

The Effect of Supply Chain Management on the Competitiveness of the Telecommunications Industry in Zimbabwe

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ABSTRACT

The purpose of this study was to analyse the impact of supply chain management (SCM) on the competitiveness of the telecommunications industry in Zimbabwe. The objectives of the study were to figure out the extent to which SCM contributes to organisational competitive advantage in the telecommunications industry in Zimbabwe, to determine the level of bargaining power when making local and off shore purchases, the extent of risk exposure due to global transactions and finally, to ascertain the strategies used on supplier ratings. Interviews and questionnaires were used as the main instruments for data collection. Questionnaires were distributed to 50 respondents with 36 responding, representing a 72 percent response rate. Data were analysed using SPSS and the results presented in graphs and tables. Interviews were carried out using a structured interview guide for uniformity of questions being asked. Three interviews were conducted with procurement managers from the three organisations represented namely; Econet, TelOne and NetOne. The results showed that SCM is a strong contributor to organisational competitiveness. If organisations in the telecommunications sector prudently apply SCM policies, strategies and practices, the performance in terms of profitability realised and competitive advantage will increase. Recommendations are that quality of products; better supplier management and competitive pricing may be realised if firms can adopt SCM principles and practices.

Keywords-- Supply Chain Management, Competitive Advantage, Telecommunications Industry

reference to TelOne and NetOne telecommunications service providers in Zimbabwe. The telecommunications sector, like other economic functions in Zimbabwe, went through economic turbulences which affected the stability and performance of many industries in the country (Sikwila, 2013). In 2009, Zimbabwe adopted a multicurrency regime that ushered in macroeconomic stability and positive economic growth. During 2009-12, the economy shifted positively, with growth rates averaging around 8.7% per year. According to RBZ (2016), the inflation rate in Zimbabwe was recorded at -1.64 % as of April of 2016 with inflation rate pegged at an average of 1.12 percent as from 2009 until 2016. Reserve Bank of Zimbabwe (2014) reported that inflation reached an all-time peak of 5.30 % in May of 2010 and recorded a low of -7.50 % in December of 2009. The sharp decline in inflation rate can be attributed to the sharp drastic economic transformations particularly from a single local currency to the dollarization of the economy. This changed the financial model parameters to the United States dollar which is stable and relatively stronger compared to regional currencies thus strengthening the trade power of the economy.

The country also embarked on its first Staff Monitored Programme with the International Monetary Fund (IMF) and began making 'token' payments on arrears to multilateral institutions (Chimboza, 2014). However, according to Zimbabwe National Chamber of Commerce Business Review of June 2015 as reported by Chimboza (2014), gross domestic product (GDP) dropped sharply from 10.9% in 2012 to 4.5% in 2013. Strict liquidity conditions and strong United States (US) dollar made inflation slightly negative in 2014. Chimboza (2014) observed that industrial capacity continued to decline to 36.3%. Imports became cheaper than domestically produced goods and exports more expensive. The current account deficit rose to 23.1% in 2014 because of increased demand for imports. Unsustainable external debt was estimated at US\$8.4 billion as in 2014. The mining and agricultural sectors were boosted to 93.5% fueling some economic growth. The manufacturing sector dropped between 2011 and 2014. In the same period, 4 610 companies closed resulting in 55 443 job losses (Kaseke, 2014).

I. INTRODUCTION AND BACKGROUND

Most telecommunication companies in developing countries depend on off-shore purchases to support their technological requirements. Poor management of the off-shore procurement systems may escalate cost structures for the company threatening the viability and growth of the organisations. Supply chain management is perceived to provide competitive advantage to the telecommunications sector in this regard. This study sought an understanding of the impact of supply chain management on competitive advantage with

The telecommunications sector experienced a slightly different economic path. Against the economic turmoil facing the country, the telecommunications industry had expanded during the same period when other economic sectors experienced some slumps mainly because of the increase in the number of subscribers for both fixed and mobile networks. This caused gradual substantial growth over the same years (POTRAZ, 2015).

According to POTRAZ (2015), during the last quarter of 2015, TelOne had a total number of active fixed telephone lines increased by 0.5% to reach 333 702 from 332 211 recorded in the third quarter of 2015. The fixed tele-density also increased from 2.5% to 2.6% in tandem with the increase in fixed subscriptions (Zimsat, 2014). According to POTRAZ (2015), the number of subscriptions increased from 329 475 at the end of 2014 to 333 702 subscriptions as at end of 2015 giving an annual increase of 1.3%. The number of subscriptions for mobile users surpassed those for fixed telephone users TelOne trailed in the number of subscribers becoming the fourth among the major telecommunications service providers (POTRAZ, 2015). During 2015, the total number of mobile subscriptions increased by 3%. The growth of the mobile service provider's networks was uneven with Econet witnessing significant growth as compared to other operators.

According to POTRAZ (2015), 55.8% of the market share belongs to Econet while NetOne, the second largest mobile company, claims 26.7% of the total market share. Telecel trails at 17.5% of the total number of subscribers and the rest belongs to other small operators such as Africom, Powertel and Telco. The competition among the mobile operators has continued and a number of these operators have begun investing in cost saving measures so as to remain competitive.

Sikwila (2013) highlights that the tough economic conditions in Zimbabwe and the unparalleled growth in the telecommunications sector has fuelled an intensive number of international suppliers which include Huawei, ZTE, China Telecom, Ericsson, and Nokia-Siemens. Mobile operators such as Econet that effectively manage their relationships with suppliers, have claimed a competitive edge over others by negotiating for cheaper and good quality products while maintaining a balanced vendor database. However, parastatals: NetOne and TelOne that procure through the bureaucratic public tender systems have failed to maintain effective supply chain management (SCM) systems.

According to Flynn et al. (2010) and Tan (2012) supply chain management describes the planning and control of materials, information flows and the manufacturing and logistics activities coordinated internally within a company and also externally between companies. The ability of a company to manage the supply chain systems may reduce the cost of procuring a product, increases efficiency in supplies and reduces inventory costs. The need for effective and efficient supply chain management (SCM) has become an

essential prerequisite for staying competitive and for enhancing profitability. The continuous changing environment that characterise the telecommunications industry has exerted a number of challenges for the operators. It is increasingly becoming more challenging for companies in this sector to formulate strategies that will guarantee them achieving a competitive advantage. Supply chain management is one such strategy that has received greater attention in recent years (Boute, Van Dierdonck and Vereecke, 2011). SCM can leverage on the strategic positioning of the supply chain. A strong supply chain if properly implemented can provide a basis for superior service (Pagell and Wu, 2009; Gimenez and Tachizawa, 2012). A company can reduce its cost by establishing strategic alliances.

