

## A conceptual framework for vendor selection

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**Abstract:** This paper tries to establish a framework to select potential vendors in a competitive environment, who have the capability, capacity and facilities, convenient geographical location, financial standing reputation, business ethics, trade experience and dependability to supply quality and diverse material and service within schedule. The vendor selection process requires a tremendous amount of a firm's resources and time. In return, the firm can expect significant benefits from the process while contracting with vendors. This paper describes the typical steps of vendor selection processes: identifying potential vendors, soliciting information from the vendor, setting contract terms, negotiating with the vendor, and monitoring the vendor. Keeping abreast with market trends, scientific and technological development and being on the look-out for new materials, equipment and process supplies that will meet our needs.

**Keywords:** supply quality negotiating, contract terms.

### I. Introduction

The role of purchase team within companies has become extreme important, often involving staggering money values. Maintain and update approved vendors list after deleting incompetent vendor. For this purpose maintain cordial relationship with vendor, review and evaluate their performance regularly. Also exchange information with other companies'. With the company's huge investment and increasing reliance on outsourcing of many complex services and products, the job of a purchaser is not only important but also challenging. Evaluate Product and services to develop and disseminate ideas and suggestion relating to cost reduction and import substitution this paper is organized around the major steps involved in vendor selection. First, step search for vendor in market Purchase manager must identify potential vendors. The purchase Manager must select capable vendors. In next step Depending on the available information from vendor. Request, vendors respond by providing "bids" for the job, specifying an offer on the Contract terms, such as Total cost of job, period, quality, etc. Depend upon provided information from vendor. Technical Evaluation of job along with commercial evaluation must done by purchase team. Multi dimension technic must use to select final vendor. In next step various contract terms and conditioned, which relate to job. Further purchase team can go over the course of negotiation. Finally, the purchaser determines which vendor will be awarded a contract and along with this monitor the given job as per given schedule to vendor. While this paper introduces the key steps in vendor selection. Following Figure 1 shows the sequence of steps involved in vendor selection



Figure 1: Framework for Vendor Selection

## **II. Identifying Potential Vendor**

To survive in the intensely competitive Market, it is very important to not only rely on existing vendors but also to search and discover new vendors. F. Hedderich et al (2006) have suggested importance viable new vendors. The Purchaser must also be cognizant of the need to ensure such Vendor Should qualified for require job Identifying and qualifying potential Vendor. Process of vendor selection can be time-consuming and costly, Purchaser often develop a long-term supply base consisting of Potential Vendor. Following some points are important in selection for vendor

- 1 Importance of new Vendor:** Many factors make new vendor's s important. First, there may exist new vendors that are superior in some way to a firm's existing Vendor. For example, a new vendor may have developed a innovative production technology which allows it to drastically reduce its production costs Purchaser may need more number of vendors to introduce competition and to minimize risks involved due to disruption in supply.
- 2 Vendor's reputation:** Vendor non-performance can leads to failure in job completion. Vendor performance is directly related to project completion e.g. in Production delays that may occur due to shortage in parts and when faulty products produced by Vendor may be recalled. Such cases are time consuming for Purchaser
- 3 Check Vendor's capability** prior to awarding them a contract. "Vendor qualification screening" is to reduce the likelihood of vendor non- performance, Such as late delivery, non-delivery, or delivery of non-conforming (faulty) goods. Another part is simply to ensure that the Vendor will be a responsible and responsive partner in the day-to-day business relationship with Purchaser Company vendors qualification screening involves many aspects.
- 4 Reference checks.** The Purchaser may contact previous customers and ask for Product delivery performance, service performance , the ability of the vendor to honour contract terms, conflicts and problems in the past and how they were resolved
- 5 Financial status checks.** Purchase team may use published Vendor performance ratings to determine the vendor's financial status and likely financial viability in the short to medium term. For example, if the vendor has recently assumed significant debt, this may raise red flags about the possibility the vendor will declare bankruptcy before fulfilling its obligations to the purchaser. Certification (or similar), indicating that the vendors has rule regulation, procedures, documentation, and training in place to ensure continuous adherence to quality standards.

Vendor qualification processes are costly and can be time-consuming. Vendor who have passed the qualification requirements and are eligible for contract award are commonly referred to as "pre-qualified" vendors. If the purchaser utilizes short-term contracts and frequently procures the same item, it mostly makes sense to establish a cohort of pre-qualified vendors who will compete for these contracts.

