MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(AN AUTONOMOUS INSTITUTE- UGC, GOVT. OF. INDIA)

LOGISTICS AND SUPPLY CHAIN MANAGEMENT

DIGITAL NOTES

SECOND YEAR FIRST SEMESTER (2020-21)

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution-UGC, Govt. of India)

MBA II YEAR I
SEM

R18MBA30 LOGISTICS & SUPPLY CHAIN MANAGEMENT

(Marketing Elective)

Course Aim:

- It provides knowledge, skill, and competence to effectively managed logistics and supply chain management of any small or large organisations.

Learning Outcome:

- The students enable themselves in implementing cost savings, latest techniques, and competitive advantage in the field of logistics and supply chain management.

Unit-I Logistics and Competitive Strategy

Competitive Advantage: Gaining Competitive Advantage through Logistics - Integrated

Supply Chains. Competitive Performance: Models in Logistics Management - Logistics to Supply Chain Management - Focus Areas in Supply Chain Management. Customer Service and Retention:

Basic Service Capability - Value added Services.

Unit-II: Measuring Logistics Costs and Performance

The Concept of Total Cost Analysis: Principles of Logistics Costing - Logistics and the Bottom

-Line. Impact of Logistics on Shareholder Value: Customer Profitability Analysis - Direct Product Profitability - Cost Drivers and Activity-Based Costing.

Unit-III: Logistics and Supply Chain Relationships

Benchmarking the Logistics Process and SCM Operations: Mapping the Supply Chain

Processes - Supplier and Distributor Benchmarking - Setting Benchmarking Priorities. Identifying Logistics Performance Indicators: Channel Structure - Economics of Distribution - Channel Relationships - Logistics Service Alliances.

Unit-IV: Sourcing, Transporting and Pricing Products

Sourcing Decisions and Transportation in Supply Chain: Infrastructure Suppliers of Transport

Services - Transportation Economics and Pricing - Documentation - Pricing and Revenue Management - Lack of Coordination and Bullwhip Effect - Impact of Lack of Coordination. CRM - Internal Supply Chain Management.

Unit-V: Managing global Logistics and Gobal Supply Chains

Logistics in a Global Economy: Views of Global Logistics - Global Operating Levels -

Interlinked Global Economy. The Global Supply Chains: Global Supply Chain Business Processes - Global Strategy - Global Purchasing - Global Logistics - Channels in Global Logistics - Global Alliances -Issues and Challenges in Global Supply Chain Management.

REFERENCES:

- Donald J.Bowersox and David J.Closs: “Logistical Management” The Integrated Supply Chain Process, TMH.

- Edward J Bradi, John J Coyle: “A Logistics Approach to Supply Chain Management, Cengage Learning, New Delhi.
- Sunil Chopra and Peter Meindl: “Supply chain Management: Strategy, Planning and Operation”, Pearson Education, New Delhi.
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- Manish Bansal, Babita Singla: “Retail and Supply Chain Management “, Kalyani Publishers, NewDelhi.

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DEPARTMENT OF BUSINESS MANAGEMENT

PREFACE

Course : **MBA II Year I SEM**

Academic Year : **2018-19**

Name of the Subject : Logistics and Supply Chain Management

Prescribed Textbook: Donald J.Bowersox and David J.Closs: "Logistical Management" The Integrated Supply• Chain Process, TMH.

Nature of the Subject :**Elective Paper**

UNIT I

Competitive Advantage in Logistics:

Logistics aims to meet the increasing demands of customers at the lowest possible cost, managing the flow of materials and information in every activity that makes up the logistics system, from the supplier to the end consumer.

As a result of its purpose, the logistics can put the company ahead of its competitors in two ways:

1. Advantage of providing value by offering services such as delivering faster or scheduled, product assembly, etc …, creating customer value.

2. Providing cost advantage, partnering with suppliers and business customers, making activities and processes more efficient, by compensating for the reduction of total logistics costs, etc …, putting on the market with lower prices than the competition.

- A company can have advantage of value, for example, the small retailer to offer a differentiated service as prompt delivery of a wide variety of goods that can be bought in small quantities and with Own vehicles to monitor and ensure the quality of service.

- Use of transit-points, which are sheds used only to spend a large amount of cargo that arrives there for smaller vehicles that perform the delivery to the end customer, making transport cheaper and reducing delivery time.

- Passive telemarketing and online at the company website queries to shorten the order cycle.

funding provided by the company itself, which may also include assistance technique.

One possible strategy used by the company is as follows:

- All products placed in a single distribution center to keep them available and reduce shipping costs and delivery times.

Gaining Competitive Advantage in Logistics:

Businesses are always searching for a competitive advantage that will set them apart from others offering a similar product or service. The competitive advantage is gained by offering a customer services of greater value, lower pricing or greater benefits. Without a distinguishing advantage, what is the lure for a potential customer to select one provider over the other? Businesses without a competitive advantage will have a harder time maintaining their relevance in the market.

In today's global economy, being adaptive and flexible is the key to staying relevant. Changes to the logistics industry have been driven by reasons such as the price of oil, labor costs, security, trade regulations, labor stoppages, vessel capacity and technology. Having the personnel, practices and tools to proactively adapt to these changes will give a company the competitive advantage.

Here are a number of solutions that if used will help a company gain the competitive advantage:

- Shipper Associations / Consortiums: By being a part of a shippers association, a business can benefit from lower transportation rates due to the competitive negotiations and economies of scale.

- Transportation Management Systems (TMS): Such platforms allow a business to manage their data flow more efficiently and allows for visibility of performance and cost. Keeping an eye on costs, transit times, delivery performance, freight claims, and compliance will allow for strategic thinking and put a company a step in front of its competitors.

- Auto-Tender Functionality: This feature allows freight to be tendered directly to carriers, greatly reducing the time spent scheduling a shipment. When set up using a least cost carrier, the savings combined with the efficiency gain provide a great advantage.

- Advanced Tracking: Visibility and transparency are becoming more and more important in business. Advanced tracking features have been adopted to give customers real-time information on where their goods are.

Integrated supply chains:

Integrated supply chain is a process wherein every phase from procurement of raw materials to production, quality control to packaging, distribution or supply to eventual delivery is streamlined and inseparable. It is a holistic collective of the various processes, which may be under complete control of one company or multiple partners will come together to have collective control over the integrated process. Integrated supply chain or supply chain integration has several advantages which is why most companies have switched to integrated supply chain management.

ADVANTAGES OF INTEGRATED SUPPLY CHAIN

Increase in Revenue

Integrated supply chain allows a company to focus on assets that would allow the organization to reap more rewards. There are always facets of a business that will have a more pronounced impact on the revenues and hence must be optimized as much as possible. Integrated supply chain management allows companies to prioritize and focus on the specialized assets that would improve their products, increase market share or enhance operating profits.

Controlled Costs

Integrated supply chain will always reduce costs, especially transactional costs which are unavoidable among subsidiaries, partners or vendors. Having a centralized or integrated supply chain management, a company is essentially doing away with frills that would have otherwise delayed the process and would have also incurred needless costs.

Quality Control

Supply chain integration helps in ensuring quality. When there is a concerted attempt to keep a stringent compliance check, it is immensely difficult to approve or pass along faulty products. There is only one authority overseeing compliance throughout the process.

Competitive Edge

With financial advantages, stricter compliance and better products, a company will be able to fight its competition and emerge as the winner with integrated supply chain management.

Competitive performance in Supply Chain Management

Effective supply chain collaboration is increasingly seen as a major competitive advantage viewing the business process as something that extends beyond the enterprise, and understanding the impact of decisions on key customers and suppliers will become a critical success factor. The ability to effectively collaborate with several other stakeholders outside your organization will become increasingly important. Successful players will operate comfortably in virtual and perhaps even transient cross-functional teams, providing domain expertise to some and leadership skills to others. The ability to rapidly process

information, filtering out the noise while gleaning the relevant pieces is the key to understanding that disconnected pieces of information are indeed part of a larger event. This knowledge can then be used to proactively plan several potential decision scenarios and to execute one or more of them in a pre-emptive mode.

In conclusion it can be said that Supply chain management is of great importance to any enterprise in order to achieve competitive advantage in an attempt to reduce production costs and enhance relationships with co-makers such as suppliers and distributors. In a nut-shell the lesson is obvious, a well-run supply chain can give a huge competitive advantage and help achieve success; a badly run one leads to dissatisfied customers and commercial failure.

Models in Logistics Management

Model 1: Standalone optimization of different logistics activities

Several major logistics providers use the standalone optimization model. The model's organizational plan is built on three key principles:

- Dedicated business units for each activity
- Separately run and locally managed business units, spanning from strategy definition to operations
- Decentralized and streamlined structure, with the head office serving as a consolidating holding

This model best serves small to midsize customers, providing them with flexible, custom-made solutions for each activity. Synergies between businesses are not the customers' main commercial focus.

Model 2: Management of all logistics activities, based on geography

The second model, adopted by companies such as Kuehne & Nagel and Ceva, is more structured and designed to support a global network strategy. The model's organizational plan is based on the following principles:

- Organized by country or region, grouping together different activities
- Managed by and under the responsibility of both regional VPs and country managing directors

- Matrix structure is determined by geography and activity, with mirroring of functions—such as sales and operations—and replication of vertical markets at all levels of the organization

The geographically based management model helps providers develop a global network around targeted trade lanes and grow that network by attracting a broad range of customers. It enables providers to take advantage of cross-selling opportunities, as well as win over global customers in search of solutions that integrate different logistics activities.

Logistics to Supply Chain Management

Logistics management is that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverses flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements.

Logistics Management – Boundaries and Relationships

Logistics management activities typically include inbound and outbound transportation management, fleet management, warehousing, materials handling, order fulfillment, logistics network design, inventory management, supply/demand planning, and management of third party logistics services providers. To varying degrees, the logistics function also includes sourcing and procurement, production planning and scheduling, packaging and assembly, and customer service. It is involved in all levels of planning and execution--strategic, operational and tactical. Logistics management is an integrating function, which coordinates and optimizes all logistics activities, as well as integrates logistics activities with other functions including marketing, sales manufacturing, finance, and information technology.