There have been a number of concerns raised in the manner NetOne, TelOne and Telecel manage their procurement processes. Numerous cases of failed procurement processes that have costed these companies have raised questions regarding the manner in which these firms manage suppliers and negotiate for purchases. Following such scandals these firms have resorted to firing and hiring concerned personnel. According to Sibanda (2011) Telecel dismissed its Human Resources Director and the Procurement Manager on allegations of problems with a tender in which South African companies were awarded. The tender was for setting up of base stations across the country at an excessive cost of US\$28million. The high costs incurred at Telecel could have been avoided if proper and systematic maintenance of transparent vendor database had been in place. Furthermore, Mambo (2016) highlights that in similar circumstances, NetOne entered into a flawed supply contract with Huawei Technologies for US\$290 million. NetOne was sued for having awarded a foreign company instead of local information communication technology firms. NetOne and the concerned State Procurement Board (SPB) were taken to court for flouting tender rules and laid down procedures. The continued flawed procurement systems for NetOne and other public operators such as TelOne and Telecel have attracted attention from both the academia and practitioners.

1.1 Statement of Problem

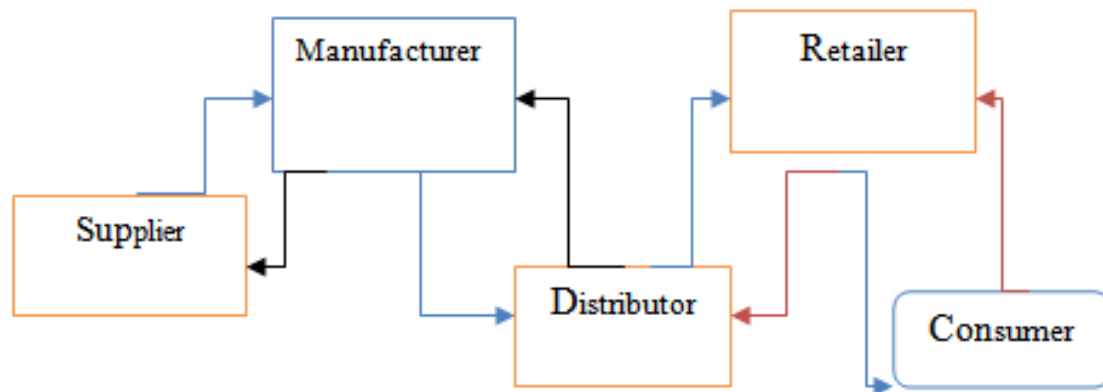
Public telecommunications service providers require proper management of the supply and procurement of equipment and materials so as to remain competitive. Failure to manage the supplies, which usually consist of off-shore purchases, has resulted in huge losses and costs for these parastatals. The unsystematic procurement processes for off-shore purchases, failed negotiating power with foreign suppliers and poor maintenance of adequate stock of inventories has not only increased running and capital costs, but lost market share to the rival, Econet. TelOne has lost a significant number of subscribers over the years and sunk huge capital costs for equipment and materials some of which became obsolete before use. Poor procurement strategies are costly and result in sinking of huge capital

investment without corresponding value addition. If public operators continue to operate with poor supply chain management systems, the country is likely to lose huge capital to foreign suppliers, which threatens the sustainability and viability of these operators. It is therefore, prudent to understand how supply chain management can be utilised to provide competitive edge to these operators.

II. THEORETICAL FRAMEWORK: SUPPLY CHAIN MANAGEMENT (SCM) MODEL

This study is anchored on the supply chain management model that governs the processes and activities from the initial supply of raw materials to provision of final consumption of the final products and services (Tummala and Schoenherr, 2011). According to Cooper, Pagh, and Lambert (1997) supply chain is the network of organisations and linkages both down and up stream that incorporates the flow of products and services; funds and information systems. The organisations include suppliers of materials, manufacturers, distributors, retailers and consumers. The entire supply chain is focused on minimising cost, delivery time and maximise customer value. The customer is the main reason for the existence of the supply chain. The supply chain is as depicted in Figure 1.

Figure 1: supply chain flow chart



The set of activities involved from supply of raw materials for manufacturers to the provision of products and services to the consumer is a complex process that incorporates activities across and within the organisation. The supply chain involves flow of materials, products and services and funds exchange as depicted by arrows in Figure 1. Supply chain management is viewed as a single process rather than fragmented pieces of disjointed activities as per each linking organisation (Cohen and Roussel, 2013).

Foss and Knudsen (2003) argue that supply chain is geared towards adding value; reducing costs; slashing response times; assists firms to compete in the dynamic international market. Each firm needs to consider the entire supply chain that includes managing supplies, monitoring the chain through effective information management systems and even negotiating for better prices of equipment and raw materials. Supply chain management (SCM) has found a number of applications across a number of business lines. It originated from the manufacturing sector in the 1990s and spread into all other business sectors inclusive of the service and non-profit making organisations (Ivanov, 2010). Lee (2004) posits that supply chain management benefits organisations in several ways: improving operations; increasing profits; better outsourcing; generating quality outcomes; tackling competitive

pressures; increasing globalisations; and enhancing customer satisfaction.

However, there have been a number of critics to the concept and application of SCM. Lee (2004) states that supply chain management has no common perspective as some scholars treat it as an operational term, while others view it as a management philosophy with other considering it as a management process. Recent schools of thought consider supply chain management as an intergrated holistic term that encompasses all facets of the supply chain. This dearth of concurrence on the concept leads to dissimilar explanations and applications throwing doubt as to the definition of the term. Furthermore, some authors such as Sawik (2011) and Seuring (2011) suggest that supply chain management has origins in manufacturing and its application in other sectors such as the telecommunications services is limited.

