

FACTORS AFFECTING INTEGRATION OF GREEN PURCHASING IN PROCUREMENT AT KENYA AIRWAYS LIMITED

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ABSTRACT

Companies are perceived as important actors in the drive for sustainability. Linked to this, and in response to increasing demands from various stakeholder groups, companies start to look at their supply chain to enhance their overall sustainability profile. Two major triggers can be identified: (1) focal companies are held responsible for environmental and social problems caused by their suppliers, which become more and more important as (2) an increasing share of value is created at the supplier level. In response to such demands, companies have to find ways to incorporate environmental and social aspects into their supply (chain) management. Therefore, environmental and social standards are integrated into supply management by amending the purchasing processes. This paper presents an approach to integrate Green Purchasing into supply policy and supply management at the Kenya Airways limited, a 3-star airline projecting to become world Class Company and a 7 star airline by 2020. The objectives of the study was to establish the ways in which Kenya Airways Limited incorporates Green Purchasing as a best practice in procurement of in-flight Products as well as the challenges being faced in incorporating Green Purchasing. The findings of this research were geared to establish the “as is” situation for green purchasing and this was a case study. Focused interviews were conducted with stakeholders who are the key participant in supplier prequalification and purchase decisions through competitive bidding process. This was a qualitative research focusing on collecting precise and exact facts hence data collected was analyzed using content analysis. The results showed there is limited scope to incorporate green purchasing in purchase decision of core products and even less for support products. The company has a SHE evaluation policy for its suppliers which are a key step to environmental considerations in purchasing. Involvement of the Industrial safety team in supplier pre qualification points to the increased step towards best practices and this is a platform to advance green purchasing practices into supply chain. The study recommends consideration of the environment in procurement may include considering the environment from the outset. There is most scope available early on when defining needs and specifications, and early action is more likely to be successful. Additionally an array of strategies

to institutionalize green purchasing in Kenya Airways into their procurement practices has been spelt out. At the end of the study are recommendations for further research in the gray area of green purchasing such as to what extent purchasers are expected to have environmental competence and expertise to face challenges of green purchasing and scope of green purchasing for core products and support products.

Key Words: *integration of green purchasing, procurement, Kenya Airways Limited*

Introduction

The uptake of green purchasing by business and industry has shown to be rather limited. A decade ago, green purchasing practices mainly occurred in some high-profile organizations and were mainly confined to chemical firms and/or to those firms in the consumer goods sectors that have experienced green consumer pressure directly. Compared with other environmental initiatives, few companies had implemented extensive programmes for green purchasing and social ethics in their procurement structures and supply chain. Environmental concerns are finally finding its way from strategy and board room meetings to operations and to supply chain management (SCM). A growing number of companies have realized the world over that implementing supply chain management is only one of the objectives they need to realize. The other important agenda is to make this SCM environmentally friendly. This has catapulted SCM to a new height by looking beyond their own facilities but also involving their suppliers in environmental initiatives and agendas. This is done by screening suppliers for environmental performance, working collaboratively with them on green design initiatives and providing training and information to build suppliers' environmental management capacity.

The Concept of Green Purchasing

Environmentally Preferable Purchasing (EPP), often referred to as "green purchasing," is the affirmative selection and acquisition of products and services that most effectively minimize negative environmental impacts over their life cycle of manufacturing, transportation, use and recycling or disposal. Examples of environmentally preferable characteristics include products and services that conserve energy and water, minimize generation of waste and releases of pollutants; products made from recycled materials and that can be reused or recycled; energy from renewable resources such as biogases fuels, solar and wind power; alternate fuel vehicles; and products using alternatives to hazardous or toxic chemicals, radioactive materials and biohazardous agents.

Green purchasing is adding environmental aspects to price and performance criteria when making purchasing decisions. Ultimate goal is to reduce environmental impacts of sourcing and to increase resource efficiency. Such impacts may be associated with any stage in the production, use or disposal of a product. Tuitoek (2007) in her research project stated that Environmental life cycle assessments of products have shown that the environmental impacts created when a product is used are often much greater than those resulting from manufacture of the product. The aim of green purchasing is to buy products or services that have less impact on the environment

than otherwise comparable products hence it's important for to take the costs of these into account when comparing products.

There is a range of green purchasing strategies available to companies. Different strategies have different effects on the environmental behavior of suppliers. The strategies can be grouped into three major categories: product standards, behavior standards, and collaboration. The effect of the various strategies on supplier environmental performance tends to follow a continuum from low (product standards) to high (collaboration). In general, more effort by buyers is needed to increase the environmental performance of suppliers. Thus buyers must make a cost-benefit analysis regarding how much they want their suppliers to improve.

Lastly, Green Purchasing is responsible purchasing going beyond price and volume. In global market economy stock listed, responsible companies are expected to be transparent and manage their reputation. Transparency calls for responsibility and cooperation of all players in supply chain. Environmental standards apply for all operations everywhere and throughout the supply chain. Responsible purchasing is hard work and requires systematic auditing and controls. The most uniformly successful way to promote improved environmental performance is through the supply chain. No supplier will ignore a justified request from an important buyer who wants to know about the supplier's environmental performance, and such requests demonstrate to suppliers that there is a serious market reason to achieve improved environmental performance. There are a small but growing number of companies that have demonstrated that buyer-supplier collaboration on environmental issues results in better economic as well as environmental performance for both parties. Lessons from these experiences should be examined and disseminated widely to business as a means for improving environmental management practices.

Green Purchasing as a Best Practice

Drucker, (2005) defines a best practice as a technique, method, process, activity, incentive, or reward that is believed to be more effective at delivering a particular outcome than any other technique, method, process, etc. when applied to a particular condition or circumstance. The idea is that with proper processes, checks, and testing, a desired outcome can be delivered with fewer problems and unforeseen complications. Best practices can also be defined as the most efficient (least amount of effort) and effective (best results) way of accomplishing a task, based on repeatable procedures that have proven themselves over time for large numbers of people.

The purchasing handbook (2007) expounds essential elements of an effective Purchasing program from where best practices can be drawn as among others: Understanding the principles of Continuous Quality Improvement and how they can be applied to the purchasing process, Utilizing Continuous Quality Improvement tools to perfect processes and procedures to better serve customers, working cooperatively to reach consensus on major issues that impact stakeholders and familiarity with the latest forms of technology, products or services available in the marketplace and the ability to communicate this information to stakeholders in order to cooperatively assist them in the procurement process. Russell, (1998) argued green purchasing is adding environmental aspects to price and performance criteria when making purchasing decisions. Ultimate goal is to reduce environmental impacts of sourcing and to increase resource efficiency. Such impacts may be associated with any stage in the production, use or disposal of a

product. Borrowing from this we can incorporate green purchasing as a best practice in procurement.

Aviation Industry in Kenya

The aviation industry in Kenya is made of private and commercial airlines. Privately owned aircraft are for rentals or private use. The commercial airlines ferry passengers and include Kenya Airways which is the national carrier and third largest airline in Africa, Jet link Express, Fly 540, ALS- Aircraft Leasing Services, 748 Air Services, East African Safaris, African express, Air Kenya, Delta Connection, Safari link Aviation, Astral Aviation and CMC aviation. Kenya Civil Aviation Authority (KCAA) is a state corporation under the Ministry of transport that is responsible for regulating the aviation industry in Kenya and for providing air navigation services in the Kenya flight region. This is the registered regulator for the aviation industry. Aviation in Kenya is dominated by Kenya Airways with tight competition from the low cost carriers for local and east sAfrican destination. Aviation Industry in Kenya is expanding with passenger traffic numbers increasing over the years. At the main Airport Jomo Kenyatta International airport 4.92 million passengers were served in 2008 and the figure increased to 7 million (unpublished) in 2009.

The Aviation infrastructure is developed compared to neighboring east Africa countries. In Kenya Jomo Kenyatta International Airport, Nairobi is the 7th most frequented African airport. Moi International Airport, Mombasa is the second biggest of the Kenya airports. It grew from a military air base established there during the Second World War. It's located 10 km north-west of Mombasa. It serves close to 1 million passengers each year. Also there is Wilson airport located 5 km's south of Nairobi. It's essentially an airstrip with a few buildings around it – it has no real terminal. It's mainly used for domestic flights with light aircrafts to Kenya airports like Mombasa, popular places along the coast (Lamu, Malindi) and national parks like Masai Mara, Amboseli and Samburu. There are also flights to Tanzania, Somalia and the Democratic Republic of Kongo. Further off Kisumu Airport located outside Kisumu, in the far west of Kenya (Nyanza province). It's the third busiest of the Kenya airports, even though it doesn't handle any international flights.

The number of passengers has quickly grown from 70,000 in 2004 to 240,000 in 2007 and now over 500,000 a year and it's planning to expand. Eldoret International Airport This airport is located 16 km south of Eldoret in the far west of Kenya. It was opened especially for transportation of export products (for example, flowers, which is a fast growing business in Kenya). Malindi Airport is located 3 km's west of Malindi on the coast, has 2 runways and a small terminal. It's only used for domestic flights, though the airport is trying to get international status, like the big Kenya airports, so that it can receive flights directly from Europe. Lastly we have Manda Airstrip located at the coast in Manda, just in front of Lamu island which is a popular tourist destination. From the airstrip, you can cross the 800 metres of sea to Lamu island by boat and Ukunda Airstrip is another popular tourist destination at the coast, 30 km's south of Mombasa.

