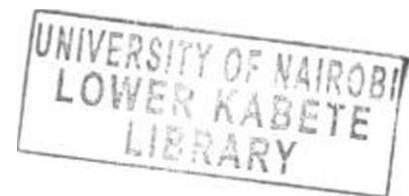


**A SURVEY OF CONTRACT MANUFACTURING
AS A COLLABORATIVE SUPPLY CHAIN PROCESS:
CASE STUDY OF SELECTED FIRMS IN KENYA**

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D61/70809/2008



**A Management Research Project Submitted In Partial Fulfillment for the
Requirements of the Award of Master in Business Administration, School of
Business, University of Nairobi**

2011

DECLARATION

The management research project is my original work and has never been presented for a degree in any other University.

Signed J.....! DateT^J..

THOMAS ABADE

D61/70809/2008

The management research project has been submitted with my approval as the University supervisor.

Signed  Date 05/11/2011

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DEDICATION

This study is dedicated to my family for the support and understanding they accorded me throughout the period of the study.

ACKNOWLEDGEMENT

I wish to acknowledge the following for their great support and encouragement without which the study would not have been a success, and for whom I owe so much gratitude.

To my supervisor, Onserio Nyamwange for his suggestions, guidance and for availing himself for consultations.

My study colleagues, friends, workmates and the staff of the university in the library, bookshop and the administrative offices of the school of business for being available to assist whenever called upon.

To my family, I owe them gratitude for their understanding and patience on the days that I had to be away from them while undertaking the study.

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ABSTRACT

The study was carried out to determine if there was any competitive advantage when organizations undertake contract manufacturing in Kenya. The firms selected represent different sectors in Kenya's manufacturing industry. The organizations are large by Kenyan standards employing over 100 people, they also subscribe to continuous improvement and good manufacturing practices.

Primary data was collected from oral interviews carried out from respondents while secondary data was collected from secondary sources such as company journals, websites and reports. Methods of data collection involved in depth personal interviews guided by a questionnaire which was structured to cover the objective of the study by having sections specific to the four key critical areas of production costs, transport logistics, manufacturing contracts and performance measuring systems. The respondents were senior personnel in the organizations. The research used content analysis to analyze the responses: this is a systematic qualitative technique for compressing data into fewer content categories based on the set research objectives to understand what lies behind a given result

On the key identified aspects that are critical to manufacturing, the study concludes that Kenya rates highly as an off-shore destination to consider when seeking a contract manufacturing relationship. This is a profitable venture as revealed with benefits, among them being speed to market for the finished goods for the contracting organization, business profitability and use of available capacity by the local organization offering the service with the overall contribution towards Kenya's development through creation of jobs and the generation of revenue and foreign exchange earnings. The areas identified as requiring improvement include bureaucracy experienced from the Kenya Revenue Authority (KRA) interface, the high cost and unreliability of power supply and the congestion at the import handling facilities of the Kenya Ports Authority (KPA), these areas need to be addressed immediately for Kenya to attract more contract manufacturing ventures and to retain its competitive advantage over other regional countries.

LIST OF ACRONYMS AND ABBREVIATION

AGOA	- African Growth and Opportunities Act
CKO	- Complete Knock down Kits
COMESA	- Common Market for East and Southern African countries
EAC	- East African Community
EKL	- Elgon Kenya Limited
GDP	- Gross Domestic Product
IPC	- Investment Promotion Council
KAM	- Kenya Association of Manufacturers
KPA	- Kenya Ports Authority
KRA	- Kenya Revenue Authority
LOKL	- Libya Oil Kenya Limited
NEMA	- National Environmental Management Authority
OEM	- Original Equipment Manufacturer
ROA	- Return on Assets
R&D	- Research and Development
SEAL	- Solvochem East Africa Limited
SCM	- Supply Chain Management
SEE	- Supply Chain Collaboration
SOT	- Shimanzi Oil Terminal
VMV	- Vision Mission Values

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

In today's world one of the most prevalent pre-occupation of organizations is the need to have an integrated production process. With an integrated process, it is anticipated that the firm will derive significant cost and quality benefits (Kicran, 2007). As observed by Mckonc and Tumolo (2002) its common place in many organizations to have marketing, distribution, planning, manufacturing and purchasing functions operating independently. The functions have their own objectives which are often conflicting. It is imperative in such a scenario to have a mechanism through which the different functions can be integrated together. Supply chain management is a strategy through which such integration can be achieved.

A supply chain strategy is simply a plan with goals and objectives. It is about using all elements in a fully integrated chain in the sourcing and procurement of goods and services to produce better results for the organization (Maslen and Platts, 1997). Before setting up the organizations supply chain strategy, it is necessary to understand the sources of the underlying uncertainties and inefficiencies then the desired ideal situation and objectives prior to exploring ways to achieve set out goals.

1.1.1 Contract Manufacturing

Contract manufacturing is the act of moving some of a firm's internal activities and decision responsibility to external providers with the terms of the agreement being established in a contract (Mckone and Tomulo, 2002). It goes beyond purchasing and consulting contracts because not only are activities transferred, but also resources that make the activities occur, including people, facilities, equipment, technology and other assets. The responsibilities for making decisions over certain elements of activities are transferred as well.

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The reasons why an organization would opt to outsource its manufacturing activities can vary greatly. Outsourcing allows a firm to focus on activities that represent its core competencies. Thus the company can create a competitive advantage while reducing cost. An entire function may be outsourced, or some elements of an activity with the rest being kept in-house. The identification of a function as a potential outsourcing target, and then breaking it up into its components allows decision makers to determine which activities are strategic and critical and should remain in house (Fisher. 1997).

1.1.2 Collaborative Supply Chains

Collaborative supply chains are those that utilize strategies aimed at creating highest cost efficiency. For such efficiencies to be achieved, non-value-added activities should be eliminated, scale economies pursued and optimization techniques deployed to get the best capacity utilization in production and distribution (Stevenson, 2005). Information linkages should be established to ensure the most efficient, accurate, and cost-effective transmission of information across the supply chain. This according to Ya-I.ing (2006) requires the creation of supply chains that utilize strategies aimed at pooling and sharing resources so that the risks in supply disruption can be shared. A single entity in a supply-chain can be vulnerable to supply disruptions, but if there is more than one supply source or if alternative sources are available, then the risk of disruption is reduced.

Kieran (2007) has shown that strategies aimed at being responsive and flexible are critical for collaborative supply chains. This is due to the changing and diverse needs of customers. To be responsive, companies use build-to-order and mass customization processes as a means to meet the specific requirements of customers. The supply chains are also required to be agile, hence the ability to be responsive to the changing, diverse and unpredictable demands of customers on the front end. while minimizing the back-end risks of supply disruptions.

1.1.3 Contract Manufacturing as a Collaborative Supply Chain Process

Contract manufacturing is essentially a supply chain process. A supply chain or logistics network is the system of organizations, people, technology, activities, information and resources involved in moving a product or service from the supplier to the customer

(Ganeshan and Hanson, 1995). La Londe and Masters (1994) proposed that a supply chain is a set of firms that pass material forward. Normally, several independent firms are involved in manufacturing a product and placing it in the hands of the end user. In a supply chain, raw material and component producers, product assemblers, wholesalers, retailer merchants and transport companies are all critical members.

A supply chain can also be described as a sequence of organizations, their facilities, functions and activities that are involved in producing and delivering a product or service. Supply chain activities transform natural resources, raw materials and components into a finished product that is delivered to the end customer (Stevenson. 2005). Additionally as observed by Stevenson, organizations have turned increasingly to global sources for their supplies. This globalization of supply has forced companies to look for more effective ways to coordinate the flow of materials into and out of the organization. Key to such coordination is an orientation toward closer relationship with suppliers. Further, organizations in particular and supply chains in general compete more on the basis of time and quality.

1.1.4 Reasons to Contract Activities

Contract manufacturing enhances effectiveness by helping organizations focus on what they do best, it helps increase flexibility to meet the changing business conditions, demand for product and services and technologies. These are organizational driven reasons which transform the organization and have the potential to increase product and service value, customer satisfaction and eventually shareholder value (Mckone and lumolo. 2002). Organizations may also desire to improve operating performance by increasing quality, productivity and shortening the cycle times, the organization will then opt for contract manufacturing as a means of general performance improvement (Baker, 1998). Through this they will obtain expertise, skills and technologies that were otherwise unavailable. Management control will improve as will risk management. The organization is also able to acquire innovative ideas and improve credibility and image by associating with superior, reputable providers and partners.