Focus areas in Supply Chain Management

The volatility in the global manufacturing environment demands an optimized high performing supply chain. Lowest price, shortest lead time, or acceptable quality are strategies that can no longer be relied on by companies.

When was the last time you looked at how effectively your supply chain is performing? Is your supply chain optimized? The optimization process begins with a comprehensive understanding of your supply chain. The CMTC Manufacturing blog recommends the following five critical areas that require management attention to achieve an optimized high performing supply chain:

1. Alignment – The supply chain strategy needs to actively align and support the corporate goals of future growth, innovation and sustainability.

2. Value – The supply chain strategy should identify suppliers who will assist us in achieving our future goals through collaboration and providing a means of growing our mutual businesses through sharing of ideas, capabilities and capacity.

3. Managing Risk – A well thought out Risk Management Plan is necessary to prevent supply chain interruptions and unexpected events that would render our product uncompetitive, unavailable, or unattractive to the marketplace.

4. Comprehensive View – The performance of the entire supply chain must be examined in order to identify current and potential future constraints. If we only look at suppliers who represent current bottlenecks we will fail to recognize potential future constraints.

5. Metrics – We can't improve what we don't measure. If we don't measure the "right things" the problems will persist.

Customer service and retention

In a competitive environment, customer service is an important means of differentiation from competitors and of customer loyalty. Setting the components of customer service and quantifying the level of service are means of keeping the company's competitive advantage. The purpose of the logistic system is to serve customers as well or better than the competition and at the same time to make profits. Customer service is the chain of sales activities and meeting customer requirements, which begins with receiving the orders and ends with the delivery of the products to customers, in some cases continuing with equipment maintenance services. The role of customer service is to provide time and place utilities in the transfer of goods and services between the manufacturer and the customer. In another form, the product has no value until it is in the hands of the customer. [6] Availability is a complex concept, influenced by many factors that together form the customer

service. These factors include the frequency of the delivery and its safety, the stock level and the time interval the order is released. Companies that compete only on product characteristics have a big disadvantage against companies that enhance the basic product with value added services. Whoever first said that "people do not buy products, but benefits" was Theodore Levitt, one of the greatest thinkers in marketing. The product in the hands of the customer is much more valuable than the product in the warehouse of the unit. [4] The distribution service was, in this case, the added value source. But in other cases, advertising, branding, packaging can increase the product value perceived by the customer. The logistic system involves the connection between the business and its customers for the procurement and stockpiling of materials, the implementation and the physical distribution of products, so that the firm manages to meet customer requirements. The logistic system provides an overview of the movement of goods and services from the supplier to the end user and the movement of payments and information in reverse sense. Between the business and the customers there are close relationships that allow identifying the benefits from the strategic point of view of the system functionality. The management's attention should focus not only on the business, but also on the interactions giving logistical system functionality. Some experts consider that logistics has the role to ensure the effective coverage of the marketing requirements. Among the marketing mix elements - product, price, promotion and placement - in practice the focus was more on the first three. "The placement or the distribution of the right product, in the right place and at the right time" has rarely been considered as part of the marketing mix.

Basic service capability

Three fundamental dimensions of customer service were identified: • Availability • Performance • Reliability The general conclusion is that all three aspects of service are important. However, a given service attribute may be more or less important depending on the specific marketing situation.

1._AVAILABILITY:

Availability is the capacity to have inventory when it is desired by a customer. • Inventory can be classified into two groups: 1. Base stock determined by forecasted requirements and held to support basic availability, 2. Safety stock to cover demand that exceeds forecasted volumes and to accommodate unexpected operational variances. Availability is usually based on the three performance measures they are: • Stock out frequency • Fill rate • Orders shipped complete These three measures determine a firm's ability to meet specific customer inventory requirements.

2.. **OPERATIONAL PERFORMANCE:**

Operational measures specify the expected performance cycle in terms of (1) Speed (2) Consistency (3) Flexibility (4) Malfunction/recovery Operational performance involves logistical commitment to expected performance time and acceptable variance.

3.. **RELIABILITY :**

Logistics quality is all about reliability. A fundamental quality issue in logistics is the ability to comply to levels of planned inventory availability and operational performance. • The key to achieving logistical quality is measurement. Inventory availability and operational performance are critical in the eyes of customers. • However, high-level performance can be maintained only by exacting measurement of achievements and failures. Three aspects of measuring service quality are important variables, units, and base.

Value added services

Evolving consumer behaviors have dramatically impacted the way retailers deliver products. From clothing, to cars, to computers, consumers have gotten used to getting the custom product they want, when they want it. As consumer preferences have become more personalized and complex, retailers are asking their suppliers and logistics providers to step up to the plate. This means more customized orders,

tighter delivery windows, and an increased focus on retail vendor compliance. Couple these factors with an economic recovery on the horizon— suppliers to retail will have to be prepared to deliver more products, with complex configurations, faster, and more often. As order to shelf cycles tighten, suppliers are looking for their logistics providers to help them keep inventories low, and fulfill orders at the last minute to better match consumer purchasing trends.

In order for suppliers and retailers to remain competitive in this changing environment, manufacturers can no longer allow products to be fully configured in Asia (or anywhere deep in the supply chain). This strategy creates the potential for lost sales and unwanted, aged inventory within the supply chain. A growing new strategy in the hi-tech/electronics industry is to postpone the customer specific configuration of the product as late in the supply chain as possible, increasingly at the third-party logistics provider's dock.

This trend is resulting in a new wave of Value Added Services that retail vendors and their logistics providers must be capable of providing. Let's use a hi-tech/electronics manufacturer as an example. The lines are often blurred between outbound finished good shipments from a hi-tech/electronics manufacturer and inbound orders for a retailer. This makes the work to ensure that the product is configured accurately— exactly the way the end consumer expects it— even more challenging. Many retailers have unique product configuration and shelf displays to differentiate them from their competitors. Consumers have very specific ideas of how a product should look and be packaged before they will make a purchase decision.

UNIT II

Measuring logistics costs and performance

Maintaining a low logistic cost, while ensuring a high product performance is key to making your production business profitable. Logistic costs include all costs beyond the basic production costs for a unit. This includes service costs, transportation costs, inventory costs and warehouse costs. Companies focus on these costs because they devalue a product after production, essentially adding costs to the production of materials and decreasing the production performance of a company. Reducing logistic costs is an important business focus for improving the overall performance of a product.

Assess your sales in terms of total sales revenue subtracted by the total cost for production, including cost of materials, labor, utilities and space. Refer to this value as profit, as this represents the gross profit

during a specific time period, before you calculate the logistical costs. Note that the logistical cost and profit reports start with the profit value and then represent the loss of profits based on logistic complications like service, transportation, warehouse and inventory costs. For instance, if you have $225,000 in total sales revenue and $45,000 in production costs, you can calculate (225,000 - 45,000 = 180,000).

Calculate the service-level costs by determining the unmet consumer demand based on industry restraints. Include production restraints, such as the inability to meet large orders due to time constraints or lost production days. Include ordering delays, such as the time it takes to process an order, delivery time and managing backorders. Include malfunction costs, such as products damaged during deliver, production errors and returned products. Determine the service level costs by subtracting the actual number of products sold without return from the total units ordered. As an example, if you had 5,500 units ordered, but were only able to fulfill 4800 orders, you can calculate (5500 - 4800 = 700 lost sales).

Determine the transportation level costs. Divide the total transportation costs by the total sales on the transported products to determine the percentage costs for transportation. Include all transportations costs in this equation, such as payroll for transportation staff, fuel use, insurance costs and maintenance costs. For instance, if you have the $180,000 in profits during a month and $18,000 in transportation costs, you can calculate (18,000 / 180,000 = 0.10 or 10 percent transportation costs).

Calculate the warehouse costs as the cost of long term storage for produced merchandise. Include the land costs, building costs, utilities, payroll and special costs if your products require special storage conditions, such as cooling. Also, include any additional warehouse space used for out of stock items, which are often stored so your company can reuse them later for parts. Present warehouse costs in terms of a pure cash value, or represent them as a percentage of your total sales by dividing your warehouse costs by your total revenue from sales. As an example, if your warehouse costs were $27,000, you could calculate (27,000 / 180,000 = 0.15 or 15 percent warehouse costs).

Determine your inventory costs, as the cost of short term storage for produced merchandise waiting to be shipped and merchandise at your store waiting to be sold. Include the space costs, utilities, labor costs and special arrangements for your products, such as cooling necessities. Present inventory costs in terms of pure cash value or as a percentage of your profits. For instance, if your inventory costs were $9,000, you could calculate (9,000 / 180,000 = 0.05 or 5 percent inventory costs).

The concept of Total Cost analysis

Total cost approach to logistics is the key to managing the logistics function. Management should strive to reduce the total cost of logistics rather than the cost of each activity. So logistics must be viewed as an integrated system rather than the individual system, because reduction in one cost invariably lead to increase the cost of other components. Effective management and real cost savings can be accomplished only by viewing logistics as an integrated system and minimizing its total cost given the firms customer service objectives. So the main costs which are involved in logistics function are:

1. Customer service level costs
2. Transportation costs
3. Warehousing costs
4. Order processing and information costs
5. Lot quantity costs
6. Inventory carrying costs

Customer Service Level Costs

Most business people find it difficult, if not impossible to measure this cost. The cost associated with alternative customer service levels is the cost of lost sales(not only the margin lost by not meeting current sales demand, but the present value of all future contributions to profit forfeited when a customer is lost due to poor availability, long lead times, or other service failures).

By comparing total logistics system costs, management can make knowledgeable judgment about the likelihood of recovering, through increased sales, the increase in total system costs brought about by an increase in customer service levels. Of course, management could also reduce spending in some other to component of the marketing mix – promotion, for example – in order to maintain profits with a similar sales volume. Likewise, with decrease in customer service levels, management can improve profitability or increase expenditures for other components of the marketing mix in an effort to maintain or improve market position. At the end the goal is to determine the least total cost method of logistics while keeping customer service objectives in mind.