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Challenges that faced airlines and the aviation industry as a whole over the last few years, has forced the industry to rethink how they do business on both a financial and operational level. Most airlines have faced up to these challenges, and as a result have been remarkably successful at turning around ailing companies, in many cases completely reinventing themselves. Although high fuel prices are affecting profitability, airlines are now in a much stronger position than 2000, due to unprecedented demand for air travel. The notion of restructuring and cost cutting has been embraced wholeheartedly by local airlines as a viable way to secure their long-term security. The air transport has gone through a period of unprecedented change, during the global slowdown. Major factors that have resulted in this ever changing landscape is airlines have been operating under major losses over the last few years, resulting in bankruptcy and the need for massive restructuring. We have small aircraft operators have been withdrawn from service, Revenue raised from business traffic has been greatly reduced, the emergence of low cost carriers and the growth of business via the internet.

Aviation industry foresee economic recovery coupled with the steadying of world markets, has resulted in the return of business confidence and corporate investment in the aviation industry. The political environment has also begun to slowly stabilize; this has resulted in high level growth in the demand for worldwide leisure travel. While the introductions of safety initiatives are clearly reducing the number of incidents, the cumulative cost of those incidents to the insurance industry is on the increase. Kenya in an effort to revamp its aviation industry through

Kenyan Transport and Communications Ministry plans to revamp the country's aviation industry to promote inter-African transportation. Key among expected changes is the immediate de-linking from the civil service of the country's Directorate of Civil Aviation, which will now be run by a Civil Aviation Authority. Other measures include the plans to develop Nairobi's Jomo Kenyatta International Airport (JKIA) into a premier hub for Eastern and Central African region.

Kenya Airways Limited

Kenya Airways limited is the National carrier of the republic of Kenya and the Third biggest Airline in Africa. Kenya Airways was established in February 1977 following the breakup of the East African Community and subsequent disbanding of the jointly-owned East African Airways. In 1995 Kenya Airways signed a Shareholders' Agreement and a Master Cooperation Agreement with Royal Dutch Airline KLM thereafter an Initial Public Offer for shares is issued in March 1996. Since then Kenya Airways has invested in acquisition of modern fleet which range from Boeing 737 classic series and New Generation series, Boeing 767 Long range aircraft and new generation Boeing 777 jumbo as well as Embrear E170 jets. Orders have been made for the environmentally friendly next generation airlines the Boeing 787 commonly known as Dreamliner.

Kenya Airways has expanded by acquiring 51% of precision Air of Tanzania. Kenya Airways has an exhaustive network within Africa and on core hubs in Europe, Middle East and Far East. Currently flying to 50 destinations this is made seamless by being an associate member of Sky Team alliance the second biggest airline alliance after the Star Alliance. Kenya Airways has a good safety record with only two air accidents in Abidjan and Douala. Kenya Airways has been awarded a 2 year renewal on its IOSA (IATA Operational Safety Audit) registration. The company has also had a good profit record making revenues of up to Kshs 70billion. The main cost drivers are Fuel costs, Aircraft lease and maintenance then staff costs. Kenya Airways has undertaken to be a world class organization (commonly known as WCO) and this is an ongoing project that will see the company operationally aim at eliminating waste and be profitable through adopting the best practices and benchmarking against the best in the industry. World class for Kenya Airways means being able to compete with the best in the aviation industry (safety, profitability, customer service, connectivity), compliance to all the aviation industry and industrial safety requirements, customer needs first – Meeting and Exceeding Customer expectations, focusing the minds of all employees on the company's strategic objectives (safety, profitability, customer service, connectivity), through effective communication and developing and empowering all employees to continuously improve performance.

Procurement in Kenya Airways is a function of supply chain under the finance department. Purchases within the airline are classified and range from aircraft acquisition, technical spares, Fuel sourcing, service outsourcing, In-flight products, IT infrastructure hardware and software, uniform, stationery and the list goes on (full list attached in appendix). For all these we have the users who give specifications and make requisition and we have buyers who source for the products or services from suppliers either via open bids, tenders or contracts. In- Flight products include: Food and beverages, On board cutlery, On Board aerosols, towels, Blankets, Pillows, magazines, and duty free products.

The in-flight products can be recyclable or one use items that is disposed after use. For in-flight products there is a system based approach to orders. Suppliers are normally tied on contract basis which gives the company benefits of service level agreements that guarantees better prices, discounts, quality standards, timely deliveries and after sale services. Hence a case to consider environmental and social factors is at the supplier prequalification stage and evaluation of tender documents. This cuts across the board and not just for in-flight products. As a positive step Kenya Airways in its vendor evaluation places 25% of the total marks on compliance to safety, Health and Environmental (SHE) checklist. This assures that Kenya Airways is dealing with safe suppliers.

In a world class firm as Kenya Airways endeavors to be supply management plays a key role in selecting outside suppliers, establishing a price for the raw materials and services, and managing supplier relationship. Supply management concerns outside production by keeping suppliers cost low, high quality and good relationship.

In order to bring the supply management to world class status Kenya airways senior management must recognize supply management critical nature and support the required transformation. One of the most visible ways is to appoint a chief supply officer (this is already in place by having Head of supply chain) and getting top management committed to its success. Kenya Airways must know where to bench mark (know where they are in relation to where they want to be) and establish best practices and developing metrics to achieve world class. Another way is for Kenya Airways to incorporate environmental agenda in the current programs rather than creating new programs from scratch. This can be enforced with the TQM program currently in the firm. Kenya Airways need to set a cross functional pollution avoidance that will address questions of: where is the material wasted, at what stage was it planned in the supply chain and why was it build in the supply chain.

The team to follow waste stream from the consumer and distribution system over the internal supply chain links to the company through the supplier. The team has to determine where the material waste is produced and focus on internal processes that could be logistics or warehousing, production or purchasing requirement. Once the physical location of the wastage had been identified the team to go further analyzing the remaining portions to get the supply link that leads to waste in the chain.

Many progressive buying organizations monitor their critical supplier's performance in both a contract and aggregate level. This is used to control supplier contract performance and also used during source selection for follow up on procurement to ensure that only satisfactory performers are considered.

Kenya Airways can use three to six months moving averages for aggregate evaluation of performance of supplier. This allows the supplier to start over at some point and prior misdeeds do not haunt them forever. They are motivated to improve. The length of the window is important and should be case specific, a short window maybe ineffective as a supplier may get off the hook so easily while a longer window maybe punitive and self defeating. Kenya Airways can adopt evaluation plans such as categorical plans, weighted point plans and cost ratio plans.

Research Problem

Oboya (2007) in his research project stated globalization increases the opportunities for buyers to source from in an increasing number of countries. As buyers increase their focus on environmental improvement, the issue of supplier environmental performance will increase in importance. As this phenomenon percolates along the supply chain, ultimately it can result in the “greening” of the entire supply chain. Beth Liddell (2003) stated that many corporate firms recognizing the tremendous power they wield in the marketplace are attempting to reduce their impacts on society and the environment by purchasing products they deem environmentally preferable or sustainable. These purchasing efforts vary widely, ranging from simple buy recycled programs to complex environmental and sustainable procurement strategies. Strategies that integrate both environmental and social considerations into purchasing are typically called sustainable purchasing dubbed environmentally preferable purchasing (EPP).

Another research was Jungman (2007) focused on Corporate Responsibility in Supply Chain Management – Case Environmentally Responsible Procurement. Jungman introduced the dimension of corporate responsibility and the concept of supply chain management and then concentrated on different procurement functions. He also combined the two parts in his literature by studying how environmental issues should be taken into account in different phases of the procurement. In conclusion there aren't any established practices for taking environmental issues into account in procurement and the practices vary between the different business areas. In most cases suppliers' environmental performance is controlled in a very general stage and environmental requirements as well as object setting for the suppliers on environmental issues are insufficient.

Tuitoek (2007) explains that senior management has to realize that most if the industry has addressed a multitude of environmental concerns while some have done so because of legal pressure others have realized the opportunities that exist in this new direction. Pollution and wastages reduction saves money and is good for profits and the environment. Management has to understand that environmental care and economic growth are neither mutually exclusive nor antagonistic goals. Companies with most environmental strategies are the most competitive, profitable and secure in the industry

In order to get the most out of embracing environmentalism the firm has to find ways of benefiting economically. These points suggest that the operational aspects of social and environmental concerns in procurement are increasingly of importance.

Considering this an extended scope of challenges, not only strategic or tactical, but also operational, is increasingly essential for implementing procurement best practices. Moreover, purchasers need to both know how to measure objectively and using valid variables how the suppliers rank in environmental and social ethics compliance and may need request the information and know how to process it and integrate it into their decision-making.

Looking at the best practices articulated on most purchasing books they relate to contract management, cost management in procurement and supplier relationship management. Environmental and social factors remain a gray area with little light shed by regulators and firms seeing it as an extra mile hence often ignored. This leads to the question that need be articulated

and solutions found as regards: is there lack of comprehensive picture of the importance that incorporating environmental and social issues in procurement as a best practice and institutional purchasing settings can yield to the company now and in the long run. Secondly, to what extent are these concerns addressed in pre qualifying and evaluation of suppliers for the companies and what weight do they carry? To date, research offers limited studies that focus on how an organisation can take into consideration social and environmental issues in their supply chain as relates procurement practices.

