UNIT 13: STRATEGIC ALLIANCES

STRUCTURE

LEARNING OBJECTIVES

After reading this unit you will be able to know about:

- What is Strategic Alliances?
- What are the different forms of Strategic Alliances?
- What is 3PL?
- What is 4PL?

13.1 INTRODUCTION

A strategic alliances is a cooperative arrangement between two companies to undertake a mutually beneficial project while each retains its independence. The agreement is less complex and less binding than a joint venture, in which two businesses pool resources to create a separate business entity. A company may enter into a strategic alliance to expand into a new market, improve its product line, or develop an edge over a competitor. The arrangement allows two businesses to work

towards a common goal that will benefit both. The relationship may be short- or long-term and the agreement may be formal or informal. Sometimes, a strategic alliance can represent an effort to "roll up" a number of separate business entities into a single legal entity having integrated management, economies of scale and other characteristics that translate into more economic clout.

The principal goal of strategic alliance is to minimize risk while maximizing leverage and profits and for that purpose to find where one or the other company has limitations. In a successful alliance, partners gain access to specific strengths such as sale of technology, finance, distribution, etc. that they do not possess themselves.

Thus, alliances are formed for joint marketing, joint sales or distribution, joint production, design collaboration, technology licensing and research and development.

13.2 FEATURES OF STRATEGIC ALLIANCES

1. A strategic alliance is a unique one-to-one relationship between two or more companies working on a project designed to generate a profit neither partner could achieve of its own. Alliance partners keep ownership of their own business, and do not lose their identity while contributing capital, expertise and other tradable to the mutual venture.

2. An alliance is a specific type of partnering arrangement where organizations come together to form a new joint venture for manufacturing, marketing and distribution, design collaboration, technology license and research and development.

It is essentially a partnership in which one can combine efforts in projects ranging from getting a better price for supplies by buying a bulk together, for building a product together with each of the firms providing a part of its production.

The alliance is said to be specific also because it is forged to serve a specific goal, i.e., product development, market development, market penetration or for diversification or setting up a new field for achieving a common objective.

Indian Bank with over 90 years of standing in the financial market with the reputation for excellent customer service, has entered into a strategic tie-up with HDFC Standard Life Insurance Company Ltd. for distribution of the latter's insurance products.

Similarly, Ranbaxy Laboratories in its attempt to widen its market base has forged marketing alliance with Teva for distribution of its HCL tablets in the USA.

3. Each strategic alliance may be formed by several companies collaborating to create a new "Go to Market" product and/or service. Ideally this new product and/or service will bring a unique value proposition in the market niche and/or segment as agreed upon by the collaborating parties. There must be a value proposition that will be identified with each of the partners and also identified for the market place (i.e., end user customers).

4. Strategic alliances are wider in scope spanning from an informal business relationship based on a simple contract such as network, subcontracting, licensing and franchising to formalized inter-organizational relationships such as Joint venture agreements as also a fully integrated merger of two companies.

In fact, the ultimate alliance would be a merger of two businesses where they blend together to become one entity. In the usual case, there is a surviving corporation that will issue new stock in the disappearing company. Much like an asset purchase, the surviving company will then take title to all the assets of the disappearing company and the latter will cease to exist.

5. The hallmark of a strategic alliance is the quest for mutual benefit the belief that by working together to address a market need the combined offering will be more potent/valuable/successful than the contributors could deliver by themselves or through less penetrating relationship. It is a common place for the boundaries between the operations of strategic alliance partners to become blurred as activities are integrated into a focused delivery capability.

6. The overriding element of a strong partnership lies in mutual respect for each company in organization. This includes strong executive commitment to one another, trust in each other's capabilities and the willingness to work together closely on multiple fronts.

7. As with mutual respect, flexibility in establishing and operating any partnering arrangement is of paramount importance. Project members give full authority to act on their own initiative without having to refer back for approval.

Again a spirit of mutual understanding and cooperation that allows for the accommodation of variations in the operation of the agreement will enhance the benefits derived and the whole outcome of the partnering arrangement.

8. A particularly good example of this requirement can be seen in the relationship between South West Water and its several partners who deliberately avoided any formal legal documentation or the use of legal advice.

Communication is an essential ingredient of strategic alliances, particularly when operating across the participants to a strategic alliance.

13.3 FORMS OF STRATEGIC ALLIANCES

The term strategic alliance has become widely used to describe a variety of diverse inter-firm cooperation segments ranging from shared research to formal joint ventures and minority equity participation. The recent wave of partnerships is distinguishable from the traditional foreign investment joint ventures in several ways.

Classically, the traditional joint ventures were forged between a senior multinational organisation with its head office in an industrial country and a junior local partner in a less developed or less industrialized country so as to access new markets.

The management between the two partners was that the senior partner provided existing products while the junior partner supplied the local marketing expertise, the means to hurdle any protectionist barriers, and the government contacts to deal with national regulations. This kind of contractual alliance benefitted both the parties. The multinational firm achieved increased sales volume and the local firm gained access to new products and at times learnt new skills from its senior partner.

However, modern form of strategic alliances is distinct from the traditional ones particularly in terms of geography, focus and the basis of forging alliances. Thus, today's alliances are not only between partners belonging to industrialized and relatively less developed countries but also between firms in developed countries.

The focus of partnering is on the creation of new products and technologies rather than the distribution of existing products. Furthermore, modern day's alliances are being formed to cope with competitive pressures with a view to building and sustaining competitive advantage. Thus, there are a variety of arrangements for joint developments and alliances.

Some may be much formalized inter-organisational relationships at the other extreme there can be very loose arrangements of co-operations between organisations with no shareholding or ownership involved. The reasons why these different forms of alliances might occur are varied, but they are likely to be combined with the assets involved in the alliances. As such, form of the alliance is likely to be influenced by asset management, asset reparability and asset appropriability.

Alliances may take the form of network opportunity alliances, subcontracting licenses and franchises, consortia, joint ventures and acquisitions and mergers. Joint ventures are typically thought of as arrangements where organisations remain independent but set up a newly created organisation jointly owned by parents.

Consortia may well involve two or more organizations in a joint venture arrangement and would typically be more focused on a particular venture or project. In both these forms of alliance, the inter-organisational relationships are likely to be formalized in the form either of shareholding or agreements specifying asset sharing and distribution of profits. The assets involved need to be jointly managed. As against joint ventures and Consortia, networks are arrangements whereby two or more organisations work in collaboration without formal relationships, but through a mechanism of mutual advantage and trust.

More opportunistic alliances might also arise which are likely to be more focused around particular ventures or projects, but may not be formalized. Such kind of alliances are more akin to market relationships than to contractual relationships.

In such alliances, assets need not be jointly managed. Capital expertise, know-how and so on can come together more informally. Further, assets cannot be separated easily from the finance involved, or without harm being done.

For example, one partner may provide access to distribution channels which are part of their operation as a whole. Internal alliances are useful if the assets involved were split off into a separate organisation. There would be high risk of their being appropriated by another party involved. This is particularly found in the case of the know-how and skills of the different parties involved.

There may exist other arrangements in between the formal and informal ones such as franchising, licensing, and sub-contracting. In franchising, the franchiser holds specific

activities such as manufacturing, distribution or selling but its franchiser is responsible for the brand name, marketing and probably training. In licensing, right to manufacture a patented product is granted for a fee. In sub-contracting, a company chooses to sub-contract particular services or part of a process to other companies.

In these intermediate arrangements relations are contractual in nature but ownership is not involved. Such arrangements are common in the cases where particular assets can be operated from the parent organisation to their advantages, for example, by setting up distribution or manufacturing in a country in which it would find problem in operation.

13.4 BUILDING STRATEGIC ALLIANCE

Building these types of alliances is totally dependent on Managers of the organization. Mostly this is done by sharing clean information trusted by every results matching with supply and demand throughout the supply chain processes and lower cost. Here it shows that better relationship helps to lower the cost between the supply chain stages.

Example: As far as trust over here is concerned a supplier can avoid forecasting about information received for the retailer. Similarly the retailer can lessen the receiving effort by decreasing counting and inspections on the trust of the supplier's quality and delivery. This ensures better coordination between supplier and retailer. Wal-Mart and P&G have been trying to build a strategic alliance that will help for better coordination and actions can be mutually beneficial.

A typical strategic alliance formation consists of some steps which are:

- **Strategy Development:** development involves feasibility of alliance, objectives and goals, decisions, focus on critical issues, technology and people with their challenges and resources.
- **Partner Assessment:** In this assessment partner's strength, potential, developing managing styles, preparing criteria for partner selection and understanding their motives for joining alliances.
- **Contract Negotiation:** It is the development of realistic objectives among the group and forming the high calibre or developing synergy. Consideration on security of information, termination clauses, and penalties for poor performance is formulated.

- **Alliance Operation:** it is linking of budgets and resources to fulfil the strategic priorities, measuring the performance etc.
- **Alliance Termination:** It is the winding down of partnership due to failure or not meeting the clauses decided before.

13.5 ADVATAGES AND DISADVANTAGES OF STRATEGIC ALLIANCE

Advantages of Strategic Alliance

- Each partner can concentrate on different stages of the supply
- Developing competences and learning form the partners
- Suitability and protection of resources is maintained
- Developing low cost models hence financial benefit.

Disadvantages of Strategic Alliances

- Strategic alliances require you to share resources and profits, and often require you to share knowledge and skills as well.
- Sharing knowledge and skills can be problematic if they involve trade secrets.
- Agreements can be executed to protect trade secrets, but they are only as good as the willingness of parties to abide by the agreements or the courts' willingness to enforce them.
- Strategic alliances may also create a potential competitor.

13.6 TYPES OF STRATEGIC ALLIANCES

There are four types of strategic alliances: Joint Venture, Equity Strategic Alliance, and Non-equity Strategic Alliance.

1. **Joint Venture:** A joint venture is established when the parent companies establish a new child company. For example, Company A and Company B (parent companies) can form a joint venture by creating Company C (Child Company). In addition, if Company A and Company B each own 50% of the child company, it is defined as a 50-50 Joint Venture. If Company A owns 70% and Company B owns 30%, the joint venture is classified as a Majority-owned Venture.

2. **Equity Strategic alliances:** An equity strategic alliance is created when one company purchases a certain equity percentage of the other company. If Company A

purchases 40% of the equity in Company B, an equity strategic alliance would be formed.

3. **Non- Equity Strategic alliances:** A non-equity strategic alliance is created when two or more companies sign a contractual relationship to pool their resources and capabilities together.

4. **Global Strategic Alliances:** It is formed between a company and foreign company.

13.7 3PL - THIRD-PARTY LOGISTICS

In a 3PL model, an enterprise maintains management oversight, but outsources operations of transportation and logistics to a provider who may subcontract out some or all of the execution. Additional services may be performed such as crating, boxing and packaging to add value to the supply chain. In our farm-to-grocery store example, a 3PL may be responsible for packing the eggs in cartons in addition to moving the eggs from the farm to the grocery store.

The term "third-party logistics provider," or 3PL, has been around since the 1970s. It simply means that a third party is involved in a company's logistics operations, in addition to the shipper/receiver and the carrier.

A 3PL does not take ownership of (or title to) the products being shipped. This third party comes into play as an intermediary or manager between the other two parties.

The first 3PLs were intermodal marketing companies that accepted loads from shippers and tendered them to railroads, becoming a third party in the contract between shippers and carriers, according to the Council of Supply Chain Management Professionals (CSCMP) glossary. Today, any company that offers some form of logistics services for hire is known as a 3PL. This includes facilitating the movement of parts and materials from suppliers to manufacturers, as well as finished products from manufacturers to distributors and retailers.

A 3PL may or may not have its own assets, such as trucks and warehouses. In some cases, the role of 3PL and broker overlap, but typically a broker is used to engage trucking capacity for a specific shipment. A 3PL may act as a broker or use brokers to move clients' freight.

Most 3PLs offer a bundle of integrated supply chain services, including:

- Transportation
- Warehousing
- Cross-docking
- Inventory management
- Packaging
- Freight forwarding

A 3PL can scale and customize services to meet customers' needs based on their strategic requirements to move, store, and fulfill products and materials. Companies turn to 3PLs when their supply chain becomes too complex to manage internally. For example, a company may grow through mergers and acquisitions, so a supply chain that was manageable at one time outgrows the in-house capability.

The 3PL offers experience gained from working for multiple clients across many different industries. They also offer technology solutions — in some cases, proprietary tools — such as transportation and warehouse management systems beyond what the shipper could afford to invest in independently. Long-term relationships with carriers can result in better pricing and service during periods when capacity may come at a premium. The economy of scale can lower prices on everything from packing tape to ocean shipping rates.

