



COMPOSITE VENDOR RATING MANAGEMENT

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ABSTRACT

Material Procurement is one of the time delaying factors. Every organization limit to themselves upon the lowest price rating. When you don't have the right provider, you'll quickly run into problems with customer service, low quality, and even missed delivery deadlines. As a result, completing all phases of a vendor selection process will ensure the success of an outsourcing project. Vendor selection, as well as the procurement of necessary products, facilities, and equipment for all types of businesses, are all important aspects of the purchasing function. Without satisfied suppliers, it is difficult to effectively manufacture low-cost, high-quality goods in today's dynamic operating environment. As a result, selecting and maintaining a knowledgeable group of suppliers is one of the most critical buying decisions. One of the most essential tasks performed by a purchaser has long been the selection of qualified suppliers. The research's key contribution is to establish a robust supplier evaluation and selection process based on a composite vendor evaluation concept to reduce the risk associated with four crucial supplier selection factors: price, quality, service, and delivery. The study's findings were used to build and construct an excel template for selecting the best vendor from a pool of candidates.

Keywords: *vendor rating, vendor selection parameters, supplier evaluation, supplier selection.*

1. INTRODUCTION

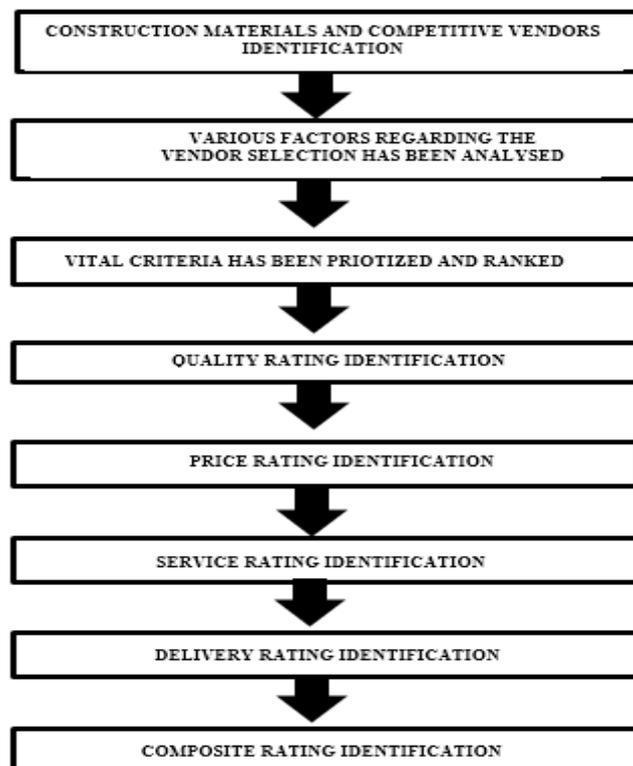
Most businesses want vendors who will produce all of their products and services without flaws and deliver them on time. Some method is required to determine which supplying firms are capable of coming close to this and thus being retained as current suppliers. The composite vendor rating is one such method. Some sort of review process must take place in order to complete the vendor rating. The process starts with the identification of vendors who can not only supply the required product or service but are also a strategic fit for the purchasing firm. Before you start looking for a vendor, you should first assess your company's requirements. If your business has decided what should be outsourced, you must identify the business and technical specifications for the outsourced service/product. The important considerations to use as vendor selection parameters are then calculated. These are typically variables that add value to the process by increasing service or lowering costs. Following the determination of which factors are critical, a method is devised to allow the vendor to be judged or rated on each individual factor



