



UNIT-10

Purchasing and Vendor Management In Construction

Staff Training Solutions

Learning Outcomes

By the end of this unit the learner will be able to:

- ✓ Explain the various features of Vendor Management
- ✓ Describe the importance of Learning Cycle and Training in Vendor Management

Unit 10

Purchasing and Vendor Management in Construction

Introduction

Specialised buying involves the purchasing division of a company making provision for buying or importing items such as raw materials, plant, or equipment due to the non-availability of these items in the country where the company is located or due to the low cost of importing the items.

Companies may resort to importing since no single country in the world has all the resources available in the right form, in the right quantity and at the right time.

Vendor Management

Vendor management seeks to identify the right sources, undertake selection of sources of supply, and develop the sources selected.

Choosing the Right Source

The choice of a particular source can have a negative or positive effect on the organisation seeking to make purchases from the source. It is the duty of the purchase manager to identify the right source and manage the company's relationship with that source to ensure that items purchased are delivered on time, at the right price and to the highest possible standard.

An ideal vendor source must meet the following criteria:

- i. The vendor must be capable of fulfilling purchase orders at the right price. Items should be of high quality. The vendor should also be in a position to deal with emergency situations such as providing credit facilities and should make constant improvements to services and items being purchased.
- ii. There must be sufficient competition in the market to encourage the provision of high-quality products and fair pricing.

Identifying the Right Source of Supply

Points to consider when identifying the right source at the macro level:

- (a) Identify which items are being procured nationally and internationally using single sources.
- (b) Identify alternative suppliers or vendors to consider.
- (c) What strategies need to be adopted to develop sources to provide high-quality products?
- (d) Identify strategies to reduce risks associated with supply monopolies.
- (e) Determine whether all sources of supply have been identified.
- (f) What are the main elements that make up the cost of items?

- (g) Can the supply cost of components be forecasted for the next year?
- (h) What events are likely to affect potential vendors in the years ahead?
- (i) What will be the effect of the entry or exit of major suppliers to these vendors with regard to pricing in the market?
- (j) Will changing prices influence manufacturing costs?

Micro points to address in finding the right source include the following:

- (a) Obtaining and studying past records of the supplier
- (b) Obtaining information on the financial standing of the supplier from their balance sheet
- (c) Determining suppliers' capacity and flexibility to expand in the future
- (d) Records on delivery lead time and delays
- (e) Willingness of the supplier to work on the buyer's terms, conditions, quality specifications and other pertinent issues such as offering warranties for items purchased
- (f) The supplier's capacity to deal with emergency requests for the supply of items
- (g) The level of expertise of supplier's production staff
- (h) Information on the break-even points of manufacturing units
- (i) Overall efficiency and reliability of supplier's company
- (j) How innovative are the suppliers and their staff?

Selecting a Source

Considerations for embarking on a vendor development programme:

- (a) The company's own past records of the vendor under consideration or other vendors who have supplied them in the past
- (b) Catalogues
- (c) Trade directories
- (d) The Internet
- (e) Advertisements to register vendors
- (f) Trade conferences

Further considerations when embarking on a vendor development programme:

- i. For the buyer to remain important to vendors, only a small number of potential sources of suppliers should be used. This will also ensure healthy competition in producing quality products at competitive, low prices.

- ii. The recommended number of vendors is two or three for large projects requiring a large number of personnel. Good relationships must be maintained between suppliers and the buyer.
- iii. It is advisable to source for three or more vendors for fast-moving items.
- iv. If competition between the vendors is quite even, the best vendor is likely to be the one closest to the storage depot of the buyer (contractor).
- v. Computerisation and management intent are key ingredients to the success of vendor development programmes.
- vi. Since the development of a vendor programme may take quite a while (two-five years), it would be wise to break the process into smaller parts for more effective execution using the value chain system or a similar method of quantifying benefits.

Benefits of choosing a Source of Supply

- Conservation of working capital by operating on low inventories
- Cost saving resulting from buying instead of manufacturing items, which involves large capital
- Ability to obtain large-quantity requirements from many vendors
- Ability to deal with seasonal variations in supply with the help of vendors
- Lead time for purchase order is reduced since items originate from a single source
- Costs associated with dual inspection can be reduced
- Quicker payments to suppliers may actually mean reduced prices
- Availability of extra credit lines from vendors
- More productive time for material managers through proper
- Computerisation of processes frees up more time for managers to undertake more productive tasks and solve more problems
- Problems associated with late deliveries and rejection of items are reduced

Vendor Registration and Development

The selected vendor(s) must be registered by the buyer organisation. During the process of registration, a comprehensive questionnaire is sent to the vendors for them to provide details on all aspects of their business. It is important to discuss the intention of this questionnaire with the suppliers to make them aware of what is expected of them. Details collected are kept on secure databases and should be well guarded to ensure confidentiality.

