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Influence of ICT Support Practices and Logistical Management on the Performance of Oil Companies in Kenya

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Abstract **Original Research Article**

In the oil industry, the supply-chain network is composed of shipping via vessel, oil tankers and pipelines that run across multiple countries. Any disruptions arising in the global supply chain have tremendous adverse effects in achieving operational efficiency, maintaining quality, profitability, and customer satisfaction. This study analysed the influence of value chain strategies on performance of oil companies in Kenya. Based on the study, this paper examines the role of ICT support practices and logistical management on performance of oil companies in Kenya. Causal research design was used in the study. The target population was one hundred and five (105) oil marketing companies operating in Kenya. The study employed purposive sampling to pick a sample of seven (7) oil firms with the largest market share. Out of the seven (7) firms, stratified random sampling was used to obtain data from eighty (80) employees from the large oil marketing companies. Primary data was collected using semi-structured questionnaires. Descriptive and inferential statistics were utilized and a regression model developed. The study found that adoption of both ICT support and logistical management had a positive influence on the performance of oil companies in Kenya. It was, therefore, recommended that oil companies in Kenya need *a*dopt ICT to improve the efficiency and effectiveness of their operations. Furthermore, oil companies should strengthen logistical management in a manner that connects the organization to the suppliers. The findings should help oil companies to better understand the importance of value chain strategies such as ICT practices and logistical management in relation to firm performance.

Keywords: ICT Support Practices, Logistical Management, Performance, Oil Companies, Kenya.

INTRODUCTION

The oil industry works as a global supply chain involving exploration, material handling, domestic and international transportation, use of technology, among others [1]. The industry offers a strong model for implementing supply chain performance. Supply chain performance involves providing maximum satisfaction to end users; in other words, delivering the right product to the right person at the right time while still maximizing profits. Today, there are many opportunities for the coordination of activities across the supply chain even in the ever-complex oil and gas sector [2]. This is largely due to the development of information systems and communication technologies within the sector. Integrating supply chain management with other factors of operations allows all functions to be involved in the management decisions [3].

Performance refers to the degree to which an achievement is being or has been accomplished [4]. Frich [5] posits that performance is a general term applied to a part or to all the conducts of activities of an organization over a period, often with reference to past or projected cost efficiency, management responsibility or accountability or the like. Thus, not just the presentation, but the quality of results achieved refers to the performance. Performance is used to indicate firm's success, conditions, and compliance. Performance comprises the actual output or results of an organization as measured against its intended outputs. There are many different ways for measuring performance, but all measures should be taken in aggregation. Line items such as revenue from operations, operating income or cash flow from operations can be used, as well as total unit sales. Furthermore, the analyst or investor may wish to look deeper into financial statements and seek out margin growth rates or any declining debt. According to O'Sullivan [6], organizational performance encompasses three specific areas of firm outcomes: (a) financial performance (profits, return on

assets, return on investment, etc.); (b) product/market performance (sales, market share, etc.), and (c) shareholder return (total shareholder return, economic value added, etc.).

For many firms around the world, ICT support practices is a major variable of interest. Many firms have had to come up with advanced ICT support practices to keep up with competitors in order to curb waste and increase the speed to market. Furthermore, due to the increase in competitive pressures, many companies are using new technologies to extend their products and operations to achieve new innovative transactional organizational forms [7]. An example of new technology is the advent of e-commerce. This phenomenon has posed various concerns for many organizations as the world has become a global marketplace where firms need to be more streamlined and efficient while simultaneously extending the geographic reach of their operations (Klein & Rai, 2013). The adoption of the new technologies, such as the internet, makes it cheaper and easier for firms to extend their markets, manage their operations and coordinate value chains across borders [9]. Because of firms' globalization of services, the ability to reach a wide variety of customers has been increased and thus, has given consumers a wider choice of products. Thus, technology has both been driven and has been a driver of globalisation, as these forces continually reinforce one another [10].

The value chain of the petroleum industry is extremely complex compared to other industries [11]. It is much bigger than procurement and logistics; it is an entirely new way of thinking and organizing the total lifecycle from raw materials to use of the final product or service by the ultimate consumer. There is a need by organisations to build a very sophisticated supply chain that can create smooth flow of information, goods and services, from inbound and outbound for the purposes of achieving high customer service delivery, resulting into high performance results [12]. The main objective of value chain management is to stimulate sales, minimize costs and take full advantage of business assets by refining collaboration and communication between all the actors creating the supply chain [4].