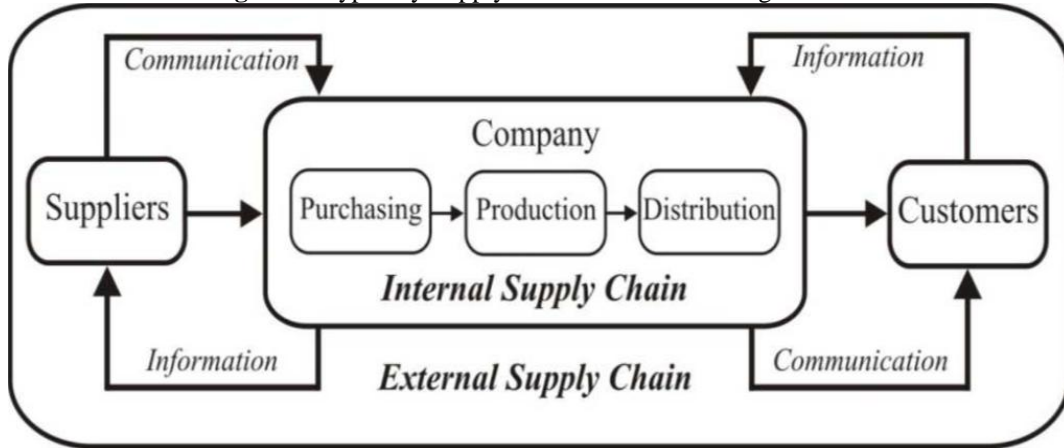
2.1 Supply Chain Management Practice

SCM practice has been defined as a set of activities undertaken within a firm in order to promote effective and efficient management of its supply chain. Donlon et al. (2010) include supplier partnership outsourcing, cycle time compression, continuous improvement and information technology sharing using Electronic Data Interchange (EDI) and Enterprise Resource Planning (ERP). Tan (2012) highlight quality,

customer relations management, elimination of excess inventory levels and purchasing as the main practices for SCM. Chen and Paulraj (2004) echo the same sentiments but rather emphasized on supplier base reduction, long-term relationship communication, cross functional teams

and supplier involvement to measure buyer-supplier relationships. Figure 2 illustrates a typical supply chain management practice in an organisation as adopted from Chen and Paulraj (2004).

Figure 2: Typically Supply Chain Practice of an organization



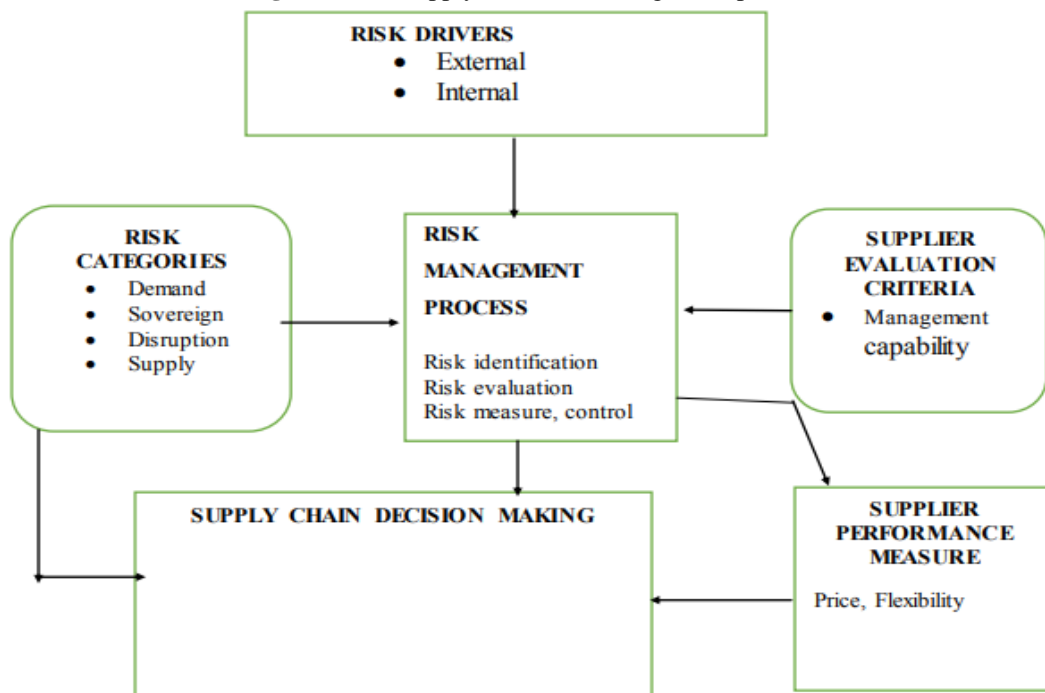
(Source: Chen & Paulraj, 2004 p120)

Tan (2010) further identifies six aspects of SCM practices through factor analysis namely supply chain integration, information sharing, supply chain characteristics, customer service management, geographic proximity and JIT capability. Mentzer and Min (2004) on the other hand identify SCM as an agreed vision and goal, information sharing risk and award sharing cooperation, process integration, long term relationship and agreed supply chain leadership.

2.2 Supply Chain Risk Management Process (SCRMP)

The complete SCRMP is depicted in Figure 3 which focuses on a detailed description of the three phases and other components, such as drivers, risk categories, supplier/logistics evaluation criteria and performance measures should not be neglected. Risk identification, risk measurement and risk assessment comprise Phase I of the process.

Figure 3: The supply chain risk management process



(Source: Adapted from Rao & Tobias 2011: page 474)

2.3 Competitive Strategy

According to Porter (1990), competitive advantage stems from the company's ability to create value for its buyers that will exceed the cost of its creation. Porter further argues that value is what buyers are willing to pay while superior value stems from offering lower prices than competitors for similar benefits or unique benefits at a higher price. Baltzan and Phillips (2010) define competitive advantage as 'a product or service that an organization's customers value more highly than similar offerings from its competitors'. According to Barney (1991), a company has a competitive advantage when it is implementing a value creating strategy different from the strategies of its competitors. Grant (2002) believes that the company has a competitive advantage when it earns a higher level of profits than its competitors. Peteraf and Barney (2003) concurs that a company has competitive advantage when it is able to create greater economic value. Economic value is defined as the difference between the perceived benefits gained by the buyers and the economic cost to the company.