2. LITERATURE REVIEW

The vendor selection process has undergone major changes such as increased quality guidelines, enhanced computer communications, and improved technological capabilities. In response to the growing popularity of Just-In-Time (JIT) manufacturing strategies, a study of JIT's effect on vendor selection is also presented. [1] One of the strategic choices is sourcing because it allows businesses to minimize costs and increase profits. In the conventional approach, vendors are chosen solely on the basis of price. Companies, on the other hand, have realized that their method to focusing solely on costs is inefficient and needs to be modified. Multiple criteria decision-making approaches have developed to cope with the dynamic process of vendor assessment [2]. Best practices in the supplier's value stream that have a direct or indirect effect on the supplier's quality and delivery were established. Second, a robust supplier assessment and selection model based on the value stream principle was developed to reduce the risk associated with two extremely important supplier selection factors: quality and on-time delivery [3]. Development of an easy and quick pre-qualification system for supply chain partners, which includes a questionnaire, an automated evaluation, and a classification method. [4] The vendor evaluation problem is developed using a five-step hybrid method that integrates the methodology of an analytic network process, as well as the multi-criteria decision-making [5,6]. An analytical hierarchy process is created based on questioner prepared by considering Dickson's vendor selection criteria [7]. Vendor switching results in a common form of relationship in which the competing outgoing and incoming vendors are expected to cooperate. The success of such transaction's highly depends on successful knowledge transfer. [8] Six Sigma concept has been applied on vendor management technique to increase the efficiency [9].

METHODOLOGY FOR VENDOR SELECTION





3. MAJOR SELECTION CRITERIA FACTORS

- Quality
- Delivery
- Performance history
- Warranties and claim policies
- Production facilities and capacity
- Price
- Technical capability
- Financial position
- Procedural compliance
- Reputation and position in industry
- Repair and service
- Packaging ability
- Communication system
- Operational controls

3.1 DISCOUNT ON MATERIALS& TRANSPORT CHARGES

If the number of units purchased increases, the percentage of discount available to each tier increases.

For example, a 5% discount is applied to the tier of 50 to 100 units for a bulk purchase of product X.

A greater discount, say 10%, is added as the tier changes from 101 to 150 units sold.

Usually for A class materials discount is not applicable and the above percentage of discount is applicable only for B and C class materials only.

For road transport, India has been categorized into 8 zones as N1, N2, E1, E2, NE, C, W1, W2, S1, and S2.

Tamilnadu, Karnataka, Andhra Pradesh comes under zone S1. Each zone has their rates in Indian rupee per kilogram and minimum freight charges. For example, in zone 7 rate per kilogram is rupees 16 and minimum freight charges is rupees 320.

4. IDENTIFICATION OF MATERIALS

The entire materials in sectors like electrical, plumbing, fire & safety, electrical maintenance and preliminaries are identified.

5. IDENTIFICATION OF VENDORS

The relative competitive vendors who fulfilled the specified standards mentioned by the organization are identified in sectors of civil, electrical, plumbing, fire & safety, electrical maintenance & preliminaries are identified.

6. COMPOSITE VENDOR RATING IN COBSTRUCTION SITE

Overall Composite Vendor Rating has been done for 55 materials which were used in Construction Site. Below I have listed for single material on calculation of Composite Vendor Rating.

CEMENT

PRICE RATING

supplier	unit price -(rs/bag)	discount	basic price (rs /bag)	transport charges (rs)	net price (rs)	lowest price (rs)	lowest price as of percent of net price (rs)	factor weight	price rating
S1	320	0%	320	4704	5024	4377	87.12182	40	34.84873
S2	345	0%	345	4032	4377	4377	100	40	40
S3	345	0%	345	5040	5385	4377	81.28134	40	32.51253
S4	395	0%	395	6384	6779	4377	64.56705	40	25.82682
S5	365	0%	365	6048	6413	4377	68.25199	40	27.3008
S6	330	0%	330	7056	7386	4377	59.26076	40	23.70431

QUALITY RATING

supplier	no of lots received (bags)	no of lots accepted (bags)	% of lots accepted (bags)	factor weight	quality rating
S1	450	450	100	30	30
S2	450	450	100	30	30
S3	450	450	100	30	30
S4	450	450	100	30	30
S5	450	450	100	30	30
S6	450	450	100	30	30

DELIVERY RATING

supplier	delivery missed	delivery fulfilled	factor weight	delivery rating
S1	0%	100	20	20
S2	0%	100	20	20
S3	0%	100	20	20
S4	0%	100	20	20
S5	0%	100	20	20
S6	0%	100	20	20



SERVICE RATING

supplier	service	highest % of service	% of service as of highest service	factor weight	service rating
S1	90	90	100	10	10
S2	80	90	88.88888889	10	8.888888889
S3	85	90	94.44444444	10	9.444444444
S4	85	90	94.44444444	10	9.444444444
S5	75	90	83.33333333	10	8.333333333
S6	70	90	77.77777778	10	7.777777778