An organization can also contract its manufacturing due to financial considerations whereby reducing investments in assets to free up resources to other purposes. The firm will hence generate cash by transferring assets to the provider. As opposed to financial driven reasons, an organization can contract for revenue driven reasons for example where the provider's extensive network can assist the organization gain market access and business opportunities. The organization can accelerate expansion by tapping into the providers developed capacity, processes and systems. Sales and production capacity can be expanded during periods when such expansion cannot be internally financed, as well as commercially exploiting the existing provider's skills (Kearney. 2005). Contracting to reduce costs through superior provider performance and the provider's lower cost structure is a key consideration. Depending on the agreement or setup for contracting the organization can change fixed cost structure into a variable cost structure. Employee driven reasons that may lead an organization to contract can be to give employees a stronger career path by exposing them to different situations. It can also be to increase commitment and energy in non core areas (Ya-Ling, 2006).

1.1.5 Kenya Manufacturing Sector

In 2007, Kenya's Gross Domestic Product (GDP) was estimated at about IJSS 12 billion, placing the country among the five biggest economies in sub-Saharan Africa. Although the economy is still small by global standards it is distinguished compared to other countries in the EAC region for being the most diverse. The economy has demonstrated strength in agriculture, manufacturing, and the services sector which have strong linkages (Ministry of Planning and National Development. 2009). According to the Macro Planning Directorate of the Ministry of Planning and National Development (2009), Kenya has an estimated population of 37.2 million which is projected to grow to 60 million by the year 2030. Almost 50% of the Kenyan population is under 15 years old. The country enjoys relatively extensive infrastructure, a well educated English speaking, multilingual population. The country- also has a population with a strong entrepreneurial tradition. Kenya is the economic, commercial, and logistical hub of the entire East African region.

Kenya's manufacturing sector plays a crucial role in the countries economy. The Percentage contribution to the economy is estimated at between 10 - 13% currently but

projected to play a key role in future growth. The sector alone has recorded growth from below 1 % in 2002 to 5% in 2005; it is projected to grow by an annual rate of 8.6% in the future. In foreign exchange earnings, locally manufactured goods contribute 34% of the country's total earnings (KAM. 2006). The survey by KAM shows that Kenya has a large manufacturing sector serving both the local market and exports to the East African region mainly, and the wider COMESA trade block. The sector is dominated by subsidiaries of multinational corporations. In future the increase in capacity utilization and reduced cost of production as a result of improved business environment will be the key factors to propel growth in this sector. A survey of the Kenya investment sector by the Investment Promotion Council (IPC) in 2009 shows that the transformation of agriculture remains the principal activity. Meat and fruit canning, wheat flour and cooking oil refining are also important. Electronics production and vehicle assembly and publishing are significant parts of the manufacturing sector. Kenya also produces textiles . ceramics . shoes , beer , glass . cigarettes , soap , metal products , leather goods , furniture , soft drinks , steel and aluminum .

Improved power supply , increased supply of agricultural products for agro processing , favorable tax reforms and tax incentives , more vigorous export promotion and liberal trade incentives to take advantage of the expanded market outlets through AGOA , COMESA and the EAC arrangements have resulted into the growth of the sector. A further analysis on the size of the sector carried out by KAM (2006) shows that Kenya has about 2.000 active manufacturing units of which 40% are privately owned by Kenyans. 46% are private ownership between Kenyans and non Kenyans, 2 % are partnerships between Kenyans and non Kenyans while 4% are fully foreign owned. Majority of Kenyan manufacturing firms, about 47% are small with less than 50 employees. The threat to growth in Kenya is linked to factors namely, the rising levels of Poverty, the general slowdown of the global and local economy which has continued to inhibit the demand of locally manufactured goods as effective demand continues to shift more in favor of relatively cheaper imported manufactured items. Poor infrastructure leads to high prices for locally manufactured products thereby limiting their

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competitiveness in the regional markets and hampering the sectors capacity utilization (KAM, 2006).

Through the establishing of regional economic blocks like the recent introduction of the EAC customs union . The Ministry of Planning and National Development, through the Kenya Investment Promotion Council views Kenya's manufacturing sector as set to having a greater opportunity for growth by taking advantage of the enlarged market size . economies of scale and increased interregional trade. Energy efficiency mechanisms are also crucial, both electrical and fuel based energy accounts for over 26% of the annual utility costs for the sector, which implies that to address quality and cost of utilities , special focus must be on the energy sources. KAM (2006) observes that for the manufacturing sector to experience sustainable growth, the main constraints to achieving optimum performance have to be identified and tackled. These are mainly, poor infrastructure, high utility costs, high taxes, high transport costs and inconsistent government policies. The Kenya Governments Vision 2030 blueprint for the manufacturing sector, aims to make the sector the provider of choice in the region for manufactured goods in eastern and central Africa through improved competitiveness in manufacturing in order to promote efficiencies in collaboration with the Government. Specific intended strategies involve restructuring key local industries that use local raw materials but that have no competitive edge for example the sugar manufacturing industry, exploiting opportunities in adding value to imports and to capture the last step of value addition. Kenya also aims to strategically increase the level of value addition in niche exports by additional processing of local agricultural products. The Government aims to develop a wide range of opportunities for direct and joint venture investments in the manufacturing sector through the development of industrial and manufacturing zones which will harness the resources available in different parts of the country.

1-2 Statement of the Problem

The continued slowdown in the world economy is forcing many organizations to reassess every aspect of their operations. Organizations are looking at their supply chains in the hope of finding new efficiencies. As the world becomes volatile, supply chains are becoming more interdependent. Manufacturing has become a global activity. The

globalization of markets and supply operations is set to continue. The current trend by global organizations is to contract production to other regions so as to establish the lowest possible cost. More OEM's are seeking to take advantage of the available manufacturing capabilities and attractive locations to enhance worldwide presence (Kieran. 2007). As opposed to services outsourcing, Kenya has not seen increased investment in manufacturing. KAM (2006) identifies poor infrastructure, poor investment climate and political instability as some of the contributing factors. Contract manufacturing seeks to use available capabilities and would naturally be easier to set up as opposed to investing in new facilities for production. No comprehensive study had been done on the existing contract manufacturing arrangements in the Kenya to clearly bring out the advantages and challenges.

1.3 Objective of the Study

The specific objectives of the study were:-

1. To establish the competitive advantage derived by organizations undertaking contract manufacturing.
2. To identify the existing challenges experienced by the organizations.
3. To establish what needs to be done to address the identified challenges.

1.4 Value of the Study

The outsourcing of activities continues to be a global trend. Most contract manufacturing locations however are sometimes at a considerable distance from the parent organization and to the target markets. This in addition to control concerns brings out issues to do with the cost of transportation and the time taken to get the finished product to the target destination market. The long cycle time inherent in production has other consequences that will drive operating costs up (Mckone and Tumolo, 2002). Contract manufacturing arrangements (and supply chain in general) have also been found to potentially not have the best interest of the members, but rather that each member is primarily concerned with optimizing their own objectives, this self serving attitude often leads to poor performance. Optimal performance can only be achieved if firms coordinate by contracting on a set of deliverables with each firm's objective align to the overall objective of the supply chain. The quality of manufacturing contracts in Kenya and the extent to which the cover key

areas and how they govern the operations of the contract is an area that requires extended study.

The purpose of evaluating business performance is to enable control of the business and the utilization of resources (Crowther, 1996). Performance measurement also derives accountability to its owners and other stakeholders and its reporting mechanism to meet its purpose. Planning for the future through use of measures and reporting of performance helps to facilitate strategy formulation and decision making. Due to the lack of key performance indicators that are mutually agreed upon by an organization and the contract manufacturing service provider, the efficiency derived from such arrangements is not very clear. In most instances, both organizations have their own performance measures and independently track performance. However, to gauge the benefits from an integrated supply chain, performance need to be measured across the entire chain. Through research, the key indicators that will truly reflect the desired state of the collaboration can be established. The key indicators identified should benefit organizations in Kenya that intend to venture into contract manufacturing and derive competitive advantage. The indicators should be independently tracked and if found to be unacceptable, continuous improvement measures can be put in place and also tracked to closure.