Competitive advantages are typically temporary as competitors often seek ways to duplicate the competitive advantage to either catch up or exceed their competitors (Baltzan and Phillips, 2010). In order for a firm to stay ahead of competition, organisations have to continually develop new competitive advantages. Michael Porter's Five Forces Model is a useful tool to assist in assessing the competition in an industry and determining the relative attractiveness of that industry. Porter states that in order to do an industry analysis a firm must analyse five competitive forces (Baltzan and Phillips, 2010).

a) Rivalry of Competitors within its Industry

It is mainly driven by the number and capability of competitors in the market. Many competitors, offering undifferentiated products and services will reduce market attractiveness. This will force the organisation to adopt a strategy that will change or make the firm competitive. Ultimately, the firm might have to consider supply chain or value chain in order to implement a cost leadership strategy.

b) Threat of New Entrants into an Industry and its Markets

Profitable markets normally attract new players which may dilute profitability. The incumbents have to build strong and durable barriers to entry which are not limited to regulation, in case of Zimbabwe telecommunications sector where POTRAZ is the regulator, these could be in the form of patents, economies of scale and huge capital requirements. Economies of scale will be as a result of partnership and strategic supply chain strategies among others that will enable the organisation to negotiate good deals when purchasing products.

c) Threat Posed by Substitute Products Which Might Capture Market Share

This happens in a market where a close substitute exist. The threat of substitute products increases the probability of customers switching to alternative products in response to price increases. This will affect the power of suppliers and the attractiveness of the market.

d) Bargaining Power of Customers

Bargaining power of buyers is driven by the number of players in the market and the importance of individual buyer to the organisation and the cost to the buyer of switching to alternative suppliers. If a business has a few powerful buyers, they are often able to dictate terms of supplies. The telecommunications industry in Zimbabwe is made up of few players who can manipulate and tilt the market in their favor.

e) Bargaining Power of Suppliers

This is an assessment of how easy it is for suppliers to drive up prices. It is mainly driven by the number of suppliers of each essential input, its uniqueness of product and service, relative size and strength of the supplier and the cost of switching from one supplier to another.

III. RESEARCH METHODOLOGY

A multi-case study design and a mixed methods approach were adopted so as to provide a complete analysis of the problem under investigation (Cohen, Manion, and Morrison, 2011). The population included managers in the following categories; operations, marketing, finance and administration and procurement. The number of these selected employees in particular departments from Econet (A), NetOne (B) and TelOne (C) is 50 distributed amongst the three organisations according to management structure. Non-probability sampling was used to select only those with relevant information. For purposes of representativeness, purposive sampling technique and study units were drawn from employees of the companies under study, that is A, B and C.

A questionnaire and interview guide were used as the research instruments. Both fillable form type of questionnaires and hardcopies were distributed to respondents to allow for flexible data collection methods. For interviews, each participant was invited to the study through a phone call and personal visit by the researcher. Appointments were set up and then face to face interviews were conducted.

IV. DATA PRESENTATION AND ANALYSIS

4.1 Response Rate

Of the 50 questionnaires distributed, 36 useful questionnaires were returned and used for analysis representing a response rate of 72%.

Extent to which Supply Chain Management (SCM) can be a Source of Competitive Advantage

This section explored the extent SCM can be a source of competitive advantage in the telecommunications industry which was the first objective of the study. Focus was on establishing if SCM

can be a source of competitive advantage. The main focus was to understand the various contributions (resources, trained personnel, supplier collaboration, better quality materials and better resource management) to competitive advantage as reflected in reduced costs and business processes optimisation.

Table 1: Relationship between SCM components and competitive advantage

	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
There is a link of organisational strategy with SCM	24 67%	12 33%	0 0%	0 0%	0 0%
Company has supplier collaboration	13 36%	18 50%	5 14%	0 0%	0 0%
SCM contributes to competitive advantage	25 69%	11 31%	0 0%	0 0%	0 0%
Organisation invests in qualified SCM personnel	19 53%	17 47%	0 0%	0 0%	0 0%
Organisation has equipped personnel with sufficient SCM resources	16 44%	10 28%	5 14%	4 11%	1 3%
SCM reduces costs	22 61%	14 39%	0 0%	0 0%	0 0%
SCM contributes to better resource management	17 47%	19 53%	0 0%	0 0%	0 0%
SCM contributes to better quality materials	17 47%	19 53%	0 0%	0 0%	0 0%
SCM contributes to business process optimisation	11 31%	17 47%	5 14%	3 8%	0 0%
SCM contributes to competitive advantage	22 61%	14 39%	0 0%	0 0%	0 0%

As shown in Table 1, 100% of the respondents concurred that supply chain management is linked and related to performance of a firm’s competitiveness. All respondents from the three operators (Econet, NetOne and TelOne) at least agreed that there is a positive link between SCM and competitive advantage. More than 72% of the respondents attributed SCM to supplier collaboration, better resource management, investment in SCM personnel training and existence of SCM organisational strategy. At least 70% concurred that SCM contributes to the organisation’s competitiveness. SCM factors contribute to reduced costs and optimisation of business processes. However, other findings imply that supply chain management (SCM) can be a source of cost advantage in the telecommunications industry in Zimbabwe only if it addresses issues to do with the

provision of equipment to its personnel, to the extent that they effectively implement the supply chain activities. Issues to do with collaboration, company practices, supply chain management and investment in qualified personnel have given the telecommunications industry a competitive edge. In conclusion the extent to which supply chain management (SCM) can be a source of competitive advantage is very high.

4.1.1 Sample t-Test

In order to measure the extent to which supply chain management (SCM) can be a source of competitive advantage in the Zimbabwean telecommunications sector, a One Sample t-test was carried out, basing on the population test value of 3 (neutral). Table 2 and Table 3 show the results of descriptive and inferential statistics.

Table 2: Sample t-test

One-Sample Test						
	Test Value = 3					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Overall	-11.464	19	.000	-.77811	-.9202	-.6360

Table 2 indicates that supply chain management (SCM) can be a significant source of competitive advantage in the telecommunications industry. This t-test

statistic was found to be statistically significant, that is lower than the hypothesised mean score, $t(20) = -11.5, p=000$. The results mean that employing supply chain