Transportation Costs

Costs associated with the transportation function can be identified in total and be segments (i.e. inbound, outbound, by vendor, by customer, by mode, by carrier, by product, or by channel). This detail is necessary to determine the incremental costs associated with changes in the logistics system. If transportation costs are not currently available in any other form, management can determine them at a relatively low cost by sampling product flows and auditing freight bills (for common carriers) or corporate accounting records (for private fleets).

Warehousing Costs

Warehousing costs are all the expenses that can be eliminated or that must be increased as a result of a change in the number of warehousing facilities. Warehousing costs should be separated into two distinct categories:

1. **Throughput Costs:** These costs are associated with selling product in a given market by moving it into and out of a warehouse in that market, and the fixed costs associated with the facility. Example is charges that public warehouses assess for moving product into and out of their facilities, and the costs of leased and owned facilities for the movement of the goods.

2. **Storage Costs:** Warehousing costs related to inventory storage should be included in inventory carrying costs. These warehousing costs change with the level of inventory held in a specific warehouse and tend to be negligible in a company- owned or leased warehouse.

Throughput costs should be included instead in warehousing costs so that the increments can be easily added or subtracted when the logistics system configuration.

Order Processing and Information Costs

Order processing and information costs include the cost of order transmittal, order entry, order processing, related handling costs, and associated internal and external communication costs. When establishing these costs management should remember to include in the analysis only those costs that will change with decision being made.

Lot Quantity Costs

Lot quantity costs are those production related or purchasing/acquisition costs that will change as a result of a change in the logistics system. Generally it consists of production preparation costs, capacity lost due to changeover, materials handling, scheduling and expediting. The lot quantity costs associated with purchasing are the costs of buying in various quantities.

Inventory Carrying Costs

Conceptually inventory carrying costs are the most difficult costs to determine next to the costs of lost sale. Inventory carrying costs should include only those costs that vary with the level of inventory stored and that can be categorized into 4 costs.

- Capital costs
- Inventory service costs
- Storage space costs
- Inventory risk costs.

Principles logistics costing

The basic principle of logistics costing is to identify the different costs that result from servicing customers with particular product mixes. Conventional accounting methods, which were strongly based on a few volume-based cost drivers for the allocation of shared and indirect costs, are being superceded by other costing methods such as direct product profitability (DPP) and activity-based costing (ABC) where overhead costs are allocated in relation to a firm's activities and their consumption of resources. The research showed that direct operating costs could turn healthy gross profit figures into marginal overall contributions to profit. It also highlighted where further cost savings could be made by utilising sales promoters more effectively and reviewing minimum order sizes and delivery orders.

Logistics and the bottomline

When it comes to running a business, saving money is the key to maximising profits. While this can be done in a number of ways, effective management of logistics plays a major role in cutting costs. By pursuing a SLP logistics management course, you could learn the tricks of the trade that make a real difference! Here are a host of ways that logistics management can impact your business' bottom line:

Strategically speaking

By implementing strategic logistics management, you will be able to consolidate all of your distribution efforts with less expenditure. This means fewer frivolous costs or transporting loads unnecessarily. You should aim to plot out your distribution at least a month in advance for optimum savings.

Evaluate your carriers

The carriers who assist you with your channel management and logistics should be evaluated on a continual basis. This will allow you to retain those who give you good service and get rid of those who don't. This saves your business valuable funds instead of wasting money on unreliable carriers! Continuously evaluation also allows you to keep track of who you would like to retain on a long-term basis and give more of your patronage to. You may also be able to negotiate better rates with carriers you trust, and give a lot of work to.

Study, study, study

As with most things in life, the more you know, the better! By studying a logistics management course, you could get to know all of the ins and outs of supply chain management. Following completion of a course, you could use the theoretical knowledge gained in the practical workplace, making your job and the process as a whole a little easier.

Outsource wisely

Those who lack the in-house expertise to manage distribution effectively should consider outsourcing. Not only will this save the cost of an in-house department, but it will also allow existing members of the team to focus on their roles without the added stress of logistics.

Impact of Logistics on shareholder value

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What are the key shareholder metrics that matter?
For a publicly traded company the ultimate measure is earnings per share or stock price. For privately held companies, the focus tends to be on the attributes that relate to earnings per share: growth, profit, and return. Growth tends to focus on revenue or net revenue year over year. Profit can be represented by gross margin, operating income before tax, or net operating income after tax. Return can be represented by return on invested capital, return on assets, or return on working capital.

What are the supply chain performance levers that intentionally add to shareholder value?
The Growth attribute is the conundrum that keeps supply chain leaders up at night. Traditionally, the assumption was that great service level, including both lead-time and reliability, didn't lose sales and potentially helped grow share of customer's 'shelf space' by having predictable availability. Now, agility has been added to the list, requiring supply chain leaders to support increasing rates of new product introductions, respond to unplanned demand and supply events, and mitigate increasing risk.

The Profit attribute is the most familiar to today's supply chain leaders. The list is robust and generally end-to-end and includes total landed price of materials, components, and services; volume independent cost reductions in manufacturing through productivity improvements; network optimization efforts aligning warehouse, transportation, and logistics costs; and overall awareness of the reverse logistics flow and costs.

The Return attribute represents perhaps the greatest opportunity because supply chain leaders are critically involved in investments in both fixed assets and working capital. For example, the growth factor of supply chain agility has added to the physical network debate of make-to-order carrying little inventory at a higher potential unit cost and/or make-to-stock carrying more finished inventory at a lower potential unit cost.

How does this affect your supply chain strategy?
The correlation between supply chain excellence and earnings per share certainly is intuitive, but there is

data to suggest that even the best supply chain companies still are not maximizing potential shareholder value.

As part of a benchmark study focusing on shareholder value, APICS SCC compared 17 companies identified as "supply chain excellent" by third parties, i.e. Gartner Top 25, Supply Chain Digest top Retail Supply Chains, and firms recognized to be Best-in-Class in S&OP.

The Demand score was calculated by counting the number of instances where annual Return on Invested Capital and Revenue Growth improved over a 4-year period. The Supply score was calculated by counting the number of instances where Gross Margin and Inventory Turns improved over a 4-year period. A perfect score for each axis is an 8, where a company improved the corresponding pair of metrics each of four years. A score of a 5 indicates that there was only one year where the pair improved.

None of the seventeen scored greater than a 5 in both demand and supply.

Customer profitability analysis

It is found that with customer profitability analysis, the firm can correctly classify customers and also find out which of the customers it needs to hold on to and acquire more of the same type, and which customers it needs to let go of. Several times, companies find out that there are customers which they should have left altogether as the profitability from these customers is minimum and expenses are more.

One of the major hindrance in calculating customer profitability analysis is to calculate cost. Calculating cost per customer becomes difficult especially in a service environment where manpower as well as time also has a cost factor associated with it. Time spent with Customer profitability analysis is best conducted with a technique known as Activity based costing or ABC analysis. Customer profitability analysis helps the company understand the net profit coming from each customer which can be calculated by revenue less costs. These costs are not only manufacturing and distribution costs but also sales costs, marketing costs, services cost and any other related costs which have to be undertaken to service the customer.

Once the costs are finalized, the customer can be classified into different profit tiers. This principle is best observed in the banking industry with credit card as a product. Customers are basically classified into four types

- Platinum customers – Most profitable
- Gold customers – Profitable
- Iron Customers – Low profit but desirable
- Lead customers – unprofitable and undesirable

Lets take credit cards themselves as an example. A credit card company would always give the best service as well financial and other benefits to the top two customers. It will at the same time try to attract iron customers and try to convert these iron customers to platinum or gold customers. Finally, these companies will have systems in place so as to avoid Lead customers each customer is different and therefore the cost is different. Furthermore there are several non customer related costs too such as the cost of lost customers. If the firm ignores these costs then the final cost will be not be the right figure thereby affecting the overall customer profitability analysis. The customers will be shown more profitable than they actually are.

Direct product profitability

Definition

Direct product profitability (or **DPP**) is a profitability metric for retail products and categories. In measuring DPP, retailers factor in such line items as storage, handling, and manufacturer's allowances, warranties, and financing plans into calculations of earnings on specific product sales. DPP is a theoretically powerful measure of profit that has fallen out of favor, but it may be revived in other forms such as activity-based costing (ABC).[1]

Purpose

The purpose of retail product profitability metrics is to assess the effectiveness and profitability of individual product and category sales. Retailers and distributors have a great deal of choice regarding which products to stock and which to discontinue as they make room for a steady stream of new

offerings. By measuring the profitability of individualstock keeping units (SKUs), managers develop the insight needed to optimize such product selections. Profitability metrics are also useful in decisions regarding pricing, display, and promotional campaigns.

Specifically, DPP identifies profitable SKUs and realistically calculates their earnings.

This metric quantifies the adjusted gross margin, less direct product costs.

Direct product profitability (%) = Gross margin ($) - Direct product costs ($)

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Cost drivers and activity-based costing.

A cost driver triggers a change in the cost of an activity. The concept is most commonly used to assign overhead costs to the number of produced units. It can also be used in activity-based costing analysis to determine the causes of overhead, which can be used to minimize overhead costs.

Examples of cost drivers are as follows:

- Direct labor hours worked
- Number of customer contacts
- Number of engineering change orders issued
- Number of machine hours used
- Number of product returns from customers

Activity-based costing (**ABC**) is a costing methodology that identifies activities in an organization and assigns the cost of each activity with resources to all products and services according to the actual consumption by each. This model assigns more indirect costs(overhead) into direct costs compared to conventional costing.