The research study therefore focused on how a business entity can incorporate environmental and social factors in its procurement processes and the study sought to answer the following research questions: 1. What are the ways in which Kenya Airways Limited can integrate Green purchasing into procurement best practices for its in-flight products? 2. What Challenges does Kenya Airways Limited face in its endeavor to attain Green Purchasing as a best practice in procurement of its in-flight products?

Main Objective

The general objective of the study was to determine the main factors that affect the integration of green purchasing in procurement at Kenya Airways Limited.

Specifics Objectives

1. To establish the extent to which volume of purchase affects the integration of green purchasing in procurement at Kenya Airways.
2. To establish the extent to which information tools affect the integration of green purchasing in procurement at Kenya Airways.
3. To establish the extent to which the management strategy adopted affects the integration of green purchasing at Kenya Airways.
4. To establish the extent to which green management costs affect the integration of green purchasing at Kenya Airways.

Theoretical Review

Stakeholders' Theory

The stakeholder theory is a theory of organizational management and business ethics that addresses morals and values in managing an organization. It was originally detailed by R. Edward Freeman in the book Strategic Management: A Stakeholder Approach, and identifies and models the groups which are stakeholders of a corporation, and both describes and recommends methods by which management can give due regard to the interests of those groups. In short, it attempts to address the "Principle of Who or What Really Counts."

In the traditional view of the firm, the shareholder MH (Majority Holder) view (the only one recognized in business law in most countries), the shareholders or stockholders are the owners of the company, and the firm has a binding fiduciary duty to put their needs first, to increase value for them. In older input-output models of the corporation, the firm converts the inputs of investors, employees, and suppliers into usable (salable) outputs which customers buy, thereby returning some capital benefit to the firm. By this model, firms only address the needs and wishes of those four parties: investors, employees, suppliers, and customers. However,

stakeholder theory argues that there are other parties involved, including governmental bodies, political groups, trade associations, trade unions, communities, associated corporations, prospective employees, prospective customers, and the public at large. Sometimes even competitors are counted as stakeholders.

The stakeholder view of strategy is an instrumental theory of the corporation, integrating both the resource-based view as well as the market-based view, and adding a socio-political level. This view of the firm is used to define the specific stakeholders of a corporation (the normative theory (Donaldson) of stakeholder identification) as well as examine the conditions under which these parties should be treated as stakeholders (the descriptive theory of stakeholder salience). These two questions make up the modern treatment of Stakeholder Theory.

There have been numerous articles and books written on stakeholder theory. Recent scholarly works on the topic of stakeholder theory that exemplify research and theorizing in this area include Donaldson and Preston and Mitchell, Agle, and Wood (1997), Friedman and Miles (2002) and Phillips (2003).

Donaldson and Preston argue that the normative base of the theory, including the "identification of moral or philosophical guidelines for the operation and management of the corporation", is the core of the theory. Mitchell, et al. derive a typology of stakeholders based on the attributes of power (the extent a party has means to impose its will in a relationship), legitimacy (socially accepted and expected structures or behaviors), and urgency (time sensitivity or criticality of the stakeholder's claims). By examining the combination of these attributes in a binary manner, types of stakeholders are derived along with their implications for the organization. Friedman and Miles explore the implications of contentious relationships between stakeholders and organizations by introducing compatible/incompatible interests and necessary/contingent connections as additional attributes with which to examine the configuration of these relationships.

The political philosopher Charles Blattberg has criticized stakeholder theory for assuming that the interests of the various stakeholders can be, at best, compromised or balanced against each other. Blattberg argues that this is a product of its emphasis on negotiation as the chief mode of dialogue for dealing with conflicts between stakeholder interests. He recommends conversation instead and this leads him to defend what he calls a 'patriotic' conception of the corporation as an alternative to that associated with stakeholder theory.

Institutional Theory

Institutional theory focuses on the deeper and more resilient aspects of social structure. It considers the processes by which structures, including schemas; rules, norms, and routines, become established as authoritative guidelines for social behavior (Scott, 2004). Different components of institutional theory explain how these elements are created, diffused, adopted, and adapted over space and time; and how they fall into decline and disuse.

Powell and DiMaggio (1991) define an emerging perspective in organization theory and sociology, which they term the 'new institutionalism', as rejecting the rational-actor models of classical economics. Instead, it seeks cognitive and cultural explanations of social and

organizational phenomena by considering the properties of supra-individual units of analysis that cannot be reduced to aggregations or direct consequences of individuals' attributes or motives.

Scott (1995) indicates that, in order to survive, organizations must conform to the rules and belief systems prevailing in the environment (DiMaggio and Powell, 1983; Meyer and Rowan, 1977), because institutional isomorphism, both structural and procedural, will earn the organization legitimacy (Dacin, 1997; Deephouse, 1996; Suchman, 1995). Multinational corporations (MNCs) operating in different countries with varying institutional environments will face diverse pressures. Some of those pressures in host and home institutional environments are testified to exert fundamental influences on competitive strategy (Martinsons, 1993; Porter, 1990) and human resource management (HRM) practices (Rosenzweig and Singh, 1991; Zaheer, 1995).

There is substantial evidence that firms in different types of economies react differently to similar challenges (Knetter, 1989). Social, economic, and political factors constitute an institutional structure of a particular environment which provides firms with advantages for engaging in specific types of activities there. Businesses tend to perform more efficiently if they receive the institutional support.

Martinsons (1998) developed a theory of institutional deficiencies (TIDE) suggesting that relationship-based commerce will prevail where rule-based markets cannot flourish due to institutional deficiencies. Martinsons (2008) extends TIDE to show how the development of relationship-based e-commerce in China has resulted from that country's lack of trustworthy and enforceable set of rules for doing business. His theory suggests that factors such as personal connections (guanxi in China, blat in Russia, etc.), informal information, and blurred business-government relations (which also encourage corruption) will constrain the transition from the physical marketplace to online market spaces.

Green Purchasing Concept

For all types of products, it is now possible for purchasers to integrate environmental and, to some extent, social requirements. This is known as "green purchasing" Purchasers can consider and assess the performance of the product, how it was produced, and who produced it. A range of environmental and social factors may be considered as part of green purchasing. Handfield et al, (2000) claims the important position that purchasers hold in supply chains and in the economy at large, offers an opportunity for green purchasing practices to positively impact both environmental and financial performance of their companies. Furthermore, an important opportunity that purchasers have is to improve customer/user safety.

The purported environmental benefits from green purchasing are that buying organizations can exert influence on the market by awarding the production of greener products. This works by exerting pressure on industry, stimulating lower prices of greener goods, stimulating the design, development and production of greener products and setting a good example. They can also influence the behavior of other socio-economic actors by providing, developing and requesting environmental product information upstream and downstream. This way they can foster greater awareness of consumption-related issues among other actors. Moreover, they can improve the

sustainability of in-house consumption by considering the environmental, health, safety and overall quality of products consumed and used within their premises.

The potential environmental gains of green purchasing, whether in the public or private sector, can be powerful. Studies on this topic have, so far, mainly been executed for the public sector but the findings suggest that the potential environmental gains from green purchasing are impressive. There are many indications that the role of businesses in society is changing, and as such, expectations on business practices are also changing. Many companies experience rapt attention to their actions from a number of stakeholders, among others customers, media, governments and investors. Mont and Leire, (2009) have claimed that over time, this attention has compelled the organizations to incorporate non-economic criteria into their purchasing practices. The range of aspects that can be associated with production that have come under the scrutiny of media and research are manifold: mining companies that have come under attack for collusion with corrupt governments, apparel retailers that have faced scandals over the use of sweatshop conditions for their workers and/or the use of child labour, oil companies have been criticized for engaging in activities that drive people countries and toy manufacturers production of lead contaminated children's toys and major mobile telephone manufacturers faced scrutiny for breaching international conventions on working conditions and workers' rights.

According to Grankvist and Biel, (2007) purchasing has a direct impact upon companies' ability to reduce their contribution to environmental and social problems. Combating environmental and social problems includes improving performance throughout complex supply chains. Studies of supply chain issues have raised the important question of the allocation of responsibilities between different actors in the supply chain. Another important question, moreover, is the extent to which they are able to fulfill this task. Among the actors in the supply chain, producers, retailers and purchasers play a critical role. Preuss, (2005) views from a life cycle perspective, it is more or less impossible to envisage environmental protection initiatives without involving supply chain management. Purchasers hold a particularly influential position because they serve as gate-keepers of an organization, and influence the properties and amounts of the materials and components that enter it.

Brian, (2006) views most companies procurement policy is that all procurement should be based on value for money, having due regard to propriety and regularity. It is important to understand that the procurement policy of achieving value for money in procurement – defined as the optimum combination of whole life cost and quality (fitness for purpose) to meet the user's requirement – applies to the award stage of the procurement process. It is for company supply chain to decide what to buy and to set the specification, in the context of their overall objectives, and subject to the normal expenditure tests of need, affordability and cost-effectiveness. It is at this earlier stage that there is most scope to consider environmental issues.