CHAPTER TWO: LITERATURE REVIEW

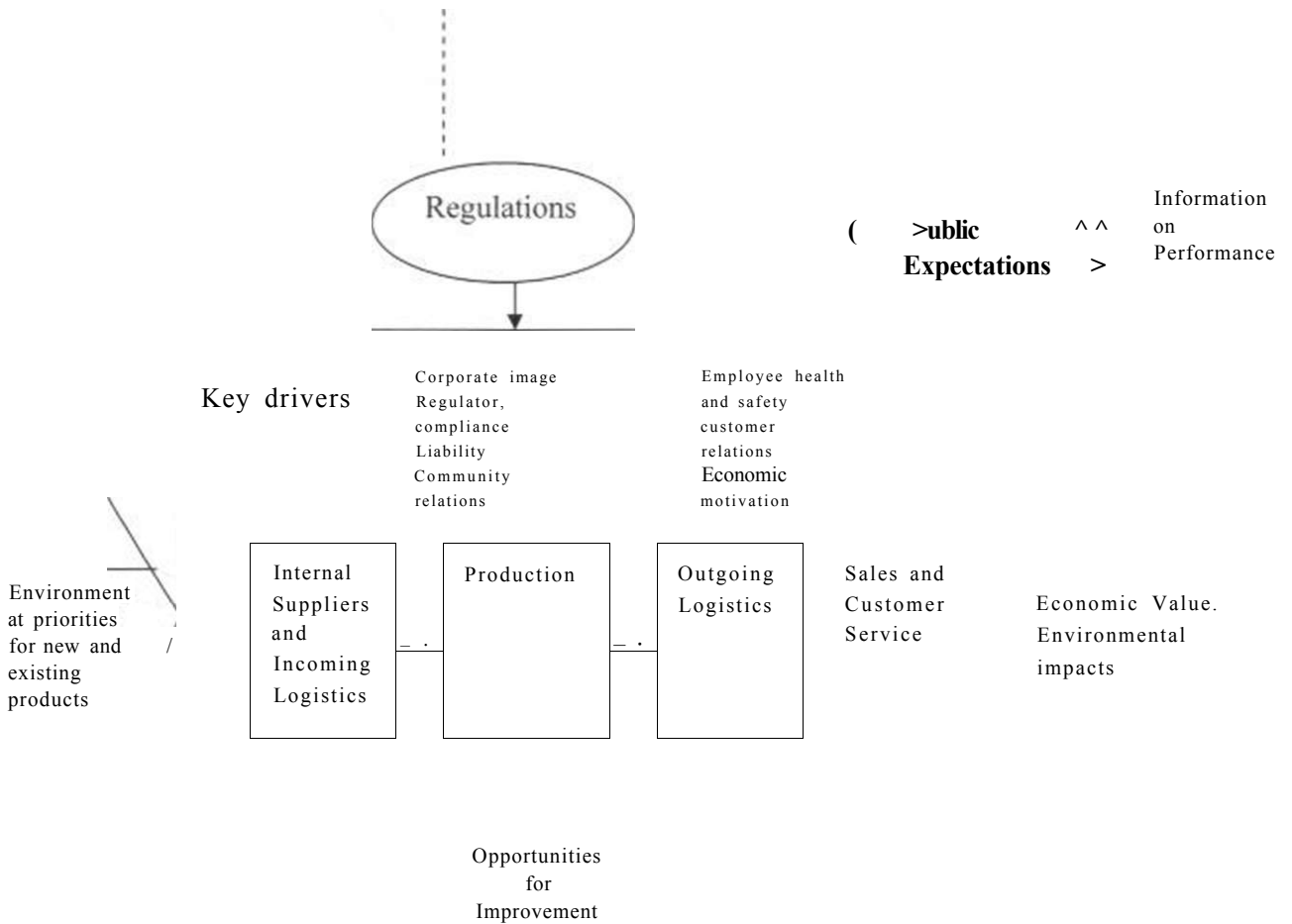
2.1 Supply Chain Concept

A supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation, of these materials into intermediate and finished products, and the distribution of these finished products to customers. Supply chains exist in both service and manufacturing organisations. (Stevenson, 2005). It is a sequence of organisations, their facilities, functions and activities that are involved in producing and delivering a product or service. The supply chain begins with suppliers of basic raw materials and extends all the way to the final customer. A typical supply chain begins with ecological and biological regulation of natural resources, followed by human extraction of raw material, and includes several production links, like component construction, assembly, and merging before moving on to several layers of storage facilities and remote locations before finally reaching the customer. A typical internal supply chain is represented by the figure 1 (Ganeshan and Harrison (1995).

The facilities in a supply chain include factories, processing centres, distribution centres, retail outlets and offices. The functions and activities include forecasting, purchasing, inventory management, information management, quality assurance, scheduling, production, distribution, delivery, and customer service. According to Stevenson (2005). there are two kinds of movement in a supply chain, the physical movement of materials from one end of the chain to the other and the exchange of information which moves both directions along the chain.

Stevenson (2005) further adds that supply chains are also referred to as value chains, this reflects the concept that value is added as goods and services progress through the chain. Supply chains comprise of separate business organizations. The supply chain is typically made up of two components, the supply component and the demand component. The supply component starts at the beginning of the chain and ends with the internal operations of the organization.

Figure 2.1: Typical Internal Supply Chain



Source: Ganeshan and Harrison (1995). *An Introduction to Supply Chain Management*

The demand component starts at the point where the organizations output is delivered to its immediate customer and ends with the final customer of the chain strategy. Among the major factors is the need to improve operations, by increasing focus in procurement, distribution and logistics so that excess costs are eliminated from the system. Organizations are also increasing levels of outsourcing, buying goods and services instead of producing or providing them themselves, this way a significant amount of time spent on non core activities is reduced.

The management of transport costs and increased competitive pressures are essential. Transport costs have continued to increase over time and hence need careful monitoring, while competitive pressure has led to the increasing number of new products, shorter product development cycles and increased demand for customization. Increasing globalization and the importance and use of e-commerce has transformed many business sectors. Globalization has led to expanding of the physical length of supply chains increasing the challenges of managing the supply chain with customers and suppliers being far flung which means longer lead times and greater opportunity for disruption of opportunities. E-commerce has added new dimensions to the buying and selling process (Stevenson. 2005). It is important to manage and coordinate inventory levels throughout the supply chain. Shortages will disrupt timely flow of work while excess inventory means added unnecessary costs. Supply chains are complex, dynamic and have many uncertainties that can adversely affect the supply chain. Successful supply chain management strategy requires trust among trading partners, effective communication, supply chain visibility, event management capability and performance metrics (Ganeshan and Harrison. 1995).

2-2 Elements of Contract Manufacturing

The basic idea behind contract manufacturing is that companies and corporations involve themselves in a supply chain, with the primary objective of meeting customer demands through the most efficient use of resources, including distribution capacity, inventory and

- In adopting contract manufacturing as part of the supply chain process, firms must

Wish practices that permit them to act or behave consistently. The identified practices

are the need to integrate both behavior and processes, the sharing of information between the organizations, the sharing of business risk and customer service goals and a framework of structured partnership and cooperation.

2.2.1 Integrated Behaviour

Bowersox and Closs (1996) argued that to be fully effective in today's competitive environment, firms must expand their integrated behavior to incorporate customers and suppliers. In this context, supply chain management in a contract manufacturing set up turns into a set of activities between supply chain partners, such as suppliers, carriers, and manufacturers, to dynamically respond to needs of the end customer according to Greene (1991).

2.2.2 Information Sharing

The mutual sharing of information is essential among supply chain partners especially for planning and monitoring processes. It is emphasized that frequent information updating among partners and members be practiced for effective supply chain management. Information sharing is the willingness to make strategic and tactical data available to other members. Open sharing of information such as inventory levels, forecasts, sales promotion strategies and marketing strategies reduces uncertainty between supply partners and results in enhanced performance (Andel, 1997: Lewis and Talalayevsky, 1997: Lusch and Brown, 1996 : Salcedo and Grackin, 2000).

2.2.3 Risk and Reward Sharing

Effective supply chain supply chain management among manufacturing partners requires the sharing of risks and rewards that yield competitive advantage. Risk and reward sharing should happen over the long term and is important for long term focus and cooperation among the supply chain members (Illram and Billington.2001).

2.2.4 Cooperation

Cooperation among supply chain partners refers to similar, complimentary, coordinated activities performed by firms in a business relationship to produce superior mutual outcomes or singular outcomes that are mutually expected over time. Cooperation is not limited to the needs of the current transaction and happens at several management levels, involving cross-functional coordination across the supply chain members.

2.2.5 Customer Service Goals and Focus

Establishing the same goal and the same focus among partners is a form of policy integration. Laser and Zinn (1995) suggested that successful relationships aim to integrate supply chain policy to avoid redundancy and overlap, while seeking a level of cooperation that allows participants to be more effective at lower cost levels. Policy integration is possible if there are compatible cultures and management techniques among supply chain members.

