitudes like 'change is the only constant', 'innovation is the key to success', 'knowledge is the key production factor', and 'things are more complex than they used to be' (Nonaka & Takeuchi, 1995:71).

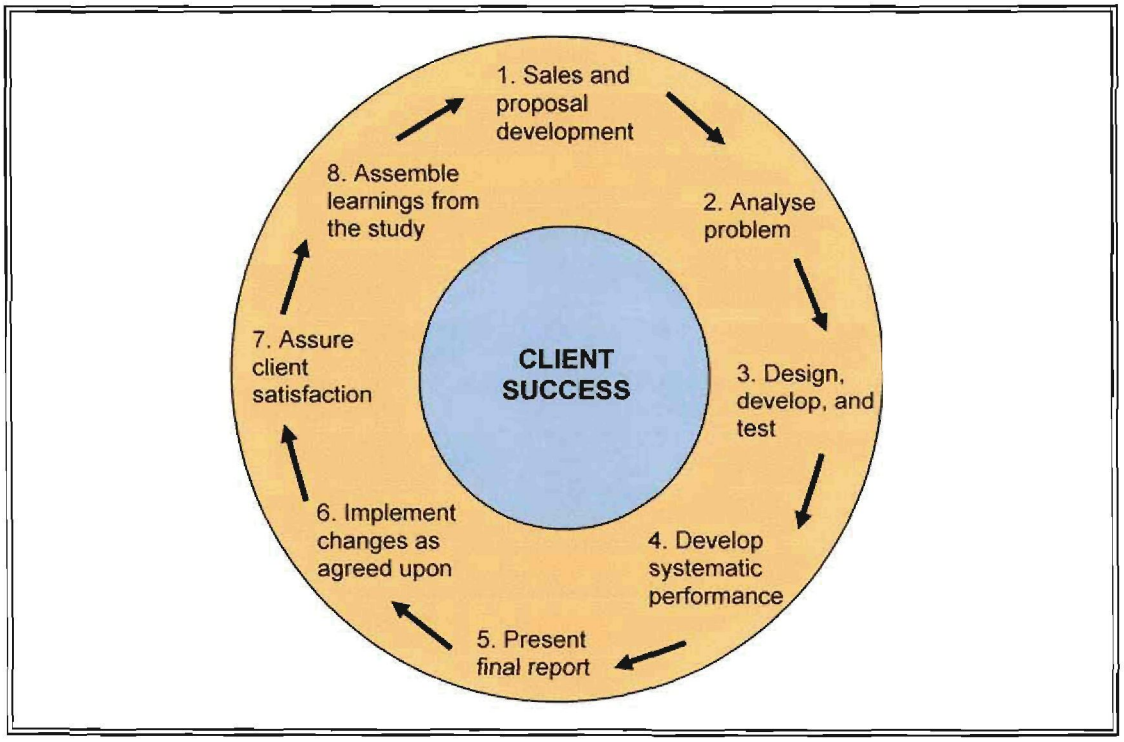
In so far as these developments are true, they increase the need of managers for advice and expertise. But, as said above, these phrases are also part of guru rhetoric, used to underpin a constant stream of management fashions. Since 1982, when Peters and Waterman published their best-selling In Search of Excellence, the number of fads has increased, while their life-cycles have shortened (Grint, 1997:52).

Managers now turn to external consultancies for knowledge and skills they used to have in-house. Besides, the wave of consolidations in the private and the public sector in the form of mergers, acquisitions, and strategic alliances, which is partly a result of the massive outsourcing, has also generated a lot of consulting work (Anon, 2000:9).

2.4. Main Steps and Focus Areas of Management Consulting

In Figure 2.1 the main steps of management consulting are illustrated where the focus may be on the strategic level or tactical level. The process itself generally requires extensive interviewing of employees, managers, and, frequently, customers.

Figure 2.1 – Steps in the Management Consulting Process



Source: Chase *et al.* (2006:329).

General management consulting calls for changes in attitudes and culture as well, which take longer to yield measurable results. The roles in which consultants find themselves range from an expert, to a pair of hands, to a collaborative or process consultant.

Deloitte & Touche (2007) Consulting lists the actions to improve processes as follows: refine/revise processes, revise activities, reconfigure flows, revise policies/procedures, change outputs, and realign structure.

Regardless of where one focuses, an effective job of management consulting results in an alignment between strategy and process dimensions that enhances the business performance of the client.

Some of the major strategic and tactical areas where companies typically seek management consulting may differ according to the industry or sector of focus. For example, firms in manufacturing may have broad specialities in process industries on the one hand and assembly or discrete product manufacture on the other. In Table 1 a summarised portfolio is provided of examples of the typical consulting focus areas for the manufacturing and services industries.

Table 2.1 – Consulting focus areas of the manufacturing and services industries

Manufacturing	
Plant	Adding/locating new plants; contracting; refocusing existing facilities
People	Quality improvement; setting/revising work standards; learning curve analysis
Parts	Make or buy decisions; vendor selection decisions
Processes	Technology evaluation; process improvement; reengineering
Planning & Control	Supply Chain Management (SCM); warehousing; shop-floor control; distribution
Services	
Financial	Staffing; automation; quality studies
Health Care	Staffing; billing; office procedures; layout
Transportation	Route scheduling; shipping logistics; reservation systems; baggage handling systems
Hospitality	Reservations; staffing; cost containment; quality programs

Source: Chase *et al.* (2006:327-328).

Many of the abovementioned focus areas are interrelated, calling for system wide solutions on a global level. Common themes reflecting this are developing competitive company strategies; designing and implementing Just-in-Time (JIT) systems; Enterprise Resource Planning (ERP) software such as SAP; outsourcing; **Supply Chain Management (SCM)**; product/service development; and E-operations.

Deloitte & Touche (2007) Consulting is for example one of the accounting firms with a full suite of consultancy services. Consulting services include: Strategy (15% of FY2004 revenue), Finance (24%), Process (12%), Infrastructure and Systems Integration (20%), Package Implementation (15%), Human Capital (11%), and Outsourcing (3%).

A Company like Accenture focus on five functional specialties within the consulting process:

- Strategy and Business Architecture
- Customer Relationship Management (CRM)
- Supply Chain Management (SCM)

- Human Performance
- Finance and Performance Management; and
- Three outsourcing strengths – Human Resource Solutions, Learning Solutions, and Finance Solutions

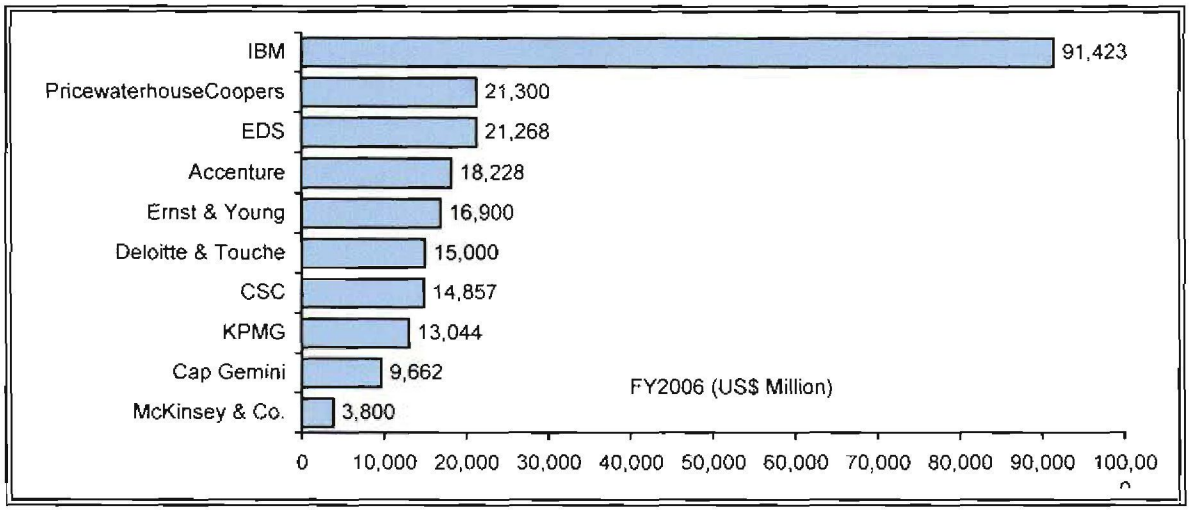
IBM's service emphasis is more on the IT-side of the operational process: Strategy Consulting, Systems Integration, Human Resources, other Information Technology and Operations Management.

It can be said that companies will typically seek out management consultants when they are faced with major investment decisions or when they believe that they are not getting maximum effectiveness from their productive capacity.

2.5 Dominant driving forces within the Management Consulting Industry

Today management consulting is booming, as can be seen by the revenue figures in Figure 2.2.

Figure 2.2 – Top 10 Ranking: Global Consulting Firms by Revenue



Source: Company Annual Reports 2006

This reason for this boom include the following: market pressures on clients to reengineer their core processes and eliminate their non-core processes; globalization requiring companies to seek expert advice on entering foreign markets and defending local ones against new competitors; and the need to better manage information technology, including systems integration,

packaged software solutions and applications (Chase, 2006:325). The abovementioned driving forces in the Management Consulting Industry are described in the sections below.

2.5.1 Globalisation

According to Hellriegel, Jackson and Slocum (2005:99) the effect of several global forces that an increasing number of companies face include: intense competitive rivalry, pressures on prices, need for cost cutting, diversification into related lines of business and the impact of changes in the financial arena on profitability. Some of the more important trends in the global economy include:

- Increased competition
- Shortened product life cycles
- Importance of exports and imports
- Worldwide communication
- New countries emerge
- Borderless organisations
- Worldwide labour pool (Hellriegel *et al.*, 2005:98).

The Management Consulting Industry (MCI) is very susceptible to the diffusion effects of globalisation and firstly, its size has been grown considerable because consultants were in demand to advise businesses on how to globalise successfully, using their global experience and best practices to suite the local markets. Secondly, the uncertainty and complexity of the global market demand also compelled consulting firms to shift the emphasis of the nature of their portfolio of services to advice on successfully transferring components of the value chain to need geographic configurations.

During this time of global change particularly three major characteristics have converged and impact on the nature of the demand for consultancy namely: (i) clients want innovative thinking; (ii) they do not want to wait years before that innovative solution has an impact; and (iii) they want to set more

ambitious and more tangible goals for their consultants (Czerniawska, 2005: 27, 29).

2.5.2 Economic cycle

Globally, the state of the economy is one of the largest driving forces affecting the Management Consulting Industry (MCI) and cycles in this industry have been found to closely follow a country's GDP (Oosthuizen, 2003:19). During a bullish cycle, client firms tend to have "cash-to-burn" and as a result consultants tend to benefit. When the economy is down, consulting services along with marketing and research is probably the first place clients tend to cut. As a result, consultants are the considerably more driven by the concept of offering greater value for money.