This distinction between the award stage and the specification stage has often been misunderstood. For example a Department can choose to purchase low emission vehicles (even where they might be more expensive than standard vehicles). They must, however, achieve value for money in awarding the contract that is the contract for low emission vehicles should be

awarded to the bidder offering the best combination of whole-life cost and quality to meet that requirement. And the requirement itself, for low emission vehicles, must be tested for need, affordability and cost-effectiveness in the context of the Department's overall objectives. However, this is a matter of prudent financial management generally rather than specifically one of procurement policy.

In Europe Directive 2004/17/EC and Directive 2004/18/EC all public procurement procedures must comply with the EC Treaty. The key principles of the Treaty, from a public procurement point of view, are the free movement of goods and services, and non-discrimination on the grounds of nationality. The treaty has considerable consideration to environmental and social issues. The important social issues here include fair treatment, fair competition, and non discrimination on basis of nationality, proportionality, mutual recognition and openness to competition. Buttressing public procurement in sound socially responsible principles seems essential if only to disseminate consciousness on the importance of such principles within the business community. Public authorities have a duty to raise awareness on this issue and follow a coherent approach in their procurement. The possibility to take fully into account such principle to promote social goals has been laid down in recitals 28, 33 and 34 of Directive 2004/18/EC and in the corresponding recitals of Directive 2004/17/EC. Yet these guiding principles failed to be developed in the core text of both Directives, thus introducing some unwarranted doubts on their legal status. It should be reminded that recitals are an integral part of any legal text and this point should be made clearer in the guide of the EU treaty.

In general, social issues taken into account during the procurement process are more limited than that for environmental issues because, by virtue of their nature, they are less likely to be clearly related to the subject of the contract. And, frequently, there will be other, more efficient and effective, means of achieving social outcomes than through their consideration in the procurement process. Canon, (1998) argues however, there will be cases where social issues can legitimately be taken into account. Services contracts, for example, are much more likely to have a social aspect than supply contracts. Sustainable procurement is no meant to conflict with the underlying principles of efficiency agenda. Efficiency need not equate to the lowest price and must still be compatible with the legal and policy framework both to achieve value for money and save the environment. It is therefore anticipated that procurement in many companies will continue to reflect framework of values and incorporate whole life costs and quality considerations.

Here home, the Kenyan government has a procurement and disposal act, (2005) which aims to establish procedures for procurement and the disposal of unserviceable, obsolete or surplus stores and equipment by public entities to achieve the following objectives -to maximize economy and efficiency; to promote competition and ensure that competitors are treated fairly; to promote the integrity and fairness of those procedures; to increase transparency and accountability in those procedures; and to increase public confidence in those procedures and to facilitate the promotion of local industry and economic development.

Drivers of Green Purchasing

Russel, (1998) explains there is great belief in the use of green procurement as a driver in the creation of markets for more sustainable goods and services. Due to the large quantities purchased, organizations have a great potential to influence the production and consumption patterns in the society. In macroeconomic terms, according to Commission Proposal COM, (2008) purchasing volumes in the public sector in OECD countries are equivalent to about 16% of total GDP in Europe and this figure varies among countries. In Sweden as researched by Falk et al, (2004) public purchasing makes up about 25% of the GDP in Sweden. Corporate purchasing, in comparison, equals approximately 50% of the GDP () and up to 25% of total GDP in Sweden meaning that the main internal and external drivers of green purchasing practices in both the public and private sectors centre on regulation, possibility to gain competitive advantage or respond to societal and stakeholder pressures. Walker et al., (2008) claims Green procurement in both public and private sector can bring about significant benefits to the society by sending a clear message to various stakeholders by buying sustainably, stimulating their behavior change by setting the example, by directly effecting the environment, regional development and social conditions by advancing economic performance through capitalizing on efficiency opportunities and improving profile of public spending.

MTF-SPP, (2006) noted by stimulating the market for sustainable products and services, making these more economic to produce, and hence increasing the general demand for them. Specifically, by choosing more environmentally sound products and services, green procurement can stimulate markets and production in a more environmentally sound manner, which could lead to reduced climate change impacts, conservation and preservation of limited natural resources, creation of markets for recycled and reused products and for reduction of volume of waste for landfills, leading to the reduction of CO₂ emissions from landfills. According to Commission Proposal COM, (2008) the main argument with the environmental potential of green public procurement is that the aggregated public purchase expenditures are substantial and could as such serve as a considerable driver for the greening of products on the market, both to stimulate the penetration of labels on the product market, and also to contribute to the a higher adoption of product and process improvement. Moreover, UNEP, (2003) green procurement is coupled with other advantages for various stakeholders in the society, such as effective partnerships and knowledge development and transfer; it can help encourage innovation, which is claimed to be another critical competitiveness factor for organizations facing environmental challenges. Some of the potential environmental savings from green procurement in the public sector have been investigated in a study funded by the European Commission. The study by Russell (1998) claims that if all public authorities across the EU demanded green electricity, this would save the equivalent of 18 % of the EU's GHG reduction commitment under the Kyoto Protocol (60 million tons of CO₂). Nearly the same saving could be achieved if public authorities opted for buildings of high environmental quality. Moreover, if all European public authorities demanded more energy-efficient computers, this could lead to the significant changes on the European computer market and would result in saving of 830 000 tons of CO₂.

Finally the Commission Proposal COM, (2008) if all European public authorities chose efficient toilets and taps in their buildings, this would reduce water consumption by 200 million tons (equivalent to 0.6 % of total household consumption in the EU. Rüdener et al, (2007) claimed besides the environmental benefits, governments increasingly justify green public procurement as a way to internalize the external costs of their purchases, compensating for the lack of other policy instruments that would account for these externalities. A recent study on costs and benefits of green public procurement in Europe revealed that joint procurement initiatives of public authorities typically have a positive impact on the purchase price and to some extent also on life cycle related costs of products and services, including maintenance and energy consumption.

Marron (1997) observed often, higher purchasing prices are compensated for by lower operating costs in the use phase. Market office equipment that was compatible with the use of recycled paper. At the same time, domestic consumers became more accepting of recycled paper. In other words, the choice of recycled paper over conventional paper in the public sector affected domestic, as well as industrial consumers, and has also given the supply of recycled paper a significant competitive edge. Since then, recycled paper has not only become a standard supply, but also cheaper than the previously conventional (chlorine bleached) paper. The demand from public organisations allowed producers to lower costs through scale economies and learning-by-doing. Leire, (2006) Green purchasing may also open up opportunities for the purchasing organisation itself. These are mainly business improvements, such as reduced operation and environmental costs, higher level of knowledge and competence, the prevention of disturbances in operations, the provision of assistance with environmental problem solving in the customer firm, higher trustworthiness and better image. Other opportunities can be competitive advantages and possibilities for business development

Barriers to green purchasing

So far as put by Russell, (1998) the potential of green procurement has been just tapped in, but not fully explored and utilized for the societal good. According to a recent study, only 14 Member States had so far adopted National Action Plans for greening their public procurement, with 12 Member States still working on developing them. Several barriers have been identified for more prominent success of green procurement. Some of the barriers are relevant for both public and private sectors, while others are more specific for certain types of organisations. A recent study by European Commission, (2004a; IEFE, 2005) has identified six main barriers for public organisations. The first barrier pertains to the availability of information for developing criteria for green procurement, which is relevant for both public organisations and private companies. It has been demonstrated that there is still lack of clear and comprehensive information sources, such as databases, which can be used by various purchasers for setting up the right environmental criteria in tender documents. Another barrier related to availability of information concerns lack of information about and consequently insufficient awareness of the benefits of environmentally sound products and services.

In green procurement Falk, (2001) buyers require significant amount of information in order to make informed purchasing choices. They need to know what environment impacts to focus on,

how to translate them into purchasing criteria, what product alternatives exist on the market and what is their environmental profile, as well as how to compare these product or service alternatives. In addition, they need to know suppliers and their environmental practices, they need to be aware about general environmental issues relevant in the society, and have access to operational green procurement procedures and tools.

The third barrier as per (European Commission, 2004a; IEF, 2005) linked to the low general awareness of both buyers and sellers about the benefits of environmentally benign products and services stems from lacking understanding of life cycle cost of products and services. This is a significant barrier, especially considering the existing perception in society that green products are more expensive than traditional products. Taking into consideration life cycle cost, green products often become less expensive, contrary to if they are judged only on purchasing price. Environmental criteria in tender documents have been identified as yet another important barrier. There has been a number of Directives and other policy documents at the EU and national levels aiming to clarify the legal boundaries. Still, a lot of uncertainty remains at the operational level Falk, (2001) touched on the lack of political commitment and support needed for facilitating progress in green procurement has been also identified as an important barrier. It has been highlighted that especially training of purchasers in public and private organisations needs to become more widespread. There is furthermore a lacking coordination and dissemination of best practices in various organisations and levels: national governmental procurement, local municipal procurement practices, as well as success cases from businesses from different sectors. Handfield et al., (2002) noted some companies report that green procurement process may lead to decreased lead-times and decreased flexibility. Allocation of responsibilities within the company may also pose a certain problem since different departments in the company usually make purchases for different purposes. The diversity of products and services bought by private companies varies greatly, depending on the type of their activity. Christensen & Staalgaard, (2004) found for many public and private organisations, one of the main challenges is the lack of knowledge and expertise for evaluating different alternatives in terms of their environmental aspects and impacts. This may lead to that purchasers feel reluctant to priorities green procurement because they need concrete knowledge of which environmental requirements are relevant for a particular product group.

