

AN EVALUATION OF THE SUPPLIER SELECTION AND EVALUATION PROCESS IN ZIMBABWEAN UNIVERSITIES

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ABSTRACT

Supplier selection and evaluation is fast becoming an important strategic consideration in purchasing and supply. Suppliers play an influential role to the overall success of the buying organisation. Nowadays, supplier selection is firmly positioned as an alternative source for competitive advantage for organisations with regards to offering low cost, high quality products and services or achieving reliability to customers. As organisations become more dependent on suppliers, the direct and indirect consequences of poor decision making on supplier selection will become more critical. With the increasingly important role of suppliers in supply chain management, the selection process strategy has changed; other than scanning a series of pricelists only, qualitative, quantitative and environmental criteria have now been incorporated into the process.

JEL CLASSIFICATION & KEYWORDS

■ M19 ■ Supplier Management

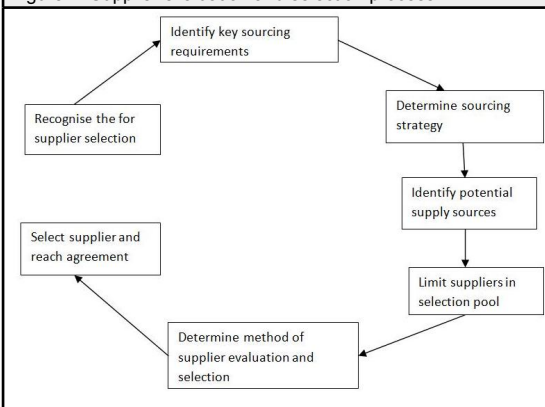
INTRODUCTION

This paper will explore supplier selection and evaluation by Universities in Zimbabwe with a specific focus on Bindura University of Science Education (BUSE), Chinhoyi University of Technology (CUT), Lupane State University (LSU), National University of Science Technology (NUST) and Midlands State University (MSU). This research is carried out on the background of poor service performances by universities. The paper will also examine the decisions facing these State University in the selection of suppliers. It will also look at the key approaches to supplier selection discussing the advantages and disadvantages of each approach. It is imperative to state at this point in time that all state universities' procurement practice is governed by the State procurement Act Chapter 22:44. The Act provides clarification on requirements for firms to qualify as eligible suppliers for public institutions. The paper will evaluate the current supplier selection strategies by Universities and also explore other supplier selection approaches.

Literature review

Yu and Shen (2009) observed that individual firms no longer compete as autonomous entities but rather by joining a supply chain alliance. These alliances provide institutions with an opportunity to exploit the capabilities of suppliers. As will be seen in later discussions, it is now imperative for organisations to analyse or to segment transaction in order to identify those that require long term interactions with specific suppliers. Lung Ng (2007) also concur with Yu and Shen when he pointed out that competitive advantages associated with supply chain management philosophy can be achieved by strategic collaboration with suppliers and service providers. In addition to this, Monczka et al (2005) offers a useful supplier evaluation and selection process model that can help organisations to purposefully select suppliers. De Boer et al (2001) as cited by Aissaoui et al (2007) identified steps that make up the supplier selection process as firstly, a preparation step achieved by formulating the problem and the different decision criteria. The next step is prequalification of potential suppliers and final choices being made. The model is given below.

Figure 1: Supplier evaluation and selection process



Source: Monczka et al 2005

Decisions facing the Universities when selecting suppliers

As has already been alluded to, supplier selection is no longer about comparing three quotation for the lowest price, but now goes deeper to examine the capabilities of suppliers and focus on establishment of long term relations. There are a number of decision areas that the Universities need to take into consideration that will determine the supplier selection strategy that will be employed. The Kraljic Purchasing Portfolio model (1983) is used in this report to help provide important insights regarding product classification decisions (also Aissaoui et al, 2006). Supplier selection is an exercise that requires a lot of resources hence it is important to identify products that deserve such an exercise.