2.2.6 Integration of processes

The implementation of contract manufacturing requires process integration right from sourcing, to manufacturing, and to distribution across the supply chain. Integration can be accomplished through cross-functional teams, in-plant supplier's personnel, and third party service providers (Cooper et al, 1997).

2.2.7 Partnership

Cooper et al (1997) believe that relationship time horizon extends beyond the life of the contract, perhaps indefinitely; while at the same time the numbers of partners should be small to facilitate increased cooperation. Gentry and Vellenga (1996) argue that it is not usual that all of the primary activities in a chain from inbound and outbound logistics . operations , marketing , sales and service-will be performed by any one firm to maximize customer value. Thus, forming strategic alliances with supply chain partners such as suppliers, customers, or intermediaries like transportation and warehousing service providers, gives a competitive advantage through creating customer value. Previously, organizations tended to concentrate on their own operations and on their immediate suppliers, in the recent past however, business organizations have been forced to think strategically and actively manage their supply chains.

2.2.8 Framework of Structuring Relationship

There are three main considerations which determine the kind of relationship between the original equipment manufacturers (OEM) and suppliers/contract manufacturers, these are the level of coordination desired, the strategic control levels permitted by the OEM and the intellectual property rules existing in the operating environment. If the coordination involves intricate interfaces where adjacent tasks involve a high degree of mutual

adaptation, exchange of implicit knowledge, and learning by doing set up where information is particular and critical to the task, then the kind of vertical integration may not favor contracting. However for standardized interfaces between adjacent tasks with systematic standardized information quantities and schedules, contracting set ups will most likely succeed (Muckstadt et al, 2001).

Strategic control will depend on the significant investment considerations, brand equity, proprietary learning curves and R & D programs versus more contracting friendly environment where assets are applicable to businesses with a large number of other potential customers or suppliers. Where intellectual property protection is weak or unclear and structures are such that one can easily imitate technology strict relationship guidelines would be required and may be potentially inhibitive , whereas in a strong property protection and with difficult to imitate technology , appropriate more flexible relationships will exist.

2.3 Collaborative Supply Chain

The concept of supply chain management emphasizes the importance of forming collaboration between suppliers in order to provide an efficient supply chain. Supply chain collaboration refers to those activities among and between supply chain partners concerned with cost effective, timely and reliable creation and movement of material to satisfy customer requirements (Muckstadt et al. 2001). According to Tsai (2006). the importance of collaboration has attracted attention due to the inherent supply chain management difficulties namely, unknown customer expectations, costs and efficiency implications. With collaboration however much better customer service will be offered to meet customer expectations, suppliers will be able to quickly respond to customer needs and good product innovations will be developed to anticipate customer needs.

The new supply chain is based on connected processes, collective decision making, information transparency, common metrics and lowered barriers of entry for new partners, the environments demands full integration and collaboration as a key to success (Peoplesoft. 2002). It is envisioned that supply chain collaboration (SCC) facilitates a Myriad of business objectives including, reducing supplier and supply variability such as

time delays and inconsistent quality, increasing velocity in replenishment as well as time to market for new products and product revisions. SCC also helps reduce the cost of supplier ownership for shared processes and increases the return on assets (ROA) across the supply chain by sharing responsibility for inventory control with suppliers. For supply chain partners to be considered collaborators they must do more than cooperate, they must plan carefully how capacity should be created through the system, what quantities of inventories of various types should exist. They must decide collectively what actions will be taken when various unplanned events occur. Strategies and tactical plans are created collaboratively by supply chain partners and executed collaboratively to achieve the maximum system efficiency. The plans describe how the supply chain will respond to variations and uncertainty (Muckstadt et al. 2001).

Collaborative supply chain systems build competitive advantage, however key elements must exist whose guiding principles include knowing the customer. There must be clear understanding and definition of customer requirements, this can be done through joint market research and the construction of an information infrastructure, we then obtain clarity on customer requirements, product desires, due dates, service requirements and method of delivery (Ya-I.ing, 2006). Collaborative supply chain also means and repeatability, reduced work in progress inventory, and the implementation of just in time delivery strategy. Effective information structures both intra and inter organizational to share up to date demand information is vital. Other information to be shared is inventory status requirements for capacity usage on a daily basis, marketing plans, changes to product and process design and logistics requirements. Collaboration is more than passing data between successive supply chain members. It requires joint planning of inventory and production strategies and the reliable execution of operations (Muckstadt et al. 2001). The establishment of intra and inter organizational business process to support the strategic objectives of the supply chain is required. This coupled with the information infrastructure will support efficient flow of material through the supply chain. It is essential to understand what processes are required and will be built inter organizationally to leverage the capabilities of the partners and to develop a tight decision support system (Spencer and Reily. 2001).

Ya-Ling (2006) contends that it is necessary for businesses to use collaboration to get into competitive positions. It helps improve customer responses, and elevate capabilities. They should share information with each other. The relationship can be managed through a small number of local organizations but can also be global. The organizations are able to listen better to customer needs, with both consistency and modularisation being implemented to enable cost efficient mass customisation. Innovation is easily generated between the internal and external supply chain.

2.4 Contract Manufacturing Strategy

2.4.1 Strategy Formulation

The fundamental supply chain strategy decisions of location, production, inventory and transportation (distribution) also apply to contract manufacturing strategy. They are both strategic and operational elements in each of the decision areas (Ganeshan and Harrison, 1995). Mackone and Tumolo (2002) further add that geographical placement of production facilities, stocking points and sourcing points are natural first step of consideration, the location of facilities is commitment of resources to a long term plan and also represents the basic strategy for accessing customer markets, and will have considerable impact on revenue, cost and level of service. Production decisions include the products to produce, which plants to produce them in. the allocation of suppliers to plants, plants to distribution centers and eventually to customers. The decisions assume the existence of facilities, but determine the exact path through which a product flows (Stevenson, 2005).

Inventories exist at every stage of any supply chain either as raw materials, semi-finished goods or finished goods. Inventories can also be in process between locations, the primary purpose being to buffer against any uncertainty that may exist in the supply chain. Inventory decisions are strategic in that top management would usually set goals, however most approaches are on an operational level which includes deployment strategies, control and optimal level considerations (Stevenson, 2005). Strategic decision on distribution is on which mode to use. distribution decisions are closely linked to inventory decisions since the best choice tends to be a trade-off on the cost of using a Particular mode of transport with the indirect cost of inventory associated with that cost.

Distribution costs average more than 30 percent of the logistic costs of many organizations and hence must operate efficiently.

2.4.2 Evaluation of Activities to Contract

An activity can be evaluated on the basis of the required coordination where the organization must establish how difficult it is to ensure the activity will integrate well with the overall process. The level of desired strategic control is important, the organization is expected to determine what degree of loss would be incurred if the relationship with the partner would be severed in terms of investment in R&D, knowledge of major customer links and relationships and the possible loss of intellectual property (Kieran, 2007).

2.4.3 Benefits of Contract Manufacturing

The immediate benefits to be derived from contract manufacturing include the minimization of production times, organizations are able to eliminate difficult logistics and excessive transport costs of moving parts from one location to another. The contract manufacturer can handle most secondary operations at one location, trimming time and costs significantly (Mckone and Tumolo, 2002). Costs are kept under control with fewer suppliers to manage and inventory to be coordinated by the contract manufacturer, fewer in-house resources are required to oversee production. Inventory expense is minimized, and costly production downtime is avoided (Peoplesoft, 2002). According to Ya-Ling (2006) designs are optimized with more collaboration with suppliers and the parent organization; common preventable design faults will be avoided, additionally. Accountability is maximized - rather than dealing with multiple sources and suppliers, it is much easier dealing with one contracted manufacturer overseeing the supply chain and producing sub assemblies to set specifications, eliminates complaints, reworks and the expediting that comes with many suppliers.

2.4.4 Associated Risks of Contract Manufacturing

As more products transition to contract manufacturers, the role of these providers is expanding beyond the traditional manufacturing and assembly. Leading contract Manufacturers today offer services throughout the entire product life cycle, from product "Production to after sales service and end of life support. Due to the intimate nature of

such collaboration, failing to engage the provider early in the product design stage may lead to the lack of the development of appropriate technology and delivery capability by the provider. This will affect the organizations time-to-market, time-to-volume or time-to-cost. Value will hence not be leveraged in such a set up (Ellram et al., 2005).