13.8 ADVATAGES AND DISADVANTAGES OF 3PL

Advantages of 3PL

A 3PL will offer innovative strategies to transform your supply chain into a cost-effective, responsive model. Consider what we're doing at Warehouse Anywhere as an example. In contrast to the traditional single distribution centre (DC) model, we have pioneered and perfected forward-deployed inventory management. The common hub-and-spoke DC model is not able to keep up with the pace of business, with large inventories and infrequent truck service. We've developed the forward-deployed model for warehousing and distribution that uses a larger number of smaller locations to move products closer to the customer. This decentralized, hyper-connected model provides the responsiveness needed to meet customers' expectations for timely delivery.

No matter if you're direct-to-consumer or in a service-level agreement situation, customers expect overnight delivery, or as close to it as possible. The Warehouse Anywhere system can optimize your inventory per location to ensure stock is on hand in areas of highest demand. You will save on transportation and logistics expenses while improving customer service.

Disadvantages of 3PL

While the 3PL model has been successful for decades, there are some things to consider. Perhaps the most significant caveat is the lack of direct oversight and control. After all, a 3PL is an outsourced service provider. That means some activities will take place outside of your direct supervision. Ensuring quality control and customer service requires an extra level of diligence. If a 3PL fails to deliver on a customer's expectation, the customer will blame your company, not the 3PL.

Another issue is the degree of dependency a 3PL can create. When you outsource a significant segment of your business, it can be difficult to switch providers or take the operations in-house if pricing or service levels no longer meet expectations.

13.9 3PL BY INDUSTRY

3PLs for Medical Devices: For industries with complex supply chain requirements, 3PLs deliver solutions that turn challenges into competitive advantages.

For the medical device industry, visibility and value-added delivery processes are top priorities. To meet regulatory requirements, devices must be tracked throughout every step of the process with a verifiable chain of custody. This capability requires complex technology solutions that can track inventory across multiple locations and carriers to ensure individual devices can be tracked and traced at a moment's notice.

Medical device shippers rely on 3PLs for services that go well beyond dropping off boxes on the dock. Clients are looking for delivery to the end-user department, on-site inventorying, returns and repairs and other small but vital steps in serving customers.

A 3PL can help a medical device company develop systems to optimize delivery from a distribution hub to individual locations. Rather than delivering half a dozen items in many shipments, the 3PL can develop the visibility to consolidate deliveries to reduce costs significantly. 3PLs can manage expedited shipments to fulfil just-in-time delivery for high-value items, such as knee implants. Greater visibility into inventories

and reverse logistics improves ease of auditing, reducing the need for physical auditing.

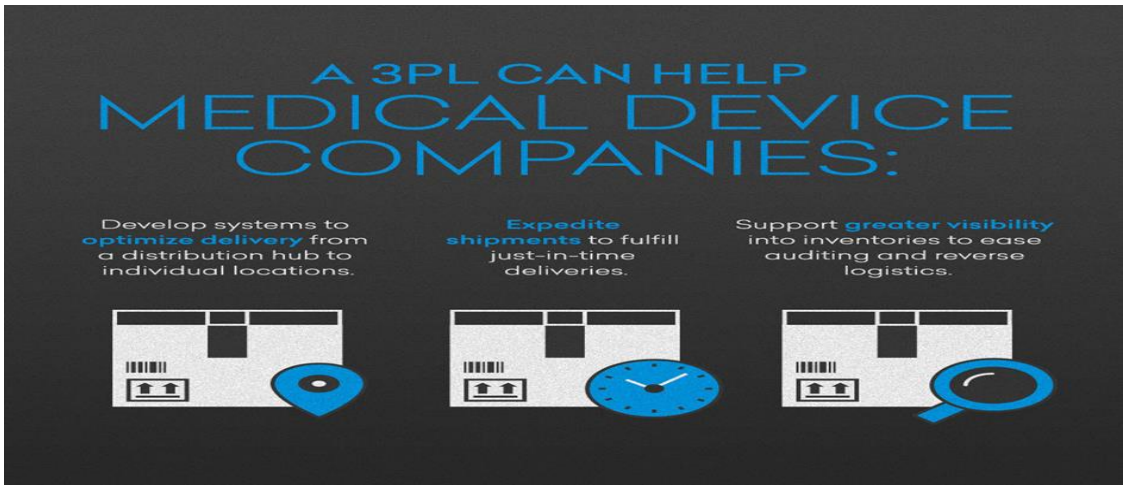

Fig 1.1: **3PLs for Medical Devices**

3PLs for Field Services: Companies with extensive field service operations, no matter if they're strictly internal or offer services to clients, will benefit from 3PL partnerships. A field service environment is different than a manufacturing situation and requires unique solutions. Meeting service level agreement (SLA) expectation is crucial to customer satisfaction, and a well-managed forward deployment program can ensure standards are met or exceeded.

To meet these high expectations, a 3PL can forward deploy commonly used items in smaller distribution hubs for rapid, lower cost response. The 3PL can develop a database of the most often ordered items and ensure inventory is managed to meet ongoing demand. Having the right part available when the service technician makes the initial call will contribute to a high level of customer satisfaction. The service tech can stop at the hub to pick up parts or place an order for expedited delivery to the job site.

3PLs for Retail: Thanks to the "Amazon effect," customers have come to expect merchandise to be readily available online or in-store. After all, if you can receive practically anything from Amazon in two days or less, customers don't understand why they can't receive goods from other shippers in the same time frame. A 3PL can

develop a strategy to improve supply chain discipline to better compete with Amazon on shipping times and fulfilment accuracy.

Fig 1.3: **3PLs for Retail**

13.10 FOURTH PARTY LOGISTICS

A fourth-party logistics provider, or 4PL, represents a higher level of supply chain management for the customer. The 4PL gives its clients a "control tower" view of their supply chains, overseeing the mix of warehouses, shipping companies, freight forwarders and agents.

The goal is to have the 4PL act as the single interface between all aspects of the supply chain and the client organization. Consulting firm Accenture originally copyrighted the term in the mid-1990s, but it has since fallen into generic use.

In some cases, a 4PL may be established as a joint venture or long-term contract between a primary client and multiple partners, often to manage logistics for specific locations or lines of business. The structure of a 4PL can vary, as there may be a 4PL component within a larger 3PL relationship. A 4PL is a form of business process outsourcing, similar to contracting out human resources or financial functions.

13.11 DIFFERENCE BETWEEN 3PL AND 4PL LOGISTICS

Typically, the 4PL does not own transportation or warehouse assets. Instead, it coordinates those aspects of the supply chain with vendors. The 4PL may coordinate activities of other 3PLs that handle various aspects of the supply chain. The 4PL functions at the integration and optimization level, while a 3PL may be more focused

on day-to-day operations. A 4PL also may be known as a Lead Logistics Partner (LLP), according to the CSCMP.

The primary advantage of a 4PL relationship is that it is a strategic relationship focused on providing the highest level of services for the best value, as opposed to a 3PL that may be more transaction focused. A 4PL provides a single point of contact for your supply chain. With a 3PL, there may be some aspects that you still have to manage. The 4PL should take over those processes for you, acting as the intermediary for 3PLs, carriers, warehouse vendors and other participants in your supply chain.

The 4PL relationship simplifies and streamlines the logistics function using technology for greater visibility and imposing operational discipline across many partners and suppliers. The enterprise can focus on its core competencies and rely on the 4PL partner to manage the supply chain function for maximum value. Basically, the 4PL acts as the enterprise would if the supply chain functions were managed in-house.

As companies transition their supply chain model to forward deployment or decentralized distribution, a 4PL partner can step in and manage that complexity. Retailers, in particular, are shifting toward a more nimble model to support e-commerce and Omni channel services. A 4PL can manage the multiplying number of resources that it takes to compete at that level. The days of the million-square-foot super regional DC may be over, as companies opt for shared warehouse space near major customer centres to speed up responsiveness. The 4PL can manage those relationships, as well as optimize the network to use parcel carriers or couriers to support e-commerce, rather than LTL or truckload services.

13.12 FOURTH-PARTY LOGISTICS ADVANTAGES

Choosing a 3PL vs. a 4PL can be a complicated decision that depends on the complexity of your supply chain and your company's strategic goals.

A 3PL relationship works well when the organization has a solid, high-performance supply chain strategy in place and requires support to execute the plan. Working with a 3PL will typically require a high level of internal management commitment and oversight to ensure performance meets your standards. However, many day-to-day decisions are out of your hands as you count on the providers selected by the 3PL to

meet your service commitments. An asset-based 3PL may focus too much on ensuring that its own assets are fully utilized at the expense of lower rates or better services from other providers. For smaller companies, a 3PL can provide an immediate level of scale that would otherwise be cost prohibitive.

A non-asset based 4PL is agnostic in choosing suppliers, concentrating on finding the best combination of value and service. Typically, a 4PL will have integrated technology offerings that deliver a high level of visibility into the supply chain for tactical and strategic analysis. Of course, internal resources are still necessary to manage the 4PL performance, but it should be a higher level of oversight than a 3PL.

Warehouse Anywhere has performed as both a 3PL and 4PL for our clients. Recently, we've seen great success in acting as a 4PL in managing forward-deployed inventories in a variety of vertical markets. We can localize your inventory in hundreds of U.S. cities in a very short period of time.

13.13 4PL BY INDUSTRY

4PLs for Medical Devices: Did you know that sometimes surgeons order a medical device such as a knee replacement only after the patient has started the anaesthesia process? Talk about just-in-time delivery. Surgeons may order several sizes of a product because they don't know precisely which one they'll need at the start of the procedure. A 4PL can manage the complex chain of custody requirements and delivery schedules to meet physician's requirements and reduce inventory costs.

For one medical-device manufacturer Warehouse Anywhere developed a network of inventory centres to service hospitals and surgery centres. We maintain their inventory, relieving field reps of that burden and eliminating consignment costs. Since we guarantee delivery of items up to one hour prior to surgery, physicians can preschedule surgeries as well. We handle all reverse logistics and restocking of unused items.

We found in many cases physicians typically ordered more than $3.5 million worth of devices in a year, but used only about $300,000 worth. The extra cost of shipping these items to and from the hospital and DC were excessive, and consumed by the medical device company. Our solution helped eliminate inventory write-off costs

while improving service to the medical facilities. Now, this medical device company sees their supply chain as a competitive advantage rather than a cost centre.

***Fig 1.4*: 4PLs for Medical Devices**

4PLs for Field Service: To serve field service and repair organizations a 4PL takes control of the supply chain including warehousing, fulfilment, transportation and technology.

The Warehouse Anywhere forward-deployed 4PL model is perfect for field service businesses because we manage all the moving parts to meet your service expectations. The process begins with a detailed analysis of parts usage based on historical data and installed customer base to determine the individual parts, quantities and locations necessary to meet anticipated demands.

The field techs don't have to function as warehouse operators anymore. Parts location and inventories are visible to all the techs in the region, reducing the need for trunk stock.

For one field service organization supporting retail and financial services technology, Warehouse Anywhere established a decentralized warehousing model, and developed a fulfilment system to provide parts in 30 minutes or less, meeting or exceeding service level agreements. Its real-time inventory tracking and visibility support full chain of custody, 24/7 inventory availability and ERP/IT integration.

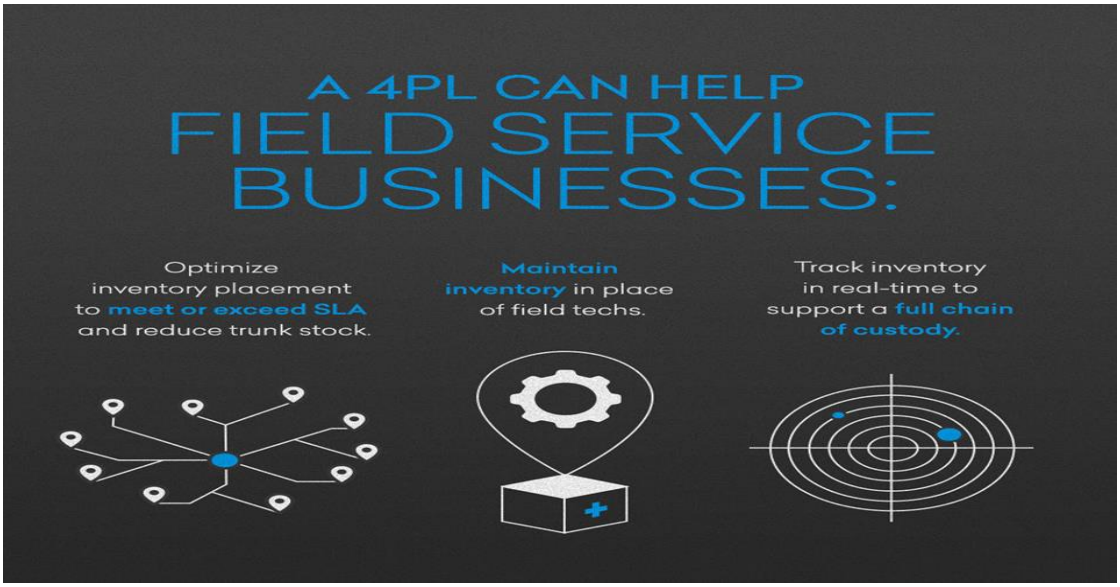

Fig 1.5: **4PLs for Field Service**

4PLs for Retail/E-Commerce: The largest e-commerce companies, like Amazon, act as their own 4PLs by owning and managing the entire supply chain. Few other companies have the resources to match that, so they turn to 4PLs for strategic management.