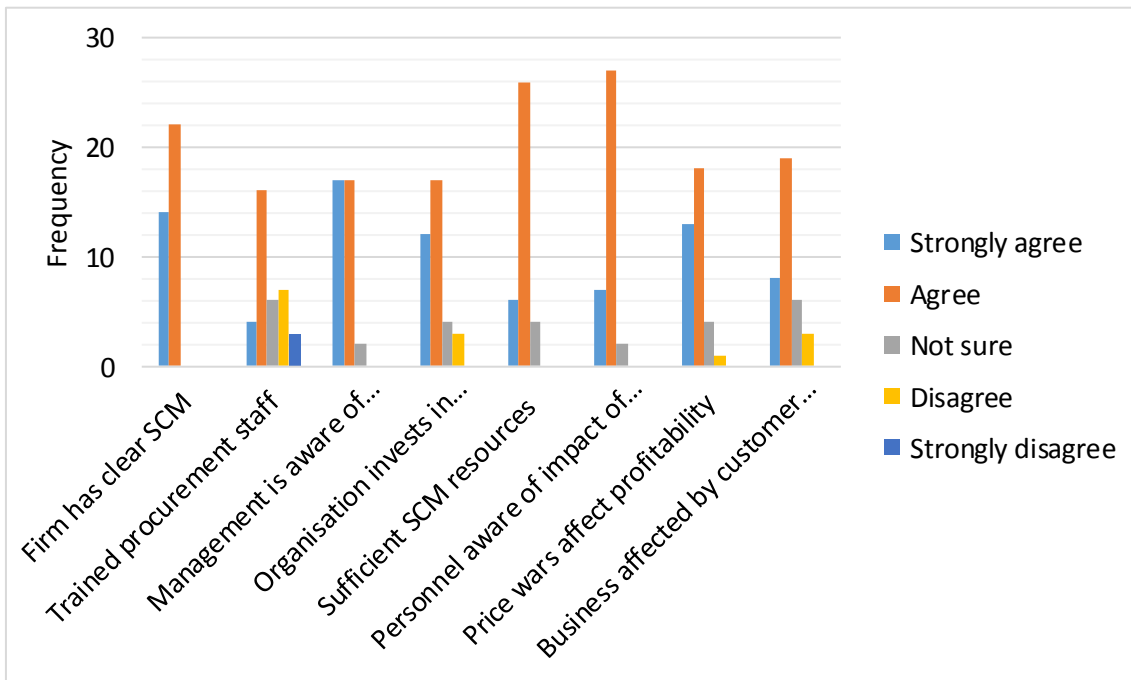
management (SCM) can significantly give organisations a competitive edge over others if adopted.

4.1.2 Organisational Strategy to Improve SCM

After analysing the supply chain management challenges and risks, it was necessary to understand

factors that enable effective supply chain management and ultimate competitive advantage; respondents were asked to suggest strategies to mitigate off-shore supply challenges and risks. Their responses are presented in Figure 3.

Figure 3: SCM strategy as reflected from operators (Econet, NetOne and TelOne)



As shown in Figure 3, for each strategy stated (clear SCM plan, trained procurement staff, management awareness of effect of SCM, investment in qualified SCM personnel, sufficiency of SCM resources and personnel being aware and conscious of SCM) at least more than 60% of the 36 respondents agreed that such strategies are effective in improving SCM in their organisations. Furthermore, price wars and mobility of customers influenced the effectiveness of SCM.

Results from this research concur with findings by several authors (Aserkar, Kumthekar, and Aserkar, 2014; Li, Ragu-Nathan, Ragu-Nathan, and Rao, 2004; Mbutia and Rotich, 2014; and Dzuke and Naude, 2015). These studies conducted across different parts of the world and for different companies produced similar trends where supply chain management is related to competitiveness. Most of these researches focused on the manufacturing sector, and commodity industry excluding technology oriented industries such as telecommunications. However, all the findings from previous studies and this study concur on the essence of supply chain management on improving competitiveness.

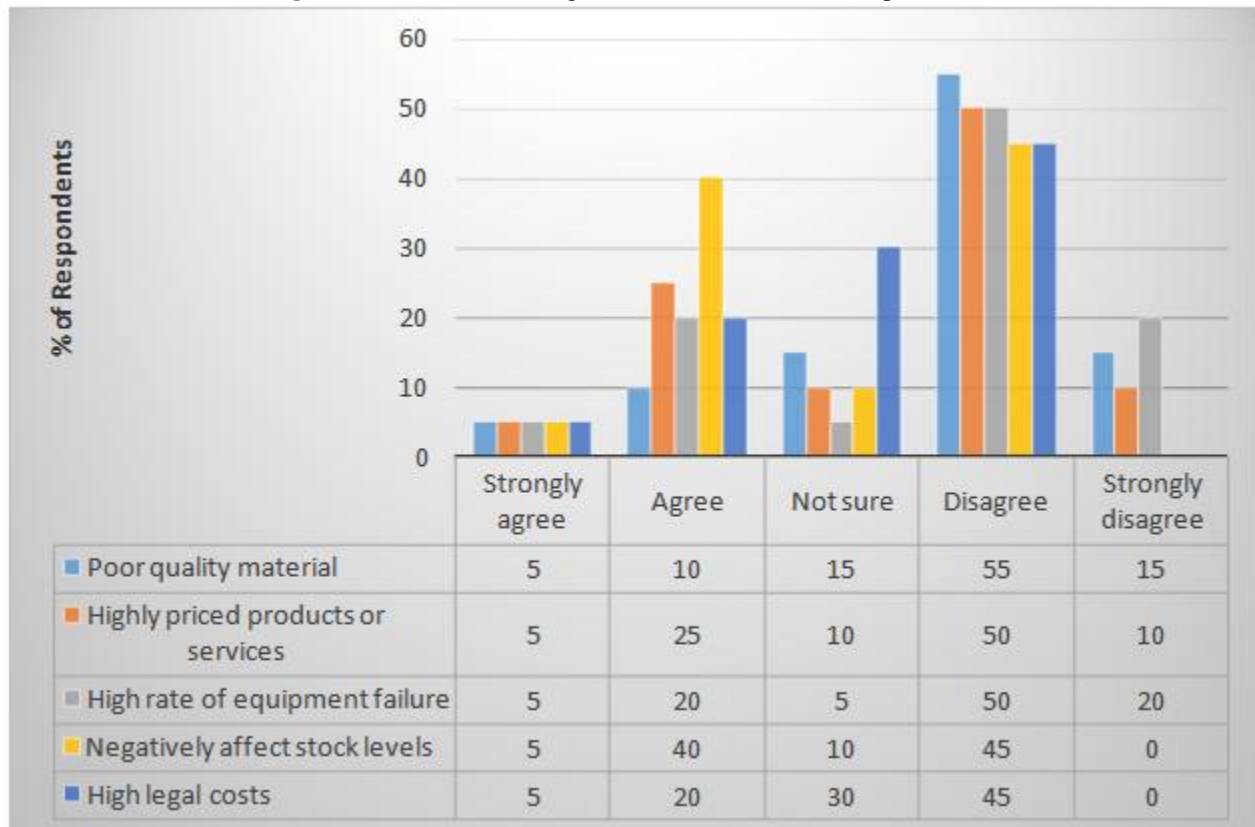
In addition, Quesada, Gazo, and Sanchez (2012) noted that supply chain management requires firms to develop specific organisational strategies aimed at managing supplier, and demand relationships otherwise firms may fail to realise full benefits of SCM. Responses

from interviews with procurement managers of the three operators reinforced such propositions.