Conditions in the general economy may also favour different kinds of consulting services being in demand. For example, mergers and acquisitions, during a downturn of the business cycle turnaround and efficiency-improvement strategies. This is the situation that both the global economy and the MCI is currently experiencing, and it is expected to continue for some time.

2.5.3 Societal concerns, attitudes and lifestyles

Emerging social changes and changing attitudes and lifestyles are powerful drivers of industry change. Shifting societal concerns, attitudes, and lifestyles alter the profile of competition, usually favouring those that can respond quickly and creatively with products and services targeted to the new trends and conditions. In South Africa for example it has given rise to the establishment of many, small niche-player consulting firms (Oosthuizen, 2003:19).

Designing a customer-pleasing product is an art. Building the product is a science. Moving the product from design to the customer is management. World-class manufacturers, such as SABMiller excels at the speedy and flexible integration of these processes. A key to this is teamwork, not only on the part of marketing, product development, manufacturing, and distribution, but on the part of the supplier and customer as well (Chase *et al.*, 2006:177).

2.5.4 Technological Change

Technology has played a dominant role in the productivity growth of most nations and has provided the competitive edge to firms that have adopted it early and implemented it successfully. With more modern technologies, that benefits are not entirely tangible and many benefits may be realised only on a long term basis. Given the complex, integrative nature of these technologies, the total commitment of top management and all employees is critical for the successful implementation of these technologies (Chase *et al.*, 2006:735).

Advances in technology, particularly internet technology, can substantially shape an industry's environment and thus mandate changes in business strategy. The pace of technology change in the Management Consulting Industry (MCI) is fast, with the industry growing in leaps and bounds as technology develops and clients demand new improved and innovative service offerings (Oosthuizen, 2003:19).

Consulting opportunities are associated with cutting edge technology and the industry consequently tries to anticipate what the next "hot" trend is going to be, then "loads up its intellectual arsenal to tackle it". The downside of this, however, being the often-heard criticism about consultants that they tend to pick up on concepts that have been used for years, and turn them into a "hot new thing" generating unfounded hype and excitement amongst many clients. For this reason large consulting projects often tend to use proven technology or even offer new product introductions at reduced rates.

2.6 Key Market Trends in Management Consulting

The consulting market is poised to begin a steady increase in growth. However, there are several trends that will affect the rate of growth in the market. One is the differing dynamics between the IT consulting and traditional management consulting markets. These two segments are experiencing different sets of threats and opportunities, as well as different growth rates (Oosthuizen, 2003:23).

Another key driver of consultancy growth will be the identification and exploitation of "pockets of opportunity" — those quickly identified client pain points needing immediate attention.

Third, IT firms are experiencing disruption due to new technologies and business models, such as services-oriented architecture, Linux-based operating environments, and off-shoring. Some of these disruptions will promote growth and complexity, while others will not.

Fourth, consulting firms' human capital will either produce or inhibit growth; hiring and retaining quality mid-career consultants with specific expertise will be the key. Another important trend is that public sector and healthcare clients will represent an increasing share of the market over the coming years. These two verticals represent well over half the consulting opportunity through 2007. And, finally, clients' attitudes toward risk either drive or inhibit consulting purchases. The types of consultancy are listed in Table 2.2 with a breakdown of the main service lines within the industry.

Table 2.2 - Consultancy Service Line Definitions

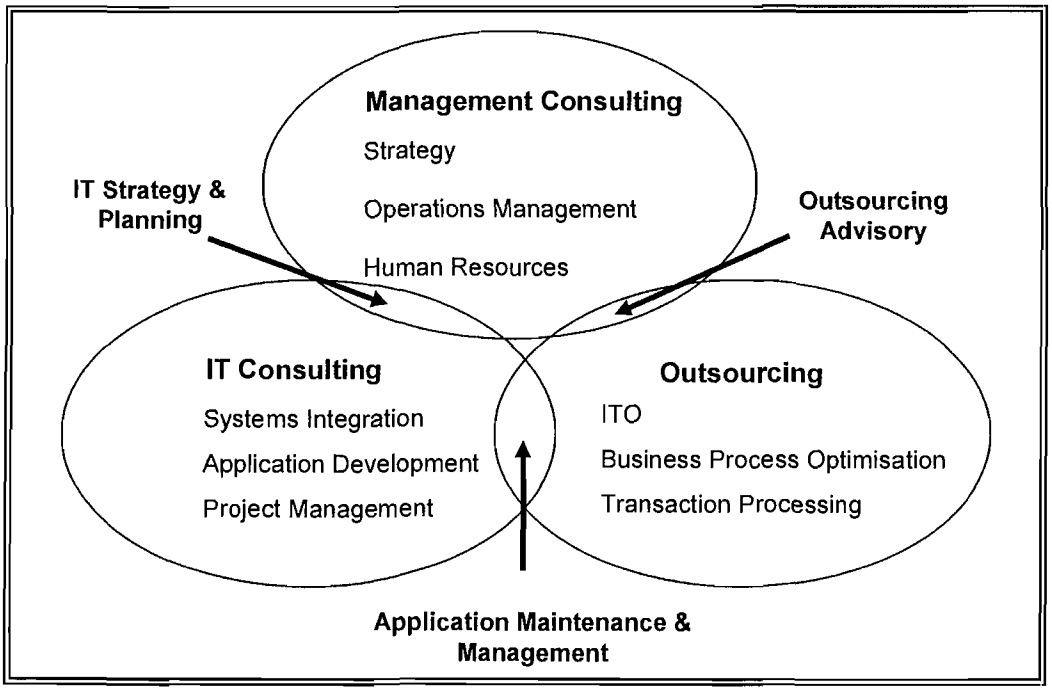
Service Line	Types of Consultancy
IT Consulting	▪ Systems integration ▪ Project management ▪ Application development (when part of a larger consulting project)
Strategy Consulting	▪ IT strategy and planning ▪ Financial strategy ▪ Strategic planning ▪ Marketing and branding strategy ▪ Organisational strategy
Operations Management Consulting	▪ Change management ▪ Business process reengineering ▪ Logistics, supply chain, and procurement operations Research and Development/product development processes ▪ Service operations improvement
HR Consulting	▪ Benefits design ▪ Compensation design ▪ Talent management (management of the entire employee lifecycle)

Source: IBM, 2007

Because so many consulting firms are also in professional services markets, it's often hard to draw the line where outsourcing begins and consulting ends. In Figure 2.3, it's abundantly clear that Information Technology consulting, management consulting, and outsourcing services all overlap to some extent.

Where management consulting and outsourcing overlap, outsourcing advisory is the consulting component. Where IT consulting and management consulting overlap, IT strategy and planning consulting results.

Figure 2.3 - The Convergence of IT Consulting, Outsourcing, and Management Consulting



Source: IBM, 2007

Where IT consulting and outsourcing overlap, there is a grey area where application maintenance and management may include application development or systems integration; in some cases, application development or systems integration specifically tied to application maintenance and management would not be included in the consulting market size and definition.

2.7 Conclusion

With the above mentioned discussion the aim is to provide the management consultant with a better understanding of the Management Consulting process and facets it entails. Consulting opportunities exist in large quantities for individuals with operations management skills. This is true not only for the major consulting firms but also for the niche firms, particularly those with capabilities in supply chain management and IT applications. The profitability

to partners of a consulting firm depends on them being able to affectively leverage their time with that of their junior consultants. For being consultants the goal is to get involved in high-visibility projects where they can demonstrate their skills and increase their skill sets.

Much of the success of a consulting engagement depends on the people handling skills of the consultant. This is especially true for reengineering, where not only the changing of practices and procedures are required, but also a change in work cultures.

For consulting firms the challenge remains to capture the growth opportunities and to adjust the emphasis within their portfolio of services in order to accommodate the changing nature of demand. In particular, South African consulting firms had to content with the relatively sudden onset of globalisation and, simultaneously develop survival strategies for clients due to the threat of international competition and the implications associated with political transformation. Furthermore, the economic downtown has had a dampening affect on the South African management consulting industry.

CHAPTER 3
SUPPLY CHAIN MANAGEMENT

3.1 Introduction

Clerchus of Sparta, in 401 B.C., recognized the value of supply in his speech to the small Greek army he led in a civil war with Artaxerxes II. His army of 14,000 was 1,300 miles from Greece when the battle of Cunaxa began. The survival of the Greek army depended not only on its discipline, training, and morale but also on its supply chain. Today the survival of most firms depends on intelligent supply chain decisions. Never have so much technology and brainpower been applied to improving supply chain performance. Point-of-sale scanners, electronic data interchange, and the Internet let all stages of the supply chain hear the customer's voice and react to it (Chase *et al.* 2006:347).

Supply Chain Management (SCM) was developed to provide a new way of examining and analysing organisations – avoiding traditional functional components to take a comprehensive look at a major longitudinal process. The supply chain consists of the links between a firm and its suppliers, through to its distribution organisation and on to its customers. The concept of Business Process Reengineering (BPR) was developed and adopted. Like BPR it offered the prospect of examining key activities and making significant changes and gains. The most appealing benefit was the improvement in response times to customers – a major advantage in increasingly competitive markets; other benefits, such as reduced inventories and lower operating costs (and the reductions in working capital that follow) were also attractive in a way that could improve, rather than revolutionise the business (Moore, 1998:172).

One significant advantage was that, unlike the more generic BPR, the concept of the supply chain (and the importance of its effective management and improvement) was simple and easily communicable throughout an

organisation. Any executive can immediately see the importance of, and the benefits that can accrue from, improving the supply chain (Moore, 1998:172).

Of course it helped that the publicity from the early adopters was almost universally good; there were claims of drastic improvements in measurable parameters – unlike the more "culturally dependent" improvement methodologies such as Total Quality Management (TQM), where improvements are often seen as being long-term and more of an act of faith (Moore, 1998:173).

However, the literature review conducted in this chapter, not only reveals that diversity exist in supply chain models, but also that several definitions exist for 'supply chain' and 'supply chain management'. In most cases, these definitions are derived from a particular sub-group or category of supply chains rather than referencing or including all categories of supply chains.

A Supply Chain Management (SCM) project selection problem is more important and complex for an enterprise today. The chapter presents a three phase framework to select the optimal SCM project in an uncertain environment, including the strategic objective analysis, the system analysis, and the group decision-making evaluation.

3.2 Supply Chain Management Typologies

'Supply chains and their management', typically referred to as 'supply chain management', are terms that emerged during the late 1980s (Harland, 1996:210) and have been popular terms used widely in textbooks, professional magazines, academic journals, courses of study and individual subject offerings.

3.2.1 Supply chain and their 'management'

In many research studies there is a presumption that the terms 'supply chain' and 'supply chain management' are well defined and clearly understood by all (Moon, 2004:22). However in terms of a conceptual perspective the terms 'supply chain' and 'supply chain management' should be investigated. Handfield and Nicolas (1999:21) state that the supplier network consists of all organisations that provide inputs, either directly or indirectly, to the local firm. That is, the 'supply chain' may not be a chain, in which the links are

considered to join peer companies, but rather a 'supply wheel' in which a number of subservient companies in supply a dominant master (Avery, 1999:24).