Product classification decisions

Kraljic (1983) classified the commodities, components, products, and services that can be bought according to the supply risk and potential profit impact of each. Supply risk is high when the item is a scarce raw material, when its availability could be affected by government instability or natural disasters, when delivery logistics are difficult and could easily be disrupted, or when there are few suppliers. Profit impact is high when the item adds significant value to the organization's output. This could be because the item makes up a high proportion of the output or because it has a high impact on quality. As such, the purchasing portfolio model identified four categories namely strategic items, leverage items, bottleneck items and non-critical items. Kraljic recommends the following purchasing approaches for each of the four product classes:

Strategic items are high profit impact requirements and have high supply risk. These requirements deserve the most attention from purchasing professionals. Purchasing strategies that can be implemented include developing long-term supply relationships, analyzing and managing risks regularly, planning for contingencies, and considering making the item in-house rather than buying it, if appropriate (Kraljic, 1998).

Leverage items are high profit impact and have low supply risk. Kraljic also proposes that purchasing approaches to consider here include using the company's full purchasing power, substituting products or suppliers, and placing high-volume orders.

Bottleneck items are low profit impact and have high supply risk. Suggested useful purchasing strategies may include over ordering when the item is available because lack of reliable availability is one of the most common reasons that supply is unreliable.

Non-critical items are low profit impact and have low supply risk. Kraljic also proposed that purchasing approaches for these items include using standardized products, monitoring and/or optimizing order volume and optimizing inventory levels.

Single or multiple sourcing decisions

The Kraljic purchasing portfolio model provides some important insights that are crucial when formulating supplier selection strategy decisions. Having classified the products in accordance of supply risk and impact on the profit, the buying organisation is faced with decision on whether to consider a single source or multiple sources (Aissaoui et al, 2006; Lysons and Farrington, 2006). Aissaoui et al (2006) assert that there has been a significant shift in the sourcing strategy of many firms, moving from the traditional concept of having many suppliers to rely largely on one source with which a long win-win partnership is established. Cox (1996) in his classification of contractual relationships as cited by Farrington (2006) explained that negotiated single sourced relationships result in joint ventures with the supplier of a complimentary product or service which he also termed strategic supplier alliances.

Lysons and Farrington (2006) however pointed out that there are risks associated with a reduced supplier base. The buying organisation is in danger of supply disruption due to strikes, production breakdowns and natural disasters which may result in the loss of goodwill. Multiple sourcing is another alternative decision the buying organisation may want to consider when making supplier decisions Aissaoui et al (2006). These decisions are in agreement with the work of Kraljic (1983) that after the classification of the products, a firm can carry out a market analysis. This market analysis can be carried out by employing Porter's five forces competitive model. Market analysis may also provide useful information that will determine the decision to buy from domestic suppliers or from foreign suppliers.

Supplier performance evaluation measurement decision

The buying firm should agree on a system to evaluate the potential suppliers. Carter (1995) as cited by Lysons and Farrington (2006) proposed a seven Cs supplier evaluation model. The seven Cs stand for competency of the supplier to undertake the tasks, capacity of the supplier to meet the purchaser's total needs, commitment of the supplier to the customer in terms of quality, cost driving and service, control systems in relation to inventory, costs, budgets, people and information, cash resources and financial stability ensuring that the selected supplier is financially sound and is able to continue in business into the foreseeable future, cost commensurate with quality and service and consistency in delivery, quality and service (also Monczka et al, 2005; Sollish and Semanik, 2010).

Sustainable purchasing decisions

Krajewski et al (2010) believes that in the not-too-distant future, sustainability issues will become one of the most important criterions to be used when selecting suppliers.

Boyd et al (2004) points out that more firms are increasingly becoming involved in business networks like integrated supply chains. An integrated supply chain represents a vertically coordinated network of firms that engages in various activities associated with the production and distribution of the firm's products to the end customer. With the increasing pressure for companies to be good corporate citizens, coordination of a supply network that incorporates social responsibility becomes paramount. According to Amaeshi et al (2008), the possibility of irresponsible practices put global firms under pressure to protect their brands even if it means assuming responsibilities for the practices of their suppliers. From the foregoing discussion it is very clear that sustainability issues are gaining worldwide recognition and as such, many firms are increasingly considering supply chain partners that embrace sustainable procurement practices.