Details to request in the questionnaire include:

- (a) Name of the supplier
- (b) Location of supplier's communications office

- (c) Location of supplier's warehouse
- (d) Location of supplier's factory
- (e) Past record of the supplier with the company
- (f) Willingness of the supplier to work on buyer's terms, conditions, quality specifications and other pertinent issues such as offering warranties for items purchased
- (g) The supplier's capacity to deal with emergency requests for the supply of items
- (h) The level of expertise of supplier's production staff
- (i) Information on the break-even points of manufacturing units
- (j) Overall efficiency and reliability of supplier's company
- (k) How innovative are the suppliers and their staff?
- (l) Effectiveness of the supplier's organisation and management including the ownership status and operational reliability of their machinery
- (m) The firm's industrial relations with its unions, its past strikes or other work stoppages or slowdown problems and the ability of the firm to cope with them in the past
- (n) Innovativeness of the company and morale of staff
- (o) Availability of testing and inspection facilities

Vendor Rating

Vendors are rated based on certain criteria after they have been registered:
Points to consider when rating vendors:

- (a) How far has the vendor accepted the specifications and inspection procedures in their entirety?
- (b) Is quality control well developed, robust and documented?
- (c) How effective is the delivery system of the vendor?
- (d) How does the rejection level of the vendor under consideration compare with others?
- (e) Can you see a particular trend in rejection of the vendor?
- (f) Does the vendor's price compare favourably with market prices?
- (g) Is the vendor's system up to date?
- (h) How effective is the production planning system of the vendor?
- (i) Is there an effective Research and Development programme in place?
- (j) Does the vendor have good labour relations prevailing at the workplace?
- (k) Does the vendor supply reputable global brands?
- (l) Has the vendor a good reputation in the marketplace?
- (m) Does the vendor have ISO 9000 certification?

Aims of Vendor Rating

Vendor rating is carried out to determine who is providing quality products, at the right price, and with the capacity to deliver at the right time. Vendors may also develop their own rating system for each buyer.

- i. It saves time and money for the buyer and provides value for money due to the high-quality suppliers of high-quality products.
- ii. It promotes good business practices by ensuring transparency and objectivity while eliminating negative practices such as nepotism, favouritism and corruption.
- iii. Vendor rating puts the company on a good standing with vendors and other businesses.
- iv. It provides the opportunity to find the best available vendor using a wide range of assessment tools.
- v. It provides the right platform to appreciate vendors who supply quality items and improves the relationship between the buyer and the supplier.
- vi. Competition is ignited between suppliers to promote quality improvements.
- vii. It is the best method of fairly distributing businesses or contracts.
- viii. Vendor rating provides a fairer platform to discriminate between classes of vendors when making decisions.
- ix. Vendors can learn about the effectiveness of their business models by comparing their performances with their competitors in terms of lead times, technical assistance, pricing, etc.

Regular updating of the vendor rating system is required and vendors should be notified of any changes to the system. Vendor information should be kept confidential.

Vendor Rating Methods

Several methods exist but, generally, a vendor will be assigned a plus, neutral or negative rating, depending on the performance. The one with the most plus ratings is chosen as the best vendor to supply the items. Due to the large amount of data involved, computers are used to store rating data securely.

Rating Methods include:

- (a) Weighted Pointed Plan (based on quality, price and delivery schedule)
- (b) Cost Ratio Method (based on identifiable purchasing and receiving costs to the value of shipments received from supplier)
- (c) Eavston's Vendor Selection Method (selecting the ideal standards and diluting them till one or two vendors qualify)

- (d) Forced Declion Matrix Method (using relative weights attributable to factors such as price, quality, lead time, service etc.)
- (e) Dowst's Key Questions Method (asking key questions about the vendor such as why, who, how etc., helps to build a vendor profile)
- (f) Spear Supplier Evaluation Method (macro level factors used for analysis include management, engineering, finance, material, manufacturing, quality and reliability etc.)
- (g) IBM Quality Rating (uses factors such as desired inspection costs to actual inspection costs)
- (h) Bell Quality Rating System (uses factors such as acceptable to rejected material)

Parameters of Vendor Rating

Table 10.1 shows factors used for assessing vendors. The factors have been classified into four different categories:

Technical	Financial	Managerial	Service
<ul style="list-style-type: none"> • Past quality performance • Warranty performance • Inspection plans • Toolroom facilities • Test equipment • Personnel skill level • Support documentation • Design facilities • Value analysis • Quality consciousness • Plant capacity • Plant layout • Maintenance policies • Generating facilities • Manufacturing experience • Inspection methods • Process rejections • Repairing rejects • Replacing rejects etc. 	<ul style="list-style-type: none"> • Volume discount • Credit terms • Cash discounts • Product price • Real profit margin • Return on total assets • Current ratio • Quick ratio • Funds flow analysis • Follow-up procedures • Inflation hedging policies etc. 	<ul style="list-style-type: none"> • Number of workers • Number of executives • Management ability • Adapting to change • Reputation of Board, Management Information Service (MIS), Corporate image, Guarantec integrity • Length of time in business • Industrial relations • Staff morale • Structure • Systems • Managerial skills • Management styles • Strength & Weaknesses • Opportunities & threats etc. 	<ul style="list-style-type: none"> • Delivery lead time • Delivery reliability • Small order supply • After sales service • Spares supply • Emergency supply etc.

Table 10.1: Parameters of vendor rating

Learning Cycle and Training

Aspects of tasks whose importance and relevance change with time include the following:

- (a) Defining the task
- (b) Finding solutions to tasks
- (c) Determination of the most suitable tool to carry out solutions
- (d) Learning how to use tools to carry out solutions
- (e) Actual work on the job
- (f) Realising proficiency in the use of the tools
- (g) Discovering innovative ways of problem-solving
- (h) Performing smooth steady-state operations

The learning cycle shows that, when tackling a task for the first time, it takes longer to find solutions or accomplish the task. After some time has elapsed, the person performing the task becomes more proficient at executing the task and the time taken reduces considerably. Figure 10.2 shows a graph of the time spent on tasks versus the number of times the tasks have been performed.

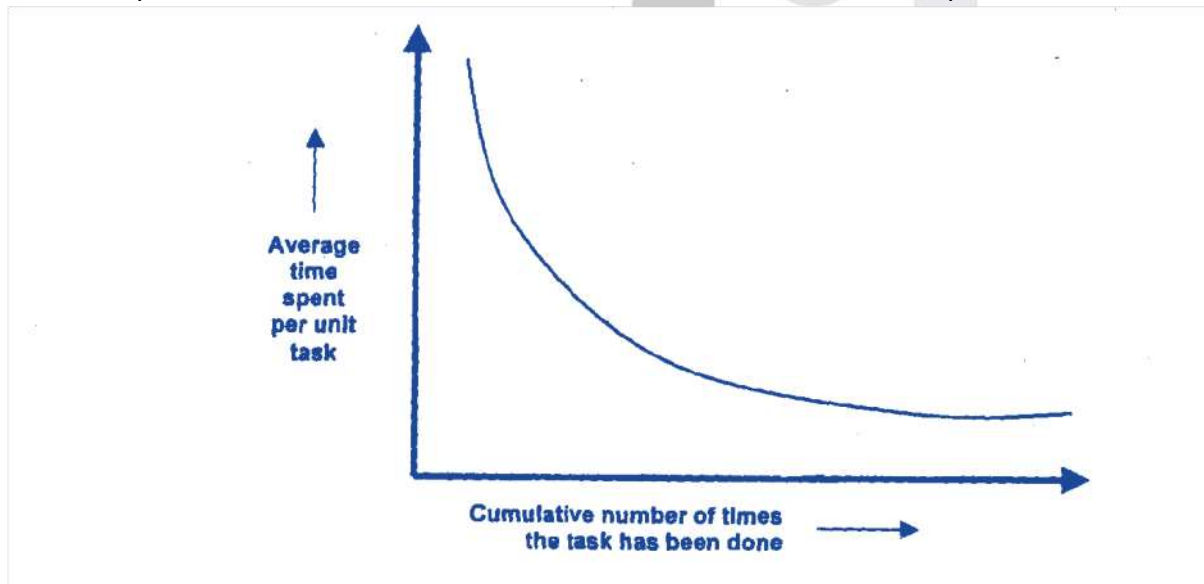


Figure: 10.2 The Learning Curve

Learning about material management follows a similar pattern to the curve. The beginning is usually slow but with experience all aspects begin to function more efficiently and shorter times are required to accomplish objectives. The curve is applicable to individual working at the department and can also be applied to the entire management department by summing up individual curves.

Pitfalls of the Learning Curve

A learning curve is expected to be applied not to items and actions but to 'situations, attitudes, problems or negotiations'.

A material manager's duties include consideration of the following:

- (a) In what ways can the learning process reduce material costs?
- (b) In what ways can the learning process be used to negotiate prices with vendors?
- (c) At what point might a new recruit be allowed to perform tasks without supervision?
- (d) How can one shorten the learning curve?
- (e) What is the time taken by new systems to attain steady state?

The learning curve shows that no system or person starts functioning at the optimum level from the beginning of employment. There is a natural learning process that follows the learning curve. The nature of the curve (steeper or shallower) depends on the nature of training policies deployed by an organisation.