Other supply chain topologies exist. Christopher (2005:29) and Kemppainen and Vepsäläinen (2003:703) argue for 'supply networks' in which there is still a dominant or focal firm, but the linkages between suppliers and customers with the dominant firm are not necessarily direct. Well-known examples of a network supply chain topology are StorebrandXchange.com (Beldona & Raisinghani, 2004:18) and Covisint represents an evolution of supply chain topology: it has evolved from a supply wheel – originally a supply chain e-marketplace for the vehicle manufacturers General Motors, Ford and DaimlerChrysler – into a supply chain network that now services the healthcare industry as well as other motor vehicle manufacturers in addition to three mentioned above.

The literature review conducted, not only reveals that diversity exist in supply chain interpretations, but also that several definitions exist for 'supply chain' and 'supply chain management'. In most cases, these definitions are derived from a particular sub-group or category of supply chains rather than referencing or including all categories of supply chains.

3.2.2 Supply chains and their 'components'

With respect to supply chain components the research literature again shows diversity rather than a common view on what are the most important or critical components of the supply chain. Assertions are made about the important or critical components but these assertions are rarely tested. For instance, Mouritius and Evers (1995: 45) discuss the stages characterising flows of goods between a supplier and a customer. Each stage has different facilities which perform different activities, such as the need for intensive communication for their mutual co-ordination. The implication is that the most important component of a supply chain is the human interaction that occurs.

On the other hand, Stevenson (1999:48) defines a 'supply chain' as a sequence of suppliers, warehouses, operations, and retail outlets. Stevenson (1999:52) goes on to differentiate between two classes of supply chains, one

relating to goods (involving for example, manufacturing firms) and the other to services (involving for example, banks or other service providers, presumably because their core operational characteristics are different. The implication is that the most important component of the supply chain's structure or topology.

A common, agreed upon view about supply management is also lacking. For example, in discussing this activity, Gattorna and Walters (1996:102-103) observe that in a short period of time, 'physical distribution management' became 'logistics management', and then 'supply chain management'. For Gottorna and Walters (1996:104), this evolution reflected the increasing strategic importance of this activity.

On the other hand, Handfield and Nichols (1999:23) claim that a 'logistics renaissance' era has arrived, in which new and emerging information technologies are used to meet the challenges of globalising markets with increasing domestic and international competitiveness. Handfield and Nicols (1999:27-29) also claim that supply chain management includes managing in formation systems involved in sourcing and procurement, production, scheduling, order processing, inventory management, warehousing, distribution and customer service. This implies that an important characteristic of supply chain management is the technological infrastructure that facilitates the information flows.

As demonstrated through the discussion above, the concepts 'supply chain' and 'supply chain management' have a variety of different meanings and interpretations. For the purpose of this study, supply chain management will be defined as: "a supply chain is a complex system which involves multiple entities encompassing activities of moving goods and adding value from the raw material stage to the final delivery stage. Along the chain, there exist various types of uncertainties, e.g., demand uncertainty, production uncertainty, and delivery uncertainty. Making decisions as to how much and when to replenish, often involves a feedback process triggering interaction between system entities, which may result in system nonlinearity. A time delay is observed when there is a lag between when a decision is made and when its effect is felt, which often further complicates the interaction between entities. Feedback, interaction, and time delay are inherent to many

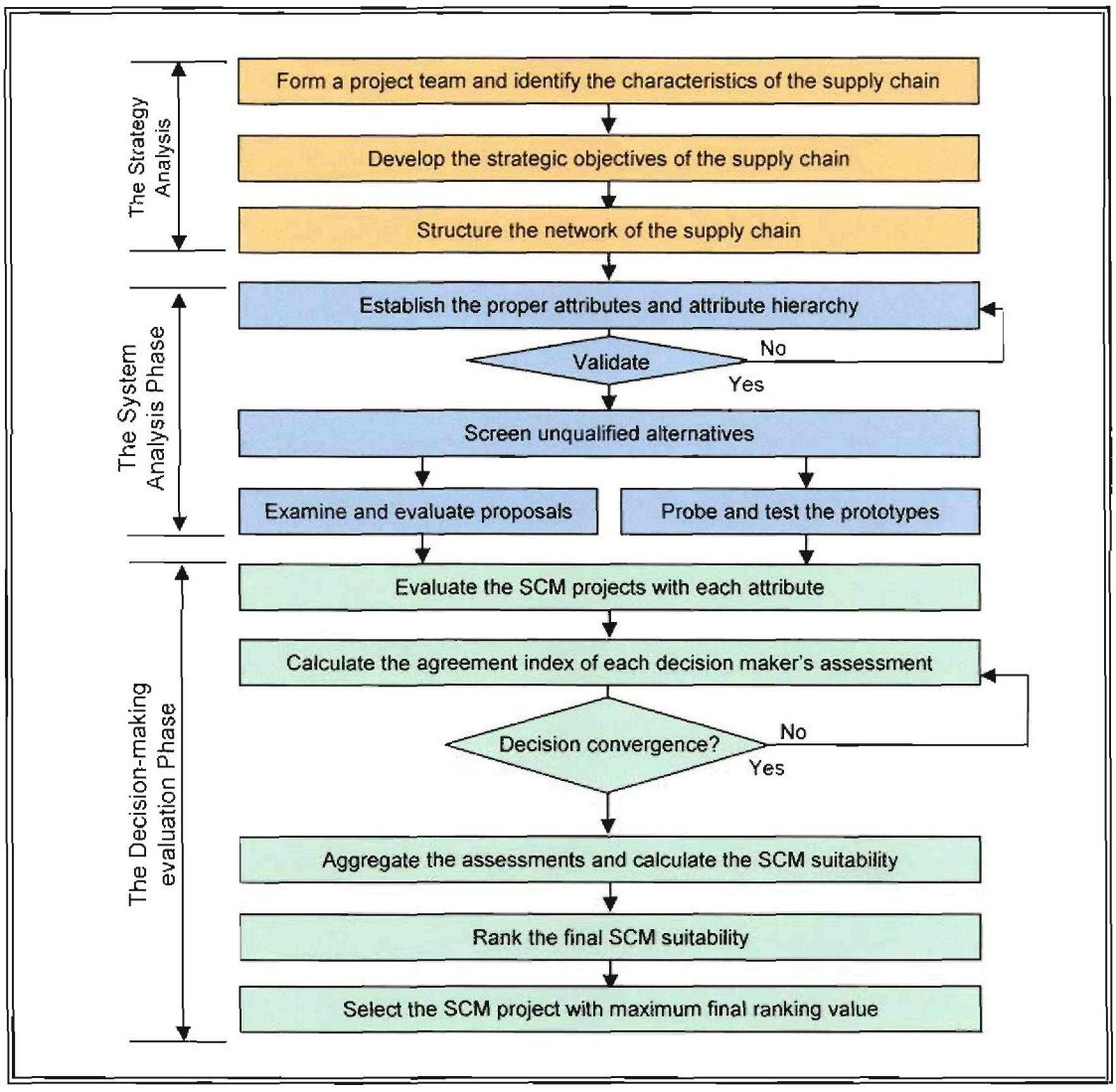
processes in a supply chain, making it a dynamic system (Hwang & Xie, 2006:1163).

3.3 Procedures for Selecting a Supply Chain Management Project

Many companies make considerable efforts in implementing Supply Chain Management (SCM) Systems to increase their competitiveness. However, how to select an adequate SCM project remains a major concern.

Wei, Laing & Wang (2007:627) presented a comprehensive framework with three main phases to select an adequate SCM project that incorporates the strategies and operating routines of a supply chain, namely: the strategic objective analysis phase, system and group decision-making analysis phase. The stepwise procedure is illustrated in figure 3.1.

Figure 3.1 – Comprehensive SCM Project Selection Procedure



Source: Wei *et al.* (2007:629)

3.3.1 The strategy analysis phase

Companies fail to reconcile technological imperatives of the Information System (IS) with the business needs of the enterprise itself. If a company rushes to install an IS without first having a clear understanding of the business implications, the dream of integration can quickly turn into a disaster. The primary issue at the strategic level is to recognise the characteristics of the supply chain, like industry characteristics, client needs, product life cycles, product positions, customer segments, procurement features, manufacturing strategies, etc. (Handfield & Ernest, 1999:83).

In order to highlight the strategic drivers of the supply chain, other crucial concerns are also widely collected, including the information, environmental trends, and obstacles of current supply chain. Meanwhile, the company must recognise its current positions and influence in the entire supply chain. Such perceptions will help the project team in clarifying the scope of business process integration in the supply chain link that the company can handle.

3.3.1.1 Develop the strategic objectives of the supply chain

Due to the complexity of the supply chain and the huge risk of a Supply Chain Management (SCM) implementation project, it is far better to spend a lot of effort understanding the objectives and requirements. Wei *et al.* (2007:629) are of the opinion that three steps can be adopted in analysing the elements of the supply chain and identifying the objectives to achieve strategy conformity:

1) *Understanding the customers:* different customers have different customer demands, i.e., quantity in each lot, response time that customers are willing to tolerate, service level required, diversity of the product line, and product price (Fisher, 1997:86).

2) *Understanding the supply chain:* the company should clarify the capabilities of the supply chain which can satisfy the targeted customer segments, i.e., the ability of lead time meeting, diverse product handling, customer service level supporting, and the inventory control ability.

3) *Achieving strategic fit:* aligning the customer requirements and the supply chain capabilities to ensure that all functionalities in the supply chain have consistent strategies that support the competitive ones.

Additionally, other factors must be deliberated in clarifying the supply chain features, including the cooperativeness of major suppliers and customers, competitiveness of the industry, and bargaining power of the company, etc.

3.3.1.2 Formulate the structure of the supply chain

For decomposing and modelling the scope of the SCM project, the project team needs to select the members of the supply chain and organize the structure of the supply chain. To fully exploit the utmost benefits of these links, the project team should clarify the unique characteristics of each interconnected link. The method proposed by Lambert and Cooper (2000:69) is modified to organize the structure of a supply chain.

1) *Selecting the members of the supply chain:* when constructing the supply chain network, identifying who the members of the supply chain are is a prerequisite. The project team should identify the members of the supply chain and allocate resources to the key members based on their core competence and contributions.

2) *Establishing the structure of the supply chain:* to compromise the dilemma between the complexity of supply chain model and the practicing applicability of the SCM system, the project team should choose the suitable scope of partnerships for particular supply chain links. Two architectural dimensions, horizontal and vertical structures, exist in the supply chain network. The horizontal dimension provides the number of tiers across the supply chain. Correspondingly, the vertical structure refers to the number of suppliers and customers represented within each tier. The project team needs to examine the key aspects of the supply chain and identify the crucial boundaries of the supply chain model.

3) *Recognizing the characteristics of supply chain links:* according to supply chain strategic objectives and linkage patterns, the project team can confirm the requirements of major processes in the supply chain

model, which will be converted into the specifications of Supply Chain Management (SCM) system fundamentals when developing and evaluating an adequate SCM project.