UNIT III

Logistics and Supply chain relationships

Mainly during the 80's, global competition has impelled companies to provide even lower costs, higher quality, more endurable products, and higher product flexibility. In this context, several programs, techiniques and technologies directly or indirectly related to Logistics, like the JIT (Just In Time), ECR (Efficient Customer Response), EDI (Electronic Data Interchange), among others, allowed for inventory reductions and better coordination of the material flow along productive chains (MUSETTI, 2000). Expanding such concept, companies started to think "outside the boundaries", becoming aware of the importance and potential benefits of cooperative relationships with suppliers and clients. Thus, strategic partnerships started to emerge, contributing to the origin of Supply Chain Management. This historical evolution can be considered the first relationship between SCM and Logistics. According to Alves Filho et al. (2004), SCM originated mainly from the developments in Logistics.

A second relation between SCM and Logistics can be discussed by analyzing the activities encompassed by each concept. One of the main assumptions by SCM is that a efficient bidirectional flow of products (goods and services) and information must take place between all the companies belonging to the chains (LAMBERT et al., 1996). On the other hand, as already mentioned in section 2.2, Logistics implements and controls the effective and efficient flow and storage (in both directions) of goods, services and related information, In this sense, a second relation can be identified between SCM and Logistics activities: the latter is directly responsible for part of the former. Also, Pires; Ayres (2000) argue that companies which implement valuable SCM partnerships believe that such relations encompass more than Logistics, i.e., SCM partnerships

probably comprises more processes and functions than Logistics management do. The last point of confluence between SCM and Logistics concern the conditionants between both concepts. According to Maia (2006), Supply Chain Management is involved with defining supply chain structure, which, in turn, creates the framework inside which all Logistical operations take place. For example, supplier location (SCM issue) have a direct impact on the in-house inventory levels a client must hold, once that hypothetically, distant suppliers imply high transportation leadtimes, which imply high inventory levels. The inverse influence (Logistics affecting SCM) can also be conceived of, once that, for example, the usage of transportation methods with shorter lead times (Logistics issue) may allow a company to outsource its products to more distant suppliers (SCM issue), without jeopardizing inventory costs.

Benchmarking the logistics process and SCM operations

Supply chain operations within an organization should be constantly reviewed to identify where improvements can be made or deficiencies eliminated. One method to help do this is to perform a series of benchmarking tests on their supply chain processes. Benchmarking, or goal setting, allows a company to assess the opportunities they may have for improving a number of areas in their supply chain including: productivity, inventory accuracy, shipping accuracy, storage density, and bin-to-bin time. The benchmarking process can provide a company with some estimate of the benefits achieved by the implementation of any improvements.

History of Benchmarking

The popularity of benchmarking was spearheaded by the Xerox Corporation in the 1980s and is now used in corporations throughout the world. Benchmarking is the process whereby an assessment of an act, or performance, is measured by some means, whether this is by a measurement of time, value, or quantity. For example, an assessment of moving items from one storage location to another can be measured by time for a single movement, or by quantity if the performance is over a set period. A benchmarking project will gather the assessments and develop a plan of action to improve the process that was assessed.

Mapping the supply chain processes

People have been mapping supply chains as long as they've been making maps (see the example above, from the 19th Century). But traditional maps only provide a summary view - they don't show how supply chains change in real time. Modern supply chain mapping is the process of engaging across companies and suppliers to document the exact source of every material, every process and every shipment involved in bringing goods to market. Accurate supply chain mapping only became possible with the rise of online maps and the social web. The first online supply chain mapping platform was developed at the Massachusetts Institute of Technology in 2008 (the underlying open source technology is the basis for Sourcemap). From the beginning it was clear that online supply chain mapping had a number of key advantages.

Social Networking: Supply chains are so complex that it's almost impossible for one person to trace a product all the way from raw material to finished good. Online mapping makes collaboration possible at a vast scale: teams can work together from all of the companies in a supply chain to account for every material, every process, every shipment. It's even possible to use crowdsourcing and open the process up to the general public.

Verification: Before online mapping, it was impossible to verify an address without visiting in person. Now we can use GPS and satellite imagery to map every mine, every farm, every factory and every distribution center. User account management make it possible to know who mapped each piece of the supply chain, and when and where they did it. Instead of monitoring only the supply chain sites that can be visited in a given year, we can communicate directly with auditors and factory managers, with the meta-data needed to verify the information from afar.

Real Time Data: Supply chain management is usually handled with in-house enterprise software, which is notoriously inflexible. The Web 2.0 was built on API's (Application Program Interfaces), meaning that any modern website can read and write from any other. Supply chain mapping with an API means that data can be synchronized from enterprise databases (for up-to-the-minute inventory, for example) AND combined with trusted third-party data, such as emergency warnings and the GPS locations of container ships on the water.

Supplier and distributor benchmarking

Supplier performance can directly affect the quality of manufactures' supply chain. An efficient management mechanism should be established to enhance and improve supplier performance.

Benchmarking management can clearly lead suppliers to find their weakness and the approach to develop their performance, therefore it can serves as the basement of the supplier performance mechanism. By setting benchmark for suppliers in different level and encourage suppliers to compare with the benchmark, enterprise can control and optimize the performance of suppliers.

Setting benchmarking priorities

1. Articulate the strategic objectives to personnel.
2. Understand measurable outcomes of success.
3. Communicate importance of key processes.
4. Highlight and focus attention on key performance indicators.

Identifying logistics performance indicators

KPI logistics or key performance indicator logistics involves certain metrics that are typical in the logistics industry. These metrics include cost and time, as well as the risks. There are complexities involved in the transactions made with different parties.

Cost and time are two elements typical in logistics operation. For a logistics business to be competitive, it must have the knowledge of the time of transit in certain locations. Time is of the essence in logistics business. Delay in delivery translates to inefficiency in the operation. The delay can also be costly.

The indicators that can come with logistics in relation to time include: the average time to complete a typical shipping transaction; the time to finish filing documents; the time to deal with customs; the average time to process a shipping transaction; the total tine for shipping procedures and trade-related processes; and the percentage of on-time delivery.

The longer the time of the delivery, the more costly the transaction and operation would be. Cost is inherent in many businesses. For a logistics business to be competitive, it must minimize cost as much as possible. It must create shipping procedures that are quantifiable and that must be within the level of budget.

Indicators to measure the performance of the logistics business in relation to cost include: cost per case, transportation cost, fuel cost, warehousing cost, total cost for sipping-related procedures, inland freight cost, and average cost in processing typical shipping transactions.

Cost against risks can be an indicator. Because of the ever-existence of risks in shipping products, it is reasonable for a logistics company to integrate insurance cost in its shipping price offer.

There are certain risks that come in shipping goods by sea or on air. Risks, such as calamities, temporary shutdowns of ports, delay in transit time, and canceled transit can be seen as challenges of the logistics management. To make the operation of shipping efficient and effective as much as possible, the management must come up with performance dynamics and develop strategies to resolve or counter problems and expected circumstances in shipping. Effective procedures in shipping must be drawn while contingency cost may have to be allocated to prepare for the risks, either God-will or manmade forces.

KPI's in logistics can help management identify and sort out problems during its normal operation. These measurements can be seen as factors for the improvement of the operation in the supply chain. Upon seeing unfavourable results in the metrics, logistics can find the aspects that need improvement and can identify the areas where the business is strong. Using the metrics, logistics management can draw up solutions or plan to enhance its performance and to make the management more effective in carrying out the objectives of the organization.

KPI logistics is a crucial tool in assessing the progress of logistics business. It can also be a means to indicate the efficiency and effectiveness of the different levels of management. Logistics management that provides effectiveness in the operation leads the organization to its success. Mismanagement at one point of the supply chain can lead to costly transactions that can eat up profits, thereby jeopardizing the position of the logistics business in the supply chain.

Channel structure

Sales to Wholesalers

The premise of a distribution channel is that different types of companies specialize in different elements of the process. Manufacturers have expertise in product development and production. Some emphasize high-quality solutions while others focus on mass production at low costs. Manufacturers typically hold finished inventory in storage until

sale to a wholesaler. Wholesalers, also known as distributors, hold inventory in warehouses for distribution to retailers or consumers.

Distributor's Role

The expertise involved in wholesaling is acquiring finished goods at reasonable rates and getting them to market. Top wholesalers identify quality or value-oriented products they expect customers to place high demand on. After establishing agreements with retailers, wholesalers often pull and ship products to replenish orders at stores. In some cases, wholesalers ship goods directly to consumers.

Retail to Customer

The expertise of retailers includes holding inventory on hand, breaking down bulk items and providing customer service. Retailers identify the needs and preferences of particular target markets and offer goods and services to match. Traditional brick-and-mortar retailers acquire goods from wholesalers and submit renewal orders for replenishment. Some retailers connect with distributors through electronic data integration and engage in a more efficient system known as vendor managed inventory. Online retailers may hold goods in their own distribution centers or rely on distributors for online order fulfillment.

Economics of distribution

Economies of scale is an economics term that describes a competitive advantage that large entities have over smaller entities. It means that the larger the business, non-profit or government, the lower its costs. For example, the cost of producing one unit is less when many units are produced at once.

Types of Economies of Scale

There are two main types of economies of scale: internal and external. Internal economies are, as the name implies, internal to the company itself and controllable by management. External economies are supported by external factors. These factors include the industry, geographic location, or government.

Internal Economies of Scale

Internal economies result from the sheer size of the company, no matter what industry it's in or market it sells to. For example, large companies have the ability to buy in bulk. This lowers the cost per unit of the materials they need to make their products. They can use the savings to increase profits. Or, they can pass the savings to consumers and compete on price. There are five main types of internal economies of scale.

1. Technical economies of scale result from efficiencies in the production process itself. Research shows that manufacturing costs can fall 70-90 percent every time the business doubles its output. Larger companies can take advantage of more efficient equipment. An example is sophisticated data mining software that allows the firm to target its customers more effectively. Large shipping companies can cut costs by using super-tankers, such as the post-Panamax ships that carry as many as 16 trains. Finally, large companies achieve technical economies of scale because they learn by doing. They're far ahead of their smaller competition on the learning curve.

1. Monopsony power is when a company buys so much of a product that it can negotiate a lower price than its smaller competitors. For example, Wal-Mart can have lower prices because its huge buying power gives it monopsony economies of scale.

