

BUSINESS PROCESS RE-ENGINEERING AND ORGANIZATIONAL PERFORMANCE

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ABSTRACT

The ultimate goal of a supply chain and operations management is to maximize overall supply chain surplus. This is the difference between the value generated for the customer and the total cost incurred across all stages of the chain. This paper was undertaken to explain business process re-engineering in revamping business performance with specific focus on supply chain management. The main purpose of business process re-engineering is to ensure efficiency and effectiveness in operations management within an organization to maximize value and profitability through competitive performance. In the modern firms especially where value for money has been emphasized, such reforms are essential. The major Conclusions were that supply chain decisions have a large impact on the success or failure of each firm because they significantly influence both the revenue generated and the cost incurred. Second, successful supply chains manage flows of product, information and funds to provide a high level of product availability to the customer while keeping costs low. Among the recommendations were that there is need to make organizations open systems where information can be accessed by all supply chain stakeholders to facilitate effective participation in decision making. ICT should be utilized to facilitate free and expeditious flow of real time information within the supply chain to enable quick and timely access to the same by all the relevant users for ensuring efficiency and effectiveness along the chain and finally, Environmental conditions are undergoing more rapid rates of change and organizations should undertake to undergo fundamental changes in both management approach and organizational structure in order to cope.

Key Words: *Business process re-engineering, Supply Chain Management, Transaction Cost*

Introduction

In the rapidly changing environment, innovation is regarded as crucial to the sustainment of competitive advantage. The prospects of an organization are affected partly by quality and speed of innovations and change in other parts of the chain where stimulation of these innovations and

the effectiveness of their adoption can be enhanced by purchasing and supply management (Saunders, 1997). Supply chain operations therefore, continue to remain key economic player not only for the established firms but also developing small economy enterprises. Literature reviewed shows that procurement consumes between 50-60% an organization's budgetary resources in a given undertaking (Eyaa *et al*, 2011, Lysons, 2007) making it significantly important in influencing organizational growth. Many companies have come up with business re-engineering reforms to streamline their operations management (Eyaa *et al*, 2011). In order to realize effective organizational change, that is reforms, (Draft, *et al* 2010) opine that ICT systems facilitate knowledge management by enabling organizations to collect and store tremendous amounts of data, analyze that data so it can be transformed into information and knowledge, and share all across the organization for informed participative reform decisions.

Saunders (1997) argues that the transformation of industrial organization in the world has been profound and marvelous for quite a long time with tremendous returns in terms of competitive advantage to many organizations. In this respect, it then follows that given the development of new manufacturing systems, new styles of industrial interfaces and the adaptation of new framework for new product development, systems engineering and marketing, a key component is the realignment of the buyer-seller relations and the adoption of new supply practices by organizations across the globe. This has given rise to the concept of business systems reengineering as a better way of enhancing and sustaining the value of supply chain and its overall performance.

Pandey *et al*, (2010) defines supply chain as a coordinated, highly integrated and well managed supply system consisting of all players involved in the direct or indirect fulfillment of customer requirements. The chain is not limited only to the manufacturer and suppliers, but also transporters, warehouses, retailers and ends with the customers themselves. Within each organization, the supply chain includes all functions involved in receiving and fulfillment of customer requirements. The functions include but are not limited to, new product development, marketing, operations, distribution, finance and customer service. A supply chain is dynamic and involves the constant flow of information, product and funds between different stages with the goal of maximization and sustenance of value creation.

According to Saunders (1997), we can no longer continue treating purchasing and supply function as a second order function in any competition conscious entity today. Towards the end of the decade of 1990, the interest began growing in the concept of business process re-engineering which occasioned the questioning of the basic approaches of how technology and people could be harnessed to carry out particular activities and how individual elements could be interlinked to best achieve the key purpose of the organization. The way forward therefore, lies with integrated materials management which pulls to glue together the tripartite structure of suppliers, production and distribution. In the fore years any business that has not got their supply chain operations right will remain uncompetitive and most likely weed themselves out of business. On the global scale, we can certainly predict shifts in global demographics and

economic power in a near-distant future. The globe is drastically transforming and new markets are coming up which include regions such as Latin America, Africa, Asia and Eastern Europe mostly in the arrangement of regional integrations. Blocks such as the common Market for the South (Mercosur), Common Market for East and Southern Africa (COMESA) and North Pacific Alliance (NPA) are sprouting up. Supply chain management plays a key role in linking the supply and integrating organizations in a two-way communication system to manage high quality inventory in the most efficient manner, (Burt *et al*, 2003).