3.3.2 The system analysis phase

Important attributes forming part of the system analysis phase include key requirements of a company such as strategic concerns and operational needs for assessing a SCM project and mapping out the project characteristics. In the literature review it becomes apparent that both quantitative and qualitative attributes can satisfy the operations under the strategies and goals of the company. Wei *et al.* (2007:630) categorised the SCM project selection attributes into four categories, namely:

1) *Strategy factors:* attributes that concern with the strategy objectives of the supply chain, for example, customer demand support, supply chain capability, domain knowledge support, and supply chain model design.
2) *Project factors:* attributes involved in SCM project management, such as total cost, implementation time, expected benefit, and project risks.
3) *System factors:* features of the SCM software system, including system functionality, system flexibility, and system integration.
4) *Vendor factors:* attributes that pertain to vendors, like the vendor's ability, implementation and maintenance ability, consulting service, and vendor's reputation.

Based on the current business environment and the requirements of the company a project team should ideally develop their own critical objectives in the strategy and system analysis phases (Step 1 and Step 2 in figure 3.1). This will enable the project team to select the appropriate attributes which are also measurable in terms of the characteristics and strategic objectives of the supply chain.

3.3.2.1 Eliminate unqualified alternatives

A couple of constraints exist inherently when selecting an appropriate SCM project. Major Supply Chain Management (SCM) project requirements and project characteristics can be converted into a specific questionnaire or

checklist when surveying various SCM systems and vendors. The potential vendors are required to provide further information in response to these questions. By reviewing the information, unqualified vendors are eliminated (Wei *et al.* 2007:630).

3.3.2.2 Hold interview meetings and examine the proposals and prototypes

After screening, the vendors that remain on the short list are asked to provide detailed proposals for requirements. The team must prepare the schedule, scenarios, and questions for the vendors before the interviews. During the interviews, the project team may ask the vendors to generate a prototype for review. From the prototype production and investigation, the project team will have better understanding about the system's user interface and vendor's planning skills and execution capabilities. Notably, the representatives of user departments in the project team should provide the knowledge of their unique processes to examine the vendors' demonstrations (Wei *et al.* 2007:630).

3.3.3 The group decision-making evaluation phase

The company should assign weights to the attributes and ratings to the SCM alternatives using linguistic terms. The weights assigned to each attribute can be adjusted according to the specific concerns of the company. Each attribute weight can be determined by directly assigning linguistic expressions. Besides, obtaining exact numbers to represent the ratings of attributes, even quantitative attributes, are usually difficult and expensive; the linguistic representations are preferable in practice (Wei *et al.* 2007:631).

Due to the preferences of the decision makers and the environment of the company are not always stable, a method that considers various trade-offs among alternatives is necessary for making the final decision. By manipulating the value, the final outcomes can be analysed. Finally, the project team can select the optimal SCM project with the maximum total integral ranking value.

3.4 Conclusion

Business Process Reengineering (BPR) forced organisations to rethink and reinvent themselves – based on an understanding of their key and core

processes. The concept of supply chain management is a specialised form of Business Process Reengineering.

Organisations should take a look at the entire supply chain and identify areas for revolutionary or evolutionary change. They can take advantage of technology developments to build alternative forms of communication and partnership with supply and distribution partners. The result, if handled effectively, is strategic use of the supply chain to improve drastically customer service and competitiveness.

CHAPTER 4

SOUTH AFRICAN BREWERIES (SAB) MILLER

4.1 Introduction

Increased recognition is being placed, both in industry and in academia, on effective supply chain management. The term supply chain management presupposes that there exists a supply chain to be managed. Supply chain management has become a universal approach to cost effectiveness, timely delivery and the creation of growth oriented exchange system in goods and services.

To balance customers' demands with the need for profitable growth, many companies have moved aggressively to improve supply chain management. Their efforts reflect seven principles of supply chain management that can enhance revenue, cost control, and asset utilization as well as customer satisfaction. The seven principles of supply chain managements are:

- Customer segmentation
- Customizing logistics networks
- Demand planning
- Product differentiation
- Sourcing suppliers strategically
- Integration of technology
- Performance measures

In order to get a better understanding of the supply chain management concept, South African Breweries (SAB) Miller has been selected as the subject company for the analysis of the supply chain management system. Selection of this company is based on the fact that it not only operates on a local level but also has major global operations.

SABMiller is one of the world's largest brewers, with brewing interests and distribution agreements in over 60 countries across six continents. Their brands include premium international beers such as Pilsner Urquell, Peroni

Nastro Azzurro and Miller Genuine Draft, Castle Lager, as well as an exceptional range of market-leading local brands such as Aguila, Miller Lite, Snow and Tyskie. Six of their brands are in the world's top 50 beer brands. SABMiller is also one of the largest bottlers of Coca-Cola products in the world. Six of their brands are in the world's top 50 beer brands and the company is also one of the largest bottlers of Coca-Cola products in the world.

Market globalization will force SABMiller to rethink traditional supply chain approaches. With the development of the Internet, customers are no longer restricted to local buying. The company needs to increasingly focus on gaining competitive advantage through effective management of its supply chains. Sharing benefits among supply chain partners will be an important success factor for a global organization such as SABMiller.

The first part of the chapter focuses on the financial and operational performance of SABMiller in its regional markets, together with the key trends in the global beer market influencing the operations of the company. The aim

4.2 SABMiller's Historical Background

The South African Brewery's overall development through the years can be categorised as one of rapid and progressive expansion into key and emerging markets through its major acquisitions and brand development.

4.2.1 Period from 2000 to 2002

In 2000 the total sales of beer and other beverages reached 77 million hectolitres – about 44 000 "drinks" or 300 ml every minute. In the same year SAB entered the Indian market by acquiring Narang Breweries. By 2001 the turnover from SAB's international operations accounted for 42% of group turnover, a remarkable achievement in a relatively short period.

A pan-African strategic alliance with the Castel group offered the opportunity to invest in promising new African markets and the benefits of scale economies. SAB also acquired a controlling 83.7% interest in Bere Timisoreana S.A., Romania.

SAB became the first international brewer to enter Central America when it acquired Honduran brewer, Cervecería Hondureña. The company also, formed a joint venture with El Salvador Beverages Business, a brewery and sparkling beverage distributor.

In 2002 SABMiller plc was formed as SAB plc acquired 100% of the Miller Brewing Company (2nd largest brewery in the United States by volume) and changed its name to SABMiller plc. Upon the acquisition, SABMiller became the second largest brewer (by volume) in the world (SABMiller, 2007).

4.2.2 Period from 2003 to 2004

SABMiller's Polish subsidiary, Kompania Piwowarska, acquired a 98.8% equity interest in Browar Dojlidy (Bialystok, Poland) in 2003. The first significant SABMiller investment in Western Europe took place through the key Italian market when SABMiller acquired a majority interest in Birra Peroni S.p.A. SABMiller also made a strategic investment in the Harbin Brewery Group by acquiring a 29.6% stake. SABMiller gained entry to the Moroccon and Algerian markets through its Castel joint venture in 2004. The same year SABMiller associate, China Resources Breweries Limited, acquired two Chinese breweries to strengthen foothold in the Anhui province.

4.2.3 Period from 2005 to recent

SABMiller acquired a majority interest in Bavaria S.A., South America's second largest brewer. Through its local subsidiary, Mysore Breweries, SABMiller also announced the acquisition of Shaw Wallace & Company's share of its joint venture in India, and, in the process became the country's second largest brewer. SABMiller also announced the acquisition of the Topovar brewery in Slovakia. Another acquisition followed when CR Snow, SABMiller's joint venture partner in China, acquired Fuyang City Snowland Brewery (SABMiller, 2007).

4.3 Key Trends in the Global Beer Market

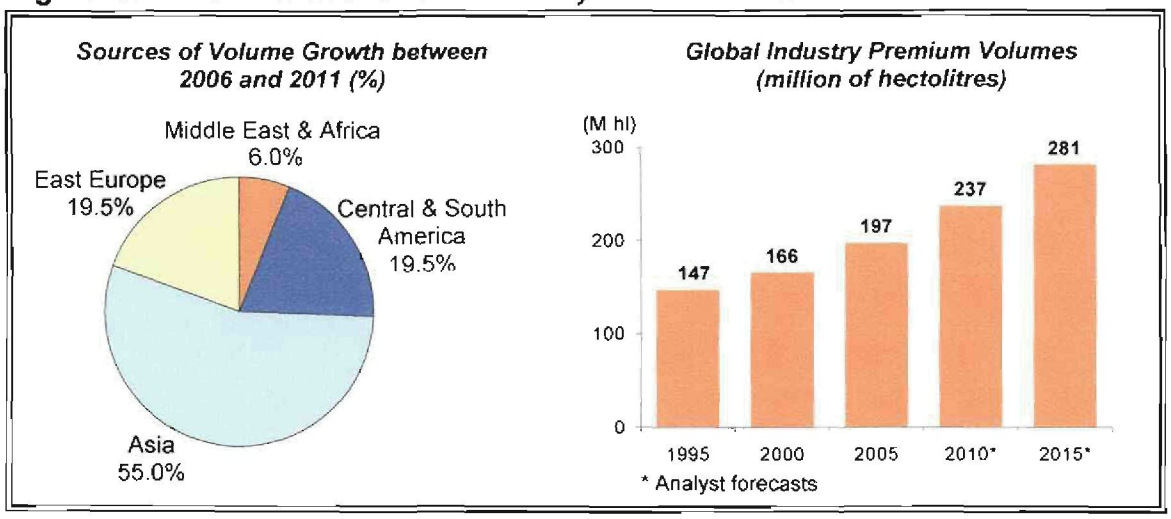
Currently there are 4 key trends influencing and steering the global beer market. The key trends include: (1) Growth in emerging markets (2) increasing popularity of premium brands (3) industry consolidation, and (4) challenging conditions in the local markets.

4.3.1 Growth in emerging markets

Perhaps the most important trend to have shaped the global brewing business over the last decade is that volume growth has primarily come from emerging markets. Since 2000, the Compound Annual Growth Rate (CAGR) has been 2.8% for the global beer market. The same period, however, has seen CAGRs of 5.1% in Asia, 3.9% in Africa and the Middle East, and a substantial 6.2% in Eastern Europe.

This trend is likely to continue. Figure 4.1 indicates that between 2006 and 2011, the most significant overall volume growth is likely to come from Asia (115 million hectolitres), Central and South America (41 million hectolitres) and Eastern Europe (41 million hectolitres), rewarding brewers with strong footprints in emerging markets (SABMiller, 2007:6).

Figure 4.1 - Volume Growth and Industry Premium Volumes



Source: SABMiller, 2007: 6

4.3.2 Increasing popularity of premium brands

Economic growth and rising disposable incomes are encouraging consumers in some markets to trade up into the beer category away from cheaper, traditional, local spirits and non-commercially brewed beer. Brewers are nurturing this trend by offering more appealing and affordable products. In addition to those trading up into commercially produced beer, there is much trading up within the beer category as consumers choose premium brands more frequently.

