IMPLEMENTATION OF INTERGRATED SUPPLY CHAIN IN MANUFACTURING COMPANIES KENYA: A CASE OF BIDCO OIL REFINERIES

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Abstract
Organizations adopt numerous business improvement strategies to improve the business performance. Supply Chain (SC) is a part and puzzle of any business. SC is a network of facilities and distribution operations for the entire business system of firms to work together to design, produce, deliver, and service products. Organizations globally have begun to embrace the strategy of integrated supply chain management. Supply Chain Integration(SCI) is a seamless supply chain of close collaborative relationships with unified data and business processes. Despite these benefits many firms in developing countries are striving to cope with management of individual functions instead of integrating activities into key supply chain processes. In Kenya for instance there are many times when there are sudden increases especially in fuel and sugar prices due to shortages. This is a direct effect of poor integration of supply chain systems. A descriptive study design was used to collect quantitative and qualitative data. The population for this study were employees of Bidco Kenya. Out of the 300 employees a sample of 10% was used that gives used. A questionnaire was used to collect data The study found that supply chain integration helps improves firms capability because it provides a systematized way to keep up with processes, it provides cost saving, improved efficiency. In addition it enhances flexibility and tight inventory management that eventually leads to higher profit margins but also it brings about competitiveness. The study recommends that since SCI systems pushes down costs and delivers super efficiencies into the company processes, all private and public companies should strive to adopt the system. Businesses, organizations and companies should look beyond initial price for implementing SCI and recognize that integrating supply chain systems and tools can build a strong and unrelenting relationship with suppliers can in fact pay greater dividends in the long run. Further research is necessary to add more systems and factors that affect supply chain integration.

Key Words: **Supply Chain Integration, Strategy, Supply Chain, Supply Chain Management**

Background of the study

Organizations adopt numerous business improvement methodologies to improve the business performance.(Kimani, 2013). Supply Chain strategy (SC) is a part and puzzle of any business. SC is a network of facilities and distribution operations for the entire business system of firms to work together to design, produce, deliver, and service products. Traditionally, promotion, distribution, planning, manufacturing, and the purchasing organizations along the supply chain operated independently. These different functions have various objectives and apparently they often conflict. It is therefore of essence to devise a mechanism through which these different functions can be integrated together. Supply chain integration is a crucial strategy through which competitiveness can be achieved (Lee and Han, 2009).

Managing supply-chain operations is critical to any company's ability to compete effectively. The supply chain has traditionally been managed as a series of simple, compartmentalized business functions. It was driven by manufacturers who managed and controlled the pace at which products were developed, manufactured and distributed. In recent years, however, customers have forced increasing demands on manufacturers for options/styles/features, quick order fulfilment and fast delivery. With the long-time competitive differentiator of manufacturing quality approaching parity across the board, meeting these customer demands has emerged as the next critical opportunity for competitive advantage. Maintaining competitive advantage likewise forces constant redirection and enhancement of product features, quality, cost, options and services. Supply-chain effectiveness has therefore joined product quality and time-to-market as a key competitive differentiator. Success for many companies now depends on their ability to balance a stream of product and process changes with meeting customer demands for delivery and flexibility. Optimally managing supply-chain operations has therefore become critical to companies' ability to compete effectively in the global marketplace. (Stewart, 1997).A company's SC is comprised of geographically dispersed facilities where raw materials, intermediate products, or finished products are acquired, transformed, stored, or sold, and transportation links connecting facilities along which products flow. The facilities may be operated by the company, or they may be operated by vendors, customers, third-party providers or other firms with which the company has business arrangements. The company's goal is to add value to its products as they pass through its supply chain and transport them to geographically dispersed markets in the correct quantities, with the correct specifications, at the correct time, and at a competitive cost.

According to (Shapiro, 2006), manufacturing and distribution companies in a wide range of industries have begun to appreciate the distinction between transactional Information Technology (IT) and analytical IT. The difference between the two as (Rouse, 2014) opines, is that Analytical IT is specifically designed to support business intelligence (BI) and analytic applications, typically as part of a data warehouse or data mart. As a result, they are seeking to develop or acquire systems that analyse their corporate databases to identify plans for re-designing their supply chains and operating them more efficiently.(Shapiro, 2006) continues to add that competitive advantage in supply chain management is gained not simply through faster and cheaper communication of data. And, as many managers have come to realize, ready access to transactional data does not automatically lead to better decision-making.One of the sectors that would greatly benefit from Supply Chain Integration (SCI) in Kenya is the Health sector. (USAID, 2009b) gives an example of the distribution and ordering of contraceptives and anti-malarial in the public sector which has

been combined with those functions for the essential medicines (EM) pull system. While facilities value having commodities delivered directly to them, when stocks of EMs are low in the country, distribution of contraceptives and anti-malarial is delayed along with the essential medicines, since it is the high volumes of essential medicines being distributed that drive the delivery schedule.Perhaps a success story of SCI is that of BIDCO. Bidco Oil Refineries is amongst East Africa's leading producers of refined cooking oil, butter and soap. Being the earliest to understand the benefits and business impact IT would provide in this competitive industry, it adopted IT investment in 1999. The solution integrates Electronic Data Interchange (EDI) and other payment gateways to accomplish complete "e-fulfillment of the Supply Chain" in a B2C market place. The solution deploys a B2B automation of the Sales order processing, Sales and Consumption tracking, Re-order level and Stock management across their region-wide infrastructure of Wholesaler and Distributor partner network, while providing a comprehensive financial and inventory management solution for the Partner's independent business.