The approaches to supplier selection

Supplier selection is a complex problem involving qualitative and quantitative multi-criteria considerations. Hence, supplier selection process requires a formal, systematic and rational selection models. Literature is awash with various supplier selection approaches and some of them are discussed hereunder.

According to Dogan and Aydin (2011), the BNs are very powerful for making inferences and drawing conclusions based on available information. Jensen (1996) as cited by Dogan and Aydin (2011) asserts that BNs are effective for modelling uncertainty by accepting probability distributions. BNs can combine expert and domain knowledge that allows flexible inference even with partial and limited information (Lauritzen, 1995). The domain knowledge of a buyer normally encodes in the form of conditional statement. BNs allow modelling of probabilistic causal relationships among variables (Bishop, 2006). Therefore, BNs can facilitate a more insightful evaluation and selection of alternatives given the semantic used for decision making (Dogan and Aydin, 2011).

Lung Ng (2007) points out that DEA approach does not require the decision maker to pre-define the weights. Weights are endogenously determined when solving a DEA model. DEA can automatically derive optimal weights of criteria with the performance scores of the suppliers. The solutions of DEA models require a linear optimizer, which is available to a decision maker. An individual DEA model is required to be optimised for each supplier. Dogan and Aydin (2011) points out that DEA has the ability to compute the relative efficiency of each supplier by identifying an efficient frontier. They also state that, although DEA is a very efficient method, the technique can only evaluate suppliers based on observed data. However, the buyers sometimes need to incorporate subjective information due to lack of experience. DEA also ignores the hierarchy and dependencies among criteria. Also Lung Ng (2007) pointed out that DEA decision maker cannot have any involvement or control of the importance of the criteria. To some extent, these DEA approaches are black-box models for decision makers in real situations.

Dogan and Aydin (2011) indicated that TCO measure the costs that are concerned in obtaining and utilising purchasing supplies and services. TCO makes purchasing function more value oriented (Wouters et al, 2005). According to Dogan and Aydin (2011) TCO provides a better inspection opportunity for determining the total cost by supplier activities on a buyer's organisation. The TCO approach is a structured methodology for determining the cost of acquisition of a product, considering all the costs

related to purchasing and mainly evaluates the supplier performance by taking into account all cost caused by supplier. Degraeve et al, (2000) as cited by Dogan and Aydin (2011) assert that these costs are not limited to the purchasing price but also include cost elements such as, quality, transportation, maintenance, and administration. Ferrin and Plank, (2002) as cited by Dogan and Aydin (2011) indicated that as opposed to an initial price perspective that mainly accept short term approach, TCO allows for a long-term perspective by selecting different buying situations. They also argue that TCO is a cost accounting application that enables purchasing decision-makers to combine value and price in making sourcing decisions. They further argue that TCO facilitates companies in dealing with pressure in their own customer markets and make purchasing more value oriented. Degraeve et al, (2000) concluded that TCO combined with mathematical programming provided overall better results than rating methods alone. However, they also submit that TCO does not assess risk or how well a particular technology fits with an organisation's strategic goals or needs. They are also of the opinion that TCO does not necessarily track environmental or social costs and benefits.

Chen (2011) stated that MCDM is an analytical method for identifying non-inferior solutions or arranging the priority order for feasible schemes based on the evaluation of multiple criteria and the preferences of the decision maker's while these feasible schemes are known. According to Tahriri (2008) indicate that MCDM is suitable if a problem is affected by several conflicting factors in supplier selection, for which a purchasing manager must analyse the tradeoffs among the several criteria. The technique supports the decision makers in evaluating a set of alternatives.