Over the years, many retailers have used 3PLs for transportation, warehousing and fulfilment. As e-commerce boomed, retailers often bolted on those capabilities to existing systems, creating parallel supply chains to meet in-store and online demand. As e-commerce logistics matures, it's become apparent that an Omni channel approach is a sustainable direction to support customers, regardless of the channel from which they purpose.

A 4PL offers the strategic vision to create a new supply chain network that efficiently manages the flow of product across all platforms. A single view of inventory gives the retailer the power to allocate inventory and meet customer demand regardless of the status or location of the inventory.

Forward-deployed inventory can serve both physical locations and e-commerce fulfilments. For brick-and-mortar locations, the forward deployment supports same-day inventory replenishment as well as online order fulfilments from the same location.

With smaller store footprints, there's no room “in the back” anymore. For a retail apparel customer, we forward deployed inventory within a five-mile radius of stores to replenish popular items within one hour.

Fig 1.6: **4PLs for Retail/E-Commerce**

13.14 CHECK YOUR PROGRESS

1. What do you mean by Strategic Alliances? What are its features?
2. What the various forms of Strategic Alliances? What are the steps in formation of Strategic Alliances?
3. What is 3PL? What are its Advantages and disadvantages?

UNIT 13: RETAILER- SUPPLIER PARTNERSHIPS (RSP)

STRUCTURE

LEARNING OBJECTIVES

After going through this unit, you will be able to:

1. Understand the concept and types of strategic alliance in SCM
2. Appreciate the concept, importance, types, and characteristics of Retailer-Supplier Partnership
4. Understand inventory ownership in RSP
5. Know about the requirements for RSP
6. Learn the process of RSP
7. Know about the pros and cons of RSP

14.1 INTRODUCTION

The completion between one organisation and another organisation no longer occurs nowadays. It is incorrect to claim that Tata Motors and Maruti are rivals in India. It would be more appropriate to state that Tata Motors' supply chain and Maruti's supply chain are in competition. As a result, supply chains compete with one another.

Therefore, it is crucial to build the supply chain's competency if a firm is to succeed. No one organisation is competent to handle it. For instance, Apple does not compete directly with Samsung, but rather with Samsung's whole supply chain as a result of the enormous number of wholesalers, retailers, and other players on the manufacturer's side.

A company can guarantee the completion of a logistics-related business function in four ways:

a) Internal Activities: If internal activities are your company's main competitive advantage, take the initiative on your own.

b) Acquisitions: Take over other businesses with a strong core competency in the desired items.

c) Arm's-Length Deals: Temporary outsourcing

d) Strategic Alliances: Partnership with a long history.

To improve the performance of a shared supply chain, many organizations form strategic alliances.

14.2 STRATEGIC ALLIANCE IN SCM

Supply chain management (SCM) is the process of organizing, implementing, and overseeing the activities of the supply chain with the aim of effectively meeting consumer demands. The movement and storage of raw materials, inventories for work-in-progress, and finished commodities from the point of origin to the point of consumption are all covered by supply chain management. In 1982, consultant Keith Oliver of the strategy consulting firm Booz Allen Hamilton invented the phrase "supply chain management." The planning and management of all sourcing, procurement, conversion, and logistics management activities fall within the purview of supply chain management. It is significant since it also entails coordination and cooperation with channel partners, which might include suppliers, middlemen, outside service providers, and clients. Basically, supply chain management blends demand and supply management within and across businesses. Key players in SCM are:

The aforementioned players have a variety of strategic alliances. A strategic alliance is a legal partnership created between two or more companies to achieve a shared set of objectives or to address a pressing commercial necessity while the parties are still independent businesses.

A strategic alliance may receive resources from partners in the form of goods, distribution channels, production capacity, project money, capital equipment, information, skills, or intellectual property. The goal of the alliance is synergy, or cooperation or collaboration when each participant anticipates that the benefits of the alliance will outweigh the results of their separate efforts. Technology transfer (access to knowledge and skills), economic specialization, shared costs, and shared risk are frequently included in alliances.

Benefits of Strategic Alliances

Partners benefit from the following things when they form strategic alliances:

i) Access to their partner's distribution networks and global market presence

ii) Access to their partner's goods, technologies, and intellectual property

iii) Access to their partner's capital

iv) Access to new markets for their goods and services

v) Increased brand awareness through partner's channels

vi) Reduced product development time and faster-to-market products

vii) Lower R&D costs and risks

viii) Rapidly achieve scale, critical mass and momentum (Economies of Scale - bigger is better)

ix) Establish technological benchmarks or the sector and launch early products that adhere to them

x) By-product utilization

xi) Management skills

Strategic alliances are partnerships in which two or more businesses collaborate to accomplish goals that are advantageous to both parties. To do this, businesses may pool their resources, knowledge, skills, and risks. A popular justification for forming a strategic alliance, according to Producer's resource, is to benefit from another company's breakthroughs without having to spend money on fresh R&D.

Reasons for Strategic Alliances

The global corporate world of today is becoming substantially more complex, and the resources needed to manage business operations are getting harder to come by. This calls for the outsourcing of numerous tasks. Businesses must make sure that tasks are carried out by other businesses. Collaboration, communication, and trust are necessary for the management of these outsourced procedures. To make sure that this is handled in the best manner for all parties concerned, many businesses form strategic alliances.

14.3 TYPES OF STRATEGIC ALLIANCE

In supply chain management, there are primarily three types of strategic alliances.

i) Third Party Logistics (3PL): The term '3PL' refers to the utilization of an outside entity to handle all or a portion of a company's product distribution and material management needs.

ii) Retailer–Supplier Partnerships (RSP): It involves the establishment of strategic partnerships between retailers and their suppliers.

iii) Distributor Integration (DI): This recognizes the importance of distributors and their relationship with end customers and offers them the assistance they need to succeed.

CHECK YOUR PROGRESS

Q 1: What do you mean by 'strategic alliance'?

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Q 2: What are the types of strategic alliance?

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14.4 CONCEPT OF RETAILER-SUPPLIER PARTNERSHIP

The notion of enhancing cooperation between retailers and suppliers is not new, and most people concur that doing so is beneficial. Successful collaboration initiatives

often lower inventory throughout the supply chain, reduce its environmental effect, and eliminate 2 to 3 percent of overall end-to-end expenses. As a result, the advantages can be significant.

Suppliers and retailers work together in a relationship known as a retailer-supplier partnership (RSP) to benefit from one another's expertise. Production capabilities and lead times are better understood by suppliers. In contrast, because they interact with customers directly, retailers have a better understanding of demand. Therefore, if a supplier and retailer form a strategic relationship, both parties stand to gain significantly.

An effective and strategic link between the supplier and the retailer is made possible by the RSP model, which opens up a better channel for customer care. It makes sure that the supplier and the retailer are working together to meet the needs of the customers. For this relationship to succeed, the vendors must develop critical abilities including forecasting, inventory management, and retail management.

14.5 TYPES OF RETAILER-SUPPLIER PARTNERSHIP

There are three main sorts of relationships between retailers and suppliers. Here they are stated:

i) Quick Response Strategy: Here, suppliers get Point of Sale (POS) information from the merchants and utilize it to coordinate their production and inventory activities with actual merchant sales. In this technique, individual orders are still prepared by the retailer, but the supplier uses POS data to decrease local time and enhance forecasting and scheduling. When the connection between the retailer and the supplier is new and trust between the two parties has not yet fully built, this arrangement might be favoured. In this technique, the retailer maintains total control over its inventory while assisting suppliers in streamlining their processes by giving them POS data. Additionally, if there aren't enough financial and human resources to create a fully integrated collaboration, this kind of partnership may be favoured. The following list includes this strategy's salient characteristics:

a) Retailers provide POS (point of sale) data to suppliers.

b) Suppliers utilize this data to match the actual sales at the merchant with their manufacturing and inventory activity.

c) Retailers continue to create customized orders.

d) Suppliers use POS data to save lead times and enhance forecasting and scheduling.

ii) Continuous Replenishment Strategy: Another name for this is fast replenishing. In this scenario, the vendors get POS data and utilize it to plan shipments at previously agreed-upon periods to maintain particular levels of inventory. As long as the service criteria are met, suppliers may gradually lower inventory levels at the retail location or distribution centre in an advanced form of continuous replenishment. As a result, inventory levels are consistently raised in an organized manner. Additionally, the inventory levels do not necessarily need to be basic levels; rather, they could be determined by complex algorithms that adjust the right amount in response to seasonal demand, promotions, and shifting client demand. Because suppliers and buyers jointly decide on goal inventory and service levels, this kind of relationship is a system between quick response and VMI. In comparison to VMI, it entails less risk for retailers and often results in a more stable and long-term relationship between suppliers and retailers. The following list includes this strategy's salient characteristics:

a) Also known as quick replenishment

b) Suppliers get POS information

c) These data are used by suppliers to plan shipments at predetermined intervals in order to maintain predetermined levels of inventory.

Advanced Form of Continuous Replenishment

As long as service standards are followed, suppliers are permitted to gradually reduce inventory levels at the retail location or distribution facility.

iii) Vendor-Managed Inventory (VMI) System: Vendor-managed replenishment (VMR) system is another name for this. Here, the provider determines the proper stock levels for each product and the proper inventory management procedures to maintain these levels. Although retailer approval of vendor ideas is initially required, many VMI programmes eventually aim to do away with retailer control of particular orders. The 1985 cooperation between Wal-Mart and P&G is an example of this kind of connection in use. P&G’s on-time deliveries to Wal-Mart have significantly improved while inventory turnover have increased. The supplier and the consumer must have a

great deal of trust in one another because this system is more interconnected than the other two systems. In comparison to the other two types of partnerships, VMI has the potential to save the system money overall if done appropriately. However, VMI needs a greater level of dedication as well as an initial, sizable investment in employees, time, and information infrastructure. The 1985-starting Wal-Mart and Procter & Gamble VMI Partnership has increased inventory turnover while enhancing P&G's on-time deliveries to Wal-Mart. The following list includes this strategy's salient characteristics:

a) Also known as a VMR system (vendor-managed replenishment)

b) The supplier chooses the proper inventory levels and the proper policies to uphold these levels.

c) The retailer's early approval of supplier recommendations

d) Eliminating retailer control on particular orders is the objective of many VMI initiatives

Benefits of VMI Process

Both retailers and suppliers gain from the VMI process. The benefits are outlined below, to name a few.

Retailer Benefits

i) Reduced Inventory: The most evident advantage of VMI is this. With the help of the VMI process, the supplier can better manage the lead-time portion of the order point than a client that has to deal with thousands of suppliers. Additionally, the supplier assumes more accountability for keeping the goods on hand when required, which reduces the requirement for safety stock. Additionally, the provider reviews the data more frequently, which reduces the need for safety stock. These elements help explain why inventories are substantially smaller.

ii) Reduced Stock-Outs: The supplier monitors the movement of goods and assumes responsibility for product availability, which reduces stock outs and boosts end-customer satisfaction.

iii) Reduced Forecasting and Purchasing Activities: The merchant can cut expenditures on forecasting and purchasing activities since the supplier forecasts and creates orders based on the demand data it receives from customers.

iv) Increase in Sales: Customers will locate the ideal product at the ideal time thanks to fewer instances of stock outs. Customers will frequent the store frequently, which will result in more sales.

Supplier Benefits

i) Improved Visibility Results in Better Forecasting: Without the VMI procedure, suppliers are unsure of how their clients would place orders. Typically, suppliers must keep sizable safety stock levels on hand to meet demand. By sending the POS data directly to the vendor using the VMI process, the retailer increases visibility and enhances forecasting.

ii) Reduces Purchase Order Errors and Potential Returns: Errors that could otherwise result in a return will decrease as the provider forecasts and creates the orders.

iii) Improvement in Service Level Agreement: When the proper product is given to retailers at the right time, service level agreements between suppliers and retailers are improved since vendors can anticipate prospective customer needs before the item is actually ordered.

iv) Encourages Supply Chain Cooperation: Collaborations and partnerships are created to sooth the supply chain pipeline.