Problem Statement

Organizations globally have begun to embrace the strategy of integrated supply chain management. Integrated Supply Chain (ISC) is a seamless supply chain of close collaborative relationships with unified data and business processes. These are internal incorporation, customer incorporation, relationship incorporation, technology and planning incorporation, measurement incorporation and supplier incorporation. This approach not only seeks to coordinate and harmonize all elements of a supply chain from raw material to finished product but also aims at achieving higher levels of overall performance as well as cut on costs.(Kemunto, 2014) says that in Kenya there are about 226 Multinational Corporations according to Kenya Be aural of Statistics. Majority seem to have integrated the supply chain. Despite these benefits many firms in developing countries are striving to cope with management of individual functions instead of integrating activities into key supply chain processes. In addition, only a few firms have adopted and successfully implemented the concept of jointly planning, controlling, and designing a supply chain(Cook, Heiser, and Sengupta, 2011). In Kenya for instance there are many times when there are sudden increases especially in fuel and sugar prices due to shortages. This is a direct effect of poor integration of supply chain systems. What then must Kenyan firms carry out in order to achieve great strength in supply chain management?

Objectives of the Study

General Objective

To assess the implementation of supply chain integration in manufacturing Companies in Kenya.

Specific Objectives

1. To determine the capability of manufacturing Companies in Kenya on implementation of supply chain integration.
2. To assess the cost of implementing an integrated supply chain in manufacturing Companies in Kenya?

3. To determine the benefits of implementing integrated supply chain systems in manufacturing Companies in Kenya

Contribution to theory and practice

It is anticipated that the study would be useful to the policy makers and the management of companies and other organizations in addressing the challenges in Supply Chain Management. It would also contribute in the in theory and practice of supply chain management. In academics in terms of building on the previous researches on strategies of supply chain management.

Scope of the Study

The study concentrated on integrated supply chain in manufacturing companies in Kenya. Data was collected from Bidco Company limited which is a fast growing manufacturing company in Kenya. The center of study was on the implementation, the cost and the capability of the firms before and after the supply chain integration. It also looked at the benefits of supply chain integration in companies.

Literature Review

This chapter contains literature materials from a number of educational researchers in their publications and books.