According to Dogan (2011) AHP is the method that ranks the suppliers by pairwise comparisons. Saaty (2008) also added by saying that AHP is a theory of measurement through pairwise comparisons and relies on the judgement of experts to derive priority scales. AHP forms the supplier selection problem in a hierarchy that allows structuring and modelling of the complex decision. Saaty (1980) proposed that AHP involves breaking down a problem into its decision elements, arranging them in a hierarchical structure, making judgements on the relative importance of pair of elements and synthesising the results. Saaty (2008) asserts that AHP makes it possible to introduce the optimum order quantities among selected suppliers to the maximisation of total value of purchasing (TVP). Although AHP method is a very systematic process, one of the drawbacks of AHP is the ignorance of the dependences in both higher-level element such as selection criteria and lower-level elements such as alternatives, and the elements within the same cluster. AHP is deterministic and ignore the randomness in the decision process.

The ANP was developed by Thomas Saaty in his work on multi criteria decision making. It applies network structures with dependence and feedback, among the criteria to complex decision making. According to Saaty (2008) provides the most comprehensive framework for the analysis of societal, governmental and corporate decisions that is available today to the decision maker. It is a process that allows one to include all the factors and criteria, tangible and intangible which have a bearing on making the best decision. The method allows both interaction and feedback within clusters of elements (inner dependence) and between clusters (outer dependence) such feedback best captures the complex effects of interplay in human society, especially when risk and uncertainty are involved. Dogan and Aydin

(2011) assert that ANP tries to address the weakness of AHP by taking into account the dependencies within and between elements. ANP is a combination of two parts namely Network of criteria and sub criteria that control the interactions and the network of influences of elements and clusters. The major disadvantage of the ANP is that it is deterministic and ignores the randomness in the decision process.

This method is employed to assess relative merits of different suppliers and select the best supply alternative. One of the biggest advantages of this method is its ability to assess the robustness of ranked suppliers by sensitivity and scenario analysis. The method however ignores the inherent nature of uncertainty. Furthermore, the dependencies among different selection criteria are overlooked (Dogan and Aydin, 2011).

Methodology

There are 9 State Universities in Zimbabwe and for the purposes of this paper; only 5 Universities were studied and interviewed. The Universities that were studied represent a 55.5% representation. The Universities that were studied are listed below;

- Chinhoyi University of Technology (CUT).
- Midlands State University (MSU).
- National University of Science and Technology (NUST).
- Lupane State University (LSU).
- Bindura University of Science Education (BUSE).

Key internal stakeholders of the Purchasing department of the Universities were interviewed namely the Bursary department where the buying departments are housed. User departments were also interviewed to establish if procurement service delivery is satisfactory.

Suppliers

In addition, 50 suppliers extracted from supplier lists were visited and interviewed. This exercise was carried out to assess supplier physical location, physical infrastructure, supplier capacity and capabilities.

Findings from the Universities

BUSE

The University advertises in the print media inviting prospective suppliers to apply by submitting company profiles. The suppliers are required to submit a certificate of incorporation, a current tax clearance certificate and a letter of introduction with trade references. The suppliers were included on the supplier list on the bases of submission of the required documents. Supplier visits were not carried out. It was also found out that suppliers were not evenly distributed to product categories for example one category had 43 suppliers while another had only 3 suppliers. It was also notable that big companies or major players in each product category were not listed. In essence little known companies dominate the supplier list.

CUT

The University advertises in the print media inviting prospective suppliers to apply by submitting company profiles. The suppliers are required to submit a certificate of incorporation, a current tax clearance certificate and a letter of introduction. Supplier visits are not carried out. The university only deals with suppliers who respond to the newspaper advertisements leaving out reputable companies that do not respond to the adverts. Suppliers are rationalized at 15 suppliers per product category.

NUST

In 2011, NUST put an advert in the newspaper for the first time, inviting suppliers. However, the University does not have a supplier list in place. Sourcing of suppliers is through the directory or simply by reference to previous transactions.

LSU

There is a supplier list with authorised suppliers for often bought items and the suppliers are listed according to categories of items they supply. Every December the University advertises in the print media for suppliers. To assess suppliers, they do reference checks, choose the ones they know or carry out supplier visits. They also approach good suppliers who do not respond to their advertisement.