A further outcome of this new approach is the elimination of the conventional managerial hierarchies, as non-value adding levels in the structure of organizations are removed. Responsibility and authority are pushed down to the lowest levels that seem to be feasible and effective in fast realization of the company mission, vision, goals and objectives. In the modern times, emphasis is placed upon teamwork and horizontal relationships associated with inter-organizational boundaries, and indeed across such horizontal interdependencies between activities. This continues to place premium on multi-functional teams as a basis for competitiveness in most entities, which include purchasing and supply personnel, as well as design, process and production and distribution operations. Representatives of both customer and supplier organizations are currently being given significant consideration as a source for value generation and therefore treated as members of such teams (Saunders, 1997).

It is argued that an average manufacturing organization spends about 52% of every sales shilling on raw material, components and maintenance repair and operating (MRO) purchases. This therefore puts forth the need for supply chain integration and effective management, coordination and control for maximum efficiency and profitability by all parties involved in the flow of materials from the point of origin through conversion to the ultimate point of consumption.

Supply Chain Structure and Organizational Performance

A company's supply chain structure has three components namely external suppliers, internal functions of the company and external distributors, (Leenders *et al*, 1993). In respect to Michael Porter's value chain concept, external suppliers constitute the inbound logistic. They are the providers of raw materials to the firm. Internal functions include activities involved in processing of the raw material into consumable products while external distributors transport the products from the manufacturer to retail grocers, where the products are sold to the customer.

Pandey *et al*, (2010) says that the objective of every supply chain should be to maximize the overall value generated. There is a strong correlation between the design and management of supply chain and all that flows along the chain namely product, information and funds and the success of the chain. According to the author, the value (also known as supply chain surplus) a supply chain generates is the difference between what the final product is worth to the customer and the costs the supply chain incurs in filling the customer's request.

For most commercial supply chains, the supply chain surplus will be strongly correlated with the supply chain profitability; the difference between the revenue generated from the customer and the overall cost across the supply chain. For instance, consider a customer purchasing a wireless router from a dealer and pays Ksh 1000.00, which represents the revenue the supply chain receives. Customers that purchase the router may value it at or above Ksh. 1000.00, say Ksh. 1,200.00. Thus, part of the supply chain surplus of Ksh. 200.00 is left with the customer. The rest stays with the supply chain as profit.

The dealer and other supply chain levels incur expenses to relay the information, produce components, store them, transport them, and transfer funds and so on. The difference between the Ksh. 1000.00 that the customer paid and the sum of all costs incurred by the supply chain to produce and distribute the router represents the supply chain profitability. Apparently, the higher the supply chain profitability, the more successful and promising is the supply chain. It is therefore imperative, prudent and reasonable in economic terms to measure success of the chain in terms of its overall profitability and not in terms of the profits at an individual stage.

Theoretical Framework

Institutional Theory

The study deals more with institutional theory, principal-agent theory and bureaucratic theory. (Eyaa et al 2011) observe that there is no unitary universally agreed definitive view of institution or institutional theory. According to (Scott, 2004) as quoted by (Eyaa et al, 2011), institutions are composed of cultural-cognitive and regulative elements that, together with associated activities and resources give meaning to life. There are three pillars of institutions which include regulatory, normative and cultural cognitive. The regulatory pillar emphasizes use of rules, laws and sanctions as enforcement mechanism, with expedience as a basis for compliance. The normative pillar refers to norms and values, with social obligation as the basis of compliance. The cultural-cognitive pillar is hinged on common understanding. In the same respect, is evident clear that supply chain management is handled within the control parameters in the sense of company rules, policies and guidelines which are issued by management on regular basis.

Agency Theory

The principal agent theory as advocated by (Donahue, 1989) explains that supply chain managers take on the relationship role. This helps to explain their role in discharging their duties. (Prior, undated) explains that an agency relationship is a contract under which one or more persons (principals) engages another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent. It is merely assumed that the principal and the agent do not share the same levels of information, and as such, unless the agent is honest and faithfully reliable can opportunistically take advantage of the situation, sometimes to the detriment of the principal. Therefore, supply chain managers take on the role of agent for their organizations.