Conceptual Framework

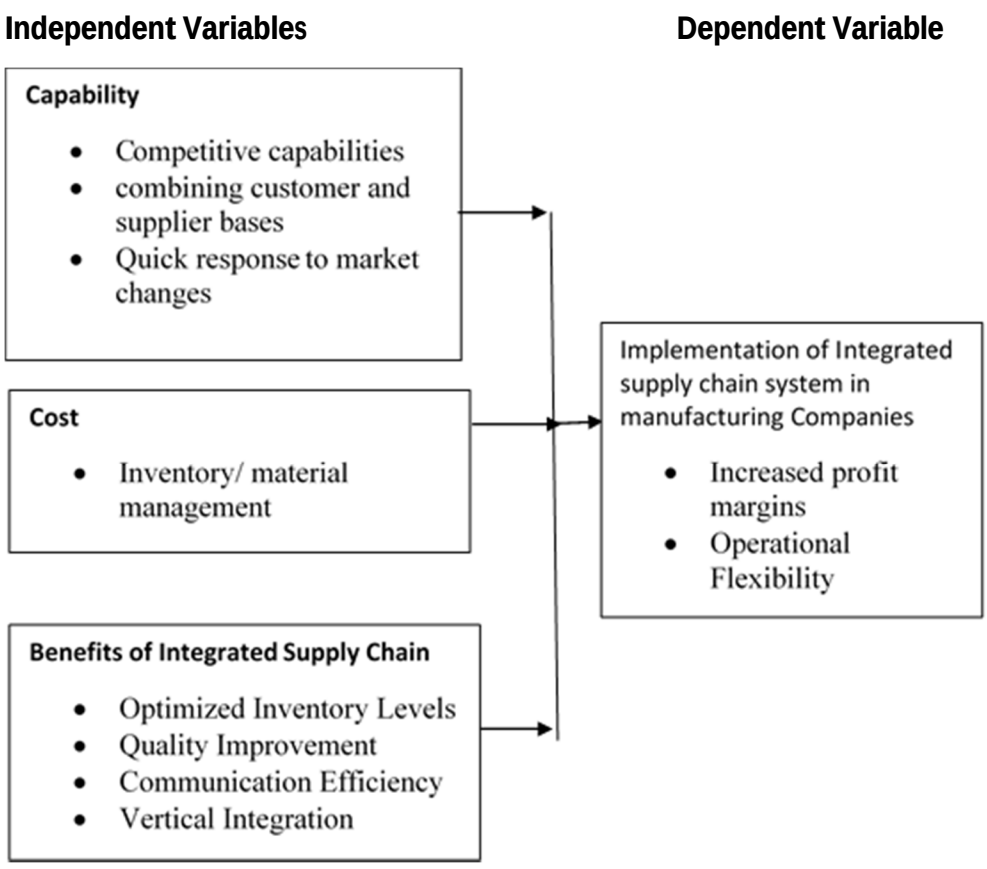

Figure 1: Conceptual Framework

Firms Capability following supply chain integration

The main purpose of supply chain integration (SCI) is to realize effective and efficient flow of materials, information, finances and decisions, to enable provision of highest value to the customer at low cost and high speed (Ganbold and Matsui, 2014)These are all important conditions that in the long-run aid in the overall firms performance. According (Rosenzweig, Roth, and Dean Jr, 2003)supply chain integration lead to improved competitive capabilities and in addition their empirical findings advocated that consumer products manufacturers also achieve performance benefits through this integration efforts. Also as a result of high integration intensity manufacturers are able to accomplish superior product quality, delivery reliability, process flexibility, and cost leadership. In (Zailani and Rajagopal, 2005)view improved performance can be realized by combining customer and supplier bases, removing redundant steps in the chain thereby speeding up information and material flows, and creating long-term partnerships with major customers and suppliers to control the capabilities of several companies in the chain. Also(Tan, Handfield, and Krause, 1998)) observed that when companies "integrate and act as a single entity, performance is enhanced throughout the chain". According to (Supply chain integration and performance: a review of the evidence) certain industries might accomplish additional performance by focusing enterprise logistics activities on the distribution of finished goods directly to customers instead of the inbound supply of parts and raw materials, or vice versa. There is need to respond to market changes and the significant role of supply chain in meeting this need. The prospective benefits of integrating the supply chain can no longer be ignored (Zailani and Rajagopal, 2005). These likely, however benefits can only be appreciated if the interrelationships among different parts of the supply chain are recognized, and proper alliances ensured between the design and execution of the company's competitive strategy. In conclusion performance measurement is a critical step in the design and evaluation of any supply chain integration. Some necessary components for SCI include the cost, customer responsiveness, resource, output and flexibility. According to (Cheruiyot, 2013) it has now been realized that non-integrated manufacturing or distribution processes and/or poor relationships with suppliers and customers are not enough for their successive supply chain performance. Poorly integrated supply chain results to sequences of excessive inventory and severe backlogs, poor product forecasts, unbalanced capacities, poor customer service, uncertain production plans, and sometimes even lost sales.

Cost of implementing an integrated supply chain

Firms spend a substantial amount of capital on materials(Asaolu, Agorzie, and Unam, 2012). In many cases, the cost of materials exceeds fifty percent of the total cost of goods produced. This therefore requires a firm to invest considerably and plan well in order to control and minimize wastage which invariably affects the performance and profitability of organizations. In the earlier years, (Ramakrishma, 2005) identifies that materials management was treated as a cost Centre since purchasing department was spending money on materials, while store was holding huge inventory of materials, stalling money and space. (Ramakrishma, 2005)also identified that half of sales income in a firm is spent on materials. He gave an example of a firm supposedly spending 50% of its volume on material and the profits are say 10% of sales volume. He concluded that a 2% reduction in materials cost would boost the profits to 11% of sales or the profits will be increased by 10%. To achieve the increase in profit through sales efforts, a 10% increase in sales volumes will

be necessary. (Shankar, 2001), identifies the eight steps for a successful supply chain integration and names them as:1). Performing a marketing and supply chain audit. In this step, the company seeks to understand its customer value drivers, customer requirements, customer relationship management process, supply chain infrastructure, and the points of linkage and disconnect between SCM and CRM. On this step (Pasula, Nerandžić, and Radošević, 2013) states that, although internal audit bears certain costs in the short term as well as the risk management processes it is a cost that in the long term has effects and its actions may permanently lower the cost of doing business primarily through identifying risks.2). The company has to set vision and goals. There is a need to set the long-term and intermediate goals for integrated demand-supply chain management, making certain that they are linked to the overall financial goals. 3). Do a gap analysis and identify the gaps. In this step, the company performs a thorough analysis of the gaps between the integrated supply chain goals and the existing state as revealed by the marketing and supply chain audits. As it develops the integrated strategy, the company needs to focus intensely on the gaps identified.4) Formulate an Integrated supply chain strategy. This critical step determines the company's approach to integration and it sets up the road map for implementation. The overarching objective of the strategy should be to synchronize supply and demand.5) Design Integrated Supply Chain initiatives and plan training. This is after the strategy has been set; the company can identify the initiatives needed to implement it. These initiatives, which may range from systems integration to the development of a new inventory planning system, help build the demand-supply chain infrastructure. Because training is key to successful implementation, it should be given top priority.6) Develop an implementation schedule. The company should prioritize the initiatives and set a logical sequence for implementation. Some actions can be undertaken in parallel such as identifying the value propositions along both supply and demand chains.7)Develop metrics. (Shankar, 2001), says that this is a critical aspect of implementing the integrated system. Unless the right measures are developed and tracked, a company cannot evaluate its investment in the system. Metric development is an ongoing process that should be improved continually. 8) Track results and revise goals. Actual performances must be tracked against certain benchmarks. These could be based on either the company's integrated supply chain goals or its competitors' measures—or both. Based on the results of the benchmarking, the company should revise its goals accordingly. (Ondieki, 2012), opine that Kenyan manufacturing firms spend an average of 56% of their annual sales turnover on materials and materials related cost. Heads thatthe concept of supply chain brings in the total systems approach to managing the entire flow of information, materials and services from raw materials suppliers through factories and warehouses to the end customer. They further emphasize that companies that face diverse sourcing, production and distribution decisions need to weigh the costs associated with materials, transportation, production, warehousing and distribution to develop a comprehensive network designed to minimize costs. As confirmed by (Chase, Aquilano, and Jacobs, 2001), organization success depends on how they manage integrated supply chain. They show clearly that it is important to monitor inventory at each stage because it draws up money. The efficiency of integrated supply chain can be measured based on the size of inventory investment in the supply chain and that the inventory investment is measured relative to the total cost of the goods that are provided through the supply chain. (Awad, 2010), notes that the costs that can be incurred by any company can be summarized in three perspectives: Technical, Managerial and in Relationships perspective. He adds that a firm achieves suppleness to quickly

realign the supply/demand mix to satisfy changing demands. Switching costs and coordination costs are a barrier to operation flexibility.

