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## Chapter 2: Supplier & 3PL Selection

### Objectives

- Examine how suppliers are selected using the 4-stage model.
- Use 3PL framework to select 3PL.

### 1. Introduction

In Chapter 1, supply chains need to be integrated in order to allow seamless flow of information and materials. Integration suggests that the active participation of partners including suppliers.

The purpose of this chapter is to focus on how suppliers are selected. The process of identifying and determining supply sources will often involve obtaining competitive bids and analyzing such bids. The following factors may be among those considered:

- Price and cost factors
  - Product cost
  - Delivery cost
  - Insurance cost
- Delivery factors
  - Delivery lead time
  - Delivery quantities
  - Delivery frequencies
- Specification factors
  - Standards
  - Quality assurance
  - Quality control
- Legal factors
  - Warranty
  - Terms and conditions

The selection of supplier can be a consequence of the following activities:

- After a bidding exercise, the winner may become an approved vendor if it is not already one.
- Some of those suppliers which did not win the bid may also be selected to be an approved vendor.
- A deliberate effort to source and select suppliers.

- Recommendations from other entities such as HQ, subsidiaries, sister companies of a larger conglomerate.

## 2. Selecting Supplier

On the internal side, it is important to understand the company's strategic direction and the tactical actions that are being pursued in the areas of technology development, engineering, materials management, manufacturing, distribution, and field service.

A repetitive sourcing program should be designed around a company's overall corporate strategy so that products can be brought to the marketplace at the right time, at a competitive price, and with a reliable level of performance.

- **Stage 1 – Survey Stage**

The original survey of potential sources should overlook no possibilities, provided that they are reasonably accessible and that there is some assurance that they meet required standards of quality, service, and price.

A good supplier is an invaluable resource to the organization requiring its product or service.

There are numerous sources in keeping and obtaining information about current and potential suppliers.

These include current supplier's purchasing and information record, public suppliers catalogue such as Yellow Pages or Green Book, Trade Registries from Associations and Chambers of Commerce, Sales representatives from the companies. Trade fairs or expo, recommendations from staff or e-mail marketing.

Trade directories provide comprehensive and well-organized listings of the whole range of manufactured products and manufacturers on a nationwide basis, usually with at least a general indication of size and commercial rating. Supplementing these are regional directories such as those issued by state Chambers of Commerce and, on a still more local scale, the classified section of telephone directories.

Specialized trade directories are available listing concerns that do not have product lines of their own but provide industrial services, such as foundries, screw machine shops, custom fabricators of plastic parts, and the like. With the continued expansion of world markets, more and more directories of suppliers in foreign countries are becoming available.

The buyer's library of manufacturers' and distributors' catalogs is another reference source of prime importance, provided that the indexing system is adequate.

Many purchasing managers also have a commodity information file in which they have collected vendors' mailing pieces and data sheets, advertisements, and new product announcements from business magazines. Some of this information is so new that it has not yet found its way into the standard catalogs, but the alert buyer has it on hand when needed.

Salespersons are an important source of information, both on their companies' products and capabilities and on their application to customers' processes. Experience has shown that the most successful salespersons are those who have not limited their service to buyers to merely selling the product at hand.

Their psychology aims more toward meeting the buyer's need, not only with products but also with whatever information, service, and technical advice are available from their companies.

The buyer can build a workable list of likely sources using information from the publications and persons mentioned above. Those who appear to be reliable and stable, have the needed kind of manufacturing capability and experience, and are conveniently located (to keep transportation costs down) are put at the head of the list.

Many times the buyer will have the requisite information through reputation or advertising. Those who have low capitalization or credit ratings or whose products are not in the required quality range will be excluded.

If the product required is of a routine nature, the buyer may send out a request for bids from such a selected list. If the product is a more important or more complex one, or one for which there is likely to be a continuing need, there will be an intermediate stage of inquiry and research.

- **Stage 2 – Inquiry Stage**

The **second stage** of supplier selection narrows the field from possible sources to acceptable sources. Inquiry at this stage is directed toward developing more specific information on vendors' production facilities and capacity, financial stability, product quality, technical competence, manufacturing efficiency, general business policies, position in the industry, progressiveness, interest in the buyer's order, and cooperative attitude.

After the design of a product is determined, the next step is to translate the individual part and materials specifications into written form. One of the basic requirements of a good specification is to satisfy the procurement consideration of clear, concise and unambiguous communication.