## **III. Information Requests To Vendors**

Once the purchase team has identified potential vendors the next step in vendor selection is to formally request that the vendors provide information about their goods or services. While there is no agreed-upon terminology, generally the purchaser seeks broadly three types of information from vendors which are described as follows-

Request for Information (RFI) is issued when the purchaser seeks to gain information regarding various alternatives that are available to meet the present needs. Typically the purchaser asks vendors what advantages his goods and services have over others. With an RFI the purchaser does not state a particular intention to award a contract. However, every vendor may not respond to the RFI as they may expect that the purchaser will eventually issue an RFP or RFQ, which is discussed below. Request for Proposal (RFP) is issued when the purchaser has a sense of the marketplace and has a statement of work which contains a certain set of performance parameter which it needs fulfilled. For example, the RFP may describe a formed part with certain strength, weakness, flexibility and fire resistance requirements, but not specify the particular composition of the material. Vendors respond to the RFP with details on how they would satisfy the purchaser's need vendor's performance requirements and the price they would be willing to accept. Upon learning the vendor's proposed pricing, the purchaser may revise its requirements.

Request for Quote (RFQ) is issued when the purchaser can develop a statement of work that states the actual requirement of goods or services needed. This is the case, for example, if the purchaser seeks a

component made of a particular plastic and could make set of thickness, density and another important specifications. Commonly, RFQs along with highly structured competitive tendering processes are prevalent in the systems. RFQs have been proved as most useful during procurement process for standard and common items in market. RFQs are appropriate for the competitive marketplace

#### **IV. Vendor evaluation**

In the Vendor evaluation process, a data bank containing an authorized list of vendors with their profiles is crucial. Database consisting of quality assessment, technical competence and organizational profile may be counted as ideal. The data of vendors must be loaded on case basis wherein various fields should depict the performance on a quantitative scale corresponding to each vendor/criteria. Proposed an approach which compares vendors for vendor evaluation and performance improvement

Li (2006) developed three factors in Vendor evaluation measure based on extensive literature review. He illustrated that underlying the documented Vendor evaluation criteria is the need to assess a vendor's quality and service capabilities as well as his strategies and managerial synchronization with the buyer. Tan et al (1998) suggested a comprehensive model by combining the analytical hierarchy process and grey relation analysis in a single evaluation based model. They proposed that through this model, it is possible to effectively integrate with specialized knowledge along with experience of each disposed evaluation and the quantitative data to select the best vendor for cooperation. Vendor evaluation is usually a time consuming process that evaluates vendors on several criteria such as cost of manufacturing, basic material cost, quality assessment, organizational goal, quality staff, delivery system, personal facilities etc. Evaluation of vendors is complicated process by the fact that numerous criteria should be considered in the decision making process. Therefore, different criteria are usually considered during the Vendor selection process.

Stanley and Wisner (2001) surveyed a number of industries and suggested that quality and delivery on time are the most important aspect of purchasing performance evaluation. Wang and Che (2007) suggested that apart from optimum price, culture, joint development forward engineering, trust, supply chain management, quality and communication were also highly important. He further suggested that the vendors' history of supply, production price, technical understanding with capability and transportation cost also play important factors during vendors' selection. Therefore, it is important to note that cost and quality dominated more in the vendor selection process.

Factors consider for Evaluation

- 1 Cost Criteria** The main aim of this criterion is to find vital element of cost associated with purchase. The most common cost related with a product is purchase cost, transportation cost and taxes Price The firm always requires the minimum price of the product to increase the profitability
- 2 Technical Capability** vendors' need competent technical ability to provide good quality product or service, committed to future improvements in performance and promote successful development efforts.
- 3 Quality Assessment** is a key factor of vendors by which they can improve and maintain quality and delivery performance. It is very important for the company and vendors. Quality and availability of product depends on this criterion.
- 4 Organizational Profile** achievement of sales and marketing goals, financial performance, achievement of current organizational goals and strategy for technology age. Good vendors should have high organizational power and advanced coordination skills.
- 5 Service Levels** The performance of the vendor in providing service to the manufacturer is the prime criteria to decide its Suitability for a specific product. Beamon (1999) argues that the good service given by the vendors may helpful in increase the customer satisfaction and therefore, this criterion is important in global vendor's selection.
- 6 Vendors Profile** the performance and past history of the vendor's s help in taking decisions for its selection.
- 7 Risk Factor** Owing to a number of exogenous dimension affecting international sourcing, global vendor's selection is much riskier than its domestic counterpart. Consequently, the global vendor selection decision is most strongly affected by perceived risks.