For example, in developed markets such as the USA, imported premium brands have achieved a CAGR of 6.0% over the last five years, and this contrasts with negative growth in US domestic brands. Similarly in many less developed markets in Eastern Europe and Russia, international brands are growing by up to 30 percentage points faster than local brands. Against this backdrop, brewers who can offer full and varied brand portfolios, with brands differentiated by functional benefits (intrinsic) and emotional benefits (extrinsic) across a range of price segments, are more likely to retain or increase their market share.

4.3.3 Industry consolidation

Given these trends in consumer behaviour, the brewing industry has been consolidating to secure brands and national positions. International brewers have also been investing for further growth, particularly in new and developing markets such as China, Latin America and Russia. The past five years have seen a steady flow of mergers and acquisitions, with the bigger brewers the busiest.

Over this period, the top 20 brewers have been involved in more than 280 deals with a total transaction value of over US$80 billion. Activity has been particularly heated in emerging markets where most of the brewers have made investments. All this has led to increasing globalisation, with the top 20 brewers now averaging 53% of sales from outside their traditional home markets, compared with just 33% in 2001.

Looking ahead, further consolidation is expected as companies seek to broaden their global footprints in order to chase enhanced growth from emerging markets. There is clearly room for further moves as, despite recent activity, the beer industry remains relatively fragmented, with the five largest companies accounting for 38% of the market compared with 75% in carbonated soft drinks (SABMiller, 2007:8).

4.3.4 Challenging conditions in local markets

Looking ahead, SABMiller expects that competition will get fiercer at a local level, as global businesses compete head to head. At the same time, the retail trade is becoming increasingly sophisticated across markets as grocery

modernises in emerging markets like China and Russia, and continues to consolidate in many developed markets (SABMiller, 2007:6).

The likely implications will be that access to distribution routes will become more ubiquitous, brand scale will become increasingly critical to driving availability, and customer management skills will become more important. This trading environment will reward brewers who have the right brands, who are strong at local market execution and are able to leverage effectively their global scale and scope.

4.4 The Nature of SABMiller's Brewing Business

In the beer industry, the Key Success Factors (KSFs) can be linked to the supply chain of the company. These include full utilisation of brewing capacity (to keep manufacturing costs low), a strong network of wholesale distributors (to gain access to as many retail outlets as possible), and clever advertising (to induce beer drinkers to buy a particular brand and thereby pull beer sales through the established wholesale/retail channels) (Thompson & Strickland, 2004: 106).

According to SABMiller's Annual Report[1] (2007: 6-7), beer has been brewed in most areas around the globe for over 4,000 years, first as a 'home' brew and then commercially in breweries. These latter would supply their local area and had little or no need to worry about competition, marketing or distribution.

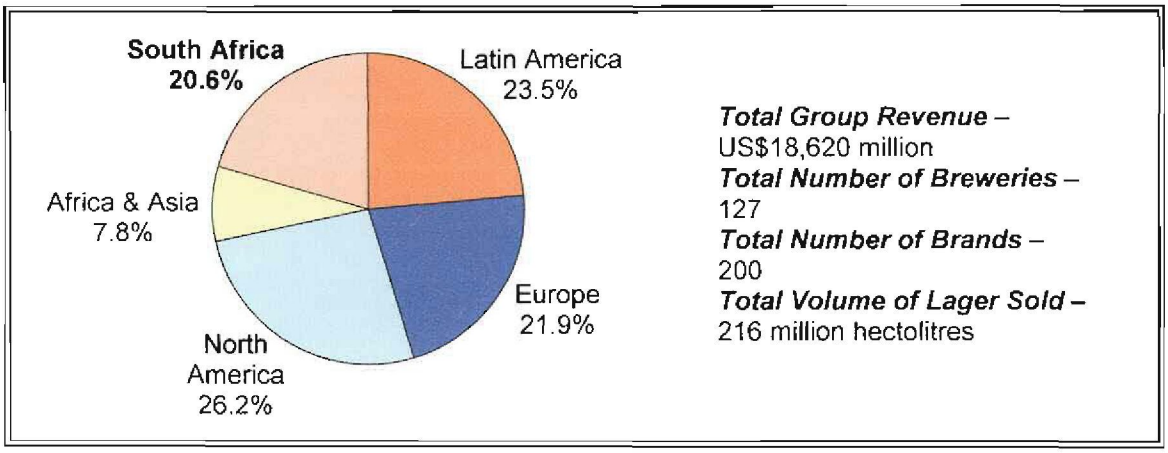
In the beginning of the nineteenth century, in the countries of the developed world, a process of consolidation began, with the development of major brewers who expanded out from their local base, transforming themselves into national organisations with national brands. In the less developed world, in Africa and Asia and much of Europe, brewing remained highly fragmented, with beer drinkers supplied by breweries which were never more than small-scale and localised, often producing low-quality beer. This was also the case, even under the communist regimes, in China and eastern and central Europe, despite their centralising and mass production strategy for most other industries.

[1] SABMiller's operating results are reported on 31 March of each financial year.

This fragmentation presented the opportunity for SAB from the mid-1990s to create a profitable and fast-expanding business in emerging markets with huge potential. This opportunity involves, generally, taking a share in a brewery with a local partner and, while retaining the brand because drinkers tend to have fierce attachments to their local brew, transforming the business. This is especially true for a company such as SABMiller, as reflected by the company's historical background in section two of the chapter.

In figure 4.2 the international spread of SABMiller's businesses are indicated with each region's total contribution to the group's total revenue.

Figure 4.2 – SABMiller's Regional Revenue Split for FY2007



Source: SABMiller, 2007:25-28

SABMiller is still active in shaping and developing their portfolio, buying and building production capacity, forming partnerships to take advantage of new markets and acquiring new brands.

Meyer Kahn, chairman of SAB argued: "Because of the passion the mass beer drinker has for his brand, and the nationalism that goes with it, there will never be a world beer brand like Coca-Cola. What we have chosen to do is give each emerging market consumer its own local, emotional, passionate brand" (SAB, 2001:9).

The transformation process starts with upgrading quality and consistency to create a beer for which people are prepared to pay more and which can give SABMiller a "healthy" profit margin. Then, improvements to marketing and distribution follows. Finally, SAB improves productivity and capacity.

4.4.1 SABMiller's strategy for growth – key priorities

SABMiller (2007:8-16) has a clear strategic focus, at the centre of which are the four priorities summarised in table 4.1 and discussed in more detail. Management use a range of indicators to monitor progress against these four priorities. The first is to create a balanced and attractive global spread of businesses – one that is well distributed geographically with appropriate exposure to both developed and developing markets. Secondly, within each market, the company aims to create a full brand portfolio that matches the aspirations and preferences of consumers. Their third and fourth priorities are to keep raising the performance of local operations and to wrest maximum value from their global scale.

Table 4.1 – SABMiller's 4 Strategic Priorities

Key Priority	*Description*	*Management's Indicators*	
Creating a balanced and attractive global spread of businesses	Their geographical spread of operations enables the company to capture growth in beer volumes in the developing markets, and value growth as consumers around the world trade upwards from economy to mainstream and from mainstream to premium brands.	10% Organic volume growth	11% Group revenue growth
Developing strong, relevant brand portfolios in the local market	Their aim is to develop an attractive brand portfolio that meets consumers' needs in each of SABMiller's markets. In many markets, because the growth is fastest at the top end, they've been focusing therefore on their international premium brands, such as Peroni Nastro Azzurro and regional brands such as Kozel in Europe.	47% International growth of Peroni Nastro Azzurro	15% Growth in premium volume in Europe
Constantly raising the performance of local businesses	Good operational performance has always been a SABMiller strength. While operational standards are already high they are continually pushing them higher as evidenced by growing EBITA and higher margins.	12% EBITA growth (organic constant currency)	20 basic points Increase in group EBITA margin
Leveraging SABMiller's global scale	SABMiller is leveraging their global scale to grow the business. Their business platform enables them, for example, to distribute their international premium brands and build their regional brands. In addition the company is using their scale to transfer skills, methods and technologies around the group, improving their operational performance and efficiency.	18% Revenue CAGR for the last three years	17% Improvement in overall equipment effectiveness at Miller over the last 4 years

The company's strategy is therefore designed to take advantage of, and generate value from, the dominant trends in the global beer market as mentioned in section 3. These include the growing importance of emerging markets, the move towards premium brands and greater competition and sophistication within local markets. In many cases, SABMiller is ahead of the

industry in identifying the trends and was able to gain early advantage. They were one of the first brewers, for example, to see value in emerging markets. While others were reluctant to take the risk, the company pioneered the buying of emerging-market businesses and was able to build leading positions.

4.5 SABMiller's Financial and Operational Performance

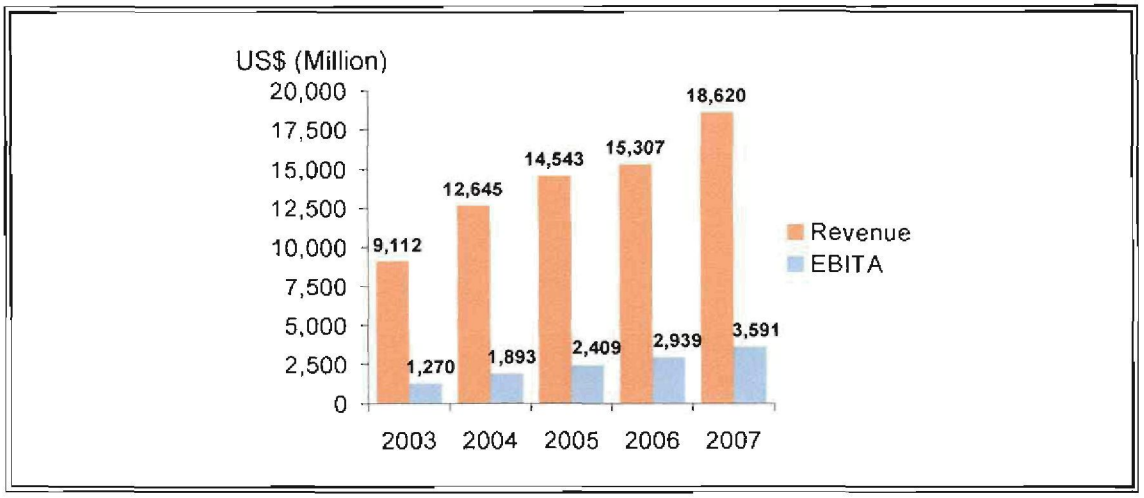
SABMiller has a clear strategic focus, with four strategic priorities, as noted in section 4.1. Management uses a range of Key Performance Indicators (KPIs) to monitor progress against these priorities. Some of the most important measures used are:

1 Volume growth on an organic basis;
2 Growth in revenue on a reported and organic constant currency basis;
3 Growth in volumes of premium brands (also called 'worthmore' brand volumes in North America);
4 Volume growth of selected international and regional premium brands outside their home markets;
5 Organic constant currency EBITA growth and EBITA margin progression; and
6 Various non-financial metrics attributable to functional areas.