Influence of ICT Support Practices on Performance

Information and communications technology (ICT) refers to technologies that pertain to human communication processes and the information they handle. It includes telecommunications equipment, computing hardware and software, office machinery, electronic goods and components used to store, process, and communicate information. In supply chain management, ICT has especially been recognized as an enabler for information sharing which companies in the supply chain can use for eliminating the so-called bullwhip-effect [13]. Information-sharing is also a key component in many of the recent automatic replenishment programmes (ARP) [14].

Information and communications technologies comprise a complex and heterogeneous set of goods, applications and services used to produce, distribute process and transform information. They include the outputs of industries as diverse as telecommunications, television and radio broadcasting, computer hardware and software, computer services and electronic media, e.g., the Internet, electronic mail, electronic commerce and computer games [15]. Cowling [16] investigated the effect of a new supply chain design on business performance in the context of information technologies in the fast-moving consumer goods (FMCG) industry in Turkey. The company possessed and used a supporting tool named SAP APO software as an information technology to perform supply chain operations. Under the scope of the study, supply, production and distribution planning processes were modelled and implemented in short, medium and long terms. Implementation results demonstrated that restructuring of the supply chain by using information technologies has positive effects on business performance criterions like supply, production and distribution.

Rick [15] assessed the usage of information technology (IT) tools, commitment of partner relationships, and supply chain performance in the Malaysian manufacturing industry. A total of 250 questionnaires were distributed to manufacturing companies located in Penang, which is in the northern region of Malaysia. After applying multiple regression analysis, the study found out that a higher level of supply chain partner commitment leads to a higher level of supply chain reliability and flexibility. Trust among supply chain partners also contributes to improving supply chain flexibility. Additionally, the results revealed that there was an insignificant relationship between usage of IT tools and supply chain performance. This could have been because IT tools were not highly used. Owing to the fact that IT tools could not create flexibility in response to changing environments since structured and standardized routines of IT tools are unable to cater for business cases that require more flexible ways of doing things.

Kohler [17] examined the impact of business analytics on supply chain performance. Using structural equation modelling and a sample size of 310 companies from different industries from the USA, Europe, Canada, Brazil and China, the research investigated the relationship between analytical capabilities in the plan, source, make and deliver area of the supply chain and its performance using information system support and business process orientation as moderators. The findings suggested the existence of a statistically significant relationship between analytical capabilities and performance. The moderation effect of information systems support was considerably stronger than the

effect of business process orientation. The results provided a better understanding of the areas where the impact of business analytics may be the strongest.

Mundia, Langat and Lelegwe [18] analysed the effect integration of information systems has on management of upstream supply chain among supermarkets operating within Nakuru town. The principal tool for data collection was the questionnaire while data was analysed using the multiple regressions model. The study established that whereas the Enterprise Resource Planning (ERP) system had no statistically significant effect on management of upstream supply chain, the Electronic Data Interchange (EDI) system had a significant and positive effect on management of upstream supply chain.

Wasike, Ogollah and Mburu [19], on the other hand, examined the role of competence in information systems on the agility of supply chain in the service industry. IT service competence was found to have a direct impact on supply chain agility as well as on service management skills. Mbaka [20] analysed the influence IFMIS has on the effectiveness of supply chains in county governments. The study found out that use of Electronic Document and Recording Management System (EDRMS) improved the processes of access to information, documents tracking and retrieval. Moreover, the study revealed that use of the e-purchasing component tended to facilitate ease and faster processing of logistics associated with procurement.

In another study, Karimi and Namusonge [21], while focusing on the role information technology plays in warehouse management, used a sample of 50 respondents from a target population of 930 individuals. They established that information technology through Enterprise Resource Planning (ERP) impacts positively on service speed and accuracy of transactions at the stores. Momanyi and Sanewu [22] examined the impact of information communication technology among ferry services in Kenya. Using questionnaires and a sample of 60 out of 220 respondents, the study identified operational efficiency, access to information and accuracy, as facets of organizational performance that benefit significantly from the use of technology.

Kimechwa [23] examined the impact supply chain management practices have on the performance of the Post Bank in Kenya. Using a series of inferential statistics that included chi-square and t-test, the study identified ICT as playing a major role in the performance of the bank, through data transaction and display modes. It is apparent that information systems as components of information technology have played a significant role in supply chain management and resulted in the performance of many companies in diverse sectors.