There is a current trend to contract to regions where labour is cheap; most organizations are driven by the need to establish the lowest possible cost for the market given product. However, beyond cheap labor, contract manufacturing in some regions may not result in lower cost due to inflation, higher worker turn over, shortage of skilled manpower, poor infrastructure, poor investment climate and political instability (Kearney, 2005).

Stevenson (2005), states that the relationship of key core functions in the organization, and the service provider must be cordial, tension between functions like engineering design and manufacturing has been observed in many organizations and always be difficult. Typically, engineering focuses on enhancing technology design, while manufacturing concentrates on improving manufacturability of product, these conflicting goals can lead to tensions which may be extended to the provider as separate companies try to manage the two functions. Practices must be developed to support cross functional integrated teams, process formality and adaptability all play critical roles. In setting up contract manufacturing associations some contractual aspects can sometimes be overlooked, the steps are mainly, customer vision, supply chain design and the reassessment of product and customer needs. Customer vision is a key point of decision making, the supplier/customer relationship will be formalized at tactical level rather than at the strategic level. The organization and the contract manufacturing provider are able to develop a clear vision of the end product, for product introduction and long term production and service needs (Kieran, 2005). The contract manufacturers according to Kieran can then segment the customer, focus on appropriate metrics and determine the global requirement for production and distribution of the product. The supply chain design stage is a critical early component that avoids instances of building capability without regard of the chain which it is embedded. Supply chain design will assist in assembling chains of capabilities in the queue or temporary advantage. The product process and supply chain design should be conducted at the same

time so that the supply chain can be cost effective and responsive over the products entire life cycle from market introduction to end of life.

Most contract manufacturing locations are a considerable distance from the parent organization and the target markets. This in addition to control concerns brings out issues to do with the cost of transportation and the time taken to get the finished product to the target destination. Non manufacturing costs inefficiencies can impact on the benefits derived globally from the practice of contract manufacturing. Mckone and Tumolo (2002) also observed that in many of the preferred contract manufacturing locations in the world, concerns have been raised on the governance and the rule of law. Organizations are sometimes doing business against a backdrop of opaque rules and regulations many of them transcending judicial frameworks. Optimal performance can only be achieved if firms coordinate by contracting a set of deliverables with each firms objective aligned to the objective of the entire supply chain. The coordination must be established through manufacturing contracts that clearly cover aspects of manufacturing risk, define performance and performance metrics. There should also be intellectual property considerations, confidentiality to govern information sharing, termination clause and the stipulated period of the contract. The quality of the contract and the extent to which it covers key areas and how they govern the operations of the contract is vital.

Before committing manufacturing service providers .organizations need to put in place mechanisms of dealing with potential language barriers . other social and cultural issues that impact on the performance such as working hours , employer -employee relations and expectations , in country labour laws on aspects like compensation , work permits and contracts. These constitute the softer costs of doing business and are hidden from view. The extent to which the human resource and corporate responsibility considerations weigh upon the location of the contract manufacturing provider/facility is of utmost importance (Mckone and Tumolo, 2002). Crowther (1996) stated that the purpose of business performance evaluation is to enable control of the business and gauge the proper utilization of resources. Performance measurement also derives accountability to its owners and other stakeholders. Planning for the future through the use of measurers of and reporting of performance, facilitates strategy formulation and decision making. The

lack of performance indicators that are mutually agreed upon by the organization and the contract manufacturing provider can greatly reduce efficiency. Secondly when both organizations have their own independent metrics the benefits of an integrated supply chain cannot be gauged or derived

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Research Design

The study was intended to obtain information regarding contract manufacturing as a supply chain collaborative process through a survey of selected firms in Kenya. The study aimed to show the extent to which the firms practice contract manufacturing in Kenya and the challenges and benefits derived. Due to the qualitative nature and the wide array of information required, the research was conducted through a case study. Case study design involves a detailed analysis of a single representative unit of study, it provides a focused and valuable insight to phenomena that may otherwise be vaguely known or understood rather than using large samples and following a rigid protocol to examine a limited number of variables. Case study method involves an in depth longitudinal examination of a single instance or event (Yin. 1984)

3.2 Sample Design

To carry out the case study, the selected firms currently involved in contract manufacturing set ups were identified. The firms represent different sectors in Kenya's manufacturing industry. The organizations chosen are large by Kenyan standards employing over 100 people, they also subscribe to continuous improvement and good manufacturing practices. They are reputable in the market and represent well known brands. In choosing these firms, it was envisaged that comprehensive and detailed responses that will assist meet the objective of the research will be obtained.

3.3 Data Collection

The study required both primary and secondary data. Primary data was collected from oral interviews carried out from respondents. Secondary data was collected from secondary sources such as company journals, websites and reports. Methods of data collection involved in depth personal interviews of respondents guided by a questionnaire (appendix 1). The questionnaire applied both open ended and close ended questions as well as scaled questions in rating or percentages. The questionnaire was also structured to cover the objective of the study by having sections specific to the four key critical areas

of production costs, transport logistics, manufacturing contracts and performance measuring systems. The respondents were senior personnel in the organizations with an all-round knowledge of the company operations and the impact of both internal and external environment.

3.4 Data Analysis

Data from the interview and secondary sources was summarized according to the study theme. The research used content analysis to analyze the responses. Kothari (2004) described content analysis as a method of analyzing contents of documentary materials such as books, journals, magazines, newspapers and most importantly contents of verbal material, whether verbal or spoken. Content analysis is a systematic and replicable technique for compressing data into fewer content categories based on rules of coding. Content analysis is considered as a scientific method of data analysis since the data collected can be developed and verified through systematic analysis. The qualitative method can be used to uncover and understand what lies behind the phenomena under study. To derive full benefits from the content analysis, the interview questions must be clear and listed out. The research objectives must be clear with good explanation on the case study site selection.

The information gathered was analyzed and divided into logical qualitative groupings to facilitate interpretation. Mugenda and Mugenda (1999) observed that this method is very appropriate for case studies because the researcher provides systematic description of composites of the objective of study.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter contains the data analysis and findings using the questionnaire attached in appendix 1. Three companies were selected while the response was elicited through an interview guided by the questionnaire. The study intended to establish the competitive advantage derived by organizations undertaking contract manufacturing in Kenya, identify the existing challenges and suggest what can be done to address those challenges. The findings of the study in this chapter have been structured with regard to the objective by using the scope as sub themes. The data analyses findings in relation to the respondent's perception on the cost of production, the existing transport logistics for raw materials and finished product, the manufacturing contracts in place and the performance measurement systems. These are critical aspects for any manufacturing organization.

4.2 General Overview of the Companies

The first section of the questionnaire was intended to gain more information in general about the organizations covered in the case study. The information would further compliment that obtained from secondary data. The data was from industry journals and the organization's websites. The questions asked included the company size, ownership, years of operation, industry sub-sector and the percentage and sources of their imported manufacturing inputs . This section also intended to find out if these organizations export the finished manufactured goods to other destinations and whether they or the OEM owned the manufacturing assets and were in charge of R & D.

From the responses received, all the three companies had over 100 employees, majority on regular employment. However, on relatively manual jobs requiring less skill, the employees were engaged on non-regular basis. One of the companies Libya Oil Kenya Limited (LOKL) outsources its line operations to a manpower service provider. The organizations sampled all had well established manufacturing set ups in Kenya, one of them. F.lgon Kenya Limited (LKL) is 100% locally owned and has been in operation in

Kenya for 53 years. The other companies Libya Oil Kenya Limited (LOKL) and Solvochem Last Africa Limited (SEAL) are owned by the Libya Oil Holdings Limited and Solvochem Middle East respectively. Both organizations have operated in Kenya for the past 5 years with Libya Oil Holdings Limited having bought off as a going concern business previously owned by ExxonMobil Corporation incorporated in the United States of America but trading in Kenya as Mobil Oil Kenya Limited and Solvochem Middle East having bought international chemical companies in various parts of the world initially trading as Shell Chemicals. All the three organizations studied are in the chemical and allied manufacturing sub sector. The main business divisions in EKL includes, the distribution of agrochemicals and fertilizers, the manufacture of plastic extrusion film and the manufacture of plastic injection and blow molding products and adhesives. LOKL is involved in the distribution of petroleum products and the local manufacture of lubricants, while SEAL markets plastics and chemicals.

For the purposes of the case study, the manufacturing divisions considered are the manufacture of plastic injection and blow molding products by EKL, the manufacture and filling of lubricants by LOKL and the manufacture and filling of automotive auxiliaries (radiator coolant and brake fluids) by SEAL.