The identification and analysis of criteria for selection and evaluation of vendors has been the focus of attention for many academicians and practitioners. In his seminal work, Dickson (1966) conducted a questionnaire survey mailed to about 300 commercial organizations, primarily production firms. The purchasing managers of these firms were asked to identify factors that were important for selecting vendors. His findings were divided into two categories: vendor selection practices by industries and vendor selection practices by

individuals Table 1 summarizes his results pertaining to factors commonly used to rate potential vendors by firms. It identifies quality, price, and delivery as the most critical factors in the vendor's selection process.

Factor	Percentage Of Systems Using The Factor
Quality	96.6
Price	93.9
Delivery	93.9
Service	81.8
Technical Capability	63.6
Financial Strength	51.5
Geographical Location	42.4
Reputation	42.4
Reciprocal Arrangements	15.1
Other Factors	12.1

**Table 1. Factors Used In Vendor Rating Systems (Dickson, 1966)**

Political stability, cultural congruence with the vendor's organization, and terrorism risk important factor for job are identified, the ability to rank order vendor is crucial for reaching an informed Vendor's selection decision. Rank ordering is simple when bidders bid are differentiated by a sole factor such as price. This might be the case, for example, if the Purchaser has issued an RFQ for a highly standardized part of machines delivered in a specific quantity by a certain date and vendors are asked to respond with their cost for the contract. Hence, rank ordering vendors becomes complex when bids must be evaluated across multiple factor.

### V. Contract terms

The Vendor selection process culminates in a contract between the Purchase and one or more Vendors. The information received from Vendors via the requests described in above part ultimately must be translated into formal contractual terms before contracting job. A contract with a Vendor specifies what the Vendor should do and how they will be paid by the buyer. At the management level, contractspecial terms and conditioned related either payment terms or how the contract will be executed Contracts can specify Rules of payment and non-payment arrangements. A few common ones are listed here what types of contract terms the purchaser might consider during negotiations and when making a contract award decision. Payment terms. In a fixed price contract, the cost of product specifies what the vendors will be paid regardless of the actual cost to execute its contractual obligations. In a cost added Contract, a formula is specified which determines how much the Vendors will be paid for an example, under a cost plus contract the supplier could receive a fixed amount only on delivery of product

Arthur L (2007) had shown how liquidated damage play the role in payment. Liquidated damages (LD) clauses can be used to specify price that either the purchaser or Vendor must pay to the counterparty upon breaching the contract. Non-payment terms. The contract can specify all kinds of details related to how the contract will be executed, for instance, delivery quantities, Schedule of delivery, delivery locations, service level, quality level, technical specifications, tenure of the contract, etc. Contracts where material must be transported typically assign "incoterms" defining the precise point at which the purchaser want to takes control of the shipment.

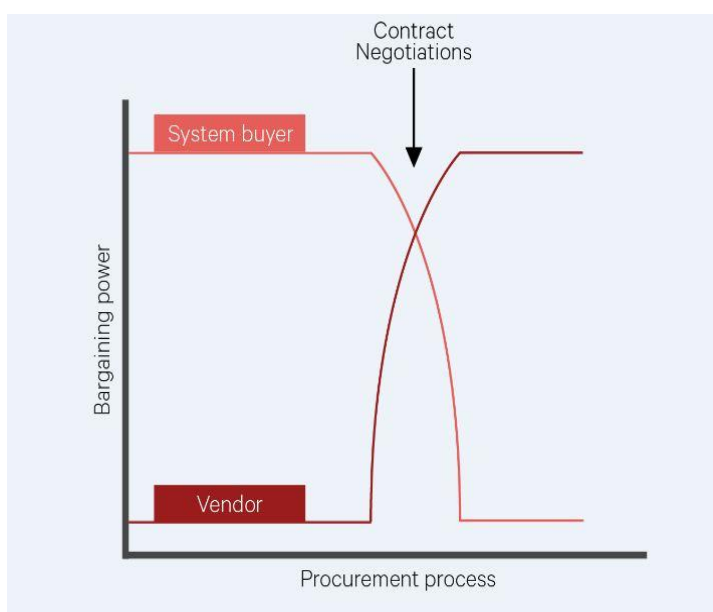
### VI. Negotiation process

As we have seen in above section, when making contract award decisions the purchaser considers each vendor's qualifications as well as the contract terms. Vendor's reputation is based on historical performance, completion of other project. Contract terms and condition, on the other hand, can be negotiate between the Purchase team and Vendors. In a negotiation the purchaser try to induce favourable terms from Vendors, and likewise the vendors attempt to induce favourable terms from the Purchaser. An extreme example of this is the take it or leave it offer approach whereby a powerful Purchaser essentially dictates the terms to the Vendors the Purchaser might demand a certain price and simply refuse to consider the Vendor unless they agree to this price. Typically, Bidders simultaneously submit bids purchaser see all bids submitted and can respond to lowering their bid, until all but one bidder has dropped out At the s other End is the price bid format in which each bid is Known only to the purchaser and the Vendors who submitted it Tendering is typically done through sealed bidding The Purchaser and a single vendor might bargain in some general and unstructured way. The purchaser and Vendor can potentially both benefit if negotiation between parties is win-win situation.