Influence of Logistical Management on Performance

The need for materials movement along a supply chain puts transport management at the core of logistics. A number of studies have consequently been conducted with a view to establishing the influence of proper logistics management and overall performance among organizations. Liberatore and Miller [24] examined the impact of the performance of out-bond logistics on firm profitability in manufacturing and service oriented firms. The study was informed by the diversity in performance metrics available for use by firms. Using Cluster analysis to develop a taxonomy, the study distinguished four clusters which were named as inventory investment minimizers, planners and efficient distribution spenders, low cost, low service providers, and heavy distribution spenders respectively.

Akdogana and Durak [25] compared logistics and marketing performance of logistics companies between Germany and Turkey. The motivation of the study was globalization and increased activities related to foreign trade observed globally. Measuring logistics companies drawn from Germany and Turkey, the study revealed that there were significant differences between logistics and marketing performance among logistics companies drawn from the two nations. Muchori [26] analysed the effect of congestion in the road traffic on freight logistics efficiency at the port of Mombasa. Building on the infrastructural pressure on the road from Nairobi to Mombasa which has continued to put a strain on logistics operations at the port, the study employed a descriptive survey design and used a sample size of 150 respondents from a possible 10450 employees. The correlation results revealed that traffic congestion had a positive correlation with transport cost. Consequently, traffic congestion impacted negatively on efficiency of freight logistics.

Mukolwe and Wanyoike [27] assessed how management practices used in logistics affect operational efficiency in Mumias Sugar Company. Using descriptive and inferential statistics, the study revealed among other findings that transport management and the practices used for physical distribution are synonymous with the flow of raw materials and goods that is cost-effective which impacts positively on operational efficiency. Mwangangi [28] examined the influence logistics management has on performance of manufacturing firms. The study used both primary and secondary data drawn from employees of the firms and published and unpublished records. Using multiple regressions analysis, the study revealed that transport management by use of transport management systems was a significant predictor of firm performance.

Gitahi and Ogollah [29] investigated how practices used to manage fleets influence service delivery to refugees under the UNHCR Kenya programme. The study builds on the premise that

transportation is central to logistics. The study used the descriptive research design and targeted 390 employees. From the sample of 117 who participated in the study, it was concluded that the rate of fuel consumption on tracking, fuel monitoring, fuel sourcing, fuel allocation on a day-to-day basis, and the rate at which fuel usage is monitored influence delivery of services to refugees in the UNHCR programme in Kenya. Ndubi, Iravo and Ochiri [30] examined the effect variability in lead times has on the performance of inbound logistics at Safaricom Limited. Using linear regression model, the study identified lead times in terms of production, shipping, the Turn Around Time (TAT) for customs brokerage, and the velocity for inspection of goods as having direct and significant effects on the performance of inbound logistics measured in terms of delivery time, cost and quantity.

Kimani [31] conducted a study on supply chain management challenges in the Kenyan petroleum industry and noted that Kenya's petroleum industry faces supply chain challenges such as lack of strategic stocks, relatively high petroleum prices compared to other East African countries, frequent fuel shortages, sub-standard products and diversion of products destined for export back into the country. He explored challenges facing implementation of effective supply chain management practices in the petroleum industry in Kenya using the case of National Oil Corporation. Specifically, the study sought to explore the influence information technology, supply chain design, people issues and partnership/collaboration issues have on the implementation of effective supply chain management. He concluded that all four independent variables have high effect on the implementation of effective SCM in the petroleum sector.

Statement of the Problem

In the oil industry, the supply-chain network is composed of shipping via vessel, oil tankers, and pipelines that may run across multiple countries. This network is used to transport crude oil from wellhead to refinery for processing and to transport finished products from product storage tanks to distribution centres and finally to the customers. Any disruptions arising in the global supply chain can have tremendous adverse effects in achieving operational efficiency, maintaining quality, profitability, and customer satisfaction. The adverse events may happen due to uncertainty in supply of crude, demand, transportation, market volatility and political climate [31].