The three organizations sampled all import over 50 % of their manufacturing inputs. The typical import locations are India, Europe, China, Middle East and South Africa. EKL and LOKL have 25% and 50% of the finished products under a contractual manufacturing arrangement respectively, the manufacturing assets are fully owned by the organizations while the product designs and formulations are owned by the OEM's in the case of EKL and LOKL while SEAL own the product formulations for up to 75% of the final products while the packaging design is fully owned by the contracting companies. The OEM's are also in charge of the R&D for EKL and LOKL. All the three organizations sampled are ISO 9001: 2000 certified. In addition EKL is BRC-SGS certified from the United Kingdom. The organizations VMV's clearly demonstrate that they are committed to high quality operating standards, quality goods and services and focus on innovation and continuous improvement. The organizations all export products



to the COMESA region mainly to full COMEA members such as Uganda, Rwanda and Burundi and COMEAS affiliate members Ethiopia and Sudan.

4.3 Production Cost Elements

In the second part of the questionnaire, the respondents were asked what percentage of their workforce comprised of skilled and semi-skilled labour and to what extent skill determined the pay package. The study also wanted to establish if skilled labour was readily available in the country. In terms of the total cost of production, the respondents were asked if labour cost was a major component and how the contribution of labour costs rated to that experienced in other regions by similar industries. The regions identified for comparison were Europe, Asia, North America, China and within the EAC. The respondents were also asked the principle location source of their raw materials how they imported the raw materials whether by road, sea or air and if the OEM incurs any part of the cost of import. Questions regarding the factors that impact on the cost of raw materials were raised in addition to those of the total energy costs and the contribution of energy cost to the overall production cost. There were questions comparing the individual organizations cost of energy with those of similar industries in other regions and if this impacted on the organizations their competitiveness in any way. Finally for this section, the respondents were also asked if they were satisfied with the transport infrastructure in the country and what impact it had on their operations including the estimated percentage contribution to the total production cost. In terms of capacity utilizations the respondents were required to give the current capacity percentage utilization rate.

All the three organizations rated the employee skill level at 50% skilled and 50 % semi-skilled. The employees' remuneration was pegged on past and on the current job experience as well as their receptiveness to job training, skilled labour was however rated to be readily available locally for the type of manufacturing operations carried out. Compared to other regions, the percentage contribution of labour cost to overall production cost was found to be lower when compared to Europe and North America, but higher comparing to Asia and within the EAC by all three organizations. The organizations also cited inventory holding as a major factor in determining production

planning. The bulk of their raw materials are imported from Europe and the Middle East by sea. To avoid any instances of stock outs and due to the long import lead times required when importing from these locations, the organizations are forced to hold very high inventory of raw materials. The other aspect affecting production is the competitive nature of the markets they operate in for the end product, both locally and in the region. The Kenyan market is considered to be very price sensitive and any price adjustments by the OEM's may on some occasions lead to increased demand forcing the organization to arrange for additional shifts to cope with demand. The other risk is similar cheaper alternative products imported directly from other regions especially Asia by traders. These factors meant that operational cost is a key factor for any organization operation on a contract manufacturing arrangement.

Electricity costs though rated as contributing to about 25% of the production costs was found to impact production negatively in terms of quality (availability). All the organizations have had to install standby generators to cope with the numerous power outages, which not only add costs in terms of production stops but also waste time and add costs on account of many start-ups and equipment damage and maintenance. The cost of electricity in kilowatt per hour (KWH) in Kenya is rated to be the highest in the region and in particular in comparison to Egypt. The high cost of energy is one of the biggest bottlenecks to economic activity in the country. Kenya continues to lose out on foreign direct investments partly because of this problem, with considerable penalties on socio-economic development. Available data shows that the cost of electricity in Kenya is four times that of South Africa, the country's main competitor in the region, and more than three times that of China (UNEP. 2006). The problem of high cost is compounded by unreliability of supply. On average, Kenyan companies lose 9.5 per cent of production because of power outages and fluctuation. This excludes the losses from damaged equipment as a result of power interruptions, which could be up to KSH 1 million for a company in 2001.

While EKL and SEAL utilize between 76-100% of the installed capacity. LOKL reported use of capacity at 26 - 50% levels at the lubricants blending plant facility citing preferred attractions for other like facilities in the COMESA region. Egypt in particular being caused by for example the advance payment of duties on raw materials even for export

goods in Kenya. Despite a mechanism put in place by the Kenya Revenue Authority (KRA) to reimburse the duties paid upon proof of exportation, the process was reported to be bureaucratic and cumbersome. Egypt was said to waive duties on raw materials used to manufacture export goods, a system that avoids forcing a manufacturing organization to tie up working capital.

Generally the three organizations studied had similar response in rating Kenya as the most attractive contract manufacturing location in the EAC region and fairly competitive in the COMESA region but less competitive to South Africa in the SADC region. EKL had not comparative information in terms of like business in the COMESA and SADC regions. In regard to production costs, labour cost was found to be a major contributor both at skilled and semi-skilled levels, pay was pegged to experience and qualification. However compared to other competing manufacturing destinations, the assessment was that labour costs in Kenya contributed less towards the total production costs. Skilled labour was also found to be readily available.

Due to the need to import high quantities of raw materials from long distant supply sources, the relatively long lead times meant that the organizations were forced to hold very high stocks leading to high inventory holding costs. Successful inventory management involves balancing the costs of inventory with the benefits of inventory. The true costs of carrying inventory include not only direct costs of storage, insurance and taxes, but also the cost of money tied up in inventory. There is a fine line between keeping too much inventory and not enough. One of the most important aspects of inventory control is to have the items in stock at the moment they are needed. This includes going into the market to buy the goods early enough to ensure delivery at the proper time. Thus, buying and importing requires advance planning to determine inventory needs for each time period and then making the commitments without procrastination. (Hedrick, 2008).

The quality of power in terms of reliable continuous availability was a concern in addition to the cost and introduced inefficiencies compared to other competing destinations like Egypt and South Africa. Overall as a contract manufacturing destination, lower skilled labour costs give Kenya an advantage over competing destinations.

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For the organizations sampled, the long lead times from the raw material sources introduces an element of uncertainty. The same would apply to any manufacturing activity in general. However they study noted that the organizations had many supply options where they could access the raw materials due to the proximity to alternative supply points and hence mitigate the effect of uncertainty, this also requires close partnership and information sharing. Open sharing of information such as inventory levels, sales forecasts, sales promotion strategies and marketing strategies reduces uncertainty between supply partners and results in enhanced performance. (Andel. 1997: Lewis and Talalayevsky,1997:Lusch and Brown,1996: Salcedo and Grakin,2010). Kenya compared to other manufacturing destinations in South and North Africa has the advantage of regular imports from Europe and Asia where most of the raw materials come from.

4.4 Import/Export Logistics

The respondents were asked about the average lead-time required to import their raw materials from the various import sources and if the raw materials were readily available. In relation to the lead-time, the respondents were asked what kind of raw material stock levels they were holding on average and if inventory holding was a major concern. The respondents were also asked if they had experienced any raw material stock outs in the recent past and how frequently this occurred and if indeed this was a major concern. The respondents were required to rate the efficiency of Kenya's import handling facilities if poor, average, good or excellent and lastly their rating of the tax administration and if in their view it helped assist to facilitate or constrain business giving specific comments on the areas of concern.

The fact that the main source of raw materials was Europe and Middle East for the three organizations, the long lead times averaged at 1 - 4 months for EKL and 5 - 8 months for LOKL and SEAL. This meant that they had to hold relatively high levels of inventory. The raw materials were however rated to be readily available and supply could be fairly consistent with minimal availability risk. The lead time was found by LOKL to be a

major consideration for determining and planning production schedules and setting the levels of finished product stock holding. EKL and SEAL reported no major issues in regard to the raw material lead times. LOKL and SEAL both reported historical occurrence of stock outs on account to delays on delivery of bulk raw materials due to long queues at Shimanzi oil terminal (SOT) in Mombasa where the delivery vessels berth to discharge bulk cargo directly into their receiving tanks and delays in clearing containerized cargoes at the port of Mombasa, however such instances were not frequent. The import handling facilities in Mombasa were rated as fair by EKL and SEAL while LOKL rated them as good. However, all the three organizations rated the tax administration process, that is the KRA import clearing and duty payment process as a constraint to their organizations. KRA computer systems were said to occasionally go off putting a stop to the processing of duty documents until they are up again . this caused delays and introduced inefficiency in the import logistics process. Import taxes were also rated to be higher by all the organizations compared to other regions while KRA as whole were found to be harsh and needed to improve their processes.