The roles and responsibilities of purchaser team for negotiation should be well understood, defined, and clearly communicated. This will help to achieve a successful outcome effectively and efficiently having an experienced negotiator on your team is very important. No matter how knowledge you have, persons sitting across the negotiating table from you are probably negotiating contracts routinely, and will have definite

and extensive experience in this area. If you have skilled professionals in your purchasing department, make them your main negotiators, but many agencies choose to give that role to an experienced consultant with a proven record. It is also important to set the negotiation target up front. At the beginning of the process you have special power. Indeed, you may make the selected vendor give up more than they would like to. This will feel like a win, but may create some internal pressures within the vendor organization to recover the margins via shortcuts/change purchase orders and have a negative impact on the project later stage. Be fair and aim for a win-win situation of the negotiations. Keep in mind that once the contract is signed, your negotiating power will decrease drastically. Figure 2 Negotiation Graph shows how bargaining power shifts throughout the procurement process.

Instead of squeezing every penny out of the vendor, focus on producing the most comprehensive contract document. Any discrepancies and gaps from the proposal documents need to be remedied now. Pay particular attention to items such as completeness of pricing combinations of acceptance test documents, project time estimation, maintenance agreement and payment terms.



**Figure 2: Negotiation Graph**

## **VII. Contract award**

This section describes how the purchaser evaluates vendors, determines the contract winner(s), and performs follow-up monitoring to inform future vendors selections. The purchaser then uses this rank ordering, along with other business considerations

### **Contract award**

Once the purchaser has a sound methodology for evaluating vendors, the process of contract awarding can begin. During this phase the purchaser determines which vendor or vendors to award a contract to. Vendor's evaluation is a key ingredient in this process, but award decisions can pivot on more than just how the purchaser evaluates the bidders. For example, even if bidders are closely matched the purchaser may choose to award the contract to just one of them. Sole award contracting may be in favour of vendor if the scope of work is well understood by a vendors.

If one bidder dominates another, the purchaser might select to give job or contract to both of them. Multiple-award contracting can be useful if the buyer wishes to schedule or different item wise its supply sources to mitigate uncertainty in material supply another reason is Purchaser might wish to prevent any vendors from becoming a monopolist, meaning it is the only viable vendor for a particular good or service needed by the purchaser. To avoid this situation the purchaser may award contracts to several vendors to keep them solvent and thereby encourage their continued presence in future contract competitions.

Multiple-award contracting can be useful if the buyer wishes to diversify its supply sources to mitigate disruption risks or if vendors have insufficient capacity or reverse economies of scale. There are also many strategic reasons for multi-sourcing. For example, a buyer might wish to prevent any vendors from becoming a monopolist, meaning it is the only viable vendors for a particular good or service needed by the buyer. This would happen, for example, if all the vendors' competitors exited the market due to bankruptcy. A buyer facing

a monopolist vendors cannot leverage competition. To avoid this fate, the buyer may award contracts to several vendors in order to have a wider range of options and also encouraging vendors about their possible participation in future contract competitions.

### **VIII. Vendor monitoring**

Mostly, contracts state the provision of goods and supplies during a longer duration of time, ranging from weeks to years. Monitoring vendor's performance during the life of the contract has several aims. Such as inspect incoming goods to ensure the received material is up to the standards and as per the specifications. This check monitoring also supports cost containment: if there is a problem with quality, it can be identified and charged back to vendors. For vendor selection itself, however, monitoring is most important in so far as it helps the purchaser to make more informed vendor selections in the future. In vendor evaluation the purchaser may consider factors which influence the total cost of doing business with the vendor. Such costs can include, the costs which are related to requirements under contract which the buyer foresees during the life of the contract. The purchaser may forecast these costs for each vendor these forecasts can be constructed using historical performance data collected through vendor monitoring. L.M. Ellram (1994) had shown in his research. Vendor's historical percentage of defective items can inform the buyer's forecast for non-conformance costs during the life of a contract.