Challenges and Limitations of VMI

The VMI approach offers a unique set of difficulties and restrictions:

i) Some businesses continue to produce in large quantities without successfully using customer-specific data for production planning.

ii) Some vendors reserve inventory, which causes shortages to other customers, in order to give priority service to VMI partners.

iii) Lack of system integration leads to insufficient visibility.

iv) High aspirations from retailers

v) Sales force resistance due to worries about losing control and impacting sales-based incentive programmes

vi) Employees' lack of faith and skepticism

Overcoming the Limitations

In order to successfully implement VMI, the challenges must be successfully overcome, and the concerns of various stakeholders must be addressed. Some of the issues can be resolved as follows:

i) Restructure incentive schemes to emphasise partnership development rather than sales volume

ii) Create enduring associations with the management dedication to good communication, information sharing that is active, problem-solving resolve, and ongoing support

iii) Prior to deployment, carry out pilot projects and simulations.

iv) Prior to commencing the VMI programme, organize training sessions.

v) Set attainable goals for the advantages of VMI

vi) Make agreements regarding service levels and the handling of exceptions

VMI in Retail Supply Chain

Understanding and controlling the relationship between inventory cost and customer service level is typically the key to success in supply chain management. The most alluring programmes result in benefits in both dimensions, and VMI is no exception.

Reduced Cost

The main issue most supply chains are dealing with is demand unpredictability, which hurts both customer satisfaction and product sales. In conventional retail settings, managerial practices exacerbate sales swings. Demand uncertainty in general, competing performance metrics, buyers' use of planning calendars, buyers acting alone, and product shortages that lead to order fluctuations can all make ordering patterns worse. VMI draws a lot of suppliers since it reduces demand unpredictability. In order to assure prompt customer service, manufacturers are forced to keep excess capacity or excess finished goods inventories, both of which are very expensive

solutions. VMI contributes to reducing production's peaks and troughs by allowing for lower capacity and inventory buffers.

Customers are drawn to VMI because it eliminates the problem of competing performance measures. For retail purchasers, the end-of-month inventory level is one important performance indicator, but customer service level (measured by some sort of out-of-stock measure) is also used. These actions run counter to one another. In order to provide excellent customer service, buyers stock up at the beginning of the month. They then allow inventory to decline towards the end of the month in order to "meet" their inventory targets (disregarding the effect on service level measures) When end-of-quarter incentives are connected to financial reporting, the negative impact is even more pronounced. A monthly order surge to the supplier is the end effect of this behaviour taken together.

The frequency of replenishment is typically raised with VMI from monthly to weekly (or even daily), which is advantageous to both parties. The factory's demand signal is significantly smoother, according to the supplier. By enabling improved resource use for both production and transportation, as well as reducing the need for large buffer stockpiles, this lowers costs. The seller can decide when to restock based on operational requirements and is more cognizant of demand trends. Genuinely decreased cycle stocks, as opposed to just low end-of-month inventories meant to make performance the primary factor in the incentive system, are advantageous to the consuming company. Even if the buyer has given up ownership to the provider, increased transportation and warehouse efficiencies have several advantages. At the end of the month or quarter, service levels will increase as well.

Finally, VMI lowers transportation expenses. When properly implemented, the strategy increases the proportion of affordable full truckload shipments and decreases the amount of expensive less than truckload (LTL) shipments. Instead of automatically filling orders as they come in, this is accomplished by giving the supplier control over the resupply process. More effective route planning is another appealing choice; for instance, one dedicated truck can make several stops to restock inventory for several neighbouring customers.

Maruti Udyog Ltd.

Compared to the industry average of 57.8%, Maruti manufactured 359,960 automobiles in 2003, operating at a capacity utilization rate of 103 percent. In an effort to increase operational efficiency, Maruti realized the need of vendor management. Every year, Maruti purchased parts for around Rs. 5,000 crores. About 34% of the company's total purchases of components from Indian vendors were made through its top 10 vendors.

By 2004–2005, Maruti planned to reduce vendor pricing by 3.5 percent annually. Through its Delivery Instruction system, one of Suzuki's best practices, Maruti simplified the sourcing and stocking of materials and components. This system sent vendors information about Maruti's component needs for each variant of the various models every 15 days. Maruti was able to reduce procurement time and expenses because to web activities.

Shopper's Stop

Their supply chain goals are as follows:

i) Customer Objectives

ii) Partner Objectives

iii) Organization Objectives

The Customer Objectives

a) Customer always receives the items in their desired size.

b) Before a consumer enters, the merchandise is always presentable and ready.

c) The customer may simply find product information and price tags.

d) Price on the price tag and the Point of Sale System are always in agreement.

e) Timely replacement of goods that move quickly

The Partner Objectives

a) Partners consistently deliver the appropriate volumes on time.

b) Always pay partners according to credit terms

c) Information about sales stockpiles and purchase orders is shared with partners

Organization Objectives

a) Customer reply time

b) Merchandise availability

c) Distribution cost

d) Shrinkage

e) Efficiency of executive time

f) Collaboration with partners

14.6 CHARACTERISTICS OF RSP

The following is a representation of the key attributes of supplier-retailer relationships:

Type of Alliance	Authority of Decision	Ownership of Inventory	New Skills Required by Vendors
Quick response	Retailer	Retailer	Forecasting skill
Continuous replenishment	Contractually agreed to levels	Either party	Forecasting and inventory control
Advanced continuous replenishment	Contractually agreed to and continuously improved levels	Either party	Forecasting and inventory control
Vendor-managed inventory	Vendor	Either party	Retail management

14.7 REQUIREMENTS FOR RSP

The prerequisites for a supplier-retailer partnership are as follows:

i) Advanced Information Systems: Both the supplier and retailer sides of the supply chain require this. To reduce data transfer time and entry errors, electronic data interchange or internet-based private exchanges are crucial for relaying POS information to the supplier and delivery to the store. To guarantee data accuracy, bar coding and scanning are necessary. To utilize the extra information available,

inventory, production control, and planning systems must be online, precise, and integrated.

ii) Top Management Commitment: This is crucial since secret information must now be shared with suppliers and consumers, and cost allocation issues must be taken into account at a very high level. Additionally, a partnership of this kind has the potential to transfer power within an organisation from one group to another. For instance, when a VMI arrangement is implemented, logistic workers instead of sales and marketing personnel have daily contact with shops. This suggests that the retailer's inventory levels are driven by supply chain needs rather than by price and discount methods and that incentives for the remuneration of the sales force must be changed. Top management may need to get involved with this change in power.

iii) Partners to Develop Trust amongst Them: The coalition will fall apart without it. For instance, under VMI, suppliers must show that they are capable of managing the complete supply chain, including both their own and the retailer's inventory. Similar to quick response, private information is sent to the supplier, who often supplies a wide range of rival merchants. Additionally, strategic partnerships can cause the inventory at the store outlet to be significantly reduced. The supplier must watch out that their rival does not take advantage of the extra area that is now available. The top management at the supplier must also be aware that a reduction in inventory at the retailer would immediately result in a one-time loss of sales revenue.

CHECK YOUR PROGRESS

Q 3: What do you mean by 'retailer-supplier relationship'?

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Q 4: What are the various types of alliances in retailer-supplier relationship?

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14.8 INVENTORY OWNERSHIP IN RSP

The effectiveness of this form of strategic alliance initiative, especially one involving VMI, depends on how inventory ownership issues are handled. When the products were first received, the retailer became the owner of them. Some VMI agreements are currently transitioning to a consignment arrangement where the supplier retains ownership of the items until they are sold. It goes without saying that decreased inventory costs are an advantage of this kind of partnership for the retailer. Additionally, because the supplier is the one who owns the inventory, managing it as efficiently as possible will be its main priority. The original VMI plan could be criticized for giving the vendor an incentive to transfer as much inventory to the retailer as the contract permits.

This might be precisely what the merchant wants to see in stock if this is a fast-moving item and the partners had agreed upon two weeks of inventory. The vendor must be given a reason to keep inventories as low as feasible if, however, this is a more complicated inventory management issue, subject to some established service levels. Wal-Mart, for instance, no longer owns the stock for a large number of the products it sells, including the majority of its grocery purchases. They are only temporarily in its possession as they go through the checkout scanner.

14.9 STEPS IN RSP

The following actions must be taken when implementing VMI.

i) The agreement's contractual provisions must first be agreed upon. These decisions include those relating to ownership and when it will be transferred, credit conditions, ordering obligations, and performance metrics like service or inventory levels, if necessary.

ii) The following three actions need to be taken:

a) If they don't already exist, integrated information systems for suppliers and retailers must be created. Both parties must have simple access to these information systems.

b) It is necessary to build efficient forecasting methods that the vendor and merchant can employ.

c) To aid in synchronizing inventory management and transportation policies, a tactical decision support tool must be created. The systems created will be based on the unique characteristics of the partnership.

Issues in Retailer-Supplier Partnerships Implementation

Performance measurement standards must also be agreed upon for an agreement to be successful. Along with the conventional financial measurements, these criteria should also take non-financial factors into account. Non-financial measures, for instance, can include lead times, customer fill rates, inventory accuracy, shipment and delivery accuracy, and POS accuracy. Confidentiality issues arise when information is transferred between suppliers and merchants.

The supplier may need the category information to make accurate projections and inventory decisions, especially if the store works with multiple suppliers for the same product category. Similar to this, inventory choices made by various suppliers may be related.

It is crucial for both parties to understand that there will be issues that can only be resolved via communication and collaboration when forming any kind of strategic alliance. In many cases, the partner supplier agrees to respond quickly to retailer emergencies and changing circumstances. If the supplier does not already have the necessary manufacturing technology or capacity, it might be necessary to add it.

14.10 PROS AND CONS OF RSP

Advantages of Retailer-Supplier Partnerships

i) The supplier's understanding of order numbers, which suggests a capacity to manage the bullwhip impact. However, this varies from partnership to partnership. For instance, in quick response, this information is obtained through the transmission of customer demand information, allowing the supplier to shorten lead times, whereas in VMI, the retailer provides demand information and the supplier makes ordering decisions, completely controlling the variability in order quantities. This information can be used to lower system costs generally and raise system service levels generally.

ii) Improved service standards, lower management costs, and lower inventory costs for the supplier.

iii) Vendor is able to lower forecast uncertainties, improving production and distribution coordination in terms of lower safety stocks, less storage, lower delivery costs, and higher service levels.

iv) Excellent chance to reengineer the supplier-retailer relationship. For instance, it is possible to remove superfluous order entries, automate manual processes, and do away with extra control stages.

Disadvantages of Retailer-Supplier Partnerships

i) Utilizing cutting-edge technology, which is frequently pricey, is required.

ii) It is essential to develop trust in what once may have been an adversarial supplier-retailer
relationship.

iii) The supplier often has much more responsibility than retailer. This may force the supplier to
add personnel to meet this responsibility.

iv) As managerial duties increase, costs at the supplier frequently rise.

v) The cost of inventory for the supplier can also go higher.

CHECK YOUR PROGRESS

Q 5: What are the disadvantages of retailer-supplier partnerships?

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Q 6: Discuss the issues in retailer-supplier partnerships implementation.

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14.11 LET US SUM UP

Strategic collaborations between two businesses are comprehensive, target-driven, and lasting. There are shared advantages as well as hazards. Long-term strategic advantages for both parties are frequently the result of this kind of partnership. Strategic relationships can offer substantial advantages, but there are also real hazards.

To guarantee that key competencies and natural competitive advantages are not jeopardized, significant efforts should be made. Strategic relationships come in a variety of shapes and sizes. The relationship between retailers and suppliers is one of the important types of strategic alliances. There are three types of retailer-supplier relationships. Strategic collaborations between two businesses are comprehensive, target-driven, and lasting. There are shared advantages as well as hazards. Long-term strategic advantages for both parties are frequently the result of this kind of partnership. Strategic relationships can offer substantial advantages, but there are also real hazards. To guarantee that key competencies and natural competitive advantages are not jeopardized, significant efforts should be made. Strategic relationships come in a variety of shapes and sizes. The relationship between retailers and suppliers is one of the important types of strategic alliances. There are three types of retailer-supplier relationships.

14.12 FURTHER READING

Benton, W.C. Jr. & McHenry, Linda F, *Construction Purchasing and Supply Chain Management*, Tata McGraw Hill, New Delhi, 2010.

Menon K.S, *Purchasing and Inventory Control*, A.H.Wheeler Publishing Publication, 1994.

Monczka R., Trent R. and Handfield R, *Puchasing and Supply Chain Management*, Thomson Publication, 2002.

Telsang M.T, *Industrial and Purchase Management*, S. Chand Publication, India, 2001.