2. Managerial economies of scale arise when firms can hire specialists to manage specific areas of the company. An example is a seasoned sales executive.

3. Financial economies of scale means the company has cheaper access to capital. A larger company can get funded from the stock market with an initial public offering. Big firms have higher credit ratings, meaning they get lower interest rates on their bonds.

1. Network economies of scale occur primarily in online businesses. It costs almost nothing to support each additional customer with existing infrastructure. So, any revenue from the new customer is all profit for the business. A great example is eBay.

External Economies of Scale

A company has external economies of scale if it receives preferential treatment from the government or other external sources simply because of its size. For example, most states will lower taxes to attract large companies since they will provide jobs for their residents. A large real estate developer can often convince a city to build roads and other infrastructure. This saves the developer from paying those costs. Large companies can also take advantage of joint research with universities. This lowers research expenses for these companies.

Small companies just don't have the leverage to take advantage of external economies of scale. But, they can band together and take advantage of geographic economies of scale by clustering similar businesses in a small area. For example, artist lofts, galleries, and restaurants in a downtown art district benefit from being near each other.

channel relationships

One of the ways companies gain a competitive advantage in the market is through successful incorporation and management of marketing channels. A marketing channel is a set of practices or activities necessary to transfer the ownership of goods, and to move goods from production to consumption. This process typically consists of all the institutions and marketing activities involved in the promotion and distribution of goods. Management teams must evaluate competitive pressures to assess whether their marketing strategies are effective and profitable, or ineffective and costly to the organization. Sales remains the most popular way to measure performance.

When developing, implementing and measuring the effectiveness of marketing channels, businesses should consider:

- The link from producers to buyers
- Sales, advertising and promotion performance
- The company’s pricing strategy

- Product strategy through branding, policies, willingness to stock
- The Impact the attitudes of channel intermediaries have on the product
- Competition from other intermediaries and other product lines

All of these factors influence the positioning of products against their competitors in the marketplace.

logistics service alliances.

A logistics alliance is a group or team of trading experts who work together to help companies competently and successfully manage and deliver their products. Companies can hire or join logistic alliance groups to empower the alliance group to provide assistance, establish supply chains and offer business advice for the company.

Supply Chains

A primary function of most logistics alliances is to help companies organize and establish supply chains to most effectively and efficiently deliver products. Thus, many alliances have advanced knowledge and skills regarding the shipping and handling aspects of business. Some alliances help businesses ship goods through their close relationships with certain transportation services, others assist companies by connecting them with customers in various different regions, and some alliances help businesses plan, schedule and supervise delivery services.

Specialties

Many logistics alliance groups specialize in certain types of products. These alliances tend to focus only on the specific category of products for which they specialize. For instance, The Perishable Logistics Alliance (PLA) is an alliance that helps many businesses across the globe effectively ship perishable cargo, which are products that are temperature sensitive and that can lose their quality if not properly maintained during the transportation delivery process. Products that can be handled by the logistic services of the PLA include live animals, fruits and vegetables, meat and fish, pharmaceuticals and high-tech equipment.

Management Services

In addition to providing chain supply services, many logistics alliances also help companies to manage the delivery process. Alliances can help with inventory management, such as inventory planning,

inventory optimization and warehouse optimization. Logistics organizations can also offer businesses planning strategies to help them design, develop and implement policies that relate to product management or shipping methods. Additionally, some alliances provide project management assistance by aligning the projects with the appropriate business requirements, reshaping organizations and developing new staff programs to form more productive and motivated teams.

UNIT IV

sourcing decisions and transportation in supply chain

Third parties increase the supply chain surplus if they either increase value for the customer or decrease the supply chain cost relative to a firm performing the task in-house. Three important factors that affect the increase in surplus that a third party provides: scale, uncertainty, and the specificity of assets. 1. Capacity aggregation: Surplus can be created by aggregating demand across multiple firms and gaining production economies of scale that no single firm can on its own. The growth in surplus from outsourcing is highest when the needs of the firm are significantly lower than→ the volumes required to gain economies of scale. 2. Inventory aggregation: Surplus can be created by aggregating inventories across a large number of customers. Aggregation allows them to significantly lower overall uncertainty and improve economies of scale in purchasing and transportation. The third party performing inventory aggregation adds most to the supply chain surplus when demand→ from customers is fragmented and uncertain. 3. Transportation aggregation by transportation intermediaries: Surplus can be created by aggregating the transportation function to a higher level than any shipper can on its own. The transportation intermediary aggregates shipments across multiple shippers, thus lowering the cost of each shipment below what could be achieved by the shipper alone. This is particularly true if the shipper's transportation flows are highly unbalanced, with the quantity→ coming into a region very different from the quantity leaving the region. 4. Transportation aggregation by storage intermediaries: Surplus can be created by aggregating in bound and out bound transportation. This form of aggregation is most effective if the intermediary stocks products from many suppliers and→ serves many customers, each ordering in small quantities. 5. Warehousing aggregation: Surplus can be created by aggregating warehousing needs over several customers. (in terms of lower real estate cost and lower processing cost). Savings through warehousing aggregation arise if a supplier's warehousing needs are small or if its needs→ fluctuate over time 6. Procurement aggregation: Surplus can be created if a third party if it aggregates procurement for

many small players and facilitates economies of scale in production and inbound transportation. Procurement aggregation is most effective across many small buyers.→

Information aggregation: Supply chain surplus can be increased by aggregating information to a higher level than can be achieved by a firm performing the function in-house. This information aggregation reduces search costs for customers. Information aggregation increases the surplus if both buyers and sellers are fragmented and buying is→ sporadic. 8. Receivables aggregation: Supply Chain surplus cab be increase if third party can aggregate the receivables risk to a higher level than the firm or it has a lower collection cost than the firm. Collecting receivables from each retail outlet is a very expensive proposition for a manufacturer. Receivables aggregation is likely to increase the supply chain surplus if retail outlets are small and→ numerous and each outlet stocks products from many manufacturers that are all served by the same distributor. 9. Lower costs and higher quality: A third party can increase the supply chain surplus if it provides lower cost or higher quality relative to the firm. If these benefits come from specialization and learning, they are likely to be sustainable over the longer term. A specialized third party that is further along the learning curve for some supply chain activity is likely to maintain its advantage over the long term.

Transportation refers to the movement of product from one location to another as it makes its way from the beginning of a supply chain to the customer's handle. This requires a new broad look at the business of transportation supply chain, including supply chain management, logistics, & procurement. Freight transportation costs in the United States amount to about 6% of the GDP, which means that a large portion of a company's supply chain costs come from transportation. As we've stated in blogs posts about understanding how transportation costs fit into the business, the more you think more holistically as a logistics or transportation manager about the role of transportation in the overall supply chain and business, and less about the tactics of transportation (technology now is the business process enablement tool), you can strategically work with other players in the supply chain in order to more effectively reach the corporate and business vision your organization has set out to reach.

Many manufacturers & retailers have found that they can use state of the art supply chain management to reduce inventory & warehousing costs while speeding up delivery to the end customer.

Any supply chain's success is closely linked to the appropriate use of transportation. Walmart has effectively used a responsive transportation system to lower its overall costs. At distribution centers, Walmart uses cross-docking, a process in which product is exchanged between trucks so that each truck going to a retail store has products from different suppliers.

Managers should ensure that a firm's transportation strategy supports its competitive strategy. Firms should evaluate the transportation function based on a combination of transportation costs, other costs such as inventory affected by transportation decisions, & the level of responsiveness achieved with customers.

Managers should consider an appropriate combination of company-owned & outsourced transportation to meet their needs.

infrastructure suppliers of transport services

Physical infrastructure, from utility networks to transportation hubs and mobility systems, is the backbone of economic growth. Yet budget and other constraints make both public and private investment increasingly more difficult, leaving significant gaps between what is needed and what actually gets implemented. While governments can sometimes reduce or effectively manage demand for infrastructure services, for example by promoting energy efficiency or dynamic pricing rather than building new power transmission capacity, in many cases this cannot be done without adversely impacting growth and development. And demand for infrastructure services is both rising and changing, while the asset base is ageing and declining in capacity and performance.

Against this backdrop ways must be found for investing in infrastructure that minimize the burden on budgets, while bringing adequate returns for investors. Increasingly therefore, both public and private players have been turning to business models which aim to deliver infrastructure "as as service", bundling assets with services into integrated solutions, as well as improving the back-end of infrastructure investments, in particular operations and maintenance (O&M). The objective is to extract full value from existing and new asset base by increasing assets' revenue streams, extending their life-cycle, while reducing costs, risks and delivery lead times. Superior operations and maintenance coupled with ability to improve customer experience, is therefore often mandatory not only to win projects, but also to make them economically viable and bankable for investors.

Yet the reality is that the infrastructure asset base has been severely neglected. Current O&M practices are often seriously deficient, failing to maximize asset utilization or meet adequate user quality standards, while incurring needlessly high costs. As a result existing assets deteriorate much faster than necessary, shortening their useful life. According to a survey by the European Federation of National Maintenance Societies, asset management practices in the European infrastructure industry are rated below those of the manufacturing and process industries, not just in overall ranking but in every one of the key

subcategories. A number of factors contribute to this situation, including insufficient funding for O&M, a lack of organizational focus and management capacity, as well as significant knowhow deficits.

Pressure for change is however increasing: Owners and operators, both public and private, need to develop comprehensive long term strategies for operating and maintaining infrastructure assets to narrow the investment gap, bend cost curves and expand effective capacity. And they need to take advantage of outcome and performance based business models, including through public-private partnerships (PPPs), to reduce risks and necessary upfront investment commitments.

Transportation economics and pricing

TRANSPORTATION ECONOMICS

Transportation economics are driven by seven factors. While not direct components of transport tariffs, each factor influences rates. The factors are: (1) distance, (2) weight, (3) density, (4) stowability, (5) handling, (6) liability, and (7) market. The following discusses the relative importance of each factor from a shipper's perspective. Keep in mind that the precise impact of each factor varies, depending on specific market and product characteristics.