Benefits of Integrated Supply Chain

As stated by (Iqbal{"id":5525124 et al., n.d.) if a firm is able to produce goods at lowest cost it has a competitive advantage, because that is what most customers want. Some customers prefer quality and in that case the firms quality matters the most. Delivery speed and reliability is something that can give the companies another competitive advantage. (Jeruto Keitany and Richu, 2014)shows that lack of passable commitment to timely funding of materials procurement, poor material planning, poor inventory control, purchasing problems, quality control problems; stores control problems, material movement and even surplus disposal problems. She says materials management should not be viewed as a drain-pipe, but should be thought of as a stabilizing and monetary growth impending factor. (Chase et al., 2001), explained that the idea of materials management brought in the total systems approach and the management of the entire flow of information, materials and services from raw materials suppliers through factories and warehouses to the end user/customer is if great advantage to any firm. It also confirmed that a firm's success depends on how they manage their materials effectively. They indicate that it is important to monitor inventory at each stage because it ties up resources. It is in this view that (JerutoKeitany and Richu, 2014) concludes that effective materials management is fundamental to the survival of business, industry and economy. As noted by (Shankar, 2001), in review to literature, it has proved that companies that do integrate demand and supply chain management systems are more successful than their counterparts. It is added that Deloitte Research, based on interviews with more than 850 manufacturers worldwide, shows that companies that combine a customer relationship focus with excellence in supply chain collaboration are better positioned for success in the new economy. (Basu, 2014) noted the following as the benefits of integrated supply chain management;

Optimized Inventory Levels

Firms that seek to further improve their operational performance, have to have a wider cooperation with both suppliers and customers at different levels of supply chain. According to (Extron, 03:46:18 UTC)Maintaining optimized inventory levels is a key goal for companies that make, distribute and resell products. Excess inventory is costly to hold and manage. However, inventory shortages negatively impact customer relationships. In Integrated supply chain, channel members share inventory data, which allows for automated replenish when inventory runs low. The closer cooperation brought about reduced costs and greater efficiency.

Quality Improvement

Given the objective of delivering the best value to the end customer, a tightly integrated supply chain is more equipped to monitor quality through the distribution channel. If retailers hear negative feedback at the store level from consumer, retail buyers can share these concerns with wholesalers and manufactures. This collaborative communication allows for improvements in production quality and potential improvements in transportation and logistics. Continual upgrades to customer value benefits all supply chain partners in fending off competition.

Communication Efficiency

According to Barrant (2004)…he argues that there are many questions which the answer integration eases activities like planning, forecasting The efficiency with which supply chain members communicate is much greater with a tightly integrated chain. Figuratively, the closeness of the supply relationships allows company leaders to constantly meet and review strengths and

weaknesses of the entire supply chain process. This collaboration impacts transportation, buying processes and pricing. From a technical standpoint, tight integration means synched computer systems. In essence, company computer systems automate communication as it relates to inventory replenishment, new order levels and low inventory alerts.

Vertical Integration

In line with Fawcett and Magnan 2002 the "tightest" supply chain integration usually occurs when a single business carries out more than one aspect of distribution. This business approach is called vertical integration. A manufacturer might sell and distribute directly to retailers, for instance, meaning it conducts wholesale activities. A retailer could acquire or start its own distribution or manufacturing business, which means it makes or distributes its own resale goods. Vertical integration has significant cost and efficiency advantages, but you must have expertise at all levels of the supply chain.

Integrated supply chain system in Kenyan manufacturing firms.

The Kenyan manufacturing sector is undergoing a major change because of the structural restructuring process, which the Kenya Government has been implementing ever since the mid-eighties with a view to improving the economic and social environment of the country. This integration not only enhances flexibility and tight inventory management that eventually leads to higher profit margins but also it brings about competitiveness in arrays of business environments as Elias el at., (2012) observed. They say the adoption of some supply chain management practices in small holder tea sector in Kenya within the tea sector both locally and internationally(Cheruiyot, 2013).A study carried out in the National oil determined that there is a strong and positive relationship between information technology (IT) and effective implementation of SCMin the petroleum sector in Kenya. The impact of IT on effective implementation of SCM is high. Findings indicated that information system factor had the highest effect is accuracy of information followed by flow of information and compatibility of technology(Kimani, 2013). According to (Okello and Were, 2014), inventory management plays a primary role in food manufacturing companies because it provides the modern food manufacturing company with a platform to address their management and communication needs. Industry-specific features and flawless integration increase quality, service, product safety and operational efficiency. According to (KNBS, 2012)its unfortunate that the performance of the food manufacturing sector in Nairobi has been affected by the use of obsolete supply chain management practices and technologies with poor state of physical infrastructure and inadequate supply chain innovation. In (USAID, 2009)view Supply chain integration strategy offer the visibility, alignment, and incentives necessary to manage complexity, while retaining a focus on customer service through reliable product availability. He says despite the fact that commercial sector supply chains are known for complexity, and supply chain integration is a well-established approach for improving those supply chains, a great deal of complexity can also be seen in the global and in-country supply chains serving developing country health systems. Therefore, approaches from the commercial sector have some resonance in these settings, due to the nature of health systems, country government structures, and international aid architecture, supply chains in these settings are exceedingly complicated.