In addition to the clarity, care must be exercised not to have specifications that are written around a specific product, as this will limit competition.

Care also should be taken not to specify unreasonable tolerances. It will cost more to make materials to close tolerances, it costs more to inspect and more reject will typically result. Standard specifications should be used where

possible.

There are three principal types of detail specification: commercial standards, design specification (generally accompanied by engineering, drawings) and material and method-of-manufacture. Other forms of specification that may be used are performance specification, function and fit specification and samples.

To meet the needs of all departments, a specification must satisfy the following requirement:

- Design and marketing requirement for functional characteristics, chemical properties, dimensions, appearance
- Manufacturing requirement for workability of materials and producibility
- Inspection's requirements to test materials for compliance with the specifications
- Stores' requirement to receive, store, and issue the material economically
- Purchasing and supply management's requirement to procure material without difficulty and with adequate competition from reliable sources of supply
- Production control's and purchasing's requirement to substitute materials when such action becomes necessary
- The total firm's requirement for suitable quality at the lowest overall costs
- The total firm's requirement to use commercial and industrial standard material whenever possible and to establish company standards in all other cases where non-standard is used repetitively.

The aim at this point is to find those suppliers who are capable of producing the item in the required quality and quantity, which can be relied on as a continuous source of supply under all conditions, who will keep their delivery promises and other service obligations, and who are competitive on price. Visits to supplier facilities are important in this stage.

Particular features to be noted at the plant of a supplier or prospective supplier are modernity and efficiency of equipment, facilities for technical controls and the importance attached to such controls, caliber of supervision and inspection, evidences of good management and good housekeeping in plant operations, practice as to the maintenance of raw material stocks, and the character of the operation, especially as it relates to purchasing requirements and practices.

Personal contacts should also be established with key people in management and production as a very helpful asset in the event that emergency or special requirements need to be discussed later at long distance.

When the projected purchase involves substantial expenditure, or when the quality of the part to be bought is critical, inspection and evaluation of potential vendors is generally made a team effort. A typical team will include representatives from the purchasing, quality control, engineering, and production departments, although the makeup of the group may vary.

A west coast manufacturer of complex electronic controls, for example, requires that a team consisting only of purchasing and quality control personnel check out suppliers of critical parts before they are accepted.

Customarily, supplier survey teams follow a standard pattern of inspection and collection of information.

Depending on the nature of the item being considered for purchase, the supplier's reputation, and other factors, other teams might give more attention to condition and capabilities of machines, shop methods, inventory, housekeeping, and so on.

The inspection can be speeded by having the supplier provide some basic information before the team's visit.

Purchasing should ask suppliers to fill in the vendor capability survey form before deciding on how extensive an analysis the evaluation team should make.

- **Stage 3 – Negotiation & Selection**

In the **third stage** – negotiation and selection stage – The result of the study at this point should be a list of several acceptable supply sources, not only capable of furnishing the requirements, but with any of whom the buyer would be willing to place an order.

The list is not necessarily in order of preference. It may come very close to that point of decision, but, in the orderly process of vendor appraisal and narrowing of choice, there still remains the stage of negotiation in which details and terms are considered, to determine where the best ultimate value lies. Basically this will be in terms of quality, service, and price.

Beyond that, it will be influenced by the intangibles of interest, cooperation, and goodwill that enhance the value of all these factors.

Beyond that, the decision may hinge on special circumstances - the smaller company in which the order will have an importance that is lost in the larger operation, the company that has an engineer or superintendent particularly skilled in that type of production, or the company that has an open spot in its manufacturing schedule to accommodate the order.

- **Stage 4 – Experience**

As a matter of fact, there may be no one best source, for the buyer usually wishes to establish alternative sources for the products that are to be bought, both as an added assurance of supply and to maintain competition.

Then the decision as to where the bulk of the business will be placed will be made on the basis of a **fourth** and convincing criterion - experience.

### **3. Purchasing Approach**

In determining the purchase specification and description, a number of approaches are available.

While purchasing and supply management has the ultimate responsibility for selecting the 'right' source, the process is handled in many ways. Procedurally, the simplest approach is when the buyer alone conducts the analysis and makes the selection.