Handfield challenges related to the evaluation include the uncertainty on how to define a green product and how to weight the relative importance of different life-cycle performance indicators. Also, there is a perceived lack of concrete product selection guidance, resulting in problems in identifying greener product alternatives. In addition, there is a perception of lack of knowhow or resources for possible verification and follow up of the life cycle oriented information. Insufficient individual capacity is another information-related challenge. The capacity aspect can be related to knowledge, insights on environmental issues, environmental education, and can have a bearing on the usefulness of a particular type of information. The feeling of inability or inadequacy can also stem from a lack of enthusiasm or intellectual understanding. Russell, (1998) advises managers, including purchasing managers of course, can have a variety of

attitudes toward environmental issues, and sometimes also have an ambivalent perception regarding the potential and immediate costs and gains of green purchasing initiatives.

Bowen, (2001) Compared to single criteria considerations, the life cycle perspective adds to the complexity of green procurement in that the number and scope of purchasing criteria is increased and needs to cover various stages of a product life cycle. The scope is extended to include not only the characteristics of the product per se, but also how it has been produced and distributed, as well as its environmental impact during use and disposal stages. In addition to lacking awareness, cost issues and lacking clarity in regulation, business companies mention poor supplier commitment and industry specific barriers.

Walker, (2008) identifies lacking of managerial support and practical tools, as well as training, as additional barriers for green procurement. Bouwer et al., (2006) however, saw the largest barrier for private companies to implement green procurement practices is lacking regulatory demands and clear regulatory framework for criteria development, evaluation and incorporation, as well as for comparing alternatives and for following up the supplier performance.

Best Practices in Procurement

According to Drucker, (2005) a best practice is a technique, method, process, activity, incentive, or reward that is believed to be more effective at delivering a particular outcome than any other technique, method, process, etc. when applied to a particular condition or circumstance. The idea is that with proper processes, checks, and testing, a desired outcome can be delivered with fewer problems and unforeseen complications. Best practices can also be defined as the most efficient (least amount of effort) and effective (best results) way of accomplishing a task, based on repeatable procedures that have proven themselves over time for large numbers of people. Ansoff, (1990) argued given best practice is only applicable to particular condition or circumstance and may have to be modified or adapted for similar circumstances. In addition, a "best" practice can evolve to become better as improvements are discovered. Despite the need to improve on processes as the environment changes, best-practice is considered by some as a business used to describe the process of developing and following a standard way of doing things that multiple organizations can use for management, policy, and especially software systems.

Brian, (2006) articulated that Price increases are impacting companies at unprecedented levels and plans to keep profits at the same level, or even increase your profitability despite this increase in costs have been: Reduce capital spending, Implement yet another round of layoffs, GM and Ford are currently pursuing this strategy, Increase employee share of health insurance and raise prices. However, if you want to maintain your stature as a "best in class organization" you cannot continue to rely on the above four methods to improve your profits. Your competitors are increasing capital spending, adding employees, offering competitive benefit packages and actually lowering prices to their customer's year after year. Their Secret – Implementing best practices in purchasing.

In his article on how to achieve world class organisation, cost containment strategies looked at how long it takes to become a best in the world purchasing organization. The short answer is, a very long time. That means inch-by-inch, day-by-day, and price increase by price increase. However the best practices evolve over time – if you decide you want to become a master

purchasing organization you have to recognize that change is inevitable, keep a positive attitude and passionately believe in the process improvement cycle. Some of the ten keys to effective procurement that have been developed by the some of the best purchasing gurus in the world are: First, improve your vendor relationships – According to Carter and Drenser, (2001) suppliers don't stay the same from year to year? This means avoid cozy or adversarial relationships with suppliers keeping in mind sitting down with vendors once or twice a year to collaborate eliminates surprises from both you and them. Other strategies here include order in a manner that keeps the vendor's cost low, work with the best vendors, taking into account local, regional, national and global players for the goods and services you are purchasing, competitive pricing is key, focus on the overall best total cost. Companies working with too many vendors, find a great vendor or two and utilize your leverage by giving them all of your business hence firms should develop an annual cost reduction plan; the best vendors will understand this concept.

Secondly Leire, (2006) advised purchasers to develop a scorecard for keeping track of vendors' service, quality, delivery and pricing. Here the strategies include track the quality, service and price performance of your vendors, communicate the results of your scorecard to the vendors, understand what is important to your vendors and make sure they understand what is important to your company and involve the vendor in the design of your product from the beginning. The third strategy is to obtain the right information and right sizing your vendor list and vendor costs. This involves leverage your volume with your vendors, purchasing and finance should form a team to identify current spending and where the greatest opportunities for improvement exist and brainstorm ideas for product improvements.

Jungman, (2003) claims the human resources as relates creating a purchasing staff with the following characteristics: Analytical –ability to get into the details of the items you are looking to buy, negotiation skills, business knowledge – understanding your business goals and the focus of your suppliers business, compliance to policies, Legal knowledge – creating contracts that benefit the company and monitor your vendors to make sure they comply with the agreements put in place and ability to work in other parts of the organization (Sales, operations, finance). Another strategy is getting the executive team behind purchasing with top officials having a direct line to purchasing so they can understand the impact of price increases will have on their business and make decisions as to whether increases should be passed on to your customers. A team approach to purchasing helps to focus on the priority areas within a company. As a best practice, Fernandez and Ortiz, (2006) proclaim to enforce a preferred vendor list which in turn preferred vendor lists prevent your total vendor list from getting out of control. If every buyer continues to buy from those vendors they like to do business with, you will lose the leverage, the pricing and the efficiencies of consolidating your spend with one or two selected vendors for an expense area. Consider structure centrally led, but locally implemented teams, in order to obtain the best leverage available to your organization you will need to gather data in a central point so that you can evaluate your total spending by area. The local team will be critical to implementation of the suggested improvements. It is extremely difficult to implement a process improvement without local support.

Thomson, (2004) in his CIPS text Purchasing Context wants buyers to develop strong negotiation skills and use technology to propel yourself ahead of your competition. Have a system you utilize everyday can handle incredible tasks and automate things that you are handling manually and lastly, design an incentive program that actually profits the individual and the company in order to implement these best practices, one should develop an effective plan, form a team that will be compensated for their results, implement the plan and track performance. Once the plan is implemented, meet quarterly to share additional successes achieved along the way.

Integrating Environmental Factors into Procurement Best Practices

In the work of Beth Liddell, (2003) stated that many corporate firms recognizing the tremendous power they wield in the marketplace are attempting to reduce their impacts on society and the environment by purchasing products they deem environmentally preferable or sustainable. These purchasing efforts vary widely, ranging from simple buy recycled programs to complex environmental and sustainable procurement strategies. Strategies that integrate both environmental and social considerations into purchasing are typically called sustainable purchasing, but for the sake of simplicity such strategies will be included under the EPP designation for the remainder of this document.

Beth, (2003) conducted to gain an overview of the EPP-related activities of public and private sector organizations throughout the United States. The information gathered was used to generate a list of over two dozen EPP leaders, each of which was then contacted and asked to contribute to this report. In the end, twenty-one representatives from fifteen public sector organizations and six representatives from three private sector organizations agreed to be interviewed. The scope of this report was limited to EPP activities involving seven product categories: paper goods, office equipment/electronics, cleaning supplies, paint, and carpet, lighting, and office furnishings. These categories were chosen because they (1) are most closely associated with the everyday office environment and (2) tend to be the early targets of EPP initiatives. While several of the categories are considered to be building materials, this report will not address comprehensive “green building” efforts. In addition, it will not delve into EPP efforts related to pest management, vehicle procurement and maintenance, “green power,” or road maintenance.

The main recommendations from this paper were ways to integrating EPP into procurement practices. These strategies may include: Awarding contracts based on a best value purchasing approach, rather than a low bid approach, Instituting purchaser incentive programs, Mandating the purchase of environmentally preferable alternatives in certain product categories, Establishing price preferences for certain environmentally preferable products, Developing preferred supplier programs based on environmental criteria and Engaging in EPP outreach and education efforts as essential to the institutionalization of EPP. Towards the end of their interviews, report participants were asked to describe the greatest challenges their organizations face in trying to institutionalize EPP. Responses varied, but the most commonly cited challenges were as follows: Lack of resources, Decentralized purchasing, Purchaser and end-user behavior,

Vendor resistance, Product pricing, Lack of reliable product information, Attribute conflicts and prioritization issues and Tracking problems.

In another research was by Jungman, (2007) focused on Corporate Responsibility in Supply Chain Management – Case Environmentally Responsible Procurement. This thesis was one of the few to study environmental responsibility in procurement. The results of this thesis increased the awareness on how environmental responsibility issues are taken into consideration in the procurement of the case company. The results can be used as a ground for creating green procurement practices for the case company as well as other companies. In the thesis it was also studied how companies can improve their environmental performance and image as well as gain economical benefits by controlling also the beginning of the supply chain. Jungman began with an introduction the three dimensions of the corporate responsibility. After this the first part of the review concentrated on the different elements of the environmental responsibility such as drivers for the environmental responsible business, environmental management system and methods, environmental accounting and environmental auditing and reporting. The second part of the literature review first introduced the concept of supply chain management and then concentrated on different procurement functions. The third part combined the first two parts of the literature review by studying how environmental issues should be taken into account in different phases of the procurement.