For successfully enhance supply chain integration in organizations in Kenya, (Cheruiyot, 2013)gives key suggestion such as recognizing internal, supplier and customer integration as a strategic instrument for competitive advantage, since competition today is based on supply chain versus supply chain and not business versus business. In addition (Kimani, 2013)accentuate that for a supply chain to achieve its maximum level of effectiveness and efficiency, material flows, money

flows and information flow must be managed in an integrated and holistic manner, this will also lead to improved financial performance. In agreement (Okello and Were, 2014)says that companies should invest in new technologies that sustain mass production, distribution and storage facilities. In addition he says that capacity building for staff should be a main concern to cope with the fast changing technologies. Again (Kimani, 2013)says there is need for the supply chain actors to work in partnership in particular in the provision of transport and distribution.

Summary and Research Gaps

This research will fill gaps in the supply chain management literature with respect to the areas of integrated supply chain and supply chain performance. This research is important to managers and scholars because it provides them with some understanding of the effect of Supply Chain Integration strategy on the Supply Chain Performance. In summary, Supply Chain Integration plays an important role in the success of many organizations and can help increase the firm's ability to be competitive.

Research Methodology

Introduction

This chapter gave a brief description of the research design that was adopted including the sample size, the target population and the way the data was analyzed.

Research design

A descriptive research design was be used to collect quantitative and qualitative data. The major purpose of descriptive research is to describe the situation as it exists at present (Kothari, 2008). A survey method of research was used; participants were asked to answer questions administered through a questionnaire.

Population

(Saunders, 1987) describe a population as the total collection of elements about which one wishes to make inferences. The population for this study were employees of private sector companies in Kenya. The target population is the entire group of study in which the researcher wishes to draw conclusions. In this study it included employees of the Bidco Kenya.

Sample and Sampling Technique

A sample is a as a set of respondents selected from a larger population for the purpose of a survey. The sampling technique employed for the survey was the stratified random sampling which involved the dividing of the population into homogenous groups and then drawing random samples from each group (Kumar R, 2005). Out of the 300 employees a sample of 10% was used that gives us 30. According to Dowing et al, a sample size should not be less than 30.

Table 3.1 Sampling

CATEGORY	POPULATION
Management	5
Procurement Personnel	15
Other Staff	10
Total	**30**

Source (Researcher, 2015)

Data Collection Methods

Questionnaire

A questionnaire which was a combination of both an open and closed ended questions was used. A questionnaire (Kothari, 2004)consists of a number of questions printed or typed in a definite order on a form or a set of forms. The tool was selected after carefully considering the nature of the data to be collected, the target population, the time available and the objectives/ research questions of the study. An introduction letter from the university was obtained to authorize the collection of data.

Questionnaire Validation

Validity is the degree to which an assessment measures what it is supposed to measure. Valid questionnaire helps to collect better quality data with high comparability which reduces the effort and increase the credibility of data. For this study, content validation was applied. It refers to observing all the specific items on the questionnaire to determine whether the questionnaire addresses the topic overall. This involves creating a list of all that the questionnaire is meant to measure and check the items on the questionnaire against this list.

Data Analysis

Data analysis is the process of examining and scrutinizing what has been collected in a survey or experiment and making deductions and inferences (Kombo and Tromp, 2006). The collected data was captured in to the Statistical Package for Social Scientists (SPSS version 21) and Ms Excel softwares. Quantitative data analysis was analyzed using descriptive statistics that is frequency, percentages and means and was presented in summary form using graphs, tables and charts. Inferential statistics assisted in drawing conclusion and making predictions based on the information provided by the questionnaire feedback (woods, 2003).

Multiple regression analysis, as shown in equation (3.1), was used to evaluate the relative relationship between the independent and dependent variables. The regression analysis determined the significance of each of the variables with respect to effective implementation SCI. In the equation, Y is the dependent variable (implementation of SCI d), x_1 is Measure of firm's capability,x_2 Cost of implementation of SCI and x_3, Benefits of SCI.

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \boldsymbol{e} \qquad (3.1)$$

RESEARCH FINDINGS AND DISCUSSION

The chapter presents the analysis and interpretations of the data collected. The research was conducted on a sample of 30 respondents from the Bidco Company Limited. However, out of the issued questionnaires, 25 were returned suitably filled in making a response rate of 83.3% which was sufficient for statistical reporting. This is per (Mugenda, 1999)who stated that a response rate of 50% and above is a good response rate.

Demographic Data

General Information

The study sought to ascertain the information on the respondents involved in the study about the gender, age and the job category. The bio data points at the respondents' aptness in answering the questions.

Respondents Gender

In order to understand the respondents' gender distribution, the respondents were asked to indicate their gender category in which they fell. The figure below shows the results.