4.1.3 Risks and Challenges off-shore Procurement

The second objective of the survey was to assess risks and challenges associated with off-shore purchases of equipment. This section evaluates risks and challenges associated with the procurement of equipment and materials outside Zimbabwe. The telecommunications industry depends on most equipment and material from off-shore. This has a number of challenges that include: high priced products, high equipment failure rates, high legal costs, unreliable stock levels and poor quality goods. This section investigated the views and experience of the managers from Econet, NetOne and TelOne with regard to these challenges as shown in Figure 4. Figure 4 illustrates the major constraints in the SCM in terms of their relative impact as perceived by managers. Negative effects of stock levels, highly priced products and services, legal costs, high breakdown rate of equipment and the quality were the major risks and challenges noted by 45%, 30%, 25%, 25% and 15% of the respondents respectively. The majority, more than 55% concurred that Econet, NetOne and TelOne do not experience off-shore challenges and risks of high legal costs, highly priced products, poor stock levels, poor quality nor high rate of equipment failure.

Figure 4: Risks and challenges associated with off-shore purchases



4.1.4 Mitigation of Risk at Organisational Level

Interviews with procurement managers of the three operators Econet, NetOne and TelOne indicated that operators value supply chain management as a critical element in steering their competitive edge against competitors. However, from observations of non-verbal expressions, the indication was that managers from Econet are confident of their supply chain system and collaborates with all employees in planning for procurement. This approach reduces risk purchasing of wrong equipment and materials. The manager clearly stated that:

“... supply chain management plays the core role in maintaining profitability and thus all employees should be part to this vision and understanding.”

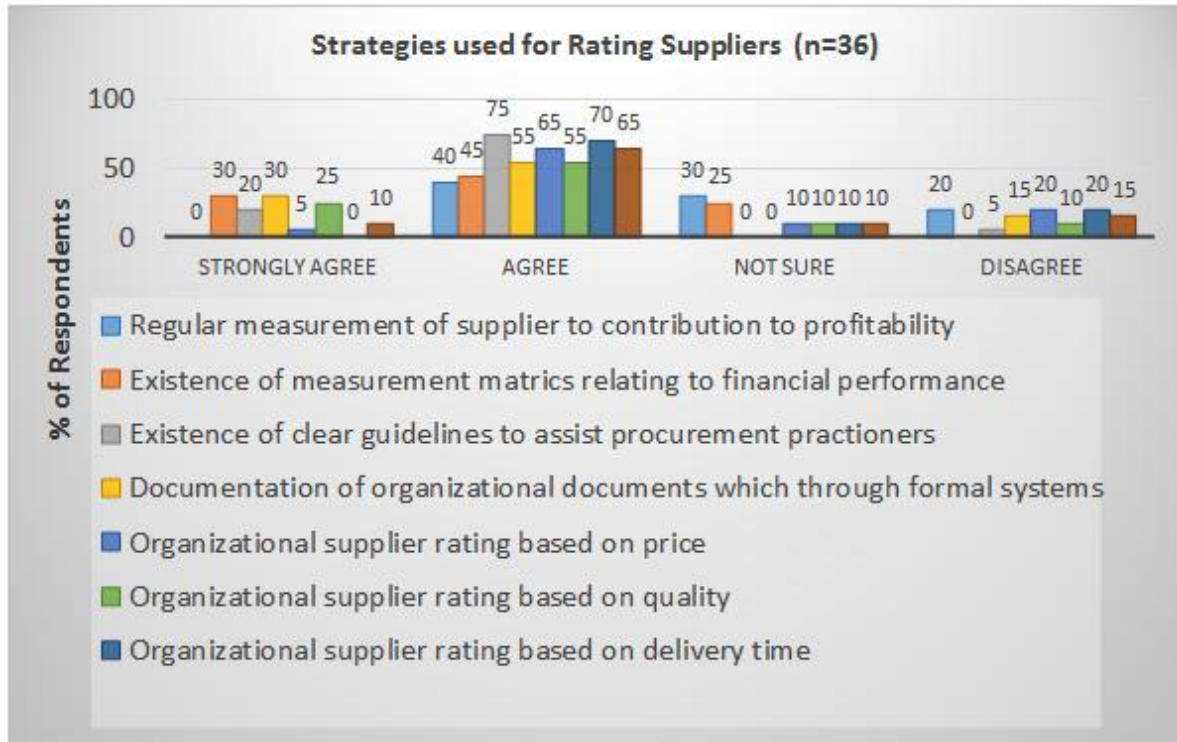
Furthermore, the manager reiterated the company’s use of independent evaluators who frequently audit their supply chain system. One of the managers from NetOne pointed to the need for effective planning

and support from management at all levels so as to improve the impact of the supply chain management systems. Generally, all operators suggested the use of well-known and established suppliers (certified dealers), rigorous supplier selection matrix, quality acceptance testing and establishment of dedicated supply chain management committees as measures to mitigate off-shore risks and improve competitiveness of the firm. The committee is made up of personnel from risk, procurement, operations and finance.

4.1.5 Strategies for Rating Suppliers

In this section, it was necessary to investigate whether the telecommunications operators NetOne, TelOne and Econet have clear guidelines and policies on supplier selection. Poor selection of suppliers may lead to higher risk which negatively impacts on pricing, quality and delivery especially for off-shore procurement. A set of nine questions were asked and the respondents’ responses gathered are shown in Figure 5.

Figure 5: Strategies used for rating suppliers



As shown in Figure 5, more than 55% of the respondents at least agreed that their organisation engages in supplier rating processes as evidenced by regular assessment of supplier’s contribution to profitability, use of measurement financial performance metrics, presence of clear procurement guidelines, formal systems for organisation documents, and ratings are based on key business parameters which are quality, price, delivery time and flexibility in payment. A close examination of the responses to the questions indicated some closeness in their intentions.