Distance

Distance is a major influence on transportation cost since it directly contributes to variable expense, such as labor, fuel, and maintenance. Figure 9.1 illustrates the general relationship between distance and transportation cost. Two important points are illustrated. First, the cost curve does not begin at zero because there are fixed costs associated with shipment pickup and delivery regardless of distance. Second, the cost curve increases at a decreasing rate as a function of distance. This characteristic is known as the **tapering principle.**

Weight

The second factor is load weight. As with other logistics activities, scale economies exist for most transportation movements. This relationship, illustrated in Figure 9.2 , indicates that transport cost per unit of weight decreases as load size increases. This occurs because the fixed costs of pickup, delivery, and administration are spread over incremental weight. This relationship is limited by the size of the transportation vehicle. Once the vehicle is full, the relationship begins again with each additional vehicle. The managerial implication is that small loads should be consolidated into larger loads to maximize scale economies.

Density

A third factor is product density. Density is the combination of weight and volume. Weight and volume are important since transportation cost for any movement is usually quoted in dollars per unit of weight. Transport charges are commonly quoted per hundredweight (CWT). In terms of weight and volume, vehicles are typically more constrained by cubic capacity than by weight. Since actual vehicle, labor, and fuel expenses are not dramatically influenced by weight, higher-density products allow fixed transport cost to be spread across more weight. As a result, higher density products are typically assessed lower transport cost per unit of weight. Figure 9.3 illustrates the relationship of declining transportation cost per unit of weight as product density increases. In general, traffic managers seek to improve product density so that trailer cubic capacity can be fully utilized.

Stowability

Stowability refers to how product dimensions fit into transportation equipment. Odd package sizes and shapes, as well as excessive size or length, may not fit well in transportation equipment, resulting in wasted cubic capacity. Although density and stowability are similar, it is possible to have items with similar densities that stow very differently. Items having rectangular shapes are much easier to stow than odd-shaped items. For example, while steel blocks and rods may have the same physical density, rods are more difficult to stow than blocks because of their length and shape. Stowability is also influenced by other aspects of size, since large numbers of items may be **nested** in shipments whereas they may be difficult to stow in small

quantities. For example, it is possible to accomplish significant nesting for a truckload of trash cans while a single can is difficult to stow.

Handling

Special handling equipment may be required to load and unload trucks, railcars, or ships. In addition to special handling equipment, the manner in which products are physically grouped together in boxes or on pallets for transport and storage will impact handling cost.

Liability

Liability includes product characteristics that can result in damage. Carriers must either have insurance to protect against potential damage or accept financial responsibility. Shippers can reduce their risk, and ultimately transportation cost, by improved packaging or reducing susceptibility to loss or damage.

Market

Finally, market factors such as lane volume and balance influence transportation cost. A **transport lane** refers to movements between origin and destination points. Since transportation vehicles and drivers typically return to their origin, either they must find a **back- haul** load or the vehicle is returned or **deadheaded** empty. When empty return movements occur, labor, fuel, and maintenance costs must be charged against the original front-haul movement. Thus, the ideal situation is to achieve two-way or balanced movement of loads. However, this is rarely the case because of demand imbalances in manufacturing and consumption locations. For example, many goods are manufactured and processed in the eastern United States and then shipped to consumer markets in the western portion of the country. This results in an imbalance in volume moving between the two geographical areas. Such imbalance causes rates to be generally lower for eastbound moves. Movement balance is also influenced by seasonality, such as the movement of fruits and vegetables to coincide with growing seasons. Demand location and seasonality result in transport rates that change with direction and season. Logistics system design must take such factors into account to achieve back-haul economies whenever possible.

FIGURE 9.1
Generalized Relationship between Distance and Transportation Cost

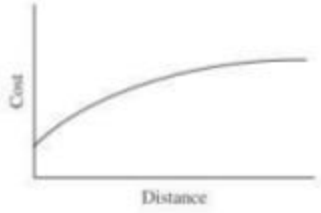
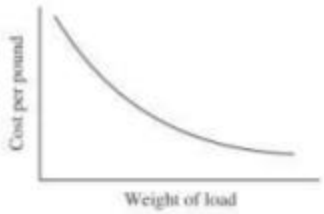


FIGURE 9.2
Generalized Relationship between Weight and Transportation Cost/Pound



Documentation

Bill of Lading

The bill of lading is the most important document that is used in transporting goods. The legal definition of a bill of lading is a contract for the carriage of goods and a document of title to them.

It provides any and all information that the carrier will need to transport the items. It contains the shipment origin and the contract terms for the transportation and is required by a carrier before the shipment is taken.

The bill of lading should include the name and address of the consignor and consignee, and often it will have the routing instructions for the carrier. It will contain a description of the goods to be transported, the quantity for each of the commodities, and the commodity class and rate.

The bill of lading will contain the terms of the contract for the movement of goods by a common carrier. This is the contract between the shipper and the carrier to transport the goods on the bill of lading to the consignee, i.e. the buyer. The bill of lading contract has nine terms;

1. Common Carrier Liability – the carrier is liable for loss and damage of the goods being transported, except if the goods were improperly packed by the shipper or if the goods themselves would be liable to a normal loss like through evaporation. The carrier is not liable for acts of God, public enemy or public authority.

2. Delay in Transit – the carrier cannot be held liable if the loss or damage is due to a delay in the transportation of the goods.

3. Freight Not Accepted – if the goods are not accepted within the time allocated, the carrier can store the goods at a cost to the owner.

1. Extraordinary Value – the carrier is not liable and does not have to carry items of extraordinary value that are not on the rated in the published classifications or tariffs unless a special agreement with the shipper has been negotiated.

2. Explosives – the carrier has to be given full written disclosure when they are shipping dangerous material, otherwise, they are not liable for any losses.

3. Recourse – the carrier cannot make additional charges to the shipper after making a delivery.

4. Substitute Bill of Lading – if the bill of lading is a substitute or exchange for another bill of lading then the current bill of lading has to include all the clauses from previous documents.

1. Alterations – the carrier must note any changes or additions to ensure that they can be enforceable.

2. Claims – this clause specifies the details on how to file a claim against the shipper and the time period after delivery in which the claim will be accepted.

Freight Bill

The freight bill is the carrier's invoice to the shipper for all the charges that the carrier has incurred. The carrier's freight bill will include the details of the shipment, the items being shipped, the consignee, the origin, and destination, as well as total weight and total charges.

Some carriers can ask for prepayment from the shipper if the value of the items being shipped is less than the total expected freight charges. If the charges are not prepaid then the carrier can present a freight bill on collect. This implies that the carrier will present the freight bill on the day of delivery.

FOB Terms of Sale

Free on Board (FOB) terms of sales documents which party will be liable for the transportation costs, which party is in control of the movement of the goods, and when the title passes to the buyer.

If the FOB terms of sale indicate that it is FOB Delivered then this implies that the shipper will be responsible for all of the carrier's costs. If the terms of sale show FOB Origin, then this means that the buyer will take the title of the goods when they are shipped and they will incur all the transportation costs.

pricing and revenue management

Pricing is a factor that gears up profits in supply chain through an appropriate match of supply and demand. Revenue management can be defined as the application of pricing to increase the profit produced from a limited supply of supply chain assets.

Ideas from revenue management recommend that a company should first use pricing to maintain balance between the supply and demand and should think of further investing or eliminating assets only after the balance is maintained.

The assets in supply chain are present in two forms, namely **capacity** and **Inventory**

Capacity assets in the supply chain are present for manufacturing, shipment, and storage while inventory assets are present within the supply chain and are carried to develop and improvise product availability.

Thus, we can further define revenue management as the application of differential pricing on the basis of customer segment, time of use and product or capacity availability to increment supply chain surplus.

Revenue management plays a major role in supply chain and has a share of credit in the profitability of supply chain when one or more of the following conditions exist −

- The product value differs in different market segments.
- The product is highly perishable or product tends to be defective.
- Demand has seasonal and other peaks.
- The product is sold both in bulk and the spot market.

The strategy of revenue management has been successfully applied in many streams that we often tend to use but it is never noticed. For example, the finest real life application of revenue management can be seen in the airline, railway, hotel and resort, cruise ship, healthcare, printing and publishing.

Lack of coordination and Bullwhip Effect

Supply chain coordination –all stages in the supply chain take actions together (usually results in greater total supply chain profits)

SC coordination requires that each stage take into account the effects of its actions on the other stages.

Lack of coordination results when:

- Objectives of different stages conflict
- Information moving between stages is distorted

Bullwhip Effect

- Fluctuations in orders increase as they move up the supply chain from retailers to wholesalers to manufacturers to suppliers (shown in Figure)

- Distorts demand information within the supply chain, where different stages have very different estimates of what demand looks like

- Results in a loss of supply chain coordination.

Impact of lack of coordination.

- Manufacturing cost (increases)

- Inventory cost (increases)
- Replenishment lead time (increases)
- Transportation cost (increases)
- Labor cost for shipping and receiving (increases)
- Level of product availability (decreases)
- Relationships across the supply chain (worsens)
- Profitability (decreases)

CRM

Customer satisfaction and loyalty drive growth and sustained profitability. However, if your clients aren't happy, sales will drop and in the end you may lose your business. This is especially true for the highly competitive transportation industry, where customers are often very selective about Logistics Service Providers (LSPs). They look not just at affordable prices and on-time delivery, but at the overall quality of interactions. Therefore, to keep your customers contented and deliver them exceptional experience, you need to empower your business with a robust CRM (Customer Relationship Management) solution.

The use of CRM software is a best practice approach for a wide range of businesses, including logistics, transportation, shipping and freight forwarding. It helps optimize customer service, manage the sales pipeline, drive successful marketing campaigns, identify and retain valuable customers, encourage unstable ones to spend more, etc.

- Maximized quality of customer service
- Strengthened marketing and sales
- Improved image of your business
- Greater customer loyalty
- Increased profit.

Internal supply chain management.