#### **3.1 Purchasing Committee Approach**

This approach recognizes that a good specification is compromise of basis objectives. A specification review committee is established, with representatives (as appropriate) from design engineering, production, purchasing, marketing, operations (including production control) and quality.

All members will review proposal, copies of drawing, bills of materials and specifications. No design becomes final until the committee approves it.

#### **3.2 Purchaser Approach**

This method emphasizes the concept of a buyer's responsibility to "challenge" materials requests.

At the same time, top management urges designers to request advice from buyers and work with them on all items that may involve commercial considerations.

Emphasis an all times is placed on person-to-person communication and cooperation between individual buyers and designers.

Using this approach, a company-oriented, cost-conscious attitude is developed at the grass-roots level throughout the organization.

#### **3.3 Cross Functional Team Approach**

This approach calls for the use of a cross-functional team consisting of representatives of purchasing, design engineering, operations, quality, and finance.

Another variation is the use of commodity team. This group of people are familiar with the product often standard materials which are readily available and do not include engineered products which require technical knowledge.

## 4. Evaluating 3PL

The use of supplier performance evaluation systems is on the rise. It is estimated that most of the major manufacturing firms either have established formal supplier-evaluation programs.

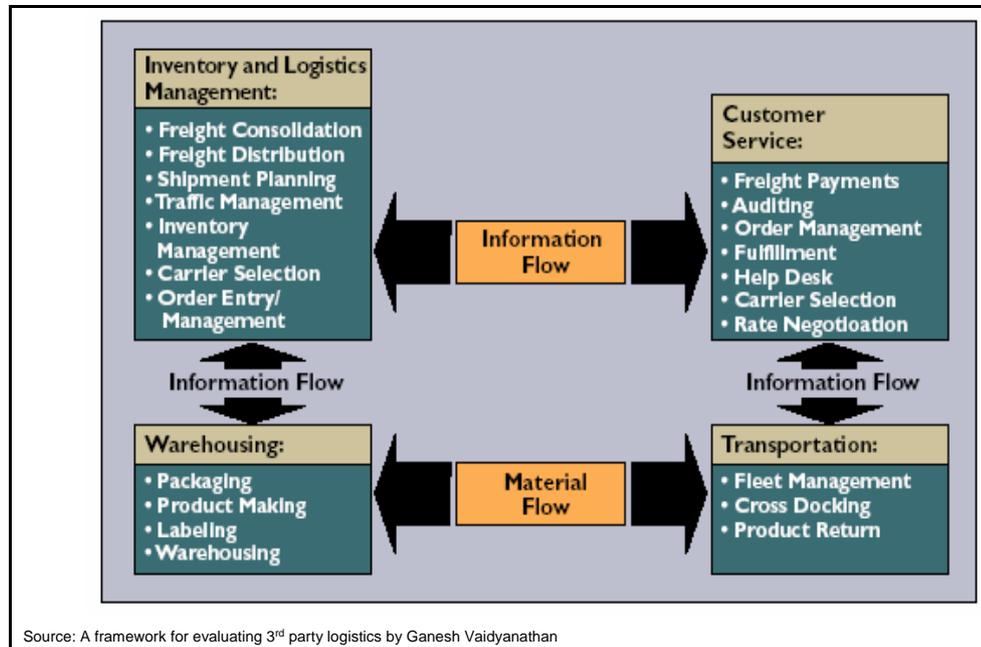


Figure 2-2: 3PL Selection Framework (after Vaidyanathan, 2005)

In supply chains, it is not uncommon to use 3PL to be an outsourcing partner. Figure 2-2 provides a framework to allow users to select 3PL.

User need to determine their exact requirements of:

- Inventory & logistics management
- Transportation
- Warehousing

Users can decide a mix of optional services from each of the functions above by defining the types and levels of customer service.

The selection of 3PL can be described as a form of outsourcing which will be covered in greater detail in Chapter 4.

## 5. Conclusion

We have covered the approaches in supplier selection. Suppliers are important in supply chain for the critical reason of providing strategic materials. Suppliers are

therefore strategic partners in working with their buyers in the provision of competitive products and services.

We have also learnt that there are many routes that Purchasing can pursue to reach the goal of ensuring that the buyer organization acquires the product using the 7R framework.

## **References**

1. Vaidyanathan, G (2005) Communications of the ACM-CACM, vol. 48, no. 1, pp89-94.