According to Stevenson (2005), the decisions around products, plants and the allocation of suppliers assume the existence of facilities and the exact path through which the product flows . Import handling facilities are critical for smooth product flow. The import handling facilities at the port of Mombasa were rated as capable of handling the cargoes fairly fast despite some areas being identified as requiring some improvement. Such areas include the container storage facilities and the bureaucracy experience with KRA processing of customs documentation and the perceived unfavorable tax regime for some raw material inputs. Competitiveness is a vast and multi-faceted concept, encompassing issues as diverse as labour skills, technological innovation and quality, infrastructure, judicial security and red tape. Facilitation and logistics play a key role in enhancing a country's competitiveness, by reducing transactions costs and improve the integration of the country in World trade (UNEP, 2006). Achieving a smooth logistics reduces the cost of imports. It is also crucial to manufactures or producers to be able to participate in global production circles and eventually diversify into new business opportunities. Improving logistics includes several dimensions: enhancement of logistics capabilities.

the development or rehabilitation of the physical infrastructure, and the streamlining of trade related procedures. The trade-off considerations in regard to the improvements required were however in favor of Kenya as a contract manufacturing destination since all organizations rated them as issues that could be fixed in the short to medium term.

4.5 Manufacturing Contracts

This section of the questionnaire had a table where the respondents were required to rate the existing manufacturing contracts they had with the OEM's and if the contracts had in them clauses governing certain aspects that are critical to a contract manufacturing relationship. The identified aspects for consideration included , confidentiality , transfer of technology , assets control and transfer , capacity utilization . demand assurance , transfer pricing , training, quality assurance . product performance/recalls , intellectual property, fee escalation, dispute resolution . R & D , stock holding and exit clause. The respondents were required to rates the aspects of a scale of 1 to 5 , where 1 representing not covered at all and 5 representing comprehensively covered. This section also asked the respondents if they had confidence in the Kenya court system in providing a regulatory framework that would promote business and ensure fair arbitration.

The three organizations all had in place manufacturing contracts with the OEM's governing the contract manufacturing arrangement. The manufacturing contacts were rated to cover most key aspects. The two items that were rated as not covered by LOKL and SEAL was transfer pricing and research and development (R&D), the OEM's in this case preferred a standard absolute price reviewed periodically as opposed to a cost plus guaranteed margin arrangement. The OEM's were fully responsible for the end product research and development. Three aspects were however rated as comprehensively covered by all the three organizations; these were confidentiality, quality assurance and intellectual property. Two companies LOKL and SEAL were confident that the court system and regulatory process in Kenya promotes business relationship and is capable of fair arbitration in the event of a dispute. EKL was however cautious citing delays in the process with the contention that mutual understanding rather than the legal route was a more effective alternative.

The existing manufacturing contracts were found to be comprehensive covering the critical areas. The specific areas that were rated as comprehensively covered include confidentiality as regards information sharing, intellectual property rights and quality assurance. Other aspects like the resolution of disputes, control of individual assets and the transfer of technology were well covered. The regulator) process was also assessed to be robust and business enabling. While acknowledging delays that are experienced in the judicial process, it was noted that out of court settlement was an option available in resolving conflicts. Regulation is important for business in general and is critical if any aspect of an OEM's activity has to be contracted giving them confidence in such an arrangement. According to Muckstadt et al (2001). considerations determining the kind of relationships between the contracting organization, the OEM and the contract manufacturer are the level of coordination envisaged, the strategic control levels and the intellectual property rules. These aspects need to be covered through express clauses in the manufacturing contracts. Kenya is rated highly and compares favorably with most contract manufacturing locations in this regard.

4.6 Performance Measurements

This section sought to know from respondents if they had a performance measuring system in place, and whether this was shared with the OEM. The respondents were asked whether the performance metrics were covered in the manufacturing contract and which specific ones were shared with the OEM. In regard to continuous improvement, the respondents were asked to share if they had any initiatives in place and if there were metrics shared with the OEM on continuous improvements. The respondents also needed to state their organizations view on performance metrics.

The three organizations studied all indicated as having a robust performance measuring system in place. They all had performance metrics that were shared with the respective OEMs. The metrics were explicitly covered in the contracts and were mostly on timely delivery, quality and production levels. The organizations had in place continuous improvement programs. Performance metrics were found to be critical in further

enhancing the manufacturing collaboration. The organizations that adopt such collaborative tools and processes today and into the future will find the ultimate benefit of participating in a networked supply chain as a significant competitive advantage. (Westbrook, J.D, 2002). As the adage goes "what gets measured gets done", organizations contracting their manufacturing to other regions need to have some control to ensure the finished product are of high quality and produced as per specification. A performance measuring culture was found to have been fully embraced and practiced by the organizations and in generally in most businesses in Kenya. This results in many benefits key being a culture of seeking continuous improvement. All high-performance organizations, whether public or private, are, and must be, interested in developing and deploying effective performance measurement and performance management systems, since it is only through such systems that they can remain high-performance organizations. Integration places performance measures where they are the most effective: integrated with the strategic, business activity. It makes it possible for the measures to be effective agents for change. If the measures quantify results of the activity, one only need compare the measured data with the desired goals to know if actions are needed (Artley. 2001).

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The study was intended to obtain information regarding contract manufacturing as a supply chain collaborative process through a case study of selected firms in Kenya. The study intended to establish the competitive advantage derived by the organizations undertaking contract manufacturing, identify the existing challenges and to establish what needs to be done to address the identified challenges. Four elements critical to manufacturing namely, production cost, transport logistics, manufacturing contracts and performance measuring systems were studied. Kenya was found to rate highly as an off-shore destination to consider when seeking a contract manufacturing relationship. The country has relatively affordable skilled labour and close proximity to alternative raw material supply sources. The local manufacturing organizations were also found to have excess capacity to accommodate extra manufacturing jobs, and had in place elaborate quality control systems which is essential for a contract manufacturing relationship. The culture of continuous improvement was also embraced by local manufacturing organizations, an aspect that would be critical if the contracting organization decided to further engage the local organization in R & D of its new products. Robust contracts governing the existing contract manufacturing relationships were also found to be in place coupled with an enabling legal environment.

5.2 Conclusions

Organizations that choose to contract their manufacturing to local companies in Kenya stand to derive several benefits among them being speed to market through shorter production runs for the finished goods and access to the EAC and wider COMESA markets. Secondly, the existence of robust contracts governing the contract manufacturing relationships should give them confidence of a protective legal framework^m regard to aspects such as intellectual property rights and breach of contract. The existence of a port is a major advantage for the ease of movement and acquisition of raw material and also the exportation of the finished goods.

The challenges identified as impacting on local manufacturing and by extension existing contract manufacturing arrangements was the unreliability and cost of power, unfavorable tax regime for some of the raw material inputs, competition from imported finished goods and the congestion at the port of Mombasa. These challenges add costs to the manufacturing process and hence render the end products uncompetitive in terms of pricing hence impacting on the overall attractiveness of Kenya compared to places like Egypt and South Africa.

5.3 Recommendations

The government through the relevant ministries, namely Industrialization, Finance. Trade. Energy and Constitutional affairs in addition to lobby groups like the KAM and other bodies like the Industrial Promotion Council (IPC) and the vision 2030 secretariat need to put concerted efforts to show case Kenya as a contract manufacturing locations and to promote local manufacturing through the review of the tax regime, provision of affordable and reliable power . promotion of an investor friendly business environment. through the harmonization of the licensing requirements by different organizations and the protection of investor rights by just laws . Infrastructure is critical for industrial developments, the government ought to seek partnerships and grants to develop and expand capacity at the ports and other import and export handling facilities to enable the clearance of the identified bottlenecks.

For any country to attract the required levels of foreign investments, areas identified as impeding such development need to be addressed urgently. As has been demonstrated by the study , globalization has meant that virtually all countries in the world have to compete to attract investment and also improve on in-country revenues and foreign exchange earnings, this is critical for all governments.

5.4 Limitations of the Study

The study was limited to the extent that the respondents in the organizations did not have comparable experience in some aspects in some other regions, hence making it difficult¹⁰ compare. Secondly, on the qualitative responses regarding cost of labour, some quantitative data would have assisted to ensure the comparison was on like versus like.

With the manufacturing operations for SEAL being in Mombasa it was not possible to arrange for a visit hence the interview had to be done through telephone, this limited the extent of probing that is possible when a face to face interview is carried out. A wider sample of organizations for the case study was envisaged, but the questionnaires sent out and an attempt to interview the personnel in charge of the manufacturing was not successful. Lastly, in view of the time limit, it was not possible to go into further on what specifically needs to be done on each challenge by the organizations listed as per the recommendations.