The petroleum industry in Kenya has witnessed enormous growth since the market was liberalized in 1994 and has resulted in very tough competition, corruption at the government level, worsening of health and safety conditions in the industry and increase in retail prices. Since then, many independent oil marketing companies were started within a very short period, increasing the total number of oil marketers from seven to thirty-five. This as a result led to many multinational oil marketers closing their Kenyan businesses [32]. The Organisation for Economic Co-operation and Development (OECD) [33] asserts that oil firms in developing countries like Kenya are more vulnerable to particular value chain threats such as bribery, corruption and other unethical business practices. For instance, large scale and small scale oil consumers have frequently complained of product outages in some Kenya depots, long durations taken to ascertain stock levels, communication bureaucracies within the company structure, fuel adulteration, time spent on queues waiting to load, rationed product transfers and delayed product arrival at delivery points [3].

Several studies have been undertaken on oil value chain strategies. Awino and Gituro [34] conducted a study on empirical investigation of supply chain management best practices in large private manufacturing firms in Kenya. They noted that, today, large companies are mainly focusing on becoming efficient and flexible in their manufacturing methods in order to handle uncertainty in the business environment. Chima [3] conducted a study on supply-chain management in the oil and gas industry and asserted that the oil and gas industry is involved in a global supply chain that includes domestic and international transportation, ordering and inventory visibility and control, materials handling, import/export facilitation and information technology.

Studies, both at global and local perspectives have been carried on the concept of value chain strategies. Studies in the context of oil marketing firms within the African setting, particularly Kenya, are limited since they have been carried out from a single company perspective, hence the existence of a gap in knowledge. This study therefore sought to fill this void by analysing the influence of ICT services and logistical management strategies on performance of oil companies in Kenya.

MATERIALS AND METHODS

The study employed causal research design. The unit of analysis for the study was 98 petroleum companies and 7 large-scale oil consumers in Kenya, hence the 105 operational petroleum companies in Kenya at the time of study. Of these, seven (7) had the largest market share of 52.2%. These were Total Kenya with 14.2%, Kenol Kobil with 13.8%, Vivo Energy with 13.0%, Gulf Energy with 7.8%, Hashi with 7.3%, Oil Libya with 4.6%, and finally National Oil Corporation of Kenya (NOCK) with 4.5%. All these petroleum companies are licensed under the Energy Regulatory Commission (ERC) (ERC, 2019). These seven (7) oil companies with the largest market share were sampled purposively for the study. Within these seven oil companies, there were three levels of

management, namely senior level, middle level and value chain management. Primary data was collected using structured questionnaires. Before processing the responses, the completed questionnaires were edited for completeness and consistency. The data was then coded to enable the responses to be grouped into various categories. Descriptive statistics, such as means, standard deviation and frequency distribution, were used to analyse the data. Descriptive statistic tools were used to analyse the closed-ended questions where a computer program (SPSS software version 23) was used. Tables and figures were used appropriately to present the data collected for ease of understanding and analysis. This enabled the researchers to summarize responses for further analysis and to facilitated comparison.

RESULTS

The study examined the influence of ICT support practices and logistical management on the performance of oil companies in Kenya.

ICT Support Practices

The study sought to determine the influence of ICT support practices on the performance of oil companies in Kenya. Respondents were expected to give their level of agreement on statements given. The findings were as presented in Table 1 below.

Table-1: Influence of ICT in Enhancing Organizational Processes

Statement	N	Min	Max	Mean	Std dev
The organization has an integrated information system with an electronic data interchange	68	3.00	5.00	4.04	.68
Our enterprise resource planning systems have improved supply chain management	68	3.00	5.00	4.10	.58
Processes automation has improved our organization performance	68	3.00	5.00	4.14	.78
Integrated information system has reduced supplies timelines and have enhanced our fleet management	68	3.00	5.00	3.94	.71
Our ICT systems has improved customer relationship and supplier relationship	68	3.00	5.00	4.24	.60

Source: *Research data (2020)*

From the research findings, majority of the respondents agreed that ICT systems adopted by oil companies had improved customer and supplier relationships (mean=4.24; std dev=.60). Processes automation were also reported to have improved the organizational performance (mean=4.14; std dev=.78). Lastly, integrated information systems had reduced supplies timelines and have enhanced fleet management (mean = 3.94 std dev=.71). These findings concurred with the views by Rick (2014) that there is a significant relationship between usage of IT tools and supply chain performance.

Influence of Logistical Management on Performance of Oil Companies

The study sought to determine the extent to which respondents agreed with given statements relating to logistical management.