The results of this study indicated that the weight of environmental issues in the case company's procurement should be increased. There aren't any established practices for taking environmental issues into account in procurement and the practices vary between the different business areas. In most cases suppliers' environmental performance is controlled in a very general stage and environmental requirements as well as object setting for the suppliers on environmental issues are insufficient. Public and private sector environmental purchasing initiatives are underway all around the world. In the USA, Federal agencies must take environmental issues into account in their purchasing decisions, and are supported in this by the US Environmental Protection Agency's (EPA) Environmentally Preferable Purchasing Program, (2000). In Canada, Federal green purchasing is well established as a key part of an overall Sustainable Development Strategy. European environmental purchasing is particularly strong at the municipal level, and the European Union and many national governments also have programmes in this area. The United Nations Environment Program also has a focus on sustainability in public procurement and provides a database of relevant purchasing criteria. The Netherlands, Norway, Japan, the UK, South Africa and many other OECD countries have commenced and are committed to work in this area. The Australian Government Office of Government Commerce Department for Environment, Food & Rural Affairs, (2003), as part of its Greening of Government Programme, is promoting environmental purchasing to address a wide range of environmental issues, including waste minimization, energy efficiency, water conservation and reductions in greenhouse gas emissions. Companies can use their purchasing power to achieve substantial environmental benefits and at the same time reduce its costs. Reducing environmental health impacts and pollution can reduce costs to the Australian community of addressing these effects.

In addition, by creating markets for new products, environmental purchasing can contribute to the establishment of new local businesses and jobs. Russell, (1998) showed environmental purchasing can achieve a number of benefits: reduce energy and water consumption (which can reduce costs), improve resource use efficiency, reduce waste (which can reduce waste disposal costs), reduce environmental health impacts of products and services, reduce pollution, provide markets for new environmentally preferable products, “close the loop” on recycling, improving the viability of recycling, provide leadership to the community and encourage industry to adopt cleaner technologies and produce products with lower environmental impacts.

Green Purchasing as Part of Sustainable Procurement

In a research conducted by Julia Koplin, (2003) for Volkswagen, an analysis of impacts of environmental and social guidelines on purchasing decisions the research was based on the assumption that it is necessary to incorporate sustainability issues into supply (chain) management. Therefore the paper answers the following question: How can environmental and social standards be integrated into the supply policies and supply processes? As part of the findings it purchasers need clear, careful consideration given to environmental issues during the procurement process. Sustainable development means achieving four objectives at the same time: Effective protection of the environment, Prudent use of natural resources, Social progress that recognizes the needs of everyone, Maintenance of high and stable levels of economic growth and employment. Environmental procurement, in support of these objectives, is therefore an important component of sustainable procurement and a contributor to the long-term goal of sustainable development.

Bowen et al (2001) addressed basically, two different forms of environmental supply management can be distinguished: (1) The integration of environmental criteria/standards into product and production related decisions along the whole supply process (“greening the supply chain”) and (2) the optimization of the environmental compatibility of purchased goods (“product-based green supply”). For the integration of environmental standards into all purchasing decisions, additional information about the environmental performances of suppliers must be gathered and evaluated. Their classification and rating schemes can be helpful, as they support related supplier selection and evaluation. One related trend is the increasing international diffusion of standardized environmental management systems (EMS), such as ISO 14001 (Corbett/Kirsch 2001). Focal companies establish this as an “order qualifier”, which has to be met before a supplier is considered at all (Zhu/Sarkis 2004). Therefore it is necessary to incorporate specific environmental criteria into the purchasing guidelines.

The greening of the product as the second major option regards all stages of the life cycle and includes for example, packaging, recycling, and disposal. Hence, Bowen et al. 2001 claimed purchased products can often be improved or replaced by other more environmental friendly products. Yet, for technically more advanced products, which are produced according to the requirements defined by the customer, environmental criteria form part of the product requirement specifications. These specifications are usually measurable afterwards, so they are much easier to evaluate.

Handfield et al, (2005) discussed programs that intend to bring about environmental improvement can often be most efficiently implemented if the whole product chain, or system, is involved. Environmental supply chain management (ESCM) involves the organization and management of activities that address the performance of materials, components, and goods and services that an organization buys and uses. At its most developed, ESCM involves identifying the most significant environmental improvement opportunities by considering the entire product system and working cooperatively with suppliers to reduce environmental impact. There are three dimensions to environmental supply chain management: supply chain that is. Network involved, through upstream and downstream linkages, in processes and activities delivering value in the form of products to users, environmental that is. Materials, energy inputs and outputs and their related environmental impacts/aspects and management – the conducting or supervising of a business/organization.

In his earlier text Handfeild, (2002) organizations applying ESCM impose certain requirements to bring suppliers in line with the organization's standards of environmental management. Requirements may be specific, such as lists of substances that are banned, restricted or targeted for phase out or specifications on recycled content. There may also be broader requirements, such as conformance to an environmental management system.

In general environmental supply chain management requirements address one or more of the following elements: energy efficiency, material and resource management, efficiency and control, safe and clean production, distribution and logistics, total costs, risk and liability, secure supply and innovation management. While the above approach is common, there are other ways that ESCM is used. In some cases, a collaborative approach is utilized where organizations and suppliers work together to improve environmental performance in both organizations. For example, if the procuring organization has particular expertise to share, they may organize training session for their

A Case for Effective Supplier Management

Suppliers are an important, critical resource for the success of a company. Sheth and Sharma, (1997) constitute that “value creation by suppliers has become an area of interest to firms. Vale creation can manifest itself in access to technology, access to markets, and access to information. Business customers will realize that suppliers provide access to value creation that will provide them with sustainable competitive advantage.” The integration of environmental and social standards into strategic supplier management is the basis for a sustainable supply (chain) management. Therefore it is necessary to coordinate a collective vision, missions and measures of both parties (buyer and supplier) for long term business relations. Supplier management consists of three parts: (1) Management of the supplier basis (election, evaluation and monitoring), (2) supplier development and (3) supplier integration, principally, every company has its own process for supplier management fitting them to variable organizational characteristics.

Nevertheless, Webster and Wind (1972a, b) tried to outline a universal organizational buying decision process, including the cycle of five fundamental steps: First, Identification of demand: A purchasing situation exists if there is a need for any product or service, which cannot be

satisfied by the company itself and has to be bought from an external contractor. Brannigan (2008) pointed questions to be asked here are: What do we want to buy, Why do we need this product or service, Can the need be met another way, Is a suitable product available elsewhere in the institution, Can the requirement be met by renting, sharing rather than purchasing, Is the quantity requested essential, Is the specification currently used the correct one for the purpose and can the product serve a useful purpose after its initial use?.

Second, definition of targets and specifications: This step includes the exact determination of the product/service acquired in the purchasing requirements. These purchasing requirements are also influenced by other business unit's for example, technical development, quality assurance, and logistics. According to Brannigan (2008) of interest in 'Modern Procurement Practice'. Thirdly, types of specification are generally used Functional – defines function and duty of the product or service, Performance – defines performance (output specification) and Technical – physical characteristics on an item. By placing the emphasis on the functional and performance based specifications this provides an opportunity for the supply market to innovate including reducing environmental and social impact.

Also key as this indicates to suppliers that environmental and social considerations are important to the client for example, Fitness for purpose and value for money, Resource, energy and water efficiency, Minimum use of virgin and non-renewable materials, Maximum use of post consumer materials, Non (or reduced) polluting with minimum use of toxic chemicals, CFC's ozone and other pollutants, Maximum durability, reparability, reusability, recyclability and upgradeability, Minimum packaging, Design for disassembly, Fault controls to prevent unnecessary waste, Health and safety standards and Biodegradability

Thirdly finding purchasing alternatives: Jungman, (2007) explains the requirements and the schedule is set up, the market can be checked for available purchasing alternatives (supplier). Therefore, already- used supply sources as well as new potential suppliers are included according to the description of the product/service. If necessary, other business units will be factored into the supply process for the election decision.

Fourth, Evaluation of all alternatives: coding to Mont and Leire, (2009) The evaluation of supplier alternatives represents the main part of the whole buying process. It consists of balancing the different offers on the basis of the supply targets and product specifications defined in step two. For an elementary product, most of the time, the price is the final decision criteria. But for a complex product, uncertainties and problems in finding a solution can exist because of divergences of the offers. Decision making makes it necessary to assess the targets and specifications, and to distinguish the acceptable trade-offs.

Fifth, Supplier selection: Thomson, (2004) with the election of a supplier for the contract, the organizational buying decision process will be completed. Supplier appraisal is used to assess the supplier's environmental and social impacts and more important for high risk goods or services or on strategically important contracts. Also using questionnaires can be a they are a familiar tool, can be cost effective way of gathering information, can produce a lot of data quickly and

can be used at pre-contract to influence the tendering process or post contract as part of contract management.