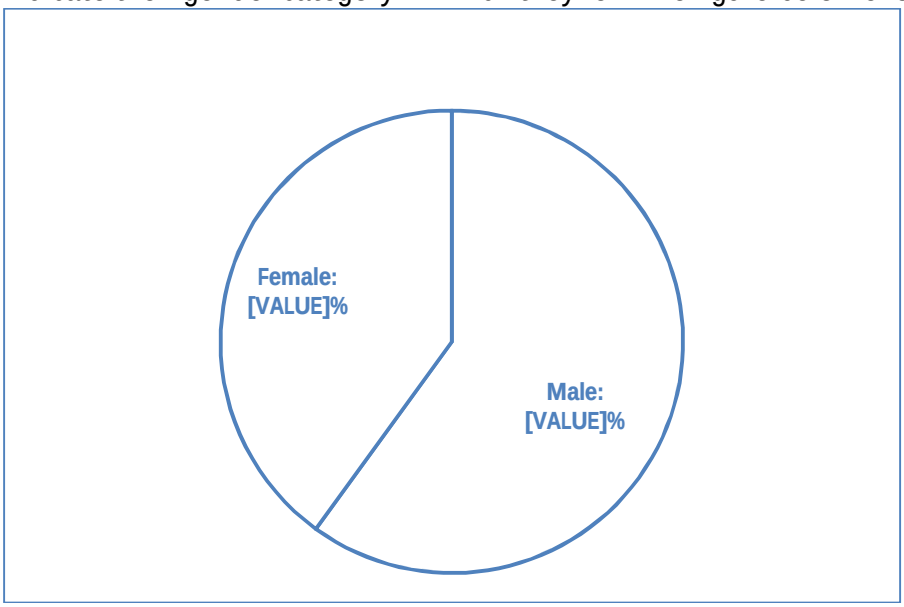

Figure 2: Gender Representation

The respondents were asked to indicate their gender by placing a mark next to the relevant option provided (male or female). From the findings, most of the respondents, 60% were male while their female counterparts represented 40%. This is a closely equal ratio,Bidco seems to be an equal opportunity employer.

Distribution of Respondents by Age

In order to understand the respondents' age distribution, the respondents were asked to indicate their age category in which they fell. Below were the responses.

Table 2: Age

		Frequency	Percent	Cumulative Percent
Valid	20-24	5	20.0	20.0
	25-34	10	40.0	60.0
	35-44	7	28.0	88.0
	45-54	2	8.0	96.0
	Over 55	1	4.0	100.0
	Total	25	100.0	

From the findings, most of the respondents were aged between 25–34 years at 40%. The findings indicate that majority of the employees at Bidco are fairly young and energetic and are able to run the affairs of the company.

Job Category Versus Years of experience.

The study sort to find out the job category and the number of years the respondents has worked for the company. Cross tabulation was used.

Table 3: Job category versus Years of Experience

Your present Job Function * How long have you worked in the company? Cross-tabulation						
		Less than a year	1-5	6-10	11-20	
Your present Job Function	Management staff	0	2	1	1	4
	Procurement personnel	4	4	3	2	13
	Other staff	1	7	0	0	8
Total		5	13	4	3	25

From the findings half of the management personnel had worked for more than 5 years, meaning the position requires people who have work experience. The other half has worked between one to five years meaning it is a group of young and brilliant tucks who are energetic and able to learn and take the company to a higher level. Procurement had the majority of staff from the analysis because it was the target group. Secondly, 44% of the staff were in the procurement section and have worked for less than 10 years. This could mean the company prefers to hire young and zealous employees.

Measure of Firms Capability

Return on Investment

The respondents were asked to indicate the degree to which they agreed with the statement supply chain integration has effect on return on investment. Below were the varied views from different job categories:

Table 4: Job category and Return on investment Cross tabulation

Your present Job Function * Return on investment Crosstabulation						
		Strongly Disagree	Neutral	Agree	Strongly Agree	Total
Your present Job Function	Management staff	0	0	1	3	4
	Procurement personnel	0	1	7	5	13
	Other staff	2	4	1	1	8
Total		2	5	9	9	25

From the above findings all the management staff agreed to the statement, cumulatively. 92.3% of procurement personnel agreed with the statement too. The high response could be because the integrated supply chain provides a systematized way to keep up with processes, it provides cost saving, improved efficiency. This finding agree with (Kimani, 2013) research that accentuates that for a supply chain to achieve its maximum level of effectiveness and efficiency, material flows,

money flows and information flow must be managed in an integrated and holistic manner, this will also lead to improved financial performance

Supplier retention and partnerships

The respondents were asked to rate the supplier retention/retention on integration of supply chain

Table 5: Supplier retention and partnerships

Your present Job Function * Supplier retention and partnershipsCrosstabulation

		Neutral	Agree	Strongly Agree	Total
Your present Job Function	Management staff	0	4	0	4
	Procurement personnel	1	7	5	13
	Other staff	5	2	1	8
Total		6	13	6	25

The study indicated that 64% agreed that integration of supply chain has an effect on supplier relations. Integrated systems are known to offer supporting various languages, currencies, international taxation and financing, shipping regulations and more. This makes it simple for buyers and suppliers in different countries worldwide to communicate and co-operate. This findings are in agreement with (Cheruiyot, 2013) research that gives key suggestion such as recognizing internal, supplier and customer integration as a strategic instrument for competitive advantage, since competition today is based on supply chain versus supply chain and not business versus business. .