A steeper learning curve indicates a fast learning process. Conversely, a shallow curve means that a slow learning process is occurring. Factors that affect the learning process include:

- i. **Personality Traits:** it is desirable to have individuals who are keen to learn new things and have a thirst for knowledge
- ii. **The Atmosphere Prevailing in the Company or Department:** the influence of the manager on the workers to motivate them for growth, the availability of a well-stocked library, general opportunities to grow with the company
- iii. **Training Programmes:** the availability of relevant training programmes shorten the learning curve

Of the three points mentioned above, training has been found to have more influence on the learning process of employees. The prevailing atmosphere also has a certain effect but not as much as the training aspect. This means that the company has the leeway in promoting these two avenues of learning because they fall under the company's control, unlike the personality trait which is beyond its control. Training facilitates the shortening of the learning curve more than the other two factors, and managers should focus on providing the best available methods of training staff in order to improve productivity.

Systematic Training Needs Analysis

The materials manager is expected to:

- (a) Provide induction training to explain the company's philosophy on objectives it wants to achieve
- (b) Provide explanations of all departmental rules and procedures
- (c) Provide regular and relevant training to all personnel
- (d) Frequently update training manuals to reflect new and emerging concepts or skill sets
- (e) Provide an up-to-date library stocked with journals and relevant magazines to enhance the learning experience

Improving the materials manager's ability involves:

- (a) Development of analytical and problem-solving ability,
- (b) Providing training on how to use new tools and techniques

- (c) Learning from the experience of senior management personnel
- (d) Focusing on his/her life philosophy
- (e) Importance of ethics for him/herself, the organisation and the nation's development
- (f) Attending induction programmes to learn more about the organisation's philosophy, objectives, motives, structure, procedures etc.

Documenting the Processes, Codification and ISO 9000

Questions for Material Management Department

- (a) How should vendors be rated?
- (b) Have the purchase orders been typed without any mistakes?
- (c) Who should approve items to be purchased?
- (d) What are my accommodation and other entitlements during inspection trips?
- (e) Which location is most suitable for a specific item?
- (f) Where can I find this particular item?
- (g) Where can a vendor's file be found?
- (h) Which items are fast-moving and which ones are slow-moving?
- (i) How can items be properly disposed of?
- (j) What are the procedures for coding new items?

Companies need to document their processes and make copies available to all concerned parties to ensure everyone is on the same wavelength. The ISO 9000 standards help to ensure consistency in the products and services that companies produce.

To assist in preparing a good document, items must be coded. Coding:

- Makes it easy to identify an item
- Avoids long and ambiguous names which are difficult to remember
- Promotes orderly arrangement of similar items
- Eliminates duplication
- Enables bulk ordering of items
- Reduces lead time
- Assists in simplifying and standardising items
- Makes it easy to computerise and transfer stocks between companies

The meaning of each code should be self-explanatory and made available to all relevant parties.

Materials Management Computerisation

Ways in which computerised systems can help the materials manager

- (a) **Efficiency** - The processes that save time when you are away from the management, end user, your own staff or the vendor, thus giving you more time to see vendors, end users, your own staff or management efficiently
- (b) **Effectiveness** - The processes that make the time with an end user, vendor, your own staff or management more productive
- (c) **Communications** - The processes that facilitate the easy transfer of information (usable information and not just data) between people throughout the entire organisational structure.

Today's situation means that the organisation, vendor or customers will want and expect:

- Quick and accurate information about the status of various activities
- Quick and dependable answers to questions
- The honouring of commitments within the promised timeframe
- Frequent communication through follow-ups

Benefits gained by Construction Manager by using computerised system

- Reduces the amount of paperwork
- Gains more face-to-face meeting time
- Promotes effective services
- Reduces time for procurement and delivery
- Provides current status of vendor and user requirements
- Provides instant and professionally prepared proposals and reports
- Provides instant review of all proceedings between the buyer and vendor
- Ensures information is intact even when a staff member in charge of certain aspects of management leaves the organisation
- Automatic generation of reports
- Provides the ability to detect fast-changing inventory trends
- Can be used to perform inventory control functions
- Enables easier exchange of information between buyers and vendors
- Integrates materials management data into corporate information systems
- Ability to provide forecasting functionality
- Can assist in re-designing layout and location of the store or site
- Computerised systems are flexible and scalable to match changing trends

- Can be used to assess the organisation's strengths and weaknesses in terms of the performance of various departments

Further Reading:

- ✓ P Gopalakrishnan, M Sundaresan (2011), *Materials Management: An Integrated Approach*
- ✓ Thomas V. Bonoma, Gerald Zaltman (2011), *Organizational Buying Behavior*