MSU

The University does not advertise however carry out supplier visits to preferred suppliers and inspect supplier's bank statements. The university also imports some commodities, mainly from South Africa and Holland and takes advantage of the duty free incentive extended to Universities. Prices are benchmarked against reputable companies and buyers also visit trade fairs and agricultural shows in order to acquire knowledge of the market and increase supplier knowledge.

Supplier visits

50 suppliers were visited and of these suppliers only 25 percent were located at the physical addresses indicated in the company profiles. They had recognizable stock holding areas. 75 percent of the suppliers were not located at physical addresses indicated in the company profiles. After phoning, some of the suppliers were located, and they claimed that they had relocated. The suppliers had single room offices some of them located several floors up in tall buildings in the city center. The suppliers did not have any stock on hand and claimed that they kept stock at places of their residence. Such suppliers are not able to guarantee their products and services. Exposing the Universities to financial losses and poor quality of products services.

University internal stakeholders

It was found out that most users of goods and services complained about frequent shortages of items and poor quality of goods especially toners and cartridges. Because of these challenges, they complained that it was hampering their service delivery initiatives.

Conclusion

The foregoing findings reveal a sad state of affairs in the manner in which the Universities select suppliers. Clearly, supplier selection is not treated with the strategic importance it deserves by the Universities. There is no University that has a credible system of selecting suppliers; hence all are exposed to opportunistic behaviours by suppliers. The approaches that have been explored in the literature review section can be helpful in overhauling supplier selection processes by the Universities. The approaches look beyond comparison of prices to other qualitative and quantitative performance measures. Katsikeas et al (2004) noted that firms take into account multiple sets of criteria in their supplier selection and evaluation decisions. They are of the opinion that some decision criteria are more important in comparison with others. For instance, while many purchase decisions rely on the product's price as a choice factor, a significant and increasing number of buying firms look beyond the price to the impact of the purchase on the cost. In essence the Total cost Ownership approach will be the

best starting point. The buying firms can consider non-price factors and select a supplier who helps achieve and sustain cost differentiation advantage in the market (Katsikeas et al, 2004). Kraljic's work can also come in handy in assisting the Universities to segment their supply market.

Lysons and Farrington (2006) recon that effective supplier selection process facilitates supplier base optimisation. They assert that supplier base optimisation or rationalisation is concerned with determining the approximate number of suppliers with whom the purchaser will do business with. Supplier competitive pricing, reliability, technological capability and service remain crucial elements in the selection of suppliers. These important considerations are being neglected hence failure by Universities to exploit opportunities that translate from having the appropriate mix of suppliers. However, an effective supplier selection is the one that tries to generate maximum benefits from each supplier performance measure for the buying firm. Effectively, the selection process should churn out a supplier mix that reduces total purchasing costs, hence enhancing the competitive capabilities of the buying organisation. In other words the buying organisation should aim to maximise the trade-offs that are brought about by engaging suppliers with different capabilities. Also, following from the examination of Kraljic's purchasing portfolio model, Universities will be able to craft purchasing strategies that mitigate against supply risk of critical products such as strategic and leverage products that have a high profit impact.

The present state of affairs at Universities does not provide basis for establishing long term relationships. Lysons and Farrington (2006) identified various buyer-supplier relationships that can be established as a result of a supplier selection process. These relationships include partnerships, subcontracting and reciprocal relationships. In essence, supplier selection form the basis for negotiated long term relationships with key suppliers. It is imperative to point out that supplier selection requires application of resources; hence it should result in meaningful relationships being established.

In closing, competition has become complicated so much that even a hefty marketing budget may not be sufficient for an organisation to take on its competitors. Previously overlooked places such as selection of suppliers are turning out to be panacea for gaining competitiveness for organisations that are deliberately engaging in careful and systematic selection of suppliers. This paper has provided decision areas that require consideration and provide guidance on the supplier selection approaches that can enable the Universities to establish an appropriate mix of suppliers. The approaches that have been explained in this report may be selected based on the degree of certainty or uncertainty in the particular supply market or industry type. It is also important to point out that issues of the environment and corporate social responsibility are becoming important considerations as firms are becoming protective of their brand names.

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