Certain KPIs are discussed in further detail below within the review of the current year's financial performance. As shown in figure 4.3 SABMiller's portfolio of developing and developed market operations generated 10% organic growth in lager volumes and 12% growth in earnings before interest, tax and amortisation (EBITA) on an organic, constant currency basis. EBITDA includes the group's share of associates' operating profit on a similar basis.

SABMiller chooses to report EBITA in their results in order to accord with the manner in which the group is managed. The company believes that the reported EBITA profit measures give shareholders additional information on trends and make it easier to compare different segments.

Figure 4.3 – SABMiller's Revenue and EBITA 5-Year Performance



Source: SABMiller Annual Reports, 2003-07

Group EBITA now stands at US$3,591 million and the group EBITA margin increased to 17.4%, a rise of 20 basis points over the prior year. This translated into a 14% increase in profit before tax to US$2,804 million and a 10% increase in adjusted earnings per share to 120 US cents.

Total lager volumes stood at 216 million hectolitres, up 10% organically, and up 23% after taking into account the first full year of contributions from SABMiller's South American businesses. Including soft drinks and other beverages, the group achieved total beverage volumes of 272 million hectolitres, up 10% on an organic basis and 23% above last year on a reported basis.

Net cash generated from operations, at over US$4,000 million, was 22% above the prior year, reflecting the overall strength of the trading performance and the company's strong cash characteristics.

4.5.1 Operational performance in its global regions

In today's market context, there are strong competitive advantages in SABMiller's wide global footprint. Thanks to major transactions in North and South America and a host of smaller ones in Eastern Europe, Africa and Asia, the company's geographic mix is one of the best-balanced in the industry.

SABMiller's operational performance in each region can be summarised as follows:

4.5.1.1 Europe

Europe delivered an excellent full-year performance, its sixth consecutive year of double-digit earnings growth, with EBITA of US$733 million, up 29% on a reported basis. Poland and Russia continued their run of strong growth while Romania increased its volumes by 23%. It was also pleasing to see a solid improvement in profitability from Italy (SABMiller, 2007:25).

4.5.1.2 Latin America

In Latin America, the company's strategy is delivering volume, revenue and earnings growth ahead of expectations, with EBITA of US$915 million. New brand launches and package renovations are beginning to lift the image of beer in consumers' minds and contributed to an acceleration of volume growth in the second half of the year. SABMiller also continues to benefit from the region's strong economic growth (SABMiller, 2007:24).

4.5.1.3 North America

It's been a tough year for Miller, their North American business, with rising commodity costs and intense price competition continuing to diminish the value of the beer market. As a result, EBITA for the period of US$375 million was 17% lower than the previous year. Nevertheless, the company is undeterred and the leadership team has a clear plan to return the business to growth (SABMiller, 2007:26).

4.5.1.4 Asia

In Asia, SABMiller's Chinese associate continues to power ahead, with the Snow brand established as the national leader. In India, volumes were up strongly, albeit from a small base. EBITA for the Africa and Asia region was US$467 million, up 11% despite currency weakness in some countries.

4.5.1.5 South Africa

In South Africa, new marketing and pack innovations continued to drive growth in the premium lager category while soft drinks sales were strong, particularly in the final quarter. The result was a good earnings performance, with EBITA of US$1,102 million, a 14% increase on a constant currency basis. The loss of the licence to brew a major premium beer in South Africa in

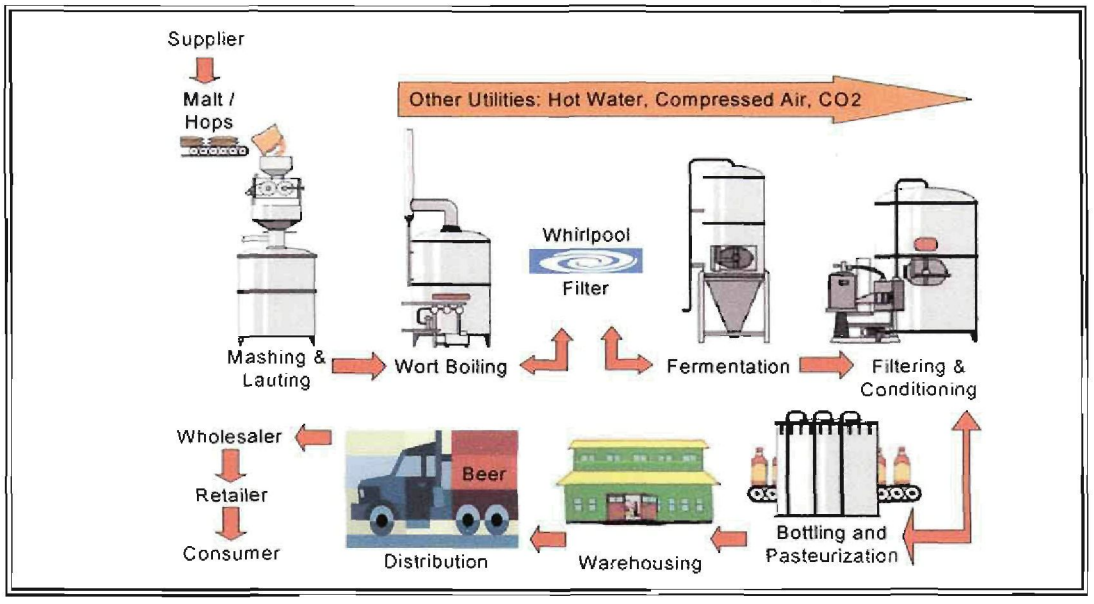
March 2007 had no impact on performance in the period under review (SABMiller, 2007:28).

It becomes clear that the group is still actively shaping and expanding its international portfolio of businesses. Acquisitions and joint ventures in China, Vietnam, Australia and Angola have been further steps in creating an attractive, international spread of businesses with good exposure to fast growing, developing markets. Along with the company's wide international footprint (now covering over 60 countries on six continents), they continue to benefit from their increasing scale.

4.6 SABMiller's Simplified Supply Chain

At this point it is important to clarify what is referred to as the general supply chain of the SABMiller brewery as well as the type of production processes employed in the brewery. Michael Porter (1985:33-34) defines the value chain as follows: "the supply chain disaggregates a firm into its strategically relevant activities in order to understand the behaviour of costs and the existing and potential sources of differentiation. A firm gains a competitive advantage by performing these strategically important activities more cheaply or better than its competitors".

Figure 4.4 – A Simplified illustration of SABMiller's Supply Chain



Source: SABMiller, 2007

As indicated in figure 4.4, SABMiller's supply chain consists of the processes which "add value" to the product and can therefore be broken down into the following generic areas:

- Brewing
- Packaging
- Interdepot
- Distribution
- Sales and marketing

When considering the physical movement of products through SABMiller's supply chain network, the flow begins with several suppliers. They send raw materials (malt, hops) to the company's factory. The factory manufactures its beer products and distributes the finished products to its regional warehouses or to its distribution centres. The warehouses and distribution centres support the customers (e.g. retailers).

In addition to these areas there are also other underlying functional areas, which fulfil a supporting role: (1) finance and procurement; (2) marketing support (3) human resources (4) information systems and technology; and (5) project/risk management (MacMillan, 2004: 32).

Market globalization will force SABMiller to rethink traditional supply chain approaches. With the development of the Internet, customers are no longer restricted to local buying. The company needs to increasingly focus on gaining competitive advantage through effective management of its supply chains. The e-business revolution is affecting supply chain management dramatically and is changing how the company integrates business processes, both inside and outside the enterprise. These developments introduce new business and technical challenges and spotlight existing business processes and supporting enterprise systems that revolve around the supply chain (Deloitte & Touche, 2007).

Supply chain management has done a very effective job of optimizing the individual supply chain constituents. However, successful supply chain management requires the recognition that SABMiller is simply one player in

the long chain that starts with its suppliers and includes transporters, distributors and customers (Sahay, 2003:78).

The company must interact cooperatively with its channel partners (e.g. suppliers, distribution centres, etc.) for the mutual benefit of the channel as well as the gain of each player. In order to adopt this systems perspective, the company should not only consider the impact of any business decision on its own performance but also on the bottom line of its suppliers, distributors and transporters.

In other words, as organizations enter the era of network competition, the winners will be those organizations that can better structure, coordinate and manage the relationships with their partners in a network committed to better, faster and closer relationships with their final customers (Christopher, 2005:84).

Christopher (2005: 86-87) further claims that as organizations look beyond their own globally localised firms, it becomes important for them to involve their suppliers and customers in the various processes. Successful involvement yields major benefits: increased market share, inventory reductions, improved delivery service, improved quality and shorter product development cycles.

Given the challenges posed to SABMiller by market globalization, there is a pressing need for newer approaches to supply chain management. Systems increasingly reflect supply chain costs from an integrated picture.

4.7 Benchmarking - Prerequisite for Building an Effective Supply Chain

Supply chain professionals are always looking for ways to improve their performance and provide their companies with a competitive edge. However, if they do implement changes, big or small, to their existing operations, how will they know whether those changes have improved their supply chain operations or hampered them? The only way to know is by benchmarking, so it's no wonder that supply chain professionals today are devoting time and budget - two very scarce resources - to the task. Prologis (2007) defines benchmarking as follows - "it is the process of improving performance by

continuously identifying, understanding, and adapting outstanding practices and processes found inside and outside the organization. Benchmarking "seeks" to improve any given business process by exploiting "best practices" rather than merely measuring best performance. Studying best practices provides the greatest opportunity for gaining a strategic, operational, and financial advantage".

The aim of this section is to explore how benchmarking can be used by SABMiller to gain insight into how the best-in-class performers have achieved their status. The differences between best and poor practices are as extreme as night and day. There are two types of benchmarking, which can be considered by SABMiller, namely: (1) Performance/Quantitative and (2) Process/Qualitative. Each serves a different purpose.

4.7.1 Performance or quantitative benchmarks

These types of benchmarks are used to compare the results or competitiveness of a given product or service against those offered by other companies. The outcome generally provides a comparative ranking and often is used to highlight those areas of performance that need improvement and further study. Participants in a quantitative benchmarking study are usually drawn from the same sector (industry or functional group). In SABMiller's case, companies such as Heineken, Diageo, InBev and Coca-Cola also form part of the alcohol and beverages industry (Leahy, 2000:210).

4.7.2 Process or qualitative benchmarks

Benchmarks of this kind are used to improve specific processes and operations within the business. Well managed companies do not simply use benchmarks to set targets. Instead, they look behind the quantitative data to understand how the best-in-class companies have achieved their enviable results. They try to identify the unique processes, tools, and methods used to achieve a high level of performance. For best results, SABMiller should use both kinds of benchmarking together. They are complements, not alternatives (Leahy, 2000:211-212).