Service quality

This study sought to investigate service delivery

Table 6: Service quality

Your present Job Function * service quality (reports updates) Crosstabulation

		Neutral	Agree	Strongly Agree	
Your present Job Function	Management staff	0	0	4	4
	Procurement personnel	2	5	6	13
	Other staff	2	4	2	8
Total		4	9	12	25

84% of the respondents were of the opinion that the integration system keeps the company on top in terms of service delivery. This is consistent with(Okello and Were, 2014) findings that opineinventory management plays a primary role in food manufacturing companies because it

provides the modern food manufacturing company with a platform to address their management and communication needs. Industry-specific features and flawless integration increase quality, service, product safety and operational efficiency.

Cost of Implementing supply chain integration

In the study various aspects in terms of the cost of Implementing supply chain integration.

Infrastructure costs

The respondents were asked their opinion whether the level of infrastructure costs. A cross tabulation was used to give the analysis. Below were the findings

Table 7: Infrastructure Cost

Your present Job Function * Infrastructure cost Cross tabulation

		Agree	Strongly Agree	
Your present Job Function	Management staff	4	0	4
	Procurement personnel	10	3	13
	Other staff	8	0	8
Total		22	3	25

According to the findings 100% of the respondents agreed the integration has infrastructure costs.

Developing SCI system

The respondents were asked to give their take on cost regarding developing SCI system. Below are the findings.

Table 8: Developing SCI system

Your present Job Function * Developing SCI systemCrosstabulation

		Neutral	Agree	Strongly Agree	
Your present Job Function	Management staff	0	3	1	4
	Procurement personnel	0	8	5	13
	Other staff	1	6	1	8
Total		1	17	7	25

According to the findings 96% of the respondents agreed there are cost relating to the development of SCI system. 4% were neutral. The response could be attributed to the fact that there are initial costs that come with implementation of a new system. However the costs are overshadowed with the benefits of such a system.

Benefits of supply chain integration

A cross-tabulation of the job category and benefits of supply chain integration were assed. Below are the findings.

Better resource allocation

A cross tabulation was done to find out the opinion of the different cadres and their view on resource allocation. Below were the findings.

Table 9: Better resource allocation

Your present Job Function * Better Resource allocation Crosstabulation

		Disagree	Neutral	Agree	Strongly Agree	
Your present Job Function	Management staff	0	0	2	2	4
	Procurement personnel	0	1	8	4	13
	Other staff	1	6	1	0	8
Total		1	7	11	6	25

According to the findings 44% agreed and 24% strongly agreed response on the statement. The findings compare well with(Cheruiyot, 2013) that realized that poorly integrated supply chain results to sequences of excessive inventory and severe backlogs, poor product forecasts, unbalanced capacities, poor customer service, uncertain production plans, and sometimes even lost sales

Information Quality

The study wanted to find out if the system has brought about change in the information quality. Below were the findings.

Table 10: SCI and Information Quality

Your present Job Function * Information Quality Crosstabulation

		Neutral	Agree	Strongly Agree	
Your present Job Function	Management staff	0	3	1	4
	Procurement personnel	0	11	2	13
	Other staff	4	4	0	8
Total		4	18	3	25

The findings indicate that 84% agreed with the statement above. The high response could be because the SCI systems provides a systematized way to keep an open line of communication with prospective suppliers and clients during a business process. There is better and faster decision-making process by keeping relevant information neatly organized and time-stamped. This leads to improved understanding of requirements and due compliance besides permitting clients to measure the state of the market by observing the level of interest shown tenders. This is consistent with(Zailani and Rajagopal, 2005) findings that show the integration is helpful because it removes redundant steps in the chain thereby speeding up information and material flows, and creating long-term partnerships with major customers and suppliers to control the capabilities of several companies in the chain.

Supply Chain Integration

In this section the study sought to understand the consequences after the integration of supply chain

Increased profit Margins

The table displays the responses from the different cadre on the effect profit margins

Table 11: Profit Margins

Your present Job Function * Increased Profit margins Crosstabulation

		Increased market share				
		Disagree	Neutral	Agree	Strongly Agree	Total
Your present Job Function	Management staff	0	0	3	1	4
	Procurement personnel	0	0	9	4	13
	Other staff	1	4	3	0	8
Total		1	4	15	5	25

84% percent of the respondents agreed the system led to the increase of the profit margins share probably due increased efficiency, effectiveness and competitiveness of the new technology. The results are consistent with Elias el at., (2012) as he observed that the integration not only enhances flexibility and tight inventory management that eventually leads to higher profit margins but also it brings about competitiveness in arrays of business environments.

Operational Flexibility

The table below shows the responses on the level of operational flexibility on supply chain integration.

Table 12: Operational Flexibility

Your present Job Function * Operational Flexibility Crosstabulation

		Disagree	Neutral	Agree	Strongly Agree	
Your present Job Function	Management staff	0	0	3	1	4
	Procurement personnel	0	1	9	3	13
	Other staff	1	5	1	1	8
Total		1	6	13	5	25

72% respondents agreed that after the SCI implementation there was an increase on the operational flexibility. (Okello and Were, 2014) opine that flawless integration increase quality, service, product safety and operational efficiency

Regression Analysis

The study conducted a multiple regression analysis to determine the significance of each of the variables with respect to supply chain integration strategy. The study applied the statistical package for social sciences to code, enter and compute the measurements of the multiple regressions for the study, and the findings are presented below.