What exactly is the internal supply chain? Without sounding painstakingly obvious, it refers to the chain of activities **within** a company, specifically, purchasing, production, sales and distribution. The internal supply chain has a significant impact on a company's success; operations need to run smoothly in order to create a harmonized working environment and an efficient workflow.

There is so much focus on the external supply chain that internal processes can often be left behind. The external supply chain refers to the network of activities outside of a company such as transportation, and the environmental factors, which can have a direct or indirect effect on operations e.g. supplier failure, changes in laws and natural disasters. These external activities are usually deemed to have a greater impact on the supply chain. This blog will highlight the important factors of the internal supply chain and the threats within this particular area that can affect an entire company structure. t is important to recognize that the internal supply chain has a massive impact on the final product and its ultimate delivery to the consumer. Understandably, a company would not be able to produce a product without the raw materials from its suppliers (external); however, the internal goings-on determine whether a final product is ready and good enough to sell. In-depth planning is one of the main factors influencing the success of the internal supply chain, determining how to market a product and ensuring the production process is on time. This leads to optimized operations, which in turn leads to success. The optimization of the internal supply chain helps ensure on-time production, happy employees through comprehensive management and an improved ability to effectively deal with unforeseen circumstances.

UNIT V

Managing global Logistics and global Supply Chains Logistics in a global economy

The following exemplify best practices established by industry leaders in implementing efficient and smoothly functioning global logistics and trade management networks.

1. **Build a Comprehensive, Integrated Global Supply Network.** Best-in-class manufacturers have shown the value of establishing an effective and smoothly functioning global supply platform in which all participants share one view of demand with the goal of improving business performance and customer service. Achieving this level of optimization across the entire supply network requires linking cross-functional operations such as sourcing, purchasing, logistics, distribution, sales, customer service and finance to enable timely information flow and collaboration. Although it sounds daunting, the fact is that building scalable enterprise architectures can be done incrementally over time as business needs dictate and resources allow. However, the end result is interoperability with other IT assets, lower total cost of ownership and -- perhaps most important -- an agile, resilient and responsive supply chain that is fully optimized to meet corporate goals.

2. **Leverage Information Technology for Improved Visibility.** The days of running a business on manual processes, silos of information and paper-based spreadsheets held within discrete functional departments are long gone. In global manufacturing operations, the process automation, enterprise-wide integration, and real-time information flow provided by today's advanced technology software applications are absolutely essential to achieving supply chain visibility from end to end. While many manufacturers have deployed business systems such as Enterprise Resource Planning (ERP) or Manufacturing Execution

Systems (MES), a majority have yet to implement solutions designed to optimize supply chain planning, collaboration or business performance management. Best-in-class companies have found that leveraging these kinds of integrated technology solutions can be a powerful engine to drive end-to-end visibility and agility.

3. **Improve Logistics for Real-Time Agility.** The rapid rise in fuel costs over all transportation modes -- air, ocean, rail and truck -- has many companies rethinking their transportation and logistics policies and practices. However, fuel costs are not the only factor to consider when aiming to achieve optimized logistics. Fragmented visibility and uncertain delivery times due to missed sailing dates, expediting issues, regional labor strikes and other bottlenecks can also play a role in driving up costs and disappointing customers. In managing a global supply chain, the key is having end-to-end visibility and a smart contingency plan, both of which require close communication and collaboration with factories, forwarders, logistics providers, brokers and other partners across multiple geographies and process touch points. With global visibility, transportation and logistics managers can monitor shipments and respond with greater speed and agility to make more informed decisions, resolve issues in-transit, and potentially identify opportunities for modal shifts, inventory diversion, direct drop shipping and other cost-saving tactics.

4. **Assure Global Trade Compliance.** International trade compliance typically falls into three areas: export compliance, import compliance and trade agreements. As one can imagine, when it comes to making sound and cost-effective decisions related to importing, exporting and trade agreements, it would be virtually impossible for a manufacturer to independently master all of the intricacies involved. Fortunately, there are technology solutions and solutions providers whose core business is providing expertise in complying with customs, security and trade regulations, policies and procedures worldwide. In fact, many leading supply chain software providers have formed strategic alliances with leading global trade management solutions providers to integrate and automate import, export and trade agreement activities. For example, JDA Software partners with Management Dynamics, Inc. to provide clients with an integrated framework for international logistics and trade, with applications designed to optimize and track shipments, provide accurate landed cost assessment, ensure accurate data management and record keeping, avoid fines and leverage trade agreements favorably. By leveraging joint solutions, companies can gain greater visibility and control over their shipments from the point of origin to the point of delivery.

5. **Ensure Operational Readiness and Optimal Performance.** As we have seen, the massive market shifts created by globalization have many organizations facing a disconnect between their need to expand

globally and their operational readiness to actually do it. According to one industry analyst, two out of three companies still manage their global logistics and trade with manual processes, and a majority of companies have inadequate staffing levels to handle global operations. As a result, the global supply chain is currently only 50% as automated as the domestic supply chain. New investments will be required to address these inefficiencies, ensure operational readiness and enterprise-wide performance monitoring. The key to a successful global logistics and trade management strategy resides in a combination of people, processes and technology deployed in such a way as to achieve a highly strategic and optimized global supply network.

views of global logistics

- **Generation of Demand**

The demand of any product is improved significantly from increased mobility, unobstructed movement of products & services and access to better logistics infrastructure. This is because enhanced trade and logistics infrastructure create place, time and form utilities for the customers & users. Both customers and users can be serviced at any time and at any place. Thus, improved international logistics infrastructure helps in increasing the overall sales of the company's products.

Cost Reduction in Doing Business

Improved logistical infrastructure helps in keeping cost of business at the lower side as transportation of products from one place to another becomes almost uninterrupted due to better ports, railway network, roads and civil aviation infrastructure.

For example, Due to better road connectivity in China, a truck can travel 1,300 km into this country in about 74 hours. And the same distance, which is equivalent to distance between Delhi-Kolkata, is covered in about 144 hours in India. This delay not only extends trade cycle, but the quality of certain goods get poor and fetches lower prices in markets.

Tapping Clients in the World

Improved global logistics services from top logistics companies and better transportation are important for the movement of goods and services from one region to another. This helps companies to have a tap on the customers in every nook and corner of the world.

For example, Indian industry has many potential fields such as electronics, engineering, chip designing, auto components, etc. It can contribute to the world's markets only if the country has improved trade logistics infrastructure and networking systems; otherwise the business opportunities can be outpaced by the nation's rivals from other developed countries.

Hence, any country needs to have quality logistics infrastructure to tap clients all over the world.

- **Ensuring Rapid Economic Growth**

In the development process of any country, growth in the economy plays a vital role. This is possible from the expansion in trade & logistics infrastructure that create demand in economic system for products such as iron & steel, cement and manpower.

For example, India has to make its logistical infrastructure better, which will not only grow its economy but also help its companies to accomplish a sustained superior performance in international markets through enhanced trade supply chain process.

- **Bridging Gap between Demand and Supply**

How to bridge gaps between demand and supply of a product? This is one of the major challenges that any company faces in international markets at all levels from sourcing of raw materials to work in progress to distribution to customers. So, better transporting goods from one place to another and timely supply of products to meet the demand will fill the gap between demand and supply of a product.

For example, China with main economic clusters on the east coast results to transporting commodities at far-away regions in the western and remote northern parts of the country. This creates the problem of demand and supply in the country's economic system. Better connectivity from road, rail network, airstrips and sea helps companies to distribute their resources between places where there are abundant resources and where there are scare.

- **Strategic Infrastructure for Global Integration**

Trade logistic infrastructure and transportation play an important role in conditions that affect regional, national and international economic entities of companies in accessing global markets.

For example, Nepali carpet exporters transport their goods towards the Nepal border by trucks that are unloaded for customs clearance at Birgunj in India. The products are again loaded on Indian trucks to move towards Kolkata by road transport. The shipment is then unloaded again for loading on ship and transhipped to Singapore.

- **Ensuring Critical Supplies on Time**

An efficient logistics system in international trade operations helps companies in making timely supply of products to their international buyers. Due to complex functionality of logistic system and long distance involved between two countries, the problem of safety, care and timing of shipment often cause nightmares to suppliers, particularly in case of perishable & high value products and goods with expiry date restrictions. Such products include newspapers, flowers and marine products.

Global operating levels

ssentially, supply chain management includes every decision made about the products or services a company delivers to their customers. The best way to understand the various phases of supply chain management and how certain points influence others is to look at the 3 levels of SCM decision-making a bit closer.

Strategic Planning

Every effective supply chain strategy begins with solid long-term decision-making. The strategy level lays the groundwork for the entire supply chain process, from beginning to end, and is an essential part of supply chain management. Strategy level supply chain decisions are usually the first step of developing a good process.

Issues addressed at this level include:

- Choosing the site and purpose of business facilities
- Creating a network of reliable suppliers, transporters, and logistics handlers
- Long-term improvements and innovations to meet client demands
- Inventory and product management throughout its life cycle
- IT programs and systems to make the process more effective

Tactical Management

Businesses make short-term decisions involving the supply chain at the tactical level. At the strategy level, general planning begins, but processes are actually defined at the tactical level. Tactical decisions play a big role in controlling costs and minimizing risks. At this level, the focus is on customer demands and achieving the best end value.

Common concerns include:

- Procurement contracts for necessary materials and services
- Production schedules and guidelines to meet quality, safety, and quantity standards
- Transportation and warehousing solutions, including outsourcing and third-party options
- Inventory logistics, including storage and end-product distribution
- Adopting best practices in comparison to competitors

The Operational Level

The operational level of supply chain management is the most obvious. These are the day-to-day processes, decision-making, and planning that take place to keep the supply chain active. The mistake that many companies make is to jump straight into operational management without focusing on the strategy and tactical levels. Effective operational level processes are the result of strong strategical and tactical planning.