14.13 ANSWERS TO CHECK YOUR PROGRESS

Ans. to Q No 1: The goal of the alliance is synergy, or cooperation or collaboration when each participant anticipates that the benefits of the alliance will outweigh the results of their separate efforts.

Ans. to Q No 2: In supply chain management, there are primarily three types of strategic alliances.

i) Third Party Logistics (3PL): The term '3PL' refers to the utilization of an outside entity to handle all or a portion of a company's product distribution and material management needs.

ii) Retailer–Supplier Partnerships (RSP): It involves the establishment of strategic partnerships between retailers and their suppliers.

iii) Distributor Integration (DI): This recognizes the importance of distributors and their relationship with end customers and offers them the assistance they need to succeed.

Ans. to Q No 3: Suppliers and retailers work together in a relationship known as a retailer-supplier partnership (RSP) to benefit from one another's expertise. Production capabilities and lead times are better understood by suppliers.

Ans. to Q No 4: i) Quick Response Strategy

ii) Continuous Replenishment Strategy:

iii) Vendor-Managed Inventory (VMI) System

iv) Advanced Form of Continuous Replenishment

Ans. to Q No 5: Disadvantages of Retailer-Supplier Partnerships

i) Utilizing cutting-edge technology, which is frequently pricey, is required.

ii) In what may have before been an acrimonious supplier-retailer relationship, it is crucial to establish confidence.

iii) Frequently, the supplier is in charge of far more than the retailer. This can compel the supplier to hire more staff to handle this obligation.

iv) As managerial duties increase, costs at the supplier frequently rise.

v) The cost of inventory for the supplier can also go higher.

Ans. to Q No 6: Performance measurement standards must also be agreed upon for an agreement to be successful. Along with the conventional financial measurements, these criteria should also take non-financial factors into account. Non-financial measures, for instance, can include lead times, customer fill rates, inventory accuracy, shipment and delivery accuracy, and POS accuracy.

Confidentiality issues arise when information is transferred between suppliers and merchants. The supplier may need the category information to make accurate projections and inventory decisions, especially if the store works with multiple

suppliers for the same product category. Similar to this, inventory choices made by various suppliers may be related.

It is crucial for both parties to understand that there will be issues that can only be resolved via communication and collaboration when forming any kind of strategic alliance. In many cases, the partner supplier agrees to respond quickly to retailer emergencies and changing circumstances. If the supplier does not already have the necessary manufacturing technology or capacity, it might be necessary to add it.

14.14 MODEL QUESTIONS

Q 1: Mention the key players in SCM.

Q 2: Explain the benefits of strategic alliances.

Q 3: State the reasons for strategic alliances.

Q 4: Discuss the benefits and challenges of VMI process.

Q 5: Explain the characteristics of retailer-supplier relationship.

Q 6: Discuss the steps in retailer-supplier relationship.

Q 7: Write the pros and cons of retailer-supplier relationship.

UNIT 15: SUPPLIER EVALUATION AND SELECTION

STRUCTURE

LEARNING OBJECTIVES

After going through this unit, you will be able to:

1. Understand the general purchasing procedure and principles
2. Appreciate the concept, importance, and benefits of supplier evaluation
3. Learn the process of supplier selection.

15.1 INTRODUCTION

Supplier selection is the procedure used by businesses to find, assess, and work with suppliers. A significant portion of a company's financial resources are expended

during the supplier selection process, which is essential to the success of any organisation. Reduced purchase risk, increased total value to the buyer, and the establishment of close, long-lasting relationships between buyers and suppliers are the primary goals of the supplier selection process. There are many different analytical techniques covered in the recent literature on supplier selection criterion and procedures. Some academics have combined multiple types of selection procedures to create hybrid models. Many research studies present a broad overview of SCM research, supplier selection criterion, and supplier selection assessment techniques. To increase their success and competitiveness, businesses may find it helpful for a comprehensive understanding of the supplier selection process. Various researchers in this area demonstrate the need of applying a structured decision-making technique, particularly in complicated situations with both qualitative and quantitative factors.

15.2 GENERAL PURCHASING PROCEDURE

The buyer should be aware of the required quality standards, quantity, and timing well in advance (Telsang 2001). The purchasing department will discover the vendors using this data, place orders, and acquire the materials. Each unit, department, or industrial facility sends its own requisitions, which are then examined, handled, and transformed into orders. The completed orders are flown back to top off the production supplies already on hand. It's crucial for businesses to have a trustworthy supplier if they desire to make sure that goods get from suppliers to consumers in the most economical manner possible without any unfair delays. Delivery schedules are becoming much more crucial to keep businesses operational without incurring additional costs from maintaining large inventory. Companies rely on their suppliers to deliver premium materials and components to deliver high-quality goods to their customers.

The following are the crucial steps in the purchasing process:

i) Acknowledging the necessity, receiving the purchase order, and analyzing it.

ii) Choosing likely prospective sources of supply

iii) Sending a request for quotes

iv) Acceptance and evaluation of quotations

v) Choosing the appropriate source of supply

vi) The purchase order is issued

vii) Continuation and accelerating the order

viii) Examining received reports, handling contradictions, and rejecting

ix) Examining and approving invoices from vendors for payment

x) Closing finished orders

xi) Upkeep of documents and files

15.3 5-R PRINCIPLES OF PURCHASING

Five guiding concepts have been used to develop the idea of buying (Telsang, 2001).

1. Right Quality: This speaks to the object's fitness for its future application. According to the product's intended application, quality should be assessed. The engineering department's specifications serve as a reference for quality. Quality is the maintenance of standards based on fitness for use, standardization, and consideration of client expectations.

2. Right Quantity: The right quantity is crucial in purchasing. The proper amount relies on the product's availability, price, and discounts, among other factors. "Economic Order Quantity" is another name for the appropriate amount.

3. Right Price: The best price need not be the cheapest. Make or buy decisions have an impact on price structure. Here, the proper price refers to receiving value for your money.

4. Right Source: The selection of the best source is influenced by factors like dependability, price, manufacturing quality, historical results, services, etc. Selecting, developing, and rating vendors are all parts of source identification.

5. Right Time: Making sure the supplier is received by the indenting department at the appropriate time and location is one of the purchase department's most crucial responsibilities. This is heavily dependent on the purchasing departments and the indenting department's careful arrangement of the materials. Information on all products is necessary to decide the ideal time and lead time.

By choosing the proper suppliers, it is possible to attain the four principles of right quality, quantity, price, and time. This is because suppliers have a significant and direct influence on the cost, quality, technology, and time-to-market of new products. As a result, choosing the proper source is crucial to determine the other four criteria; corporations have placed the most emphasis on choosing the correct provider.

CHECK YOUR PROGRESS

Q 1: What do you mean by 'supplier selection'?

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Q 2: What are the 5 R principles in purchasing?

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15.4 MEANING OF SUPPLIER EVALUATION

A supplier evaluation is the procedure used to rate and accept prospective suppliers using both quantitative and qualitative evaluations. A list of the top providers is being compiled with that as its goal. To cut costs, minimize risks, and promote progress, a supplier review also looks at the performance of the company's current suppliers.

15.5 IMPORTANCE OF SUPPLIER EVALUATION

To measure and monitor the performance of the current set of suppliers in order to lower the costs of the goods required on a regular basis, reduce the likelihood of risk involved, and promote continuous improvement in their performance, the overall process and approach of the Supplier Evaluation are typically used.

In the current environment of global purchasing methods, the process is of highest importance, and every firm, particularly those engaged in manufacturing operations, needs to have an evaluation matrix or model in place.

Companies that regularly assess the performance of their suppliers report improved visibility into supplier performance, the elimination of hidden costs, reduced risk, a competitive advantage through decreased order cycle times and inventory, knowledge of how to improve their supply base, and alignment of business practices between management and suppliers.

15.6 BENEFITS OF SUPPLIER EVALUATION

1. Increase Performance Visibility

When businesses lack information on the performance of their suppliers, supplier management frequently relies on educated guesses. When businesses grant extra

business based on suppliers satisfying performance goals, the straightforward act of monitoring performance can take on much greater dramatic impact.

2. Uncover and Remove Hidden Waste and Cost Drivers in Sustainable Procurement

There are many potential dangers associated with sustainable buying, many of which may come from suppliers' CSR practices. Improved customer and supplier communication can help to reduce some of these risks. Customers can assist suppliers in reducing waste and inefficiency by learning about supplier performance as well as their operational procedures. This decreases expenses for customers while simultaneously improving supplier performance.

3. Leverage the Supply Base

An organisation might set a benchmark for its suppliers to meet in order to produce higher-quality results by tracking their performance. Based on a deeper understanding of the capabilities and performance levels of their suppliers, businesses can create new goods and services.

4. Align Customer and Supplier Business Practices

In an ideal world, suppliers would conduct business in a way that is consistent with that of their clients, according to the same standards of quality, sustainability, and continual progress.

5. Mitigate Risk

Understanding supplier performance and business procedures aids in lowering business risk, especially considering how dependent businesses are becoming on their major suppliers. Risks might be operational or financial, and they rise with distance.

6. Improve Supplier Performance

Evaluation of supplier performance and advancement should be the aim of supplier assessment. Even while merely assessing performance is beneficial, supplier assessment is most successful when it results in ongoing improvement initiatives that genuinely improve supplier performance. The greatest strategies to achieve quantifiable and beneficial results include follow-up activities like supplier training and development and remedial actions to address supplier evaluation findings.

15.7 CARTER'S 10 CS OF SUPPLIER EVALUATION

The Seven Cs of Supplier Evaluation was initially presented by Dr. Carter, director of DPSS Consultants, in a 1995 publication in the Journal of Purchasing and Supply Management. Later, he expanded the model by three new Cs.

The 10 Cs are standards for judging a potential supplier's suitability. When determining who to approach and who to avoid, use them as a checklist. These are as follows:

1. Competency
2. Capacity
3. Commitment
4. Control
5. Cash
6. Cost
7. Consistency
8. Culture
9. Clean
10. Communication

Carter's 10 Cs can serve as the cornerstone of a potent procurement management strategy. They can significantly enhance your supply chain management and assist you in evaluating possible suppliers in the areas that are important to you. Additionally, keep in mind that suppliers may not simply be large corporations, given the current trend toward a more flexible and gig economy.

First, you can utilize the 10 Cs to assess various facets of a supplier's operation; by looking at all 10 components, you can gain a comprehensive picture of the supplier's efficiency and capacity for performance. You might swiftly weed out every supplier if you only have a few to evaluate and you want them to succeed in every one of the 10 Cs. To prevent this, rate each provider according to each of the 10 Cs using a grid-based technique, such as Decision Matrix Analysis. Select the supplier who performs best when compared to the factors that are most important to you.

Always review the supplier's weak points again because some of them can prevent a successful relationship.

You can also use the checklist to bargain for a lower price. For instance, if you see a supplier has a weakness, you can use this knowledge to negotiate a lower price, especially if you believe the supplier's vulnerability presents a risk to your company and you need to take steps to reduce this risk.

The 10 Cs Model in Detail

For resources that are essential to your organisation, when you will be spending a lot of money, or when you desire a long-term partnership with a supplier, it is worthwhile to put a lot of effort into supplier evaluation.

When conducting research about a supplier, be ready to ask incisive questions that will elicit the degree of information you require to make an informed choice. If at all feasible, speak with current clients as well as the vendors themselves. We examine how to use Carter's 10 Cs approach to locate the supplier that will most closely match the requirements and values of your firm in the parts that follow.

1. Competency

Start by assessing the supplier's level of expertise. Make a careful evaluation of their abilities and compare them to your needs. Then consider what other clients have to say. How satisfied are they with the vendor? Have they run into any issues? Find out why past clients switched suppliers. To ensure that the data you obtain is pertinent to your company, seek out clients with comparable wants and values.

2. Capacity

The supplier must be capable of meeting the demands of your business. Therefore, find out how quickly they can adapt to changes in demand and supply as well as your needs. Examine the resources of the provider as well. Given their obligations to other clients, do they have the resources to fulfill your orders? These resources may include personnel, tools, space for storage, and stockpiles of goods.

3. Commitment

Your supplier must demonstrate their dedication to high quality standards. Look for quality efforts within the company, such as ISO 9001 or Six Sigma, where necessary. The supplier must also demonstrate their dedication to you, the customer, for the duration of the time you anticipate working together. If you're preparing to have a long-term relationship with them, this is very crucial. Look for proof that they are persistently dedicated to satisfying your demands, regardless of the needs of their other clients.

4. Control

Inquire about the degree of control this supplier has over your company's rules, practices, and supply chain. How will they guarantee consistency and dependability of delivery, especially if they depend on limited resources that are under another organization's control?

5. Cash

Your supplier's finances ought to be sound. Businesses that are cash-positive are significantly better equipped to withstand economic ups and downs. So, is this supplier financially strapped or does he/she have lots of cash on hand? And what proof of the supplier's continuous financial stability may be provided?