4.1.6 Factor analysis

According to Nouri (2011) factor analysis is the statistical analysis in which variables are categorised, grouped and loaded into a comon factor or factors. It is valuable in understanding some underlying factor being explained by the variables. Factor analysis was used to factor out all variables which were not principal factors with regards to the investigation at hand. The factor analysis process involved steps as shown by Table 3.

Table 3: Factor analysis: Total variance

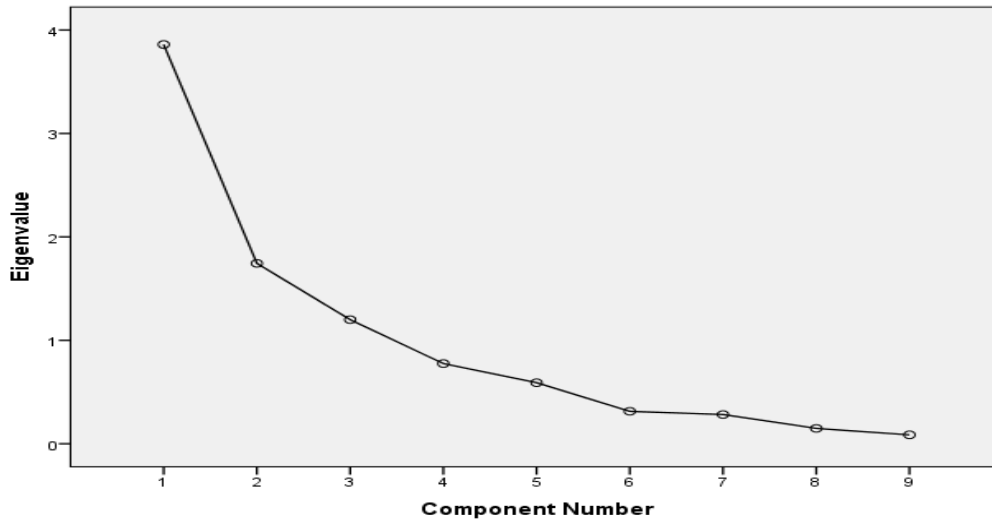
Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.860	42.890	42.890	3.860	42.890	42.890	3.356	37.293	37.293
2	1.744	19.374	62.264	1.744	19.374	62.264	1.940	21.553	58.846
3	1.200	13.333	75.597	1.200	13.333	75.597	1.508	16.751	75.597
4	.775	8.613	84.211						
5	.590	6.559	90.769						
6	.314	3.483	94.253						
7	.282	3.138	97.391						
8	.149	1.653	99.044						
9	.086	.956	100.000						

Extraction Method: Principal Component Analysis.

Table 3 shows the number of components extracted regarding strategies used for rating suppliers. Results indicate that only 3 components from a possible number of 9 were considered as strategies when rating

suppliers and these accounted for a total variance of 75.6% with component one accounting for 37.2% on its own. The Scree Plot in Figure 6 also presents a further analysis of such.

Figure 6: Factor analysis: Scree plot
Scree Plot



The scree plot in Figure 6 outlines the component numbers that were identified in Table 3. A further rotated component matrix is shown in Table 4.

Table 4: Rotated component matrix

Table 4: Rotated Component Matrix^a			
	Component		
	1	2	3
q19		.936	
q20			.804
q21			.752
q22		.870	
q23	0.812		
q24	.861		
q25	.852		
q26	.847		
q27	.929		
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.			
Rotation converged in 4 iterations.			

As shown in Figure 6 and Table 4, three factors were extracted with question 19 (q19) explaining component or factor 2, questions 23 to 27 explaining factor 1 and then questions 20 and 21 explaining factor 3.

The information was extracted and represented as shown in Figure 6 and Table 4. Table 5 has the outline of the components and grouped into variables.

Table 5: Reduction of variables into possible factor

Component or Factor	Variable
Supplier information and rating	Question 19 and 22 which related to regular measurement of supplier and documentation of organisation documents
Service quality	Q23-27 rating based on price, quality, delivery time and flexibility in payment
Standards	Q20 to 21 relating to the financial measurement metrics, and clear guidelines to assist procurement

As shown in Table 5, three main underlying factors pertaining to strategies for supplier rating are service quality, work standards, and supplier information and rating matrix. Findings indicate that the most important strategy in place was linked to the way the company rated its suppliers. Rating of organisations was based firstly on flexibility in payments, followed by price, delivery period, quality and use of online databases for sharing information with clients were constituents of component one of the rotated matrix, and these had loading factors of 0.929, 0.861, 0.852, 0.86 and 0.812 respectively.

4.1.7 Negotiating Power for Local Companies in Off-Shore Purchases

This study intended to understand the level of power when local companies negotiate terms for off-shore procurement. It is generally perceived that off-shore purchases are entangled with challenges for the procurement entity. Foreign suppliers who possess the knowledge and technology much sought by locals have a negotiating advantage over the buying firms. In this study, it was investigated as to the extent locals have negotiating power over their suppliers. This was interrogated on several relevant off-shore issues: relationship with suppliers, willingness of supplier to provide information, supplier ratings, use of partners and negotiating power as shown in Figure 7.