Sixth the Tender evaluation: gives opportunity to incorporate your priorities into tender for goods and services, helps integrate into an essential part of business operations, need to set out contract award criteria at an early stage, opportunity to apply weighting to environmental criteria and award criteria must be linked to the subject matter of the contract.

Lastly, Contract management: Set target related to your own organisational objectives and relevant to the contract – KPI's, encourage innovation around reducing environmental and social impacts, this sends out a clear message to the market that this is on the agenda and will develop further, use past performance in award of new contracts, discuss alternative products & services with suppliers, Continuous improvement which work with suppliers to improve, set targets and monitor improvement through contract review, allows organisations to accept issues are apparent but are working to address them, train your suppliers, provide guidance and give awards.

Consequently, environmental criteria form part of the requirements placed on suppliers aiming to reduce the input of natural resources and minimize environmental risks by improving the efficiency of suppliers (Simpson/Power 2005). Sustainability thereby covers external impacts upstream and downstream in the supply chain along the product life cycle and the involved actors (supplier and customer) (Seuring 2004; Green et al. 1996). One main objective is the economic success of a company's supply chain by complying with environmental and social standards on the basis of collaboration and corporate development between buyer and supplier (Preuss 2005). Environmental impacts and violations of human rights should be discovered and stopped early in the supply chain. Thus, a rising influence of environmental and social standards on product and production decisions is expected for the future (Zhu et al. 2005). The starting points for environmental and social requirements in supply management are the interaction of three different trends: (1) the increasing strategic importance of supply management (Goldbach et al. 2004), (2) the increasing importance of buyer-supplier-partnership both for "normal" business, but also facing environmental and social problems (Harland et al. 1999), and (3) the awareness of the connection between supply decisions and a firm's environmental and social or sustainable performance (Seuring/Müller 2004; Bowen et al. 2001). As a result, sustainability in supply management accrues from the general adaptation of products to changed environmental and social conditions along the chain concerning design, ingredients, production systems, recycling, and disposal (Green 1996).

World Class Supply Management

Porter et al, (1995) discusses world class supply management philosophy reflects those actions and values responsible for continuous improvement of the design, development and management processes of an organization supply system with the objective of improving profitability and ensuring its survival. The term world class recognizes that companies compete in global environment hence spans functional boundaries and company borders. The function of world class decision making from an internal department or single company focus toward optimization of the supply chain. Through continuous improvement world class supply management is ever moving target that focuses on supply chain improvement. This requires the development and

management of institutional trust. It is strategic in nature concentrating on proactively improving processes with the long term goal of upgrading competitive capacity of the firm and firm supply chain

To understand this supply management will be observed from three perspectives as put by Brian, (2006) first as a function of business, second as one of the basic elements required to accomplish productive work and third as key departments responsible for outside manufacturing services. Supply is one of the functions common to all types of business enterprises. These functions are basic because no business can operate without them. They include production, finance, supply, personnel and distribution. By its very nature, supply management is a basic and integral part of business management. For a business to be successful all its individual parts must be successful. A successful supply activity is required for any business to achieve its full potential.

Research and Value Based Analysis

Koplin (2006) in her thesis the specific manner in which an environment and cost based value analysis is performed cannot be standardized. Management require analysts to follow several steps designed for supply chain for example, the value analyses checklist, functional environment and cost approach, use of brainstorming as well as customers and suppliers. The checklist should contain a number of general questions followed by several highly specialized questions. During the environmental and cost approach, questions would be do a particular function performed justify environmental impact and cost? The use of brainstorming stimulates creative solution. Value analysis possesses tremendous potential. However for the potential to be realized those responsible for administration of the value analysis program must adopt broadly based management point of view. This is important because value analysis should be optimized to total value efficiency.

In summary, the literature review has looked at some key research and cases put forward for green purchasing citing how best to incorporate the issues and likely challenges faced. Lessons from these research and articles should be examined and disseminated widely to business as a means for improving environmental management practices. Multinational and large companies and governments have a number of opportunities to promote green purchasing and to take advantage of the trends in globalization to improve the environmental performance.

Research Methodology

Research Design

Research design refers to the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in the procedure (Babbie, 2002). This study adopted a descriptive research design. A descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals Orodho (2003). It determines and reports the way things are and attempts to describe characteristics associated with target population, estimates of proportions of a population that have these characteristics and discovery of associations among other different variables. Descriptive research portrays an accurate profile of persons, events, or situations (Robson, 2002) in their current state. This study also used inferential statistics to give the relationship of the

variables in the study. Both approaches were appropriate in explaining the factors affecting integration of green purchasing in procurement with specific reference to Kenya Airways Limited.

Population

Mugenda and Mugenda (2003) described population as, the entire group of individuals or items under consideration in any field of inquiry and have a common attribute. The study sought to collect data on volume of purchase, information tools, management strategy and cost of green purchasing. The target population of this study comprised of all the employees in the procurement department of Kenya Airways. The procurement department of Kenya Airways has a total of 50 employees.

Sampling and Sample Size

Mugenda & Mugenda (1999) advises that a study should take as big a sample as possible if he has adequate time for the study to ensure that someone else would get similar findings to a high degree if he selected another sample of the same size. The basic idea of sampling is that by selecting some of the elements in a population, conclusions can be drawn about the entire population (Zikmund, 2003). In this study, the target population is small and the researcher therefore decided to obtain information from all the employees hence a census study. This therefore did not require any sampling.

Data Collection

The research used primary data for making conclusions. Primary data is data which is collected afresh and for the first time, and thus happens to be original in character. (Kothari 2003: 94). This study used a structured questionnaire to collect data. Questionnaires are commonly used to obtain important information about the population. Each item in the questionnaire was developed to address a specific objective. The questionnaires were self-administered by the researcher adopting the drop-and- pick-later technique. This approach gave the respondents enough time to complete the questionnaires.

Data Analysis and Presentation

According to Mugenda & Mugenda, (2003), data obtained from the field in raw form is difficult to interpret. Such data must be cleaned, coded, key-punched into a computer and analyzed. This included an analysis of data to summarize the essential features and relationships of data in order to answer the stated research questions. Before processing the responses, data cleaning was done on the completed questionnaires to ensure completeness and consistency.

The organized data was interpreted on account of concurrence to objectives using assistance of computer packages especially statistical package for social scientists (SPSS) version 21 and Microsoft excel package to generate quantitative reports through tabulations, percentages and measures of central tendency.

Multiple regression models were used to find out the effect of relationships between variables. This method is valuable for quantifying the impact of various simultaneous influences upon a single dependent variable. Multiple regression attempts to explain the variation in one dependent variable Y via variations in the explanatory or independent variables that is, it combines two or

more independent variables (examples X₁,X₂,X₃,) to predict the dependent variable Y (Green Purchasing Integration) using all independent variables at once.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Y dependent variable Green Purchasing Procurement

α = coefficient of the factor

X₁ = Volume of Purchase

X₂ = Information tools

X₃ = Management Strategy

X₄ = Cost of Green Purchasing

Data Analysis and Interpretations

Reliability Analysis

The reliability of an instrument refers to its ability to produce consistent and stable measurements. Bagozzi (1994) explains that reliability can be seen from two sides: reliability (the extent of accuracy) and unreliability (the extent of inaccuracy). The most common reliability coefficient is the Cronbach's alpha which estimates internal consistency by determining how all items on a test relate to all other items and to the total test - internal coherence of data. The reliability is expressed as a coefficient between 0 and 1.00. The higher the coefficient, the more reliable is the test.

In this study to ensure the reliability of the instrument Cronbach's Alpha was used. Cronbach Alpha value is widely used to verify the reliability of the construct. Therefore, Cronbach Alpha was used to test the reliability of the proposed constructs. The findings indicated that volume of purchase had a coefficient of 0.847, information tools had a coefficient of 0.751, management strategy 0.881 and cost of green purchasing of 0.991. All constructs depicted that the value of Cronbach's Alpha are above the suggested value of 0.5 thus the study was reliable (Nunnally & Bernstein, 1994; Nunnally, 1974). On the basis of reliability test it was supposed that the scales used in this study is reliable to capture the constructs.

Demographic Data

Respondents were required to indicate their age bracket. Majority (40.6%) of the respondents in this study were aged between 36-45 years of age. They were closely followed by those aged above 45 years of age at 33.2%. Another 20.4% of the respondents were aged between 25-35 years of age and the remaining 5.6% of the respondents were aged below 25 years of age. The age bracket of 36-45 is therefore the age where majority of employees in the procurement department of KQ lies hence a mature generation. Respondents were required to indicate their gender. The findings revealed that majority (52.3%) of the respondents were male and the remaining 47.7% of them were female. The findings therefore reveal that all the respondents were proportionally represented. Respondents were further required to indicate the highest level of education they had attained. From the descriptive statistics 62.8% of the respondents indicated that they had attained a bachelors' degree level of education and closely followed by those who had attained diploma level of education. The remaining 9.3% of them indicated that they had

attained masters' degrees. The findings therefore reveal that majority of the respondents were literate hence could easily articulate green purchasing issues under study.