6. Cost

Take a look at the price of the good or service this supplier offers. How does it stack up against the alternatives you're thinking about? Most individuals believe that when choosing a supplier, price is an important consideration. Cost, however, sits in the midst of the list of the 10 Cs for a reason. If you want to rely on the supplier in the long run, other considerations like a commitment to quality and financial stability may potentially have a considerably bigger impact on your business than pricing alone.

7. Consistency

How will this supplier guarantee that their products or services are always of a high standard? Do they have a proven track record or are they a fresh face with a novel idea? Nobody is ever going to be flawless. To maintain consistency, the provider should have policies or guidelines in place. Inquire about a potential supplier's strategy, and if at all possible, request a demonstration and a test product.

8. Culture

The strongest professional ties are those that have roughly parallel working principles. This is why it's crucial to consider the supplier's corporate culture. What if, for instance, your company values quality above all else, but your primary supplier is more concerned with meeting deadlines? This discrepancy can indicate that they are prepared to make compromises you would find unacceptable. Use the Cultural Web to identify the organization's values and keep an eye out for suppliers who have won awards for cultural excellence within the sector.

9. Clean

This is a reference to the supplier's dedication to sustainability and their compliance with environmental regulations and industry standards. What steps are they taking to lessen their impact on the environment? Get a copy of any awards or certificates they may have for being environmentally friendly.

Does this supplier treat its employees — as well as the people around them — with respect? Are they known for practicing corporate social responsibility and conducting themselves ethically?

10. Communication

Ask the supplier how they intend to get out to you. Do their suggested communication strategies match the ones you prefer? Who will be your point of contact at this company?

Finding out how the provider will manage communications in a crisis is also crucial. If there is a supply disruption, how soon will they let you know? How is that conversation going to happen? And if you need to, will you be able to contact senior citizens?

When handling daily tasks that you outsource or working with independent contractors or consultants who deliver core services, communication is very crucial.

CHECK YOUR PROGRESS

Q 3: What do you mean by 'supplier evaluation'?

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Q 4: What are the 10 Cs for judging a potential supplier's suitability?

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15.8 SUPPLIER SELECTION

Supplier selection is the procedure used by businesses to find, assess, and work with suppliers. A significant portion of a company's financial resources are expended

during the supplier selection process, which is essential to the success of any organisation.

15.8.1 SELECTION OF RIGHT SOURCE OR SUPPLIER SELECTION

Evaluation, selection, and continual measurement of suppliers is one of the most crucial procedures carried out in enterprises today. Competitive bidding has historically been the main process for allocating purchase orders. Getting three offers and selecting the supplier with the lowest price used to be sufficient in the past. But today, informed buyers invest significant funds to assess a supplier's performance and capacity across numerous domains. Due to the significance of the supplier selection process, teams of cross-functional employees are frequently tasked with visiting and assessing potential suppliers. A wise choice of suppliers today can lessen or even eliminate a variety of issues later.

Choosing the best source or supplier is a crucial component of supply chain management according to the 5R principles.

15.8.2 SOURCES OF INFORMATION ON POTENTIAL VENDORS

You can learn more about the vendors from the following sources (Menon 1997).

1. Current vendors, 2. Business directories, 3. Trade publications, 4. Telephone book, 5. Catalogs from suppliers, 6. Trade shows and events, 7. Marketers, 8. Databases of data, 9. Company staff, 10. Purchase divisions of other businesses, 11. Competitive bids, and 12. Recommendations from sources in a related field.

15.8.3 EVALUATION OF POTENTIAL SUPPLIERS

The following criteria are used to assess potential suppliers:

1. Internal facilities, 2. Sufficient and stable financial conditions, 3. Technological Prospects, 4. Reputation, 5. After-Sale Service, 6. Workplace relations, and 7. An agency or direct manufacturer.

15.8.4 SUPPLIER MEASUREMENT AND EVALUATION

Every supplier evaluation system contains certain subjective elements. Even the use of a sophisticated measurement system necessitates making judgement calls. There is some subjectivity involved in deciding what data to analyse, what measurement system to employ, what performance categories to include, how to weight certain categories, how frequently to produce performance reports, and how to use the

performance data. Furthermore, there are no strict guidelines for the particular characteristics to include in the supplier measurement systems.

15.8.5 STAGES OF SOURCE SELECTION AND EVALUATION

The four steps of source evaluation are as follows:

1. Survey Stage: All potential sources are researched, their capabilities are assessed based on primary data provided by the supplier or vendor themselves, or through advertisements, catalogues, brochures, etc., and a list of those that require further investigation is created. Many businesses maintain a list of authorized vendors. A vendor must submit a particular form in order to be considered for such registration.

(ii) Enquiry Stage: After gathering all necessary pertinent data, a thorough analysis is performed. If necessary, a visit to the factory may accompany the vendor's request for information on a standard inquiry form. His current clients can be questioned on their performance.

(iii) Negotiation and Selection: The investigation stage may show that many of the candidates examined during the survey stage fall short of expectations. In order to discuss business opportunities and clarify terms like credit, quantity discounts, quality control methods, etc., vendors that successfully complete the enquiry stage may be brought in for negotiations. Afterwards, a list of approved and selected suppliers is created.

(iv) Experience Stage: The buyer is now assessing the vendor's performance. Many individuals have the impression that the goal of supplier evaluation is to separate the good from the bad and discard the latter. That is untrue. The goal is to have the vendors perform better in the areas where they fall short, such as quality, turnaround time, after-sale services, etc. It is comparable to an organization's yearly employee appraisal. The goal is to fix their mistakes and enhance their performance. The evaluation is focused particularly on two key points:

(a) Quality: This is determined by whether or not the vendor’s materials are accepted. If the rejection rate is high, the vendor is insufficient. Especially if the commodity is a high-value item where buffer stockpiles are often minimal and purchase is tightly in accordance with accrual usage, rejections frequently result in significant production

issues for the buyer's organisation. Production halts could happen, which would have related effects.

(b) Delivery: Similar issues can develop if the delivery does not occur on time. For instance, the production division of the buyer can be dealing with a low inventory. Stock outs could happen if delivery delays take occurred.

There are many different approaches to assess a provider. The most often used of these three are the categorical technique, the weighted point method, and the cost-ratio method. Below is a description of them:

(i) Categorical Method

There are no quantitative measures made using this approach, which is not very scientific. Because the process mainly relies on the knowledge and skills of the buyer, it is said that the evaluation may be highly arbitrary. The buyer creates a list of all the elements that he believes are important for evaluation and creates performance reports on a regular basis let's say once every three months. To establish the grade to be assigned, the buyer may also consult other parties involved in the vendor's supplies, such as the stores, production, or quality control departments. There may be a performance standard chosen. For instance, a vendor might receive the following grade depending on his point total:

Table 1: Points and Grading of the Vendor

Points Scored	Grade of the Vendor
90 points and above	Excellent
80-90 points	Very good
70-80 points	Good
60-70 points	Satisfactory
50-60 points	Average
40-50 points	Poor
Below 40 points	Very poor

A meeting with the suppliers should be organized to provide a clear evaluation of their performance based on this evaluation. Those who get low marks ought to receive a warning to step up their game. After one or two tries, if they still don't demonstrate any signs of progress, they should be taken from the list of authorized sellers. Given

that comprehensive performance data are not required, it is a fairly affordable solution. It is simple to use because it primarily relies on the memory and judgement of the individual customer. However, if the buyer is disorganized and neglects to conduct the evaluation on a frequent basis, it may turn into a habit and lose all significance and relevance.

(ii) The Weighted Point Method

Here, the assessment criteria are scored using a points system based on the caliber of the goods received, the timeliness of deliveries, and the caliber of the vendor's service. Any number of attributes may be present, and each may be given a weighted rating based on the buyer's assessment of their relative value. However, the sum of all of these points should be 100, and grading can be dictated using a system akin to the category plan. These may be awarded in the form of Quality - 50 points, Delivery - 30 points, and Price - 20 points.

Each performance criterion is quantified using this manner based on real performance. Consider the quality aspect, for instance. Let's imagine that 16 of the 160 lots that were received over the year were rejected due to low quality.

The rating would be: (Number of lots accepted / Number of lots received) x 50 = (144/160) x 50 = 45

Where, quality is given a weight of 50.

The following criteria can be used to measure delivery rating:

(Number of lots delivered on time / Number of lots delivered) x 30

A similar type of calculation is used to determine price.

(Least offer received / Suppliers offer) x 20

Such a grade can be applied to a wide range of elements that the vendor considers crucial.

(iii) Cost Ratio Method

This method entails a complex system for figuring out the actual expenses associated with purchase, following up, transportation, packaging, duties receiving, etc., as well as figuring out the unit cost incurred by the buyer on the material when it is actually received. The lower the supplier's comparable rating, the greater this cost.

The costs that will be charged depend on the goods. The standard considerations are pricing, delivery, service, and quality. In addition to the standard purchase expenses, expenditures related to quality may also include factory visits, approval of samples, inspections, rejections of incoming supplies, losses resulting from manufacturing, such as reworking costs, rejections, etc. Similar to this, delivery-related costs will also cover the cost of follow-up activities like phone calls, telegrams, letters, trips to plants for expediting, adoption of more expensive modes of transportation (such as a truck instead of a railway wagon to accelerate deliveries), etc. The three evaluation techniques mentioned above are meant to empower the buyer to make better decisions about keeping his vendors based on things like integrity, behaviour, attitudes toward improvement, etc. Here, the experience and judgement of the buyer would eventually matter.

15.8.6 DEVELOPING AN INITIAL SUPPLIER EVALUATION AND SELECTION SURVEY

A survey of providers (Monczka et al., 2002) discloses the precise scenario of how customers view the suppliers.

The steps involved in this procedure are as follows, as indicated below:

1. Identify important categories for supplier evaluation, 2. Take into account each rating category, 3. Define and give subcategories weight, 4. Specify the categories and subcategories for the scoring system, 5. Directly assess the supplier, 6. Examine evaluation findings and choose a candidate, and 7. Constantly evaluate supplier performance

1. Identify Important Categories for Supplier Evaluation: The supplier selection criteria are indicated by the categories here. In general, a buyer may assess a supplier's pricing structure, anticipated delivery performance, technological and process capabilities, quality systems, and management capability.

2. Take into Account Each Rating Category: The weight assigned to the performance categories often reflects the relative importance of each category. For instance, if quality performance is significant, a buyer may give that area more weight. The weights given to each category accurately reflect their respective importance. The sum of all the weights must be exactly one.

3. Define and Give Subcategories Weight: If there are any performance subcategories inside each larger performance category, they must be identified as part of this process. For instance, it might be necessary to identify distinct subcategories within the quality systems category. If so, any subcategories or components that make up the quality systems category should be considered in the supplier's evaluation. Choosing how to weight each subcategory within the larger performance evaluation category is also crucial for the buy manager to make.

4. Specify the Categories and Subcategories for the Scoring System: Each score within a performance is defined by this procedure. A performance category can be evaluated using a 5 or 10 point scale. A carefully defined scoring system converts potentially very subjective criteria into a numerical scale for measurement. If diverse people perceive and rate the same performance categories under review equally, scoring metrics are successful.

5. Directly Assess the Supplier: To complete this phase, the reviewer must travel to the supplier's premises and conduct the evaluation there. Site visits take at least a day to complete, and frequently several days. A business must carefully choose the suppliers it has intended to examine when taking into account travel time and post-visit reviews. The evaluation is frequently carried out by a cross-functional team, allowing team members with various backgrounds to provide diverse questions.

6. Examine Evaluation Findings and Choose a Candidate: A reviewer must eventually choose whether to endorse or disapprove a supplier as a source. What actually transpires depends on the specific circumstances being examined. A company may evaluate a supplier for potential future business and a specific contract. A purchaser may have a lot of options if they evaluate vendors before making a purchase. The purchaser is in a position to respond fast once a real demand arises since it has a pre-qualified supplier. A suggestion on whether to accept a supplier for the company is the main output from this phase. A buyer may compare many providers who could be vying for the same purchasing contract. Before making a final selection, the initial evaluation offers a neutral approach to compare suppliers side by side. Based on the findings of the supplier survey, a buyer could opt to work with many

suppliers. The evaluation's goal is to determine if prospective suppliers are eligible for current or anticipated future purchase contracts.

7. Constantly Evaluate Supplier Performance: The evaluation process has more steps after the survey or visit with the provider. When a buyer chooses a provider, that supplier is then required to fulfill the buyer's demands. The focus of procurement managers changes away from the initial assessment and selection of suppliers and toward the proof of ongoing supplier performance improvement.

15.8.7 SUPPLIER MEASUREMENT DECISIONS

When creating a system for measuring suppliers, organizations must make certain important choices. The system's final design and implementation depend heavily on these choices.