Some aspects of operational level management are:

- Daily and weekly forecasting to figure out and satisfy demand
- Production operations, including scheduling and detailed management of goods-in-process
- Monitoring logistics activity for contract and order fulfillment
- Settling damages or losses with suppliers, vendors, and clients
- Managing incoming and outgoing materials and products, as well as on-hand inventories

The most effective supply chain strategies are the result of a holistic management approach. When all 3 levels of supply chain management are given proper attention, every member of the supply chain benefits.

Interlinked global economy

Two nations have interlinked economies when one economy is affected by something that happens to the other. For example, one of the main staples of China's economy is the ability to create and export cheap goods to the US. Equally, the US requires China to create those goods so the US doesn't have to. If the US takes a hit, causing people to slow their purchasing Chinese products, this would negatively impact China's economy, because China would now be unable to profit from the goods they created. Thus, something that negatively impacts the US economy also indirectly impacts the Chinese economy, because these two economies are interlinked. Interlinked Economies occur internationally when one nation/economy's actions in their own market and in the global market impact another's economy or market. This impact can be positive or negative, depending on the situation. For example, if the United States government stopped drilling for oil in other countries and decided to use its own resources, that would not only impact the US and the nations from which is stops drilling, but could also impact economies of surrounding nations that have some form of involvement in that industry

The global supply chains

Firms are creating truly global supply chains because it enables them to reduce their costs. Companies can take advantage of lower production costs and they can outsource to free capital from non-core activities and generate large-scale efficiencies. In addition, the costs of shipping, communications and tariff-related charges have come down over the years. Global supply chain management involves planning how the entire supply chain will function as an integrated whole, with the aim of generating an optimum level of customer service while being as cost efficient as possible. Other aims include increasing the speed by which your product reaches your customers, as well as flexibility in dealing with customer transactions. It incorporates management processes that integrate the network of suppliers, manufacturers, warehouses and retail outlets so that the right type of goods are sourced, supplied, produced and shipped in the right quantities, to the right locations, at the right time and are received in sound condition. To achieve successful integration, flows of information (such as purchase orders, shipping notices, waybills and invoices), materials (including raw and finished products) and finances (payments and refunds) through the supply chain must be co-ordinated effectively.

Global supply chain business processes

.1. Customer relationship management. 2.

Customer Service Management. 3. Demand management. 4. Order Fulfillment. 5. Manufacturing flow management. 6. Procurement. 7. Product development and commercialization. 8. Returns.

Global strategy

Global strategy helps companies grow from being an international company to a global company. Once upon a time, McDonald's was classified as an international company. An **international company** focuses on the domestic market with some sales overseas. Their product or services are entirely made in their home country. On the other hand, an international company may also be defined as a company that sells imported products in the domestic market.

When McDonald's expanded to Canada and Puerto Rico, it became a multinational company. A **multinational company** has products or services in just a few countries or may use services or raw materials from a select number of countries. The domestic market is still primary, but the product may be modified to satisfy their customers in other countries. For example, as Puerto Rico is primarily Spanish speaking, the McDonald's menu is offered in Spanish and English. They may also add a few items that emulate local customs and cuisine.

Global purchasingSERVICES

CONTENT

What is global sourcing and why is it so important? Because companies sourcing from both inside and outside their country borders are better able to compete.

The global reality

As international demand grows for more and better products and services, competition becomes more intense. Firms must keep up with rapidly changing technology while also lowering their costs, increasing quality, and improving customer service at all stages of the value chain. This is the reality of international trade.

What is global sourcing – really?

It is the process of sourcing goods and services from the international market across geopolitical boundaries. It aims to exploit global efficiencies such as lower cost skilled labor, cheaper raw materials

and other economic factors like tax breaks and low trade tariffs. Examples are call centers in the Philippines, clothing and shoes manufactured in China and Thailand.

Starting a global sourcing initiative

Many companies use an outsource solution, especially in the beginning when they are inexperienced. International procurement organizations (or IPOs) are often used as agents to source from "low cost" countries. They can and do identify and develop key suppliers across many sourcing categories in large and complex countries such as China or Brazil.

What is global sourcing – the advantages?

Some advantages of global sourcing are learning how to do business successfully in a new market, finding and developing alternate supplier sources to reduce costs and stimulate competition. The opportunity exists to locate scarce skills and resources not available or unproductive at home thereby increasing manufacturing capacity and other technical capabilities.

What is global sourcing – the disadvantages?

There are also disadvantages. Monitoring costs go up and there are hidden costs relating to the effort and time spent learning about different cultures and time zones, especially in the beginning. There is exposure to financial, political and legal risks, often in emerging economies. In the service industries there is also a real risk in losing a grip on your intellectual property.

What is global sourcing going to do to challenge me?

Firstly lead times for delivery are significantly longer than with domestic sourcing and these costs have to be factored into the selling price.
Secondly, prudent financial management is key. Currencies fluctuate daily and the price and the currency need to be fixed upfront as global sourcing often involves payment using a letter of credit.

Global logistics

What is global logistics? In order to compete in a globalized, international economy, you will have to have a good understanding of how the global logistics situation impacts your business. You will also need to develop custom global logistics that will allow you to expand your firm and its operations internationally without taking on either untenable consulting fees or operational deficits. Custom global logistics consultants should always be able to justify their price by demonstrating the amount that you

save from every initiative they undertake while they are within your employ. Cost savings should add up to significant fractions of each transaction.

As you probably already know well, logistics encompasses the entire series of diverse operations involved in getting your product (or, in the less frequently used sense, your service) to your end consumer. Global logistics management requires the development of global logistics solutions that are much more complex than what you would encounter while working on a national or even on a regional basis. When you consider logistics of a global scope, you are dealing not only with the obvious challenges that are part of every logistics operation, but also with the following:

- A wider network of suppliers and vendors who might operate according to unfamiliar laws.
- Issues such as customs and related fees which can create a drag on your global business;
- More complex insurance regimes that can make it difficult for you to collect on your claims.
- Different expectations from your consumers in terms of the level of logistics quality needed.
- Different norms and standards of quality assurance, communication, and so on from vendors.

Since global logistics management has to take all of these factors into account, powerful global logistics solutions are more sophisticated than local solutions. To secure global logistics that will work for you, you will often have to deploy larger systems that demand a higher level of savvy from every member of your organization, including all of your shipping managers. Plus, you must take extra steps to ensure that you have secure global logistics that will not fall prey to the kinds of exceptions caused by issues such as loss, theft, and other problems that are not typically part of the market landscape in the United States, but may be a factor in some other areas.

When making the transition from a regional to a worldwide logistics model, one of the most important factors is to unite global operations using the right kind of technology. Without true data visualization that includes features such as package routing, carrier shopping and logistics handling, it is virtually impossible to initiate a new global scope of operations without losing significant funds per transaction. That being the case, it is a good idea to not only institute the right technology and the change controls to go along with it, but to seek the expertise of an enterprise with a global scope that can imbue your team with best practices from the start.

Global alliances

A global strategic alliance is usually established when a company wishes to edge into a related business or new geographic market, particularly one where the government prohibits imports in order to protect domestic industry. Alliances are typically formed between two or more corporations, each based in their home country, for a specified period of time. Their purpose is to share in the ownership of a newly formed venture and maximize competitive advantages in their combined territories.

The cost of a global strategic alliance is usually shared equitably among the corporations involved and is generally the least expensive way for all concerned to form a partnership. An acquisition, on the other hand, offers a faster start in exploiting an overseas market but tends to be a much more expensive

undertaking for the acquiring company--one that is likely to be well out of the reach of a solo operator. While a global strategic alliance works well for core business expansion and utilizing existing geographic markets, an acquisition works better for immediate penetration to new geographic territories.

Hence, an alliance provides a good solution to global marketers that lack the required distribution to get into overseas markets.

A global strategic alliance is also much more flexible than an acquisition with respect to the degree of control enjoyed by each party. Depending on your resources, you can structure an equity or non-equity partnership. Within an equity partnership, you can hold a minority, majority or equal stake. In a non-equity partnership, the host country partner has a greater stake in the deal, and thus holds a majority interest. Yet whom you choose as your partner is arguably more important than how the partnership is structured, because you want a partner who will have an active contribution to make and who is flexible and able to resolve conflicts as the alliance evolves.

Even more important is that you keep in mind what you are seeking to gain from the alliance and that you choose a partner whose contribution will enable you to achieve those goals.

Issues and Challenges in Global supply chain Management

The following six risks can easily have a negative impact on your business:

1. **Quality levels and defects.** Manufacturing processes aren't perfect, so the industry typically accepts a certain quality level for products. Complexity and variability are part of any production process, and unfamiliar sources might not adhere to accepted U.S. defect levels. Choosing a non-U.S.-based sourcing firm can open up questions and disputes about which party is liable for defect percentages that rise above normal.

2. **Time zones.** Some U.S. firms experience issues when dealing with companies on the other side of the country—and never mind the 13-hour time difference between the United States and Asia. Waking and working hours do not coincide, which can be a challenge when a pressing issue arises. Waiting one day to clarify a product question or process change can often simply be too long for companies that are trying to run nimble operations.

3. **Long-range logistics.** Purchasing items at a delivered price is easy, but the shipment can be delayed. Whether it is a factory hold-up or transit problem, ignoring the complexity of long-range logistics can be a risk.

4. **Accountability and compliance.** Companies should consider social compliance every time they look at global sourcing. They need to conduct due diligence about child labor practices, acceptable working conditions, forced labor, and fair compensation practices. Barring the hiring of local staff members, however, there isn't a surefire way to ensure social compliance from across the globe. Risk comes in the form of severe brand damage due to unfair or illegal practices that come to light.

5. **Delays.** To receive on-time product delivery, it is vital to have firm completion dates and shipping timeframes. An item that is globally sourced, however, is often just a piece of a bill of materials that must be on hand for product completion. Delays from a non-U.S. source can derail production and drive up related costs.

6. **Language barriers.** Global partners offer competitive pricing and efficiencies, but still often conduct day-to-day business in a different language. Managers will likely speak English, but their directions must be relayed to line staff, and your own words might be lost in translation. Errors are bound to happen when communications aren't translated and interpreted perfectly.