COMPOSITE RATING

supplier	price rating	quality rating	delivery rating	service rating	composite rating
S1	34.8487261	30	20	10	94.84872611
S2	40	30	20	8.888888889	98.88888889
S3	32.5125348	30	20	9.444444444	91.95697926
S4	25.8268181	30	20	9.444444444	85.27126255
S5	27.3007953	30	20	8.333333333	85.63412859
S6	23.7043054	30	20	7.777777778	81.48208322

EVALUATION CRITERIA FACTORS:

When two or more companies provide the same or similar goods or services, a common set of parameters may be used to evaluate the vendor's results, as shown below.

- The supplying firm's managerial, scientific, administrative, and professional competence.
- The ability of a supplier to meet physical, intellectual, and financial specifications is referred to as capacity.
- Commitment: the ability of the supplier to invest physical, intellectual, and financial capital.
- Management control and information systems: efficient management control and information systems
- Cash capital: the supplier's financial resources and stability. Profit, return on investment, return on equity, and asset turnover ratio
- Cost: the actual cost of purchase, not just the price.
- Consistency: the ability of a supplier to maintain quality and dependability over time.

QUESTIONNAIRE FOR SERVICE RATING:

1. Does the provider provide technical assistance for circumstances including servicing, repair, and installation?
2. Is the provider willing to provide technical support, documents, and general information?
3. Is the customer service staff polite, competent, and knowledgeable?
4. Does the vendor provide after-hours assistance for product repair or replacement?
5. Is the provider responsive to issues in a timely manner?
6. Is the vendor representative courteous and professional, and does successfully manage complaints?

7. Are the vendors offering current catalogues, price lists, and technical information?
 8. When an emergency delivery is required, does the provider go above and beyond to satisfy the requirements?
- Based on the inference from the questioner survey, service rating for suppliers is calculated.

6.1 EXCEL TEMPLATE ON COMPOSITE VENDOR EVALUATION RATING METHODOLOGY

PRICE RATING

supplier	unit price	discount	basic price	transport charges (rs)	net price (rs)	lowest price (rs)	lowest price as of percent of net price (rs)	factor weight	price rating
S1			0		0	0	#DIV/0!	40	#DIV/0!
S2			0		0	0	#DIV/0!	40	#DIV/0!
S3			0		0	0	#DIV/0!	40	#DIV/0!
S4			0		0	0	#DIV/0!	40	#DIV/0!
S5			0		0	0	#DIV/0!	40	#DIV/0!

QUALITY RATING

supplier	no of lots received (units)	no of lots accepted (units)	% of lots accepted	factor weight	quality rating
S1			#DIV/0!	30	#DIV/0!
S2			#DIV/0!	30	#DIV/0!
S3			#DIV/0!	30	#DIV/0!
S4			#DIV/0!	30	#DIV/0!
S5			#DIV/0!	30	#DIV/0!

DELIVERY RATING

supplier	delivery missed	delivery fulfilled	factor weight	delivery rating
S1		100	20	20
S2		100	20	20
S3		100	20	20
S4		100	20	20
S5		100	20	20

SERVICE RATING

supplier	service	highest % of service	% of service as of highest service	factor weight	service rating
S1		0	#DIV/0!	10	#DIV/0!
S2		0	#DIV/0!	10	#DIV/0!
S3		0	#DIV/0!	10	#DIV/0!
S4		0	#DIV/0!	10	#DIV/0!
S5		0	#DIV/0!	10	#DIV/0!



COMPOSITE RATING

supplier	price rating	quality rating	delivery rating	service rating	composite rating
S1	#REF!	#REF!	#REF!	#REF!	#REF!
S2	#REF!	#REF!	#REF!	#REF!	#REF!
S3	#REF!	#REF!	#REF!	#REF!	#REF!
S4	#REF!	#REF!	#REF!	#REF!	#REF!
S5	#REF!	#REF!	#REF!	#REF!	#REF!

7. CONCLUSION

Till now there is no standards operating procedure or regulatory framework for vendor Evaluation which directly results in placing the order, with same vendor. Henceforth we have developed a simple framework which can be operated by any personals using Excel template. Further by adopting programming like python, a simple Application can be created which will be effective in Composite Vendor Selection.

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