What to measure and how to weigh the performance categories should be the basis for decisions. The performance criteria that are subjective (qualitative measures) and which are objective (quantitative measures) should be decided by the organisation. The following three main groups contain the majority of the objective and quantitative factors.

- Delivery performance
- Quality performance
- Supplier cost reduction

Additionally, other characteristics must be taken into account while choosing a provider. 23 attributes were characterized by Dickson (1966) for the supplier selection.

15.9 SUPPLIER SELECTION ATTRIBUTES

The buyer creates a set of evaluation criteria while the choice of provider must be decided. The three types of supplier selection factors are critical, objective, and subjective. For a provider to be further examined, the crucial factor either needs to be present or not. Price, quality, and delivery date are some examples of crucial considerations. For instance, if the quality is deemed crucial, any suppliers whose quality falls below a predetermined threshold may be disqualified. The variables that can be valued financially are considered objective. Subjective elements are those that

are hard to measure but are significant enough to justify attention in the decision-making process.

15.10 IMPORTANCE OF SUPPLIER SELECTION ATTRIBUTES

Supplier selection criteria are a critical factor in all evaluation and selection processes for suppliers. These factors are crucial in the initial assessment and choice of providers. The different steps, including site visits, revisions to the evaluation, decisions, and follow-ups, are carried out based on the weights assigned to the supplier selection criteria. The following stage is to analyse each potential supplier after a list of potential suppliers has been created, in order to reduce the list to the predefined number with which the buyer chooses to place an order. Comparing the suppliers' capacities to deliver the desired quality, quantity, pricing, service, etc. is how the evaluation process is carried out. Even in supplier evaluation, the weighted point technique is used to assign the supplier selection criteria weights. Suppliers are assessed using the supplier selection criteria in other evaluations as well. In supply chain management, purchasing initiates and controls the cycles. Source selection is a critical issue for decision-making in purchasing, and criteria are crucial for the evaluation and selection of suppliers. Many scholars had used these characteristics in different ways when deciding how to evaluate and choose providers. The literature discusses many works on the qualities.

CHECK YOUR PROGRESS

Q 5: Which criteria are used to assess potential suppliers?

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Q 6: Mention some supplier selection attributes.

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15.11 LET US SUM UP

Supplier selection is the procedure used by businesses to find, assess, and work with suppliers. The buyer should be aware of the required quality standards, quantity, and timing well in advance. Five guiding concepts have been used to develop the idea of buying.

A supplier evaluation is the procedure used to rate and accept prospective suppliers using both quantitative and qualitative evaluations. To measure and monitor the performance of the current set of suppliers in order to lower the costs of the goods required on a regular basis, reduce the likelihood of risk involved, and promote continuous improvement in their performance, the overall process and approach of the Supplier Evaluation are typically used. The Seven Cs of Supplier Evaluation was initially presented by Dr. Carter, director of DPSS Consultants, in a 1995 publication in the Journal of Purchasing and Supply Management. Later, he expanded the model by three new Cs.

Supplier selection is the procedure used by businesses to find, assess, and work with suppliers. A significant portion of a company's financial resources are expended during the supplier selection process, which is essential to the success of any organisation.

The buyer creates a set of evaluation criteria while the choice of provider must be decided. The three types of supplier selection factors are critical, objective, and subjective. For a provider to be further

Supplier selection criteria are a critical factor in all evaluation and selection processes for suppliers. These factors are crucial in the initial assessment and choice of providers. The different steps, including site visits, revisions to the evaluation, decisions, and follow-ups, are carried out based on the weights assigned to the supplier selection criteria.

15.12 FURTHER READING

Benton, W.C. Jr. & McHenry, Linda F, Construction Purchasing and Supply Chain Management, Tata McGraw Hill, New Delhi, 2010.

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15.13 ANSWERS TO CHECK YOUR PROGRESS

Ans. to Q No 1: Supplier selection is the procedure used by businesses to find, assess, and work with suppliers.

Ans. to Q No 2: The 5 R principles in purchasing are right quality, right time, right price, right source, and right quantity.

Ans. to Q No 3: A supplier evaluation is the procedure used to rate and accept prospective suppliers using both quantitative and qualitative evaluations.

Ans. to Q No 4: The 10 Cs are standards for judging a potential supplier's suitability. These are: 1. Competency, 2. Capacity, 3. Commitment, 4. Control, 5. Cash, 6. Cost, 7. Consistency, 8. Culture, 9. Clean, and 10. Communication.

Ans. to Q No 5: The following criteria are used to assess potential suppliers 1. Internal facilities, 2. Sufficient and stable financial conditions, 3. Technological Prospects, 4. Reputation, 5. After-Sale Service, 6. Workplace relations, and 7. An agency or direct manufacturer.

Ans. to Q No 6: Some supplier selection attributes are price, quality, and delivery date.

15.14 MODEL QUESTIONS

Q 1: Discuss the general purchasing procedure of a company.

Q 2: Explain the 5-R principles of purchasing.

Q 3: What is the importance of supplier evaluation?

Q 4: Mention the benefits of supplier evaluation.

Q 5: Briefly explain Carter's 10 Cs of supplier evaluation.

Q 6: Discuss the procedure of supplier selection.

Q 7: What are the importances of supplier selection attributes?

UNIT 16: USE OF BEST PRACTICES AND INFORMATION TECHNOLOGY (IT) IN SUPPLY CHAIN MANAGEMENT (SCM)

STRUCTURE

LEARNING OBJECTIVES

After studying this unit, you will be able to:

- Understand the concept of information technology
- Discuss the role of IT in SCM
- Understand the relation between information technology and SCM

16.1 INTRODUCTION

Supply chain management (SCM) describes the practices and processes used to ensure an effective and efficient movement of materials and information among a business and its direct suppliers and customers. SCM includes stakeholders from internal and external supply chain teams as well as various business units. The effectiveness of supply chain management depends upon the appropriate framework and data used by management to make the right decisions.

However, it's not an easy task to reduce the risks and overcome all the obstacles that crop up in these complex supply networks. The five fundamental phases of supply chain management are planning, acquiring materials and suppliers, production, delivery, and returns. Each phase of the process has its applications and challenges. The progressive use and implementation of information technology (IT) in supply

chain management can be contributed to the overall organizational performance and its improvements that leads to value creation. The main focus of this unit is on understanding how IT may be used to manage supply chain management.

16.2 CONCEPT: INFORMATION TECHNOLOGY AND SUPPLY CHAIN MANAGEMENT

Supply chain management (SCM) is focused on the flow of goods and information across the organisations that form the supply chain, including suppliers, manufacturers, service providers, and consumers. These organisations connect to buy, manufacture, transport, and distribute products and services from suppliers to the end-users.

Nowadays, information and technology must be created broadly to include the information that organisations produce and use, as well as a diverse range of growingly convergent and connected technologies that process the information with the beginnings of the personal computer, the internet access, optical fiber networks, and the World Wide Web. The availability and economical information resources facilitate simple connections and remove information-related interrupts in any supply chain network. This implies that organizations are shifting toward a concept termed as Electronic Commerce, in which transactions are completed using a number of digital media, such as electronic data interchange (EDI), Extensible Markup Language (XML) electronic funds transfer (EFT), bar codes and scanner, fax, automated voice mail, etc. The old system of "paper" transactions becomes obsolete. There is no need for paper purchase receipts, purchase orders, invoices, and the conventional accounts payable "matching" process for the organisation. All necessary information is recorded electronically, and related transactions are carried out with minimal human intervention. Latest developments in database structures enabled part numbers to be acquired, coded, stored in databases, and digitally ordered. With the implementation of effective information systems, the need to monitor and control inventory levels, place an order, and faster orders will soon be one thing of the past.

16.3 BEST PRACTICES FOR SUPPLY CHAIN MANAGEMENT

Integration, operations, purchasing, and distribution are considered an additional four dimensions of a supply chain. A successful supply chain management strategy is built on these major areas.

Companies can enhance their supply chain management in a variety of ways to boost productivity, minimize costs, and achieve customer satisfaction. Following are some of the supply chain management techniques that can help businesses start experiencing these advantages.

1. **Recruit and Develop Supply Chain Professionals**

   The growth of supply chain systems is being accelerated by technological innovation and a globalization supply chain, while there is a shortage of competent personnel to manage these operations. Only a few supply chain leaders feel confident in their team's ability to compete in the current market.

   Most supply chain leaders are already using staffing companies that focus on supply chain recruitment. Another efficient method of finding qualified applicants with the required abilities is to build links with colleges and to create a channel of students in supply chain, logistics, and product development programs for internships, entry-level jobs, and professional growth.

   It is crucial to develop opportunities programs for supply chain personnel to measure the progress of their job. That means it indicates, making investments in top qualitative training to enhance the skill sets of present personnel. Companies can sustain employees and build a well-rounded workforce that is knowledgeable about all dimensions of supply chain operations by concentrating on cross-functional job mobility and developing clear blueprints for promotions.

2. **Align the Supply Chain Team**

   Building a successful supply chain depends on effective cross-business execution. However, each component of the supply chain functions as a separate entity, divided by business units, different priorities, differences in time and resources, and even geographical boundaries. Overcoming these

differences of skilled workers, there is a need of searching for new talent as per required knowledge.

How can supply chains remain as effective with such diverse teams? A primary function that integrates operations and communication between the various business units could be helpful by promoting collaboration and coordinating work. By leading comprehensive discussions about the advantages and disadvantages of the present and proposed processes, including the effects of variations on each element of the value chain, this person would create standardized supply chain processes.

Once it is finished, each supply chain team can put the defined procedures into use and make any necessary changes. Above all, each should have their own opinion in supply chain operations, from senior-level decision-makers to warehouse employees, to ensure that objectives and procedures are in line with one another and to promote innovation.

3. **Establish Alliances with Suppliers**

Framing strong relationships with suppliers is essential to the success of the supply chain since it frequently reduces costs and increases reliability. These partnerships should be mutually beneficial if both parties approach them as such. That necessitates balancing problem-solving approaches and jointly developing objectives that benefit both sides.

Apart from the fundamentals, including skill, cost, and timeliness in supply partner screening, businesses should search for suppliers who share similar values and principles. Issues like labour law violations create a negative effect on the companies, issues like environmental sustainability and social responsibility are crucial points of agreement.

4. **Improved Demand Forecasting**

Companies incur costs when they keep too much or too little product on hand. The former could indicate that inventory isn't relocating because of sales dropped or the company overestimated demand and overvalued. The second could indicate that sales are increasing but supply is not, causing businesses to

miss out on revenue opportunities. Both are the outcomes of inaccurate demand forecasting.

Forecasting errors have a significant impact on the bottom line. Appropriate demand forecasting allows businesses to have the right quantities on hand to meet existing and future needs, and it considers historical revenue, sales forecasts, seasonality, and promotions.

5. **Increased Supply Chain Visibility**

Constant correspondence, timely updates, and dependable documentation are critical components of an efficient supply chain. Businesses require accurate end-to-end supply chain visibility and thus must account for all aspects, including suppliers, associates, warehouses, and shipping carriers.

Real-time data sharing throughout the supply chain offers a bird's-eye view of the entire chain as well as more detailed information about each node. The advantages of this visibility are even passed on to the customer in the form of real-time delivery tracking. The advantages of this visibility are even reaching the customer in the form of real-time delivery monitoring.

6. **Invest in Technology and Software**

To monitor their supply chain operations, most businesses use different systems. Basic programmes like Excel spreadsheets and applications which are then integrated well with enterprise resource planning (ERP) system. The issue in various parts of the supply chain frequently use separate systems and manual processes to conduct supply chain tasks. In today's fast-paced business environment, this can be an expensive mistake.

7. **Investment in Environment and Social Sustainability**

Having a leader in this field can help a company's brand value, credibility, and bottom line, even if compliance with numerous laws and regulations is the main driver of supply chain sustainability activities. Now a days, consumers are becoming more concerned about the environment and taking greater attention to how sustainably businesses operate.

Access to real-time statistics and supply chain analytics are essential for a successful, efficient supply chain because they ensure information strategies

and allow for quick action when it is required. Supply chains are already becoming more productive and economical because of automation, predictive data analytics, and digital records. The most effective tool for supply chain optimization, however, is an all-inclusive supply chain management solution which can tackle every area of the business, from all operational tasks to sales and marketing to finance.

CHECK YOUR PROGRESS

Q1**.** What is SCM?

Q2. What is ERP?