5.5 Suggestions for Further Research

A number of organizations mainly based in the United States of America (USA) operated contract manufacturing operations in some regions of the world, especially Asia and South America. Some of these organizations have been in the news in the recent past for exploiting local labour in the countries where they carry out these operations and in some cases using child labour, while cheap labour was identified as one of the advantages to have a manufacturing base in Kenya, further studies need to be carried out to ensure exploitation does not occur. Trade union activities have also been known to deter OEM's from setting operations in some countries hence further study is required in regard to the extent to which trade union activities interfere with manufacturing activities and what laws exist to protect workers.

The protection of the environment has become one of the most critical requirements for man in the recent past. Countries all over the world have set up environmental regulation to ensure future sustainability of the earth's resources. To complement the effort of governments, non-governmental organizations such as Green Peace have set up surveillance operations to ensure the protection of the environment even in areas where governments are reluctant to act. In Kenya the national Environmental Management Authority (NEMA) is responsible to ensure that the environment is protected in all areas of business endeavor. Organizations are known to move from locations where environmental laws are stringent to those where they are lax. Further study is required to



ensure that organizations caring contracting their manufacturing in Kenya also ensure that operations are carried out in an environmental friendly manner.

A decision to move ones manufacturing off-shore is essentially a "make or buy" decision. During the interviews, the competition from imported finished goods was cited as one of the main threats to organizations manufacturing locally. Further study is required to gain more insight on the extent of the threat and what can be done to protect and promote local manufacturing.

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APPENDICES
APPENDIX I: Letter of Introduction



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TELEGRAMS "VARSI TV.NAIROBI"
TELEX:22905 VARSITY

P.O. BOX 30197
00100 NAIROBI
KENYA

28th October 2010

To whom it may concern

Dear Sir / Madam.

REF : INTRODUCING THOMAS ABADE - D61/70809/2008

The above mentioned is a student of the University of Nairobi pursuing a Masters of Business Administration Degree.

In partial fulfillment of the requirements of this degree, the student is required to carry out a management research project on Contract manufacturing as a supply collaborative supply chain process - The Kenyan context.

You are kindly requested to provide the required information to the best of your knowledge by filling in the attached questionnaire.

This information is strictly for academic purposes and will be treated in the strictest of confidence.

Yours Faithfully.

Thomas Abade
RESEARC11ER

Onserio Nyamwange
SUPERVISOR

APPENDIX II: Research Questionnaire

Please provide answers to the following questions by giving as much detail as possible in the spaces provided:

Part 1 - General Information

1. Company Name

2. Company Ownership (tick as appropriate)

a. Local •

b. Foreign •

c. Other

(specify)___

3. How many years have you been in operation ?

5 years • 10 years • 20 years • Over 20 years •

4. Number of Employees:

50 or LessD 50 to 100D 100 to 500D 500 and aboveD

5. Type of Industry involved in (tick as appropriate)

a. Service •

b. Manufacturing •

c. Other (specify)

6. Which manufacturing sub sector do you belong e.g. Food & Beverage , Chemical & Allied , Plastics & Rubber, Energy. Electrical and Electronics (specify)

7. Do you import your raw material inputs? YES • NO •

8. What percentage of your manufacturing inputs is imported?

0-25% • 26- 50% • 51-75% • 76-100%D

9. From which region do you mainly import the raw materials?

10. Do you export your products or services? YES • NO •

11. If yes. specify export destination?

12. What percentage of your finished products is under contractual arrangement?

0-25% • 26- 50% • 51-75% • 76-100%D

13. Who owns the production assets? Your company or the OEM?

14. Who is in responsible for the R & D? Your company or the OEM?

15. Other than contract manufacturing, specify any other arrangements in place

Part 2 - Production cost elements.

1. What percentage of your workforce comprises skilled labor?

0-25% • 26- 50% • 51 -75% • 76-100%D

2. What percentage of your workforce comprises semi-skilled labor?

0-25% • 26- 50% • 51-75% • 76-100%D

3. Please specify to what extent skill determines the employees pay

4. In your sector is skilled labor readily available locally? YES • NO •

5. Is salaries and wages a major component in your total cost? YES • NO •

6. How would you compare the contribution of the salaries and wages component in your company to that in other regions?

- Europe HIGHER • LOWER •**
- Asia HIGHER • LOWER •**
- North America HIGHER • LOWER •**
- China HIGHER • LOWER •**

16. How would you compare the cost and quality of energy in Kenya to other countries in the region. EAC and COMESA?

17. Is power of major or minor consideration in gauging competitiveness in your sector?

MAJOR • MINOR •

18. Please comment on your response above

19. Is the final product collected from your location or do you deliver? COLLECTED • DELIVERS

20. If you deliver, what percentage does transportation cost contribute to the final product cost? 0-25% • 26- 50% • 51 -75% •

21. How does the existing transport infrastructure impact on your operations?

22. Comment on the competitiveness of Kenya for a manufacturing location versus other regions in regard to road infrastructure.

EAC_

COMESA_

SADC

23. What is the current usage of your installed capacity?

0-25% • 26- 50% • 51-75% • 76-100%D

Part 3 - Import/Export Logistics.

1. What is the average lead time for your imported raw materials?

Less than 1 month • 1-4 months • 5 - 8 monthsD 9-12 monthsD

2. Are the raw materials readily available? YLS • NO •

3. Please comment on the response above

4. What kind of stock levels do you hold for each consideration above?

YFS: Less than 1 month • 1-4 months • 5 - 8 monthsD 9-12 monthsD

NO: Less than 1 month D 1-4 months D 5 - 8 monthsD 9-12 monthsD

5. Is inventory holding cost a concern? YliS Q NO Q

6. What is the extent of impact on production schedules by the raw material lead times?

7. Have you experience raw material stock outs on account of lead lime and constrained logistics YHS • NO •

8. If YES is this a major concern and is it frequent? YES • NO •

9. How would you rate the efficiency of the import handling facilities in Kenya?

Poor • Average • Good • ExcellentQ

10. Is the existing tax administration mechanism facilitating or constrain your operations?

FACILITATE • CONSTRAIN •

11. Explain your response:

12. Compared to other competing manufacturing organizations in the region, would you consider the tax regime in Kenya as offering a competitive advantage?

Part 4- Manufacturing Contracts.

1. Do you have a contract with the OEM? YES • NO •

2. If NO , please specify the kind of manufacturing arrangement you have with the OEM

3. On a scale of 1 - 5 , please indicate the extent by which the current contract addresses the listed aspects for the mutual benefit of the OEM and the service provider . 1-Not covered , 2-Somewhat covered. 3-Fairly Covered 4-Covered 5-Comprehensively covered

			N		T	ir.
1	Confidentiality	n	•	•	t)	•
2	Transfer of technology	u	u	u	u	•
3	Assets control and transfer	u	u	u	u	•
4	Capacity utilization	u	u	u	u	•
5	Demand assurance	u	u	u	u	•
6	Transfer pricing	u	u	u	u	
7	Training	u	u	u	u	•
8	Quality assurance	u	•	u	u	•
9	Product performance/recalls	u	u	u	u	•
10	Intellectual property	•	u	u	u	•
11	Fee escalation.	u	•	u	•	•
12	Dispute resolution	u	•	u	u	u
13	Research and Development	u	u	u	u	•
14	Stock holding	u	u	u	u	•
15	Exit clause	u	u	u	u	•
Others (specify)		u	u	u	u	•
		u	u	u	u	•

4. Do you have confidence in the Kenya court system when it comes to providing a regulatory framework to promote business relationships and arbitrate fairly?

YES (UNO •

5. Please comment on your assessment on adherence to contracts in the Kenya manufacturing environment.

Part 4 - Performance Measurement Systems

1. Do you have performance metrics in place? YES • NO •

2. If YES are the metrics shared with the OEM? YES • NO •

3. Are some of the metrics explicit in the manufacturing contract? YES • NO •

4. Please specify the types of metrics shared with the OEM

5. Do you have any continuous improvement initiatives derived from the metrics?

YES • NO •

6. Do you also have metrics for the OEM? YES • NO •

7. Are performance metrics critical in further enhancing the supply/manufacturing collaboration? YES • NO •

8. Any other comments?

THANK YOU VERY MUCH FOR YOUR RESPONSES AND TIME!

NAME OF RESPONDENT:

DESIGNATION :