Figure 7: Level of negotiating power in off-shore purchases

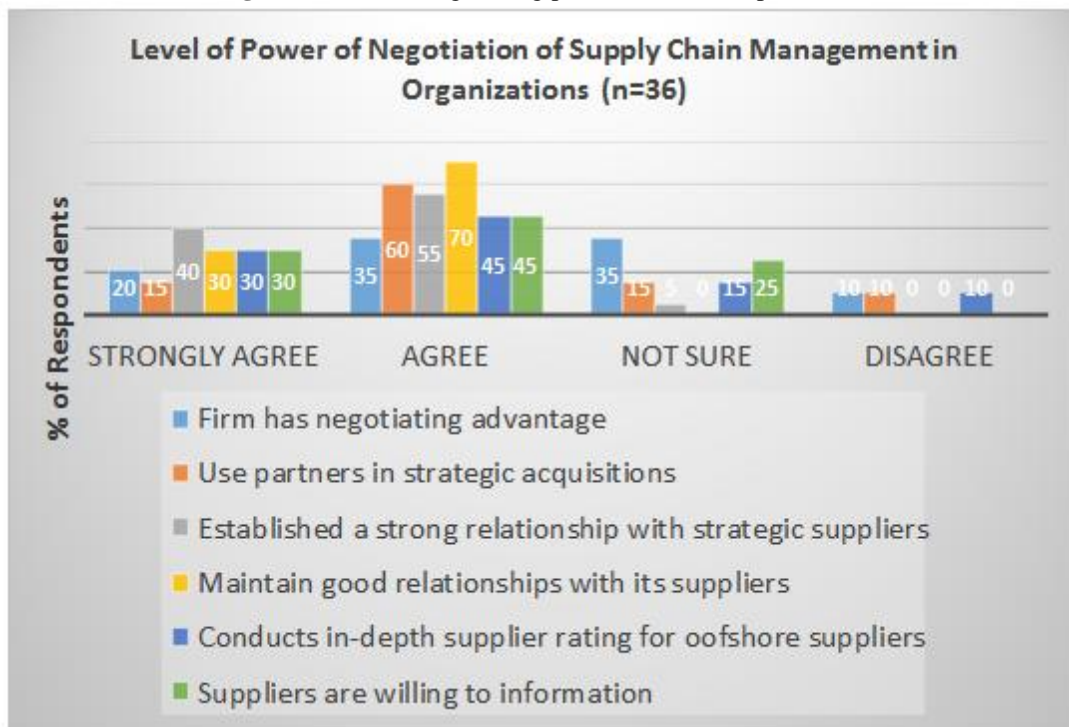


Figure 7 indicates the levels of the telecommunications sector in Zimbabwe in various aspects of negotiation. Across all aspects of negotiation, the SCM level of negotiations was high, though variations were noted between different aspects: establishment of strong relationships with suppliers.

4.1.8 Factor Analysis of Negotiating Power Variables

Carrying out factor analysis indicated that the six variable measures of negotiating power of the companies could be reduced to two factors as shown in Table 6. Questions 40 and 41 were reduced to one factor while 34, 36, 37 and 39 were bunched into one factor. Conducted in-depth supplier rating and supplier willing to supply information pointed to some underlying issue of

possessing adequate supplier information and the other variables that included strong relationship with suppliers, good relationships with suppliers and use of strategic

partners pointed to supplier side collaboration and management.

Table 6: Rotated component matrix

Rotated Component Matrix ^a		
	Component	
	1	2
q34	.784	
q35		
q36	.785	
q37	.848	
q38		
q39	.857	
q40		.829
q41		.839

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Table 6 shows the extracted components which are the organisational principles in place with SCM. A clear organisations supply chain management strategy, understanding the value of the SCM by management, personnel understanding impact of supply chain management's effects on organisational profits and investing in qualified SCM personnel, were the organisational strategies employed by the telecommunications industry in Zimbabwe as indicated by loading factors of 0.784, 0.848, 0.857 and 0.785 respectively and were the major constituents of component one which accounts for most of the variance and hence the variance in it are more important, the most important having a greater loading factor. Interviews conducted in this section also pointed out that most organisations in the telecommunications sector have a higher negotiating advantage. One manager highlighted that:

"It's a buyers' market; definitely we have to make the best out of it. Any small savings you make in purchases of any form and size have a positive impact on the balance sheet."

Informant 2 concurred and further reiterated that "... because of a wider base of suppliers, and the increasing global competitiveness, days of buying overpriced and poor quality goods are over."

The organisation takes time to assess and negotiate the best deals without any compromise to quality.

V. CONCLUSION AND RECOMMENDATIONS

5.1 Extent to Which SCM Can be a Source of Competitive Advantage

Firms can leverage SCM as a source of competitive advantage that can reduce costs and optimise processes of the business. A number of researches carried all over the world yielded the same result. In America, Li,

Baofeng, Linyani, and Xiande (2013) carried a survey across a manufacturing sector. Questionnaires were distributed electronically and a 10% response rate was achieved. The objective was to find out the extent to which SCM contributes to organisational competitiveness. The findings were that SCM is a great contributor of organisational competitiveness. The interviews conducted with the managers also had similar results as all of the informants literally concurred that SCM is a great contributor to an organisation's competitive advantage. Aserkar, Kumthekar, and Aserkar, (2014) carried a similar study that produced similar results.

5.1.2 Risks and Challenges of Off-Shore Purchases

Though poor quality materials and equipment, highly priced products from off-shore procurement, high rate of equipment failure, high off-shore related legal costs and erratic stock levels can be significant risks for off-shore purchases, Econet, NetOne and TelOne dismissed such as challenges for their operations. Furthermore, the informants were all aware of the potential risks that could negatively affect their procurement processes. In light of that, their organisations have a committee that specifically deals with procurement issues whether it is local purchases or international. Mostly, such committees are comprised of members drawn from all the departments.

5.1.3 Strategies for Supplier Ratings

Existence of clear guidelines and measurement metrics for suppliers, and basing supplier evaluations on service quality (delivery time, historical and track record of supplier, quality of products and responsiveness to requests among others) and proper supplier rating information are effective strategies towards effective supplier chain management processes.

5.1.4 Buyer Negotiating Power

Econet, NetOne and TelOne use partners for strategic acquisitions, conduct in-depth supplier vetting and selection, obtain relevant supplier related

information, and have sound and strong relationships with their suppliers that enable them to have negotiating edge over their suppliers.

5.1.5 Strategies to Improve SCM

Clear SCM methodologies, training of personnel, investment in qualified SCM personnel and provision of sufficient SCM resources are necessary to improve a firm's supply chain management framework.

5.2 Recommendations

Based on the findings of the study, the following recommendations are proffered:

5.2.1 Supply Chain Management Practitioners

Supply chain management is one key component that can provide underlying competitiveness in a business and as such it is recommended that practitioners reconsider their SCM practices with a view to reduce costs and increase profitability and competitiveness. The quality of products, better supplier management and competitive pricing may be realised if firms can adopt SCM principles and practices. A prudent SCM policy and practice are necessary tools for competitiveness.

5.2.2 Telecommunications Operators

Econet, NetOne and TelOne may need to consider SCM as a strategic tool to harness cost reduction, provide better quality products and increase profitability. However, evidence from this study points to the need for these operators to invest in SCM skilled personnel and train all employees in SCM principles so as to build a SCM culture across the entire spectrum of the organisational structures from management to shop-floor level workers.

5.2.3 Recommendations for Further Research

Though the respondents alluded to prudent SCM practices in their organisations, the fact that these firms are competitively different as earlier highlighted requires further interrogation as to why then, these firms are different with TelOne and NetOne paying higher prices for similar goods and equipment from similar off-shore companies as compared to Econet. Service quality as a determinant of competitive advantage is another area recommended for further study.

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