For example, quantitative benchmarking results can reveal that the company is experiencing high overtime rates and operating costs at nearly double the

industry norms. The qualitative phase of the benchmarking exercise can reveal that the company is achieving those high on-time results by "muscling" through the shipping and receiving functions with rudimentary processes. Additionally, the benchmark results can help the company to target key initiatives designed to improve the efficiency of its operations while maintaining its high service levels.

4.7.3 Standards of comparison in benchmarking

Typically, those companies designated as being "best in class" are those in the top 20% (such as SABMiller) of their industry for performance results or process execution. Companies that are the best in class share certain attributes. One of the common denominators is the effective use of learning and change as a route to improvement. This is true regardless of company-size or industry. Before launching a benchmarking project, a company must carefully determine what its standard of comparison will be. It may be either *internal* or *external* (Prologis, 2007).

4.7.3.1 External benchmarking

External benchmarking uses "outsiders" as the standard of comparison. Generally, other companies (e.g. Diageo and InBev) within the same industry are used in this capacity. But customers or companies in different industries are also excellent sources of comparative information.

Typically the selection of an external benchmarking partner depends on the type of benchmarking that one wishes to do. For the most part, companies that want to do comparative/quantitative analyses will participate in a benchmarking survey or pool (usually sponsored by an industry trade group or professional organization) while companies that want to do qualitative/process benchmarking will work with one (or a very small group) of other companies. Each of the three sources is explored below (Prologis, 2007).

i) Benchmarking against pools or surveys

The easiest way for companies to conduct an external benchmarking study is to participate in a pool or survey. Participants usually enter their data into a survey or questionnaire. In return, they receive reports that show how their

companies' performances rank in relation to those of other companies, although participants may have to pay a fee to get access to the data.

ii) Benchmarking against individual companies

SABMiller can also compare itself against an individual company or a handful of select companies - "taking a peek under the sheets," so to speak, to see how the other companies perform certain processes. Usually, the other companies that are selected will be from different, non-competitive industries (Prologis, 2007).

Every company has its own unique competitive processes, but there are also a few core processes or operations that are common across many or even all industries. A company in one industry may well find that the best practice for one of these core processes resides in another company in a totally different industry. For example, almost all companies have an accounts payable process and a process to buy goods or services from external suppliers. A more efficient accounts payable system could significantly increase cash flow, in turn improving competitive capabilities (Manrodt & Vitasek, 2004: 14).

iii) Benchmarking against customers

SABMiller also can benchmark itself against its customers' expectations. After all, a company's success depends critically on how well it measures up to its customers' expectations. Moreover, many companies report "disconnects" in customer satisfaction - i.e., the companies perceive that they are doing a good job, yet they are still hearing frequent customer complaints.

For example, suppose that one customer of SABMiller requires 98% on time and complete orders whereas another requires 95%. Customer benchmarking would look at performance for each customer separately - and not as aggregate performance. The goal is to ensure that SABMiller is performing to the level of its customer's expectations regardless of what its competitors or other "best practice" companies are doing.

Customer benchmarking is especially important for companies that provide services to other businesses and in industries where the cost of loosing a customer is substantial (Manrodt & Vitasek, 2004: 16). Companies such as third party logistics providers, contract manufacturers, and shippers supplying

product to retail stores or distributors should all consider doing customer benchmarking.

Bottom line: it's not enough for SABMiller to outperform the industry average. Rather, it needs to meet or exceed its customers' expectations - and customer benchmarking will enable the company to assess how well its performances measure up to this standard.

A good way to institutionalize customer benchmarking is to adopt monthly or quarterly customer scorecards or dashboards that gauge performance against customers' required service levels and then review these results with one's customers.

4.7.3.2 Internal benchmarking

The beauty of internal benchmarking is that it is easier to implement, and much less expensive, than conventional best-practice discovery. As the name suggests, internal benchmarking simply involves looking inside one's own company for best practices that can be leveraged across the organization rather than looking to other companies or other industries (Prologis, 2007).

A company such as SABMiller with multiple business units, divisions, warehouses or locations can use internal benchmarking. It's not just for big companies with multiple locations. Even small companies with a single location can internally benchmark by comparing how individual employees approach similar tasks.

One of the best rationales for internal benchmarking is that it creates a culture of continuous improvement - i.e., a culture of learning and innovation spurred by internal competition. A company that can foster healthy rivalry between divisions will experience innovation at all levels. Internal benchmarking is also a powerful mechanism for focusing that competitive spirit on strategic objectives.

One potential drawback of internal benchmarking is that internal sources may not offer the absolute best practice standard. While a company might learn of significant improvement opportunities by comparing internal groups, internal benchmarking may not be the best route to optimum performance.

4.7.4 Key challenges – preparing the benchmarking analysis

The biggest stumbling block that companies face in preparing a benchmarking analysis is in getting reliable statistics covering their own operations. Often, the information must be assembled from disparate systems. Even when companies do get the statistics that are needed, they must struggle to get them to align with industry-wide measures so that they can perform apples-to-apples comparisons (Gardner, Harrity & Vitasek, 2005: 23).

Once these data problems have been resolved, companies can then complete the benchmarking exercise. What to do with the results is the next big challenge. Indeed, the art of benchmarking lies in the successful interpretation of the results. It is about identifying which shortcomings represent the biggest opportunities. The real work then begins. Companies must develop (a) a strategy for implementing these best practices and (b) a game plan for executing the process changes needed to drive improved performance (Gardner, Harrity & Vitasek, 2005: 24-26).

Alternatively, when a company measures just for the sake of measurement, it often ends up calibrating everything that moves. It then becomes difficult, if not impossible, to discern meaningful conclusions from the mountain of data that has been collected. Granted, a company must measure a great many variables, but meaningful decisions and conclusions will be drawn only after the company has determined which strategic measures matter most to facilitating successful change.

Perhaps one of the most common pitfalls of benchmarking is to believe that the performance indicator itself is the goal. If the benchmark company achieves a 99% fill rate, then this becomes the goal regardless of however many dysfunctional, inefficient processes may underpin this "fool's gold" standard. Instead, successful benchmarking will seek to understand the circumstances of successful processes — and not the end results of successful process. The qualitative context, not the quantitative results, will lead to a successful benchmarking effort.

4.7.5 Keys to benchmarking success

To summarise, a list of key factors are presented, which can help insure bottom-line success in benchmarking projects:

- Senior management unqualifiedly supports the project.
- Scope of the benchmarking effort is clearly defined.
- Objectives are well defined.
- Company has developed a solid foundation of data in the areas to be benchmarked, and the evaluation team understands the company's historic performance in these areas.
- Communication is broad, regular and frequent, and also targeted to many levels within the organization.
- The benchmarking team has adequate resources and training
- Recommendations are consensual, with participation by all affected operating processes and with agreement of as many stakeholders as possible (Council of Supply Chain Management Professionals – CSCMP, 2004).

The importance of senior management's support and participation to the success of a benchmarking effort cannot be stressed enough (as mentioned in chapter two of this study). It was found that the payback from benchmarking was far greater at companies that provided adequate management and financial support than it was at those companies that didn't support the effort with both executive sponsorship and funding. Benchmarking projects cannot be successful, however, unless companies take the next step and apply the lessons learned from the exercise.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The complexities of getting material ordered, manufactured and delivered overload most Supply Chain Management (SCM) systems. The fact is, most systems are just not up to handling all the variables up and down the supply chain. For years, it was thought that it was enough for manufacturers to have an Enterprise Resource Planning (ERP) system that could help answer fundamental questions such as: What are we going to make? What do we need to make the products? What do we have now? What materials do we need, and when? What resources/capacity do we need and when?

Businesses need to know a lot more today to have a truly effective supply chain. There are a number of fundamental weaknesses in the old system logic. Many planning and scheduling systems in use today assume that lead times are fixed, queues do not change, queues must exist, capacity is infinite and background scheduling logic will produce valid load profiles and good shop floor schedules. These assumptions are totally illogical, and following them causes many schedule compliance problems. An effective fix is first to streamline operations and then to apply predictive, preventive forms of advanced planning and scheduling.

SCM involves two flows. Information flow signals the need to start the flow of material. In supply chain, the fast flow of high-quality information and material is inextricably linked and of paramount importance to SCM success. Untimely or low-quality information virtually guarantees poor performance. Manufacturers need to develop flexible supply chain processes that can adapt to the needs of various customer segments. They must also develop supply chain strategy, processes and supporting systems that conform to current and future requirements.

Generally, an effective SCM approach must focus on:

- Flexible supply and production processes that can very quickly respond to changing customer demand,
- A short-cycle, demand-driven order-to-delivery process,
- Accurate, relevant information that is available on demand throughout the supply chain

Throughout the supply chain, there are some absolutely critical and predictive questions your system should accurately and quickly answer:

- When *will* specific orders *really* ship?
- Which orders *will* be late?
- Why *will* these orders be late?
- What are the specific problems that *are* delaying the schedule?
- What are the *future* schedule problems and *when* will they occur?
- What *is* the best schedule that can be executed now?

If Management can answer predictive questions, its decisions will greatly improve. Preventive actions can offset what were once overseen problems. The supply chain will be managed more effectively and improve chances of gaining a competitive advantage.

Good collaborative forecasting, good planning and realistic replenishment scheduling are essential to effective SCM. Further improvements come from redesigning supplier links to make them firm, fast and flexible for the benefit of the entire supply chain. During the transformation, companies have learned the value of minimizing the cycle time and having predictable schedules, especially with mass customization. Both are necessary for effective supply chain performance.

5.2 Recommendations

Many companies are confronted by the question about superior supply chain management, namely: what is it going to take to get ahead and stay ahead of their competition? As part of the recommendations in this study, the following

list of questions (see table 5.1) about supply chain characteristics can be used by the consultant as a starting point of how well a company is progressing with supply chain management.

Table 5.1 – Questions on Supply Chain Characteristics

	Yes	No
We clearly understand the strengths and weaknesses of our current supply chain sub-processes and have developed action plans for improvement		
We have defined our supply chain improvement objectives and have management commitment to achieve superior performance in our industry		
Our supply chain system provides high-quality, relevant and timely information flow that effectively supports decision making for inventory replenishment, capacity activation and for synchronizing material flows at all tiers within the supply chain		
Supply chain process operational responsibilities are well-defined and personnel are thoroughly trained and cross-trained		
Our supply chain is based on pull to actual demand		
Our trading partnerships are well formulated and grounded in strategic supply chain alliance agreements		
All organizations in our extended enterprise have been trained and developed to perform new roles that require fast, high-quality decision making and material flow		
We continually review evolving logistical business models for their impact on distribution planning, movement of goods, cost, cycle time and customer service		
We use e-commerce for selling, buying and business-to-business paperless transactions		
Our information technology provides a system that truly mirrors what we want to do throughout the supply chain		
We use performance measurements that encourage and reward behaviour that improves supply chain performance.		
Our company has developed supply chain management to a competency level		

The management consultant can use these 'benchmarks' with a company's entire management team to provoke thought and useful discussion, and to develop action plans. However, the challenge for top management still remains the setting of the right priorities, allocating appropriate resources and, of course, achieving the required results. Regardless of the industry and customer base, more effective supply chain management will be a prerequisite to a company's future success.