Effective vendor's performance monitoring with

- Regularly check the vendor's progress to ensure that contractual obligations are being met
- Statistical Quality and Quantity checks must be performed over receivables during the contract period to ensure that they meet given requirement and are of a suitable standard
- Check that all conditions and clauses in the contract have been taken care of any breaches of contract must be in the sight of Contract Manager and be prepared to take action if any non-conformance with the contract occurs
- Advice the vendors in writing any lacunas are observed in the performance during execution of the contract.
- Act immediately if a problem occurs and involve senior representatives of both the procurer and vendor to solve any identified problems as soon as appropriate
- Develop effective mechanisms for registering stakeholder's feedback over the process of procurement.
- Keep adequate, written records of all dealings with the vendor and of the administration of the contract
- Perform regular inspections of work to ensure compliance with any applicable legislation, provisions of contract and quality, or workplace health and safety – depending on the nature of the procurement, risk assessment and associated problems, this could be on a daily, weekly or monthly basis.

The extent of performance monitoring applied to a vendor should be determined by the level of risk involved in the procurement and type of items and services. Complete track of contractor performance progressively anticipates, identifies and helps in taking corrective measures before the bonding with the vendor is adversely affected and before value for money is compromised

### **IX. Conclusion**

The vendor selection framework is of vital importance for operation of every company because it should not affect cost and quality fully or partly. Indeed, for many organizations effective, finalization of vendor and actual purchasing from them are not that easy job. A great deal of research has been conducted to determine what key steps should be used to select a vendor. Systematic frame work helping purchase team in find out the potential vendor in market for particular job. Purchaser team can rank the available vendor depend upon our requirement. Apart from this purchaser having choice to go for negotiation with vendor for finance or quality purpose. After awarding contract to vendor, Monitoring of work is essential for project execution or completion job. Purchaser can keep watch on vendor activity and control the activity if it deviated from schedule. In practice, key steps of framework must take into consideration the hurdles, complications of real life while vendor selection a complicated decision problem which involves ups and downs of trade and fulfilling the requirement.

### **References**

- [1]. F. Hedderich, R. Giesecke, and D. Ohmsen. "Identifying and evaluating Chinese suppliers": China sourcing practices of german manufacturing companies. *Practix*, 9:1–8, (2006).
- [2]. International Chamber of Commerce. <http://www.iccwbo.org/incoterms/id3040/index.html>.
- [3]. Arthur L. Corbin. *Corbin on Contracts*. Matthew Bender & Company, Inc., (2007)
- [4]. WoraponThanaraksakul and BusabaPhruksaphanrat. "Supplier evaluation framework based on balanced scorecard with integrated corporate social responsibility perspective". *Proceedings of the International MultiConference of Engineers and Computer Scientists 2009 Vol II*. March 18-20, (2009), Hong Kong.

- [5]. L.M. Ellram. "Total cost modeling in purchasing". (1994). Center for Advanced Purchasing Studies
- [6]. Z.Wan and D.R. Beil. "RFQ auctions with supplier qualification screening". Forthcoming in *Operations Research*, September (2008).
- [7]. "Supplier Selection" by Damian Beil Stephen M. Ross School of Business July (2009).
- [8]. R. Myers. Food fights. *CFO Magazine*, June, (2007).
- [9]. Julie Schmit and Elizabeth Weise. "Three firms indicted in pet-food recall case". *USA Today*. February 6, (2008).
- [10]. R. Chen, S. Ahmad Beygi, D.R. Beil, A. Cohn, and A. Sinha." Solving truckload procurement auctions over an exponential number of bundles". (2009). Forthcoming in *Transportation Science*
- [11]. Li, S., B. Ragu-Nathan, T.S. Ragu-Nathan and S.S. Rao. "The impact of supply chain management practices on competitive advantage and organizational performance", *Omega* 34(2), 107-124(2006)
- [12]. Tan, K.C., Kannan, V.R. and Handfield, R.B. "Supply chain management: supplier performance and firm performance". *International journal of purchasing and material management* 34 (3), 2-9(1998)
- [13]. Stanley, L.L. and Wisner, J.D., Service quality along the supply chain: implications for purchasing, *Journal of operations management* 19(3), 287-306(2001)
- [14]. Wang G, Samuel HH, DismukesJP."Product-driven supply chain selection using integrated multi-criteria decision making methodology". *International Journal of Production Economics*; **91**: pp.1-15., ( 2004)
- [15]. Beamon, B., "Measuring supply chain performance". *International Journal of Operations and Production Management* 19 (3), 275-292 (1999)
- [16]. Ruth Mwikali Stanley Kavale, 'Factors Affecting the Selection of Optimal Suppliers in Procurement Management', *International Journal of Humanities and Social Science*, Vol. 2,189-193 (2012),
- [17]. Dickson, W. Gary. "An analysis of vendor selection systems and decisions," *Journal of Purchasing*, 2, pp.5-20, (1966).