Table-2: Statements Assessing on Logistical Management

Statement	N	Min	Max	Mean	Std dev
The storage facilities of the organization are adequate	68	3.00	5.00	3.84	.66
The transportation infrastructure of the organization is adequate and reliable	68	4.00	5.00	4.35	.48
There is a formal communication department to address customer issues	68	4.00	5.00	4.29	.46
The organization carries out regular customer satisfaction surveys	68	3.00	5.00	4.10	.74
Long-term strategic relationships with other suppliers has positively affected our logistical management	68	3.00	5.00	4.12	.70
The products are widely available to customers	68	3.00	5.00	4.03	.69
The marketing infrastructure of the oil product is adequate and reliable	68	3.00	5.00	4.04	.63

Source: *Research data (2020)*

Results show that majority of the respondents agreed that the transportation infrastructure of the oil companies in Kenya were adequate and reliable (mean = 4.35 std dev=.48), and there was a formal communication department to address customer issues (mean = 4.29 std dev=.46). These findings agreed with those of Mwangangi [28], that transport management by use of automated systems was a significant predictor of firm's performance.

Further the study indicates that the marketing infrastructure of the oil product was adequate and reliable (mean=4.04 std dev=0.63) and that oil companies had their products widely available to customers (mean=4.03 std dev=0.69). These findings

were in support of those by Mukolwe and Wanyoike [27], that the rate of fuel consumption on tracking, fuel monitoring, fuel sourcing and monitoring of fuel allocation on a day to day basis influence delivery of services within organizations.

Performance of Oil Companies in Kenya

Table 3 presents the statistical findings on financial performance of oil companies in the last four years.

Table-3: Performance of Oil Companies, 2016-2019

Performance	2019	2017	2016	2016
Return on assets	184.36	143.12	158.14	133.04
Return on investments	178.32	105.3	133.12	98.36
Sale volume	197.02	96.58	123.99	85.36
Market share	53.4%	33.14%	44.10%	40.22%

Source: Research data (2020)

An analysis of organizational performance revealed most of the oil companies registered a positive trend on market share, increasing from 40.22% in the year 2016 to 53.4% in the year 2019. The same trend was also observed on return on assets where the lowest (133.04%) was recorded in the year 2016 and the highest values recorded (184.36) in the year 2019. Results also showed that sales volume improved from 85.36 in the year 2016 to 197.02 in the year 2019. Lastly, on return on investments, a similar trend is also recorded whereby the lowest value of 98.36 was recorded in the year 2016 and the highest of 178.32 in the year 2019.

Correlation Analysis

In order to confirm the influence of the study variables on financial performance, the study used Pearson moment correlation. The results were as shown in Table 4.

Table -4: Correlations Results

			ICT Support Practices	Logistical Management
	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	68		
ICT Support Practices	Pearson Correlation	.674**	1	
	Sig. (2-tailed)	.000		
	N	68	68	
Logistical Management	Pearson Correlation	.663**	.493**	1
	Sig. (2-tailed)	.000	.000	
	N	68	68	68

Source: *Survey data (2020)*

Table 4 shows that a strong positive correlation existed between ICT support practices and performance of oil companies in Kenya, as shown by a correlation coefficient of 0.674. The significant value was 0.000, which was less than 0.05. These results agreed with those of Rick (2014) who found a significant relationship between usage of IT tools and supply chain performance.

The study identified a positive correlation between logistical management and performance of oil companies in Kenya as shown by the correlation coefficient of 0.663. The significant value was 0.000, which is less than 0.05. The findings supported the empirical results of Mukolwe and Wanyoike [27] who found that the rate of fuel consumption on tracking, fuel monitoring, fuel sourcing, fuel allocation on a day-to-day basis, and the rate at which fuel usage is monitored influence delivery of services within organizations.

Hypotheses Tests

The significant value for ICT support coefficient table was 0.003, which was less than 0.05. Since the P-value of 0.003 was less than 0.05, the null hypothesis, that *ICT support has no significant positive effect on performance of oil companies in Kenya*, was, therefore, rejected. The implication was that there existed a significant positive relationship between ICT support practices and performance of oil companies in Kenya.

The significant value for logistical management coefficient table was 0.032, which was less than 0.05. Since the P-value of 0.032 was less than 0.05, the null hypothesis, that *logistical management has no significant positive effect on performance of oil companies in Kenya*, was, therefore, rejected. The implication was that there existed a significant positive relationship between logistical management and performance of oil companies in Kenya.