Table 13: Model summary

R	R^2	Adjusted R^2	σ
0.911	0.899	0.815	0.502

σ, standard error of estimate; a, predictors: (constant), firm's capability, cost of implementation, benefits of supply chain integration; dependent variable: implementation of supply chain integrationCoefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable. The three independent variables that were studied, explain 82.9% of variance in implementation of supply chain integration as represented by the R^2. This therefore means that other factors not studied in this research contribute 17.1% of variance in the dependent variable.

Table 13: Multiple regression results

Description	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta	B	
(Constant)	3.374	.842		4.009	.000
Measure of firms Capability	0.842	.046	0.330	1.830	.001
Cost of implementing SCI	0.754	.88	0.167	8.545	.0035
Benefit of SCI implementation	0.616	.13	0.032	5.046	.0041

From the regression findings, the substitution of the equation (3.1) becomes:

$Y= 3.374+ 0.842x_1+ 0.754x_2+ 0.616x_3$ (4.1)

In equation (4.1), Y is the dependent variable (implementation SCI), x_1 is Measure of firms capability, x2 cost of implementing SCI, and x_3, benefits of SCI implantation. According to the equation, taking all factors constant at zero, Implementation of SCI will be 3.374. The data findings also show that a unit change in firm'scapability will lead to a 0.842 change in Implementation of SCI; a unit change in cost will lead to a 0.754 change in Implementation of SCI, and a unit change in benefits of SCI realized will lead to a 0.616 change in implementation of SCI. This means that the most significant factor is changes in firms capability, hence equation (4.1) becomes:

$Y =3.374+0.842x_1$ (4.2)

Summary of the Findings

The general findings indicate 60% were male while their female counterparts represented 40%, the company seems to incorporate the third rule, and therefore it is an equal opportunity employer. Majority of the employees at Bidco Company limited are fairly young and energetic and are able to run the affairs of the company. Half of the respondents in the study were in the management personnel had worked for more than 5 years, meaning the position requires people who have work experience. On the other hand, the other half had worked between one to five years meaning it is a group of young and brilliant tucks who are energetic and able to learn and take the company to a higher level. The findings many of the staff agreed integration of supply chain improves firms capability because it provides a systematized way to keep up with processes,

it provides cost saving, improved efficiency. The integration also aids in supplier retention and forging of partnerships. Integrated systems are known to offer supporting various languages, currencies, international taxation and financing, shipping regulations and more. This makes it simple for buyers and suppliers in different countries worldwide to communicate and co-operate. It helps in recognizing internal, supplier and customer integration as a strategic instrument for competitive advantage, since competition today is based on supply chain versus supply chain and not business versus business. 84% of the respondents were of the opinion that the integration system keeps the company on top in terms of service delivery. In addition it aids in offering service quality. It is particularly useful in food manufacturing companies because it provides the modern food manufacturing company with a platform to address their management and communication needs. Industry-specific features and flawless integration increase quality, service, product safety and operational efficiency. According to the findings 96% of the respondents agreed there are cost relating to the development of SCI system. The response could be attributed to the fact that there are initial costs that come with implementation of a new system. However the costs are overshadowed with the benefits of such a system.According to the findings 44% agreed and 24% strongly agreed response on the statement. It has now been realized that poorly integrated supply chain results to sequences of excessive inventory and severe backlogs, poor product forecasts, unbalanced capacities, poor customer service, uncertain production plans, and sometimes even lost sales. 84% of the respondents agreed that the integration helps in Information quality because SCI systems provides a systematized way to keep an open line of communication with prospective suppliers and clients during a business process. There is better and faster decision-making process by keeping relevant information neatly organized and time-stamped. This leads to improved understanding of requirements and due compliance besides permitting clients to measure the state of the market by observing the level of interest shown tenders. 84% percent of the respondents agreed the integrated supply chain systems led to the increase of the profit margins share probably due increased efficiency, effectiveness and competitiveness of the new technology. This integration not only enhances flexibility and tight inventory management that eventually leads to higher profit margins but also it brings about competitiveness in arrays of business environments. In addition, 72% respondents agreed that after the SCI implementation there was an increase on the operational flexibility because integration increase quality, service, product safety and operational efficiency. The regression analysis indicated that firm'scapability was the most significant factor with 0.842.

Conclusion

The study concludes that supply chain integration helps improves firms capability because it provides a systematized way to keep up with processes, it provides cost saving, improved efficiency. In addition it enhances flexibility and tight inventory management that eventually leads to higher profit margins but also it brings about competitiveness. It also assist in provision of quality information because SCI systems provides a systematized way to keep an open line of communication with prospective suppliers and clients during a business processes. That with implementation of SCI systems there would be increase on the operational flexibility because integration increase quality, service, product safety and operational efficiency.The three independent variables that were studied, explain 82.9% of variance in implementation of supply

chain integration. This therefore means that other factors not studied in this research contribute 17.1% of variance in the dependent variable.

Recommendations

From the findings, SCI systems pushes down costs and delivers super efficiencies into the company processes, therefore all private and public companies should strive to adopt the system. Businesses, organizations and companies should look beyond initial price for implementing SCI and recognize that integrating supply chain systems and tools can build a strong and unrelenting relationship with suppliers can in fact pay greater dividends in the long run.

Areas for further Research

Further research is necessary to add more systems and factors that affect supply chain integration. A study should also be done on how to easily integrate the upcoming new technologies such as the new system by the Government of Kenya Integrated Financial Management Information System (IFMIS) that is to be used on all government transactions, others are the ERPs, CRMs. This study was done in a food processing company and therefore it is necessary to have the study done in other sectors.

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