5.2.1 Other recommendations for the consultant to be considered

Various recommendations pertaining to this study can be identified and is outlined below:

- In strategy development, the focus is on analyzing the capabilities of operations in light of the firm's competitive strategy. As mentioned in chapter two, market leadership can be attained in one of three ways, through: (1) product leadership; (2) operational excellence; or (3) customer intimacy. Each of these strategies may well call for different operations capabilities and focus. The operations consultant must therefore be able to assist management in understanding these differences and be able to define the most effective combination of technology and systems to execute the strategy. In process improvement, the focus should be on employing analytical tools and methods to help managers enhance the operating performance of their departments.
- Many companies make considerable efforts in implementing Supply Chain Management (SCM) systems to increase their competitiveness. As indicated in the study, there are a few main phases the consultant needs to consider when selecting an adequate SCM project. They include:

  ⇒ Development of strategic objectives by understanding the client's demands.

  ⇒ Clarification of the supply chain's capabilities.

⇒ Alignment of the client's requirements and the supply chain's capabilities.

⇒ Formulate the structure of the supply chain, in other words, identifying the number of suppliers and customers within the supply chain.

⇒ Recognise the characteristics of the supply chain link by defining the requirements of major processes in the supply chain.

⇒ Eliminate unqualified alternatives by compiling a questionnaire or checklist when surveying SCM vendors.

⇒ During the interviews, the project team should ask the vendors to generate a prototype for review. From the prototype production and investigation, the project team will have better understanding about the system's user interface and vendor's planning skills and execution capabilities.

REFERENCES

ACCENTURE. 2007. Financial Information and SEC Filings. http://investor.accenture.com/phoenix.zhtml?c=129731&p=irol-irhome Date of access: 7 Oct. 2007.

ANON. 1998. Survey. *The Economist*, 13(2):3, Feb.

ANON. 2000a. Survey. *The Economist*, 23(7):1, Aug.

ANON. 2000b. Consultants Face Future of Change and Uncertainty. *Financial Times*, 10(12):9, Dec.

AVERY, S. 1999. Tosiba Program Rewards Suppliers for New Ideas. Purchasing, 126(8):24-26, Jan.

BELDONA, S. & RAISINGHANI, M.S. 2004. Exchanges in the Digital Economy: The Case of StorebandXchange.com. *Journal of Information Technology Cases and Applications*, 6(1):11-22, Jul.

BOWER, M. 1982. The Forces that Launched Management Consulting are Still at Work. *Journal of Management Consulting*, 1(1):4-6, Apr.

BUTCHER, C. 2000. The Rise of the Multi-disciplinary Pro (PMR), March: 24-25.

CAP GEMINI. 2007. Cap Gemini Annual Report 2006. http://www.capgemini.com/annual-report/2006/index2.php?L=en Date of access: 6 Oct. 2007.

CHASE, R.B., JACOBS, F.R. & AQUILANO, N.J. 2004. Operations Management for Competitive Advantage. 10th ed. McGraw Hill / Irwin. 765p.

CHEN, F., SAMROENGRAJA, R. 2000. The Stationary Beer Game. *Production and Operations Management*, 9:19-30, Jul.

CHRISTOPHER, M. 2005. Logistics and Supply Chain Management: Creating Value- adding Networks. England: Prentice Hall Financial Times, Pearson Education.

CSC (Computer Science Corporation). 2007. Financial Reports. http://www.csc.com/investorrelations/reports.shtml Date of access: 6 Oct. 2007.

CSCMP (Council of Supply Chain Management Professionals). 2004. Supply Chain Management Process Standards – Deliver.

CZERNIAWSKA, B., SEVON, G. 2005. Translating Organizational Change. Berlin: De Gruyter. 68p.

CZERNIAWSKA, F. 1999. Management Consulting in the 21st Century. Basingstoke, Hampshire: Macmillan Press.

DELOITTE AND TOUCHE. 2007. Worldwide Member Firms 2007 Review. http://www.deloitte.com/dtt/section_home/0,1041,sid%253D162028,00.html Date of access: 6 Oct. 2007.

EDS (Electronic Data Systems). 2007. Investment Reports. http://www.eds.com/investor/annual/ Date of use: 6 Oct. 2007.

ERNST AND YOUNG. 2007. Delivering on our Promise: Global Review 2006. https://eyo-iis-pd.ey.com/Tour/GlobalReview2006/GLOBAL_REVIEW_06_index.html Date of access: 6 Oct. 2007.

FINCHAM, R. 1995. Business Process Reengineering and the Co-modification of Managerial Knowledge. *Journal of Marketing Management*, 11(7):707-719, May

FISHER, M.L. 1997. What is the Right Supply Chain for your Product? Harvard Business Review, 1997(March-April):83-93.

GARDNER, C., HARRITY, C. & VITASEK, K. 2005. A Better Way to Benchmark. *Supply Chain Management Review*, Apr.

GATTORNA, J.L., WALTERS, S. 1996. Managing the Supply Chain: A Strategic Perspective. London: Macmillan Press. 387p.

GREINER, L.E., METZGER, R.O. 1983. Consulting to Management. Englewood Cliffs: Prentice Hall. 184p.

GRINT, K. 1997. Fuzzy Management: Contemporary Ideas and Practices at Work. Oxford: Oxford University Press. 212p.

HANDFIELD, R.B., NICHOLS, E.L. 1999. Introduction to Supply Chain Management. New Jersey: Prentice Hall.

HARLAND, C.M. 1996. Supply Chain Management: Relationships, Chains and Networks. *British Journal of Management*, 7:63-80, Sept.

HELLRIEGEL, D., JACKSON, S.E. & SLOCUM, J.W. 2002. Management: A Competency-Based Approach. Canada: South-Western. 561p.

HORVATH, L. 2001. Collaboration: the Key to Value Creation in Supply Chain Management. *Supply Chain Management*, 6(5):205-207, Jan.

HULL, B. 2002. A Structure for Supply Chain Information Flows and its Application to the Alaskan Crude Oil Supply Chain. Logistics Information Management, 15(1):8-23, Aug.

HWARNG, H.B. & XIE, N. 2006. Understanding Supply Chain Dynamics: A Chaos Perspective. *European Journal of Operational Research*, 184 (2008):1163-1178, Dec.

IBM (International Business Machines). 2007. IBM Investor Relations. http://www.ibm.com/investor/index.phtml Date of access: 6 Oct. 2007.

ICMCI (International Council of Management Consulting Institutes). 1999. Uniform body of knowledge. http://www.icmci.org Date of access: 27 Oct 2007.

KANIGEL, R. 1997. The One Best Way: Frederick Winslow Taylor and the Enigma of Efficiency. New York: Penguin Books. 368p.

KEMPPAINEN, K. & VEPSÄLÄINEN, A.P.J. 2003. Trends in Industrial Supply Chains and Networks. *International Journal of Physical Distribution ad Logistics Management*, 33(8):701-719, Apr.

KILPATRICK, J. 1999. Redefining the Supply Chain: The Key to Success. *Canadian Supply Chain and Logistics Journal*, Spring 1999. http://www.infochain.org/quarterly/Journals.html Date of access: 27 Oct 2007.

KIPPING, M. 2001. Trapped in the Wave: The Evolution of Management Consultancies. (In Clark, T. & Fincham, R., *ed.* Critical Consulting. Oxford: Blackwell.

KPMG. 2007. KPMG's UK Annual Report 2006. http://www.kpmg.co.uk/about/annualreport/index.cfm Date of access: 6 Oct. 2007.

LAMBERT, D.M. & COOPER, M.C. 2000. Issues in Supply Chain Management. *Industrial Market Management*, 29(4):65-83, Nov.

LEAHY, T. 2000. High-Velocity Benchmarking. *Business Finance,* Nov. 394p.

LEE, H.L., PADMANABHAN, V. & WHANG, S.J. 1997. Information Distortion in a Supply Chain: The Bullwhip Effect. *Management Science*, 43(a):546-558, Mar.

MACMILLAN, S. 2004. Constraints Management of a Continuous-Batch Process. Pretoria: UP. (Dissertation – M.Eng.) 178 p.

MAISTER, D.H. 1993. Managing the Professional Service Firm. New York: Free Press. 231p.

MANRODT, K.B. & VITASEK, K. 2004. Global Process Standardisation: A Case Study. *Journal of Business Logistics*, 25(1):14-16, Apr.

MCKINSEY AND COMPANY. 2007. About Us. http://www.mckinsey.com/aboutus/ Date of access: 6 Oct. 2007.

MOON, S.A. 2004. The Relationship among Manufacturer Product Strategy, Supply Chain Structure and Supply Chain Inventory. *Asia Pacific Journal of Marketing and Logistics*, 16(2):20-45, Nov.

MOORE, N. 1998. Supply Chain Management. Work Study, 47(5):172-174, May.

MOURITUS, M. & EVERS, J.M. 1995. Distribution Network Design: an Integrated Planning Support Framework. *International Journal of Physical Distribution and Logistics Management*, 25(5):43-57, Feb.

NONAKA, S. & TAKEUCHI, N. 1995. The Knowledge-creating Company: How Japanese Companies Create the Dynamics of Innovation. New York: Oxford University Press. 179p.

OOSTHUIZEN, H. 2003. The Management Consulting Industry in South Africa – a Strategic Assessment. *South African Journal of Business Management*, 34(4):15-26.

PASCALE, R.T. 1990. Managing on the Edge: How the Smartest Companies use Conflict to Stay Ahead. New York: Simon and Schuster.

PROLOGIS. 2007. Supply Chain Management. http://www.prologisresearch.com Date of access: 26 Nov. 2007.

PWC (Price Waterhouse Coopers). 2007. The 2006 Annual Report for PricewaterhouseCoopers LLP. Date of access: 6 Oct. 2007.

SABMILLER (South African Breweries) Miller. 2007. Company History and Events. http://www.sabmiller.com/sabmiller.com/en_gb/Our+business/Our+history/ Date of access: 2 Nov. 2007.

SABMILLER (South African Breweries) Miller. 2007. Company Annual Report for the Financial Year of 2006. London.

SABMILLER (South African Breweries) Miller. 2006. Company Annual Report for the Financial Year of 2005. London.

SABMILLER (South African Breweries) Miller. 2005. Company Annual Report for the Financial Year of 2004. London.

SABMILLER (South African Breweries) Miller. 2004. Company Annual Report for the Financial Year of 2003. London.

SABMILLER (South African Breweries) Miller. 2003. Company Annual Report for the Financial Year of 2002. London.

SABMILLER (South African Breweries) Miller. 2002. Company Annual Report for the Financial Year of 2001. London.

SAHAY, B. 2003. Supply chain collaboration: the key to value creation. Work Study, 52(2):76-83, Mar.

SPRAGUE, C. & KLEIN, S. 2000. *South African Breweries: Achieving Growth in the Global Beer Market.* University of the Witwatersrand.