Interpretation of Findings

Results showed that ICT iterated supply chain dramatically reduced waste in several areas also oil firms were able to save on space in warehousing due to better route management. This saves oil firms on emissions helping oil firms to meet low-waste environmental goals, Trucks are filled on every leg of the route maximizing cube and ensuring that oil firms do not have empty trucks driving around. This means that oil firms are more efficient and save money. According to Ristovska, Kozuharov and Petkovski [35], businesses with ICT iterated supply chain can produce and deliver products at a much faster, more successful rate, and thus attain that higher profit margin.

The study also revealed that logistical management practices have a positive impact on the performance of oil companies in Kenya. Integrated supply chain by oil companies in Kenya increased firm's flexibility to adjust to client requests, competitors' actions, and events within the industry. Oil companies also reduced waste and lower costs. Overall, with an integrated supply chain oil companies in Kenya were gaining advantage over the competition and the whole business benefits. Having an integrated supply chain allows oil companies in Kenya to do that much more quickly and fluidly than would be possible with a traditional logistics model. While very beneficial to a company's costs and space, this method can be detrimental if the supply chain is not effective or responsive enough, limiting inventory and creating delays and ultimately costing more than the savings are worth.

DISCUSSION

The study found a strong positive correlation between ICT support practices and performance of oil companies in Kenya (correlation coefficient = 0.663, significant value = 0.000). Results showed that a unit change in ICT support practices while holding the other factors constant would positively change performance of oil companies in Kenya by a factor of 0.393. These findings supported those by Rao [36], that the use of IT in supply chain relations is mostly related to operational efficiency, such as order information exchange, providing information availability and visibility, enabling single point of contact of data and allowing decisions based on total supply chain information.

Results showed that ICT systems adopted by oil companies had improved customer relationships and supplier relationships (mean=4.24 std dev=.60). Further, processes automation has improved the organization performance (mean=4.14 std dev=.78). These findings concurred with those of Rick [15], that there is a significant relationship between usage of IT tools and supply chain performance.

The study found a positive correlation between logistical management and performance of oil companies in Kenya (correlation coefficient of 0.674, significant value = 0.000, test regression). Results also show that a unit change in logistical management while holding the other factors constant would positively change performance of oil companies in Kenya by a factor of 0.576. These findings supported those of Chima [3], that managing logistics on a proper level will give a company control over inbound freight, keep inventory at optimal levels, organize the reverse flow of goods, and utilize freight moves on the proper transportation mode all of which can cut costs significantly.

Results showed that the transportation infrastructure of the oil companies in Kenya have adequate and reliable (mean=4.35, std dev=.48). It was noted that there is a formal communication department to address customer issues (mean=4.29, std dev=.46). These findings affirmed those of Mwangangi [28] that transport management by use of transport management systems was a significant predictor of firm performance. Further the study found that the marketing infrastructure of the oil product with most of the oil companies in Kenya is adequate and reliable (mean=4.04, std dev=0.63). These findings were in support of those of Mukolwe and Wanyoike [27] that the rate of fuel consumption on tracking, fuel monitoring, fuel sourcing, fuel allocation on a day-to-day basis, and the rate at which fuel usage is monitored influence delivery of services within organizations.

CONCLUSION

The study concludes that ICT support practices have a positive impact on performance of oil companies in Kenya. IT in SCM is viewed to have great opportunities, ranging from direct operational benefits to the creation of strategic advantage ICTs provide a means to improve both upstream operations (crude oil production) and downstream operations (transportation, refining of crude-oil and distribution of oil products). Moreover, the study concludes that logistical management enhances the performance of oil companies in Kenya. Oil companies have adopted various logistical management measures such as bound and outbound transportation management, fleet management, warehousing, materials handling, order fulfilment, logistics network design, inventory control, supply/demand planning and management of third-party logistics services providers.

RECOMMENDATIONS

Oil companies in Kenya need *to a*dopt ICTs to improve the efficiency and effectiveness of their operations, as well as to aid management decision making. Due to competitive positions in rapidly changing environments, oil companies must undertake innovative activities such as improving operational

processes and continuously reviewing competitive strategies. The study further recommends that oil companies should continue strengthening logistical management in a manner that connects the organization to the suppliers, and other clients that are situated in various parts of Kenya. Companies should have the technology to link all the entities in a way that offers consistency, enhances visibility and streamlines processes so that the firm can meet challenges in real time. Make sure that firm uses solutions that can deliver to everyone in the supply chain, regardless of their location.

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