Study Variables

Volume of Purchase

The study sought to investigate the effect of volume of purchase on the integration of green purchasing in procurement at KQ. Respondents were required to rate the extent to which they agreed to different aspects on volume of purchases in relation to green purchasing. This measurement scale consisted of 6 items describing volumes of purchases in relation to green purchasing. Items that were measured on a five point Likert-Type scale ranging from 1 being "strongly disagree" to 5 being "strongly agree". Means of between 2.0789 - 4.4375 and standard deviations of between 0.15172 - 0.51235 were registered. The study findings therefore revealed that majority of the respondents agreed that purchasing in volumes had contributed to higher environmental quality (4.4375). Further, majority of the respondents agreed that volumes of goods purchased influenced the consumption patterns of their organization. However, it was clear from the research findings that majority of the respondents were neutral that purchasing in large volumes had led to higher adoption of product and process involvement. The findings are as presented in Table 4.5. These study findings are similar to those of (Russel, 1998) who argues that there is greater belief in the use of green procurement as a driver in the creation of markets for more sustainable goods and services. According to the study findings various aspects on volume of purchase applied to a greater extent at KQ.

Information Tools

The study sought to investigate the effect of information tools on the integration of green purchasing in procurement at KQ. Respondents were required to indicate their level of agreement with various aspects on information tools in relation to integration of green purchasing. Items that were measured on a five point Likert-Type scale ranging from 1 being "strongly disagree" to 5 being "strongly agree". Means of between 2.7000 - 4.7250 and standard deviations of between 0.01242 - 0.92508 were registered. The study findings therefore revealed that majority of the respondents agreed that their organization provided buyers with significant information on green purchasing so as to make informed choices when tendering (4.7250). Further the organization had sensitized staff in the procurement department on benefits of environmentally sound commodities. However, it was clear from the research findings that majority of the respondents disagreed that information regarding green purchasing was not easily accessible their organization. These results are consistent with Falk (2001) who contend that buyers require significant amount of information in order to make informed purchasing choices. According to the study findings, the organization had to a great extent embraced dissemination of information on green purchasing to various stakeholders.

Management Strategy

The study sought to investigate the effect of management strategy adopted on integration of green purchasing. Respondents were required to indicate how they agreed to various statements on management strategy in relation to green purchasing integration. Items that were measured on a five point Likert-Type scale ranging from 1 being "strongly disagree" to 5 being "strongly

agree". Means of between 2.9744 - 4.7250 and standard deviations of between 0.03497 - 0.95239 were registered. The research findings revealed that the top management of their organization was committed to environmental issues (4.7250), suppliers were able to participate during product design/service delivery discussions (4.7250) and that the top management was committed to implement the green purchasing strategy in their organization. On the contrary, the research findings revealed that the top management of their organization did not emphasize on environmental impact audits of the suppliers which is very key in integration of the supply chain. The research findings complement the findings of Jungman (2007) who argues that senior management need to support environmental issues for them to be implemented. The findings therefore reveal that the type of management strategy adopted has a significant effect on the integration of green purchasing in procurement.

Cost of Green Purchasing

The study sought to investigate the effect of cost of green purchasing on the integration of green purchasing in procurement. Respondents were required to indicate their level of agreement to various statements pertaining to cost of green purchasing. Items that were measured on a five point Likert-Type scale ranging from 1 being "strongly disagree" to 5 being "strongly agree". Means of between 2.0789 - 4.7250 and standard deviations of between 0.14326- 0.97106 were registered. Majority of the respondents strongly agreed that material life cycle costs were considered in purchasing decisions (4.7250). They further agreed that green packaging was costly (4.4359) and that it was affordable to dispose-off wastes from green products. On the contrary, majority of the respondents disagreed that environmental costs were affordable (2.0789). The descriptive study findings also complement the findings of Stock (2002) who contends that green purchasing can improve a firm's economic position, by reducing disposal and liability costs. This therefore implies that cost of green purchasing has a positive impact on integration of green purchasing in procurement.

Regression Analysis

The multiple linear regression analysis models the relationship between the dependent variable which was integration of green purchasing in procurement and the independent variable which were volume of purchase, information tools, management strategy and cost of green purchasing. The coefficient of determination (R^2) and correlation coefficient (R) shows the degree of association between integration of green purchasing and various factors. The research findings indicated that there was a very strong positive relationship ($R = 0.852$) between the variables. The study also revealed that 72.7% of integration of green purchasing could be explained by the factors under study. From this study it is evident that at 95% confidence level, the variables produce statistically significant values and can be relied on to explain integration of green purchasing in procurement at KQ.

Table 1 shows the results of ANOVA test which revealed that the combined independent variables have significant effect on integration of green purchasing. This can be explained by high F values (8.746) and low p values (0.003) which is less than 5% level of significance.

Table 1: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.518	42	.138	8.746	.003
Residual	.185	1	.185		
Total	1.702	43			

Table 2 shows the results of regression coefficients which reveals that a positive effect was reported for all the factors under study.

Table 2: Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	4.441	1.820		2.440	.059
Volume of purchase	.147	.358	.172	.410	.049
Information tools	.136	.232	.157	.587	.053
Management strategy	.253	.244	.323	1.039	.047
Cost of green purchasing	.266	.254	.310	.048	.034

Interpretation

From this study it was evident that at 95% confidence level, the variables produce statistically significant values for this study (high t-values, $p < 0.05$). A positive effect is reported for all the variables under study hence influencing integration of green purchasing positively. The results of the regression equation below shows that for a 1- point increase in the independent variables, integration of green purchasing in procurement at KQ is predicted to increase by 4.441, given that all the other factors are held constant. The equation for the regression model is expressed as:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

$$Y = 4.441 + 0.253X_1 + 0.136X_2 + 0.147X_3 + 0.266X_4$$

Where:

β is a correlation coefficient

Y= Integration of Green Purchasing

X_1 = Volume of purchase

X_2 = Information tools

X_3 = Management strategy

X_4 = Cost of Green Purchasing

The findings therefore revealed that cost of green purchasing, management strategy, volume of purchase and information tools respectively affect the integration of green purchasing in procurement at KQ.

Summary of Findings

The study sought to determine the main factors that affected the integration of green purchasing in procurement at KQ. Specifically, the study considered volume of purchase, information tools, management strategy and cost of green purchasing. The findings revealed that all the four factors had a positive effect on the integration of green purchasing in procurement at KQ. However, cost of green purchasing and management strategy adopted registered the greatest effect on integration of green purchasing. The empirical literature supported the research findings. A pilot study was undertaken with 5 employees to test the reliability and validity of the questionnaire. The respondents who participated in the pilot study were selected randomly.

The finding of the study revealed that volume of purchase positively influenced the integration of green purchasing in procurement at KQ. Results of the inferential statistics such as unstandardized regression coefficients show a positive effect on integration of green purchasing in procurement at KQ. This further indicates that volume of purchase had a significant effect on integration of green purchasing in procurement at KQ as indicated by the low p values.

The finding of the study revealed that information tools positively affected the integration of green purchasing in procurement at KQ. Results of the inferential statistics such as unstandardized regression coefficients show a positive effect on integration of green purchasing in procurement at KQ. This further indicates that information tools had a significant effect on integration of green purchasing in procurement at KQ as indicated by the low p values.

The finding of the study revealed that the management strategy adopted at positively influenced the integration of green purchasing in procurement at KQ. Results of the inferential statistics such as unstandardized regression coefficients show a positive effect on integration of green purchasing. This further indicates that the management strategy adopted had a significant effect on the integration of green purchasing in procurement at KQ.

The finding of the study revealed that green management costs positively influenced the integration of green purchasing in procurement at KQ. Results of the inferential statistics such as unstandardized regression coefficients show a positive effect on integration of green purchasing. This further indicates that cost of green purchasing had a significant effect on the integration of green purchasing at KQ as indicated by the low p values registered.

The study findings revealed that the combined effect of the four factors under study on the integration of green purchasing in procurement at KQ was statistically significant. This was revealed by the ANOVA findings where high F values and low p values were registered at 95% confidence interval.

Conclusions

The objective of this study was to determine the main factors that affected the integration of green purchasing in procurement at KQ. Based on previous studies, the factors were expected to have a positive effect on the integration of green purchasing. The study findings indicate that there is a significant positive relationship between the factors namely: volume of purchase, information tools, management strategy and cost of green purchasing with integration of green purchasing in procurement at KQ.

The findings also indicate that cost of green purchasing and the management strategy adopted respectively had major effect on the integration of green purchasing in procurement than volume of purchase and information tools respectively.

Recommendations

With due regard to the ever increasing desire to have high integration of green purchasing in procurement in Kenya there is need to invest in various strategies. This should be done in a manner in which all the stakeholders are happy. This ensures that they are incorporative hence players need to embrace proper strategies which are acceptable, accessible, ethically sound, have a positive perceived impact, relevant, appropriate, innovative, efficient, sustainable and replicable. This therefore calls for establishing strategies that meet consumer needs. Specifically the study recommends:

1. Organizations should organize seminars and workshops to sensitize the employees and suppliers on the benefits of green purchasing and the need to embrace it. Once employees and suppliers are aware of the benefits of an green purchasing it will be easy to implement the green concept in organizations.
2. The management of organizations should consider appreciating environmental issues and inculcate this culture to its employees who will go a long way in implementing the green vision in their organizations.
3. Suppliers should consider making the supply of green products affordable so as to attract consumers to procure green products. This will go a long way in reducing the green-house –effect (global warming) because consumers will use environmentally friendly commodities.

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