Conceptual Framework

These aspects coupled with effective information flow through the application of ICT and effective change management can have desirable results on procurement reforms. (Birks et al, 2000) argues that e-procurement can be an invaluable tool for enterprise experiencing difficulties in their supply chain. While day-to-day operations are affected by new technology, a strategic perspective is important in introducing it (Saunders, 1997). The study conceptualizes that sound re-engineering reforms in the supply chain management can be realized through a well-blended environment where these variables are proportionately integrated and carefully implemented on an all-inclusive stakeholder spectrum.

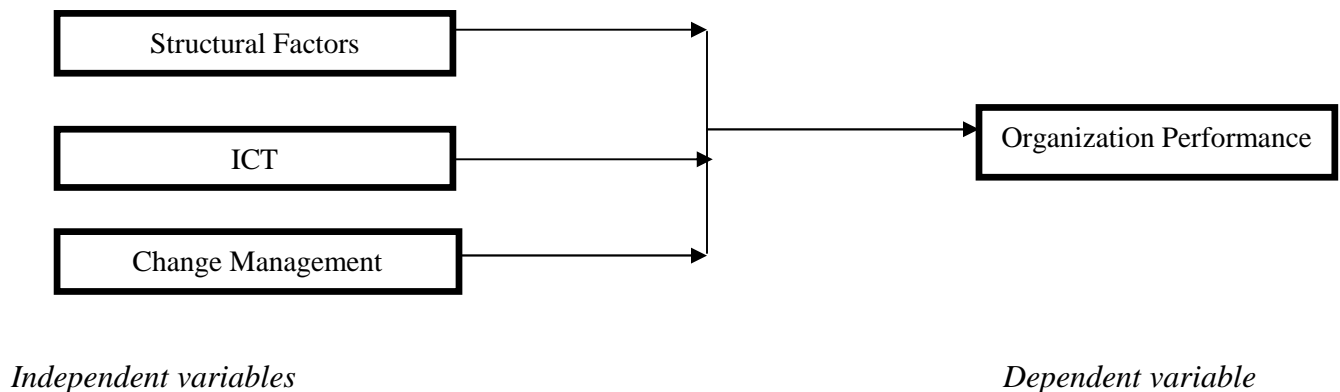


Figure 1: Conceptual framework

Empirical Literature

Organization Performance

According to (PPOA, 2010), supply chain management is one of the reforms of the public sector finance management systems. Public procurement in Kenya has been undergoing reforms consistent with the global trend since mid-1990s, notably within the periods covering 1997-2001 and 2005. Previous to these reforms, the framework governing public procurement was very amorphous, inefficient, lacked accountability and transparency, easily manipulated and therefore providing conducive environment for the perpetration of malpractice in public procurement system. This included the endemic corruption that characterized the system leading to wasteful use of public resources.

Leenders *et al*, (1993) argue that any coverage of the purchasing area should give due attention to the unique problems of purchasing by individual organizations. The funds spent by purchasing managers deserve the same serious attention as money spent for operational transactional activity, since the source of these funds is the hard earned profits and even taxes for public organizations. If funds are spent effectively and efficiently, benefits will accrue all those who pay for and obtain benefits from the services provided by the organization.

It is imperative to note that the total value of public procurement in the central government is currently estimated at 10% of the Gross Domestic Product (GDP), (Juma, 2010). Accordingly,

Kenya's GDP in the year 2008 was estimated at Ksh. 2,099.79 billion putting the total expenditure on procurement by the Government at around Ksh. 209.79 billion annually. Even at 10% savings due to improvements in procurement practices and controls would mean a yearly gain to the exchequer of about Ksh. 21 Billions. The gains expected from a streamlined supply chain operational system will allow for investment of more resources into other needy areas such as health and education. This will improve the quality of life not only of the employees, but also of the citizens, a venture that has the potential of greatly improving productivity and growth for the organization.

Ndung'u, (2010) on the other hand lays blame on the way supply chain operations are managed as the stumbling block towards realization of the same. In this regard, operations management assessment in the public sector by the PPOA which focuses on key indicators of compliance with the Public Procurement and Disposal Act, 2005, such as procurement institutional arrangements or structures, procurement processes, mandatory reporting to PPOA and stores, inventory control and management has revealed numerous hiccups. According to the reviews and assessment results, common areas of non-compliance include poor records management, documentation and filing systems among other reasons.