16.4 INFORMATION TECHNOLOGY IN SUPPLY CHAIN MANAGEMENT

In the context of Information Technology (IT) system, it means the application of inter-organizational systems for information transfer and/or communication across organisational boundaries. To achieve organisational and individual competitiveness, improve higher service levels, reduced inventory, lesser supply chain costs, and reduce electronic risks, the incremental advancement of information technology (IT) and digital communication in supply chain management (SCM) is playing a pivotal role in maximising supply chain network flow decisions. IT in SCM is also necessary to achieve integration and efficient information sharing inside and across organisations. With the aid of quick advancements in technology and IT applications, such as Enterprise Resource Planning (ERP) software, Radio Frequency Identification (RFID), Bar Code, Electronic Commerce, and Decision Support Systems, organisations are shifting toward a virtual supply chain. It is also simple to implement in reducing electronic risks.

The crucial role of IT in SCM is as follows:

i. **Electronic Records Management**

Electronic Records Management (ERM) refers to all paperless commercial transactions facilitated by Enterprise Resource Planning (ERP) Systems, Automatic Identification (Auto ID), and Electronic Data Interchange (EDI). The goal of using ERM in SCM is to provide operational accountability, which is key to reducing cybercrime risks (e-risks) caused through e-communication.

ii. Bar Code and Scanner

When used as a part of a communication system, bar codes contain data in a magnetic or optical mode in either a picket-fence orientation or a ladder orientation. The organisations use it in supply chain operations to manage the tracing and tracking of goods and services at each stage. Since it encodes a number or code in a way that machines can interpret, it also provides the essential consistency and accuracy of information that is useful to eliminate errors.

Bar code helps us to reduce risk in the supply chain which is rising due to manual oversight or fraudulent data entry by an insider.

iii. Radio Frequency Identification (RFID)

The technology known as Radio Frequency Identification (RFID) is designed to take advantage of tags that transmit and receive an object's identity in the shape of a unique serial number via wireless radio signals as well as readers, which gather the information the tags broadcast and send it to the business's information system for additional examination and analysis.

By implementing RFID technology, the supply chain enhances better monitoring, counterfeit detection, theft prediction, dependable and accurate order forecasting, better productivity, lower operating cost, and transparency into customers' requirements. RFID improves forecasting and planning skills while minimizing channel volume and enabling authentication.

iv. Artificial Intelligence (AI) Systems

Artificial intelligence (AI) is the study of computer-based inference methods and concepts, as well as the symbolic representation of the knowledge that feeds as conclusive approach. The term intelligence states the cognitive abilities that includes learning logically, interpreting language, dealing with problems, and acting in a way that would be seen as intelligent in a human being.

v. Extensible Markup Language (XML)

This is a way to packing information for transmission over the internet. It is a very effective technique to organise information so that anyone can easily

access using the internet or web-based technology. The use of electronic data interchange may be replaced with XML.

vi. Electronic Data Interchange (EDI)

Electronic Data Interchange (EDI) is defined as the computer-to-computer exchange of business documents and/or data in a standard, organised, machine-retrievable data format (a computer can interpret the data without user intervention), and is most often used to adhere strictly to the application of EDI communication standards like EDIFACT. It took the place of the conventional postal, courier, or fax methods.

It was used for paperless communication inside the supply chain network to share operational data order processing, availability of information, inventory controlling, accounting, transportation, higher productivity, better customer service, improved tracing and expediting, economic viability, competitive advantage, and enhancement invoicing within the inbound and outbound supply chain. EDI is also extremely beneficial in mitigating the Bullwhip effect, and supply chain enterprises can overcome the information of distortions and exaggerations by utilising technology to support real-time sharing of overall demand and supply information.

i. Enterprise Resource Planning (ERP) system (e.g. SAP, Oracle, PeopleSoft)

Enterprise Resource Planning (ERP) is an organisational planning process that revolves all over core business operations and has all rational and reasonable interfaces to achieve free flow of information through the organisation within the supply chain network, often linked up to external systems.

ERP systems assist organisations in automating and integrating with their Supply Chain Management and operational processes. They essentially allow the acquisition of data without manual intervention for the entire business together into a single software package from raw resources to the customer base with all information ow. ERP systems may provide benefits such as cost savings in internal operations, improved customer service, efficiency across the global supply chain, and network relationships.

In the new generation ERP, the entire supply chain management theory is incorporated extending the planning idea to trading partners where greater visibility throughout the organisation is possible, and the idea of digital organisation is backed using electronic commerce. It will have an impact on Just in Time (JIT), Business Process Reengineering (BPR), and alteration on organisational structure, individuals, and management.

SAP, Oracle, Baan, and People Soft are the market leaders in ERP software packages with a seamless connection by incorporating a single data model, establish a common understanding about what the shared data reflects, and constructing a set of rules for network connectivity. These ERP packages are critical in helping organisations minimise fraud and e-risks in one‘s supply chains.

ii. Distribution Requirement Planning (DRP)

Distribution Requirement Planning (DRP) is a management operation that connects warehouse operations (a store, logistics system, or warehouse that carries goods for sale) and transportation prerequisites to confirm that supply sources (a third-party distributor, a local delivery point, or a factory) can reach customers. DRP rejuvenates inventories in local as well as global warehousing systems using time-phased logic. DRP-II expands DRP contains the planning of important distribution network for resources such as warehouse storage, manpower concentration, and transportation capacity.

iii. Electronic Supply Chain (E-Supply Chain)

Electronic supply chain (ESC) is a supply chain which is managed digitally between or among participating associations via EDI or the Internet. It is essentially a Virtual Supply Chain that connects organisations to enable them to acquire, sell, and relocate goods, services, and cash using Internet-based applications to buy and sell as well as exchange information to their downstream or upstream counterparts.

iv. Electronic Commerce (E-commerce)

Electronic commerce (e-commerce) referred to the tools and techniques used to run a business in a paperless environment. E-commerce comprise electronic

data interchange (EDI), electronic mail, electronic funds transfers like NFT, electronic publishing, image processing etc. As a result, it plays a significant role in integrated supply chain management (SCM) and changing market complexities in the form of the following.

- E procurement
- Digital Signature
- Smart Cards
- E- Auctions
- Wireless Internet
- Intranet/Extranet
- Spread sheet (Microsoft Excel)
- World Wide Web
- Data Warehousing and Data Mining
- E-business
- Web Service
- Mobile Agent

CHECK YOUR PROGRESS

Q3. What is RFID?

Q4. What is E-Supply Chain?

16.5 BENEFITS OF INFORMATION TECHNOLOGY IN SUPPLY CHAIN MANAGEMENT

An organization can develop a wide range of advantages by implementing Supply Chain Management (SCM) through its best practices and advanced technology. Manufacturers and distributors assume benefits like efficiency measures, sales growth, and shorter duration. Supply chain technologies have a significant impact on both direct and indirect business.

The Following five key advantages of technology use in supply chain management are:

1. **Improved Access to Information**

An effective supply chain technology links previously isolated data. An information storage facility exists when distinct segments of organisation supply chain (such as people, software systems, or outside trading partners) would not transfer information in a consistent, reliable, and frequent manner. Storage facilities can establish when functions and departments within an organisation (such as sales, production, and

distribution) need not share same information. As a result, forecasts are inaccurate, misleading implementation, and reaction times are lengthy.

With the advancements in information technology, organizations can examine inventory status, warehouse operations, and product movement, and much more rapidly and efficiently, better customer satisfaction.

2. **Improved Insight**

Insight is the foundation for a key decision. It is simpler to review data, acquire insights (on issues like customer demand, storage/transportation constraints, and supplier lead times), and improve decisions that have both indirect impacts on the functioning of the supply chain as whole supply chain technology.

In addition, supply chain technology has features that promote faster and better decision-making. This enables organisation to process data and run simulations in real-time based on numerous circumstances, enabling them to evaluate potential solutions. By understanding the tradeoffs associated with each response, better decisions can be made.

3. **Improved agility**

Agility in the supply chain is improved through technology. With improved access to information, leaders are able to handle issues or create new business opportunities much faster. Business won't work with agility if processes, methods, or organisation have barriers. Each operation must be observed throughout the whole supply chain in order to assess its impact and develop preventative measures.

The "best" tasks will generally be suggested by good supply chain technology, which business can change when better opportunities become available. This skill is essential in dynamic environment. Suppliers can integrate planning and execution excel that ensure, everyone in the organisation is informed of new decisions.

4. **Better Collaboration**

Collaboration is the process wherein two or more people or businesses cooperate with one another in order to achieve a common objective. Successful supply chains incorporate technology and processes that facilitate, supervise, and analyse collaboration between people, groups, and organisations in order to sustain a consistent flow of data, analysis, and choices. Collaboration is essential to fulfilling

the growing demands of multichannel consumer's choice, timeliness, and flexibility. Organizations that are technology-enabled can only provide the agility and reactivity necessary to successfully negotiate these objectives.

One distinguishing feature of extremely competitive supply chains is their potential to maintain synchronisation over a wide network.

Retailers and producers who have achieved this degree of collaboration consistently increase their profitability, including higher inventory turns, cost benefits, and service levels.

5. **Improved Customer Loyalty**

Due to the issues the multichannel consumer experiences, supply chain technology is more important ever for retaining and gaining new customers. Customers want to be sure of the availability of the product before they visit the store and make a purchase, Retailers make sure they have the essential goods in their stores whether customers make in-store purchases or place online orders. As a result, customer satisfaction and loyalty are improved. It would be not possible without supply chain technology's visibility, accuracy, and agility.

16.6 PRESENT ISSUES OF INFORMATION TECHNOLOGY (IT) IN SCM

IT has a significant role in improving supply chain operations. However, adopting new technology usually includes some level of risk, particularly if it challenges present processes and organisational cultures.

1. Problems in implementation of SCM software

Commonly occurring problems when implementing new software are as follows:

- Suppliers and Partners are unable to compromise
- Employees struggling to cope with new process and tools
- Lack of practice and training before execution
- Communications barriers internally and externally
- Customers concerns, complaints and poor experiences

Before implementing the new system, organisation should consult, negotiate, and communicate with every individuals of the supply chain to reduce these risks.

2. Factors affecting success of SCM software

In early stage, organisation need to consult with its suppliers and customers. Some organisations may not be able to transfer the volume of data that a supply chain software is capable. Customers might have issues with current system and suggest either to improve or remove the funds invested in the new software.

Organisations needs to share with associates the details of quantities, inventories level, customer orders, delivery status, demand forecast. So better information sharing can solve the above supply chain issues.

3. Cultural challenges

Cultural Challenges is the major issues for implementing supply chain management software. Purchasing process modifies the role of supply chain inside the organisation. The requirement for new software can be avoided by maintaining minimal stock or optimal availability of raw materials, which can lower costs and increase performance.

16.7 LET US SUM UP

- The concept of effective management in supply chain activities as a requirement for the realisation of total cost efficiency and also as a fundamental for assuring their ability to value their goods and services to compete with each other and exceed the marketplace.
- Information Technology improves competitiveness and create technologies that help organisation in SCM, in order to achieve integration and efficient information sharing inside and across organisations.
- To monitor their supply chain operations, most businesses use different systems. Basic programmes like Excel spreadsheets and applications which are then integrated well with enterprise resource planning (ERP) system.
- IT in SCM is necessary to achieve integration and efficient information sharing inside and across organisations. With the aid of quick advancements in technology and IT applications, such as Enterprise Resource Planning (ERP) software, Radio Frequency Identification (RFID), Bar Code, Electronic Commerce, and Decision Support Systems, organisations are shifting toward a virtual supply chain.
- Implementation of IT in SCM faces technological issues that includes some level of risk.

16.8 FURTHER READINGS

- Sunil Chopra and Peter Meindl (2015) *Supply Chain Management: Strategy, Planning, and Operation; Fourth edition*
- https://www.netsuite.com/portal/resource/articles/erp/supply-chain-best practices.shtml
- https://www.techtarget.com/searcherp/definition/supply-chain-management-SCM
- https://stockarea.io/blogs/benefits-of-technology-in-supply-chain-management/

16.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Supply chain management (SCM) describes the practices and processes used to ensure an effective and efficient movement of materials and information among a business and its direct suppliers and customers.

Ans to Q No 2: Enterprise resource planning (ERP) refers to a type of software that organizations use to manage day-to-day business activities such as accounting, procurement, project management, risk management and compliance, and supply chain operations.

Ans to Q No 3: The technology known as Radio Frequency Identification (RFID) is designed to take advantage of tags that transmit and receive an object's identity in the shape of a unique serial number via wireless radio signals as well as readers, which gather the information the tags broadcast and send it to the business's information system for additional examination and analysis.

Ans to Q No 4: Electronic supply chain (ESC) is a supply chain which is managed digitally between or among participating associations via EDI or the Internet.

16.10 MODEL QUESTIONS

Q1. What is the role of IT in SCM?

Q2. Explain the benefits of IT in SCM?

Q3. Discuss ERP?

Q4. What are the challenges faced towards application of IT in SCM?