Purchasing management should be managed in manner that ensures transparency, accountability and provides ease of access to the purchasing information when need arises. Since material costs may represent at least 50-60 per cent of the cost of goods, purchasing significantly affects profitability, (Butt *et al*, 2003, Bowersox *et al*, 2005). The authors advance the argument that changes in product cost structure, with materials comprising the bulk of the cost of goods sold have elevated the role of purchasing in many organizations and therefore increasing the effect of purchasing on the organizations overall performance. Through the deployment of IT in its purchasing operations, a company may be able to push down some purchasing costs associated with lack of technology use such as communication costs, handling costs and holding costs through the use of modern inventory management techniques. These techniques which are IT based according to (Lysonset *al*, 2007) include Enterprise Resource Planning (ERP), Just-in-Time (JIT), Material Requirement Planning (MRP I), Electronic Data Interchange (EDI) and Electronic point of sale (EPOS) inventory management techniques and philosophes.

To forestall the malpractices of buying common-user items at inflated prices due to collusive practices and bid rigging by persons involved in the procurement process according to (Kirungu, 2010), an organization should develop a price reference guide that should be used across the board in supply chain cost cutting endeavors. The subsequent impact assessment for use of the pilot guide by the PPOA has established that the pilot entities have been able to procure the items at an average 20% above the market rates, 40% down from the initial 60%. Currently, PPOA with the support of the World Bank and in collaboration with the Kenya ICT Board is developing a web-based market price index. This is envisaged to be an efficient way of updating the price guide in real time. The author concludes that based on this, goods and services would be

procured at prevailing market prices so that millions of money savings can be used for availing more services to Kenyans.

Baily *et al.*, (2005) underscores need for accountability in procurement activities stating considerable amount of money are spent annually on goods and services in commercial entities. The procurement of these is for the good of the population at large and the expenditure that is incurred is, in effect, the company earnings. Public sector purchasers are accountable to the public whose money is being spent, including the disappointed tenderers and potential suppliers who are likely to incur losses when incompetent decisions are made. Procurement personnel must therefore produce procedures and practices which will stand up either to scrutiny during audits or to the challenge through the courts of any purchasing decision that has been made. The primary purpose of accountability is to prevent abuse of the company financial resources, letting it be seen that any such abuses have been prevented should come secondary. This is likely to promote goodwill toward the buyer from its clients and thus better services will accrue benefits to the organization.

Leenders *et al.*, (1993) advance that if the total annual tax-supported budget of a given unit is say \$2 billion, purchased supplies, materials, services and construction probably account for approximately \$500 million which is much less the purchases/sales of the average industrial firm. This therefore requires ethical management practices that will provide good care in spending company's hard earned money. If an overall 10% reduction in purchasing costs could be effected through better management of the operations of purchasing function, it would translate into savings of \$50 million which is a significant amount. This gives rise to higher level of service, lower tax rates or some combination. This is will augment the relationship between the buying entity and the society at large in the contrary. Consequently, the role of procurement in the economy will project more positive as a tool for economic growth.

The (Procurement Records Procedures Manual (PRMPM), 2008) says that breakdown of record keeping system has serious consequences on the procurement process in an organization. The indicators of failure to manage records effectively include non-maintenance of an accurate, comprehensive and complete file for each procurement; inappropriate, dilapidated and inadequate filing requirements; existence of huge backlog of unfilled procurement documents; absence of record keeping policy and regulations, officers' keeping official records in personal folders and desks, unauthorized access to, alteration or destruction of records, absence of reliable records control systems, inadequate and weak file movement control procedures, huge backlog of closed and unorganized files, fragmentation of procurement records, where different documents pertaining to a single activity are kept by different officers, such accounts, registry and stores section.

Lysonset *al.*, (2006) argue that purchasing as part of the broader supply chain accounts for at least 60% of an organization's total expenditure budget. This creates need for it to be efficiently and transparently accounted for. Without an effective system to exert tight control on purchasing

operations, purchasing personnel may be tempted to misuse the financial resources under their control to the detriment of the organization's economic standing. At 60% financial consumption, purchasing has a significant impact on a firm's income financial statements, which unless wisely managed can plunge an organization into serious economic woes.

Structural Factors and Organization Performance

Saunders, (1997) says that the choice of organizational structure is affected by the initial position of the firm and the strategic decisions in relation to competitive advantage and competitive scope. According the author, increasing concern for horizontal interdependencies between activities has focused attention on the development of coordinating mechanisms, such as matrix structures, multi-functional teams and committees. Among the emerging trends in supply chain management as a consequent of business process re-engineering in modern day organizations include project management approach on regular basis.

Baily *et al*, (2005) on the other hand argue that there is no one ideal structure that organizations can use forever. The more dynamic the environment, and the greater the growth of an organization, the greater the need to re-examine purchasing and supply organization. This is actually true especially with regard to the modern world business environment. Unless an appropriate structure is implemented to support operations of the function, sometimes it has been found that purchasing and supply staffs have their objectives frustrated because of poor departmental design. The following are important factors to be addressed by management in respect to structure related issues in respect to change implementation within a firm.

Systems

Attention to the development systems and procedures is also an integral part of the problem coordinating efforts to achieve key strategic purposes. The integration potential of computer systems provides opportunities for managing chains of activities more effectively and coping with linkages problems. This is one of the forces encouraging a radical reappraisal and redesign of business processes, which affects job specifications and skill needs (Saunders, 1997).

Style

Development in ideas about organizational structures and more optimistic attitudes towards the potential contribution of workers have influenced concern for more democratic and supportive styles of management. Firms which implement the supportive style of management put more emphasis on expertise being applied at the grass roots level and expect people to have more influence over their work and to contribute ideas towards operations improvement in the organization.

Shared Values

A more supportive style of management, which relies less on close control and looks to realize the skills and expertise of workers as problem solvers may require other ways of achieving support and commitment. The values of the organization with regard to such factors as mission,

objectives and approach to management take on extra significance especially with regard instituting effective change. These may be aspects of cultural environment of the firm. At the heart of fundamental changes required by strategies may be need to change the culture of the firm in order to support systems re-engineering.

Information Communications Technology (ICT) and organization Performance

Chopra *et al.*, (2010) says that information is crucial to the performance of a supply chain because it provides the basis on which supply chain managers make decisions. Information Technology (IT) consists of the tools used to gain awareness of information, analyze this information and execute on it to increase the performance of the supply chain. ICT serves as the eyes and ears, and even sometimes, a portion of the brain of management in a supply chain, capturing and analyzing the information necessary to make good decisions. It facilitates knowledge management by transforming data into information and knowledge, and share all across the enterprise, (Draft *et al.*, 2010). It is a key supply chain driver that glues and allows the other supply chain drivers, to work together with the goal of creating an integrated, coordinated supply chain. A supply chain can be effective only if all stakeholders within the supply chain share a common reasoning about the information that they have to make decisions. Different information with different stakeholders results in misaligned action plans that hurt supply chain performance.

In the GOK-ERS, (2003-2007), achieving organization's objectives of systems re-engineering require improvement in the reporting and accountability by establishing regular reporting flows in and out of organization accounts, implementing the e-business and strengthening oversight bodies and automating the internal audit function. Although the Integrated Financial Management Information System (IFMIS) in the public entities was intended to automate and seamlessly integrate key business functions in the public financial management reform effort, many key activities are still undertaken outside the system albeit the IFMIS capabilities to achieve full automation of these manual processes, (IFMIS Re-Engineering Strategic Plan, 2011-2013). The Minister for Finance observes that the strategic plan seeks to identify the political, administrative and capacity constraints that require rigorous interventions in order to secure the buy-in and ownership attributes necessary within MDAs to facilitate effective implementation of IFMIS and improve the confidence of all relevant stakeholders. The Minister adds that through the IFMIS re-engineering process, the government hopes to also address the change management and communication challenges previously experienced in the pilot phase of IFMIS implementation which greatly contributed to the lackluster performance of the system.

There is a clear indication here of lack of adequate involvement of the human resources factor in the roll out plan of the system which (Saunders, 1997) argues play an integral part in the process of introducing technological change and can determine whether the efforts succeed or fail. Technology impacts on the development of business conditions and creates new opportunities for suppliers, producers and customers. The personnel in public procurement can determine the

extent to which firms take advantage of ICT. Failure to recognize and exploit such innovations may jeopardize the future of an organization.

The (UN, 2006) says that for an organization to be able to successfully implement e-procurement, those involved in the procurement function need to understand the e-procurement concepts and tools so as to provide input into their development, use, evaluation and refinement as a means of improving procurement efficiency and effectiveness. The study thus establishes that procurement officers can make useful contribution to decisions about investment in, and configuration and use of e-procurement tools in many ways including having general understanding of the various e-procurement applications, understanding the sources of e-procurement benefits and identifying the procurement processes that are effectively supported by e-procurement. This requires a professional supply chain complete with technically qualified personnel. Such staffs will have a better understanding of need to reform the system and offer positive contribution toward the same course. The most successful e-procurement implementations have been driven by those who best understand the procurement processes and the outcomes to be achieved from deploying ICT in decision making. Unfortunately, (Burt *et al*, 2004) argue that it is common to ascertain that transaction-based procurement system has been purchased, implemented, operated and maintained with almost no input or participation from supply management. These systems may be acquired on the strength of purging costs of full time employees (FTE) which does not discriminate between individuals performing tactical and strategic value-added activities. Such purging increases future problems since few professionals are left to contribute during the critical requirements development process.

However, Draft, *et al* (2010) conclude that information only becomes knowledge when a person absorbs it and puts it to use. The government should therefore embrace knowledge management as an effective tool for change if it intends to enhance its reform agenda. Despite deployment of IT being a major boost for procurement reforms, Choppra *et al*, (2010) opine that when organizations switch over to new systems without proper integration, the new system is unable to perform all that was, for the purpose of this study, expected. It may even perform worse than the system being replaced. It therefore remains a delicate balance to actually make the transition over to the newer ways of doing business.

Saunders (1997) says that advances in technology have opened up new opportunities in the field of storage, transport and distribution which exploitation has contributed to improved performance in supply operations. Combinations of mechanization and automation have led to the use of automated warehousing techniques. There is also improvement in shipping, road and air transport which have adapted use of containers as a way of speeding up and reducing the costs of material handling. The use of computers and bar coding has created the ability to track and control the movements of goods and parcels more effectively thus enhancing supply chain performance. Changes in technology have also transformed administrative and office operations. Application of IT have led to widespread use computer aided design (CAD), computer aided engineering (CAE) in developing product designs. Other important applications include

computer aided production management (CAPM) and computer integrated manufacturing (CIM). So to speak, technological change through its various manifestations impacts on the development of business conditions and creates new opportunities for suppliers, producers and customers.

Change Management and Organization Performance

Saunders, (1997) argues that no economic sector been insulated from forces of change which have as well confronted the world, whether public or private. The introduction and management of changes is mandatory and necessary in these two parts of the economy as well. Accordingly, the various reforms measures in the supply chain management signal a swing away from processes of administration to the need for processes on management, which implies a number of changes in approach. The management of cultural change, as organizations undergo fundamental reforms and re-organization, becomes a significant activity in this endeavor.

All successful changes involve changes in people and culture, (Daft *et al*, 2008). This basically pertains to people's mind-set, how employees think. People change concerns just a few employees, such as sending a handful of middle managers to a training course to improve their leadership skills. Culture change on the contrary pertains to the organization as a whole. Large-scale culture change, which is a pre-requisite for reforms, is however not easy and thus the reason for poor momentum in most business process re-engineering in operations management and reforms initiatives.

According to Daft *et al* executives around the world invest heavily in change and innovation projects but become disappointed with the results. However, (Baily *et al*, 2005) says that the most important concern should be to first ask ourselves "are we doing the right things?" then ask again, "are we doing them right?" (Armstrong, 2011) observes that it is important to bear in mind that while those wanting change need to be constant about ends, they have to be flexible about means. Employees resist change, many of them for no apparent reason. It is important to get all stakeholders to understand the need for change as the first step in implementation. Managers and employees who are not involved in a given innovation often seem to prefer the status quo. This requires therefore that the change champions should seek to understand the underlying reasons for resistance by other stakeholders, which can help them implement change more effectively for better performance in organizations operational activities.

Conclusions

The ultimate goal of a supply chain and operations management is to maximize overall supply chain surplus. This is the difference between the value generated for the customer and the total cost incurred across all stages of the chain. Based on the reviewed literature, it is right to conclude that supply chain decisions have a large impact on the success or failure of each firm because they significantly influence both the revenue generated and the cost incurred. Successful supply chains manage flows of product, information and funds to provide a high level of product availability to the customer while keeping costs low.

Recommendations

1. There is need to make organizations an open system where information can be accessed by all supply chain stakeholders so that effective participation in decision making can be enhanced.
2. ICT should be utilized to facilitate free and expeditious flow of real time information within the supply chain to enable quick and timely access to the same by all the relevant users for ensuring efficiency and effectiveness along the chain.
3. Environmental conditions are undergoing more rapid rates of change and organizations should undertake to undergo fundamental changes in both management approach and organizational structure in order to cope.

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