

Supply Chain Management

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INNOVEST SME
Accelerating Small Business

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*The secret of getting ahead
is getting started.*

AGATHA CHRISTIE

PREFACE

Supply Chain Management improves the coordination and relationship between Suppliers, Producers, and Customers. It must be kept at a high level of organization to be successful in today's global economy. Goods and services are now pieced together from all over the world, and this process can be hectic and complicated if not managed correctly.

With Supply Chain Management your company and employees will be on target to lower costs, improving efficiency, and increase customer satisfaction.

*A satisfied customer
is the best business
strategy of all.*

MICHAEL LEBOEUF



WHY SUPPLY CHAIN MANAGEMENT?

Imagine this: an entrepreneur has an idea for providing affordable organic linens to a national discount chain. But how will she get her product from a factory in South America to customers in the Midwest who will shop at one of the chain's stores? What processes are involved? Who will perform what functions? What about financing and shipping? What will she need to do to ensure satisfied customers? These are the questions answered through supply chain management.

So then, what exactly is supply chain management? It is the management of interconnected businesses involved in providing goods or services to consumers. Supply chain management involves the finances, logistics, and delivery of products or services and requires integrated behavior and cooperation among the chain's firms to be successful.

CUSTOMER SATISFACTION

Customer satisfaction is a consequence of supply chain management that reflects the value created by the supply chain firms. It comes through delivering value of what is perceived by the customer as important not the firm members. Customer satisfaction influences purchasing behavior, customer loyalty, and also serves as an indicator of the supply chain's

collaborative success at creating a differential advantage. The differential advantage is what sets the chain apart from its competitors. In this topic, let's look further at how we can create value and promote high levels of customer satisfaction.

IMPROVING PERFORMANCE

Some decades ago, leadership and management experts Peter F. Drucker and Steven R. Covey contributed significantly to the field of performance management. Their ideas created new ways in which organizations both for- and non-profit functioned and they also set new standards for measuring both personal and professional success. Performance management is the system of activities involved in measuring and ensuring goals are met for individuals, departments, and organizations. Performance improvement is the concept of measuring processes or procedures and the changes made to improve the effectiveness of those processes or procedures. Performance improvement is a management approach. Because of the globalization of business and the rapid changes in today's marketplace, an important aspect of the supply management puzzle is how to continually improve performance.

LOWERING COSTS

After assessing their environment, a supply chain manager might realize that they need to develop a low-cost strategy. In this case, the primary focus of this chain would be cost control. The output or end product is a major consideration in lowering cost. The gross margin (price of goods minus

their costs) has to sufficiently cover overhead to turn a profit. Additionally, for cost lowering strategies to be effective, the supply chain must lower its costs without compromising the value or quality of the end product.

Cost control might entail:

- Making some tasks routine
- Producing standard products
- Practicing economies of scale
- Trimming or reducing budgets
- Implementing process engineering

PRODUCT DEVELOPMENT

Supply chain management is a set of management processes in which every step of the process should be on meeting the customer's requirements. Product development is the process of supply chain bringing a new product to market. The product can be tangible (e.g., stainless steel countertops) or intangible (e.g., counseling services). The process of product development can be quite lengthy. It may involve steps such as:

- Idea generation
- Business analysis and market research
- Idea prototypes

- Beta testing
- Marketing testing
- Technical and legal requirements
- Product pricing
- Marketing and retailing

PRACTICAL ILLUSTRATION

A small publishing company of “how to books for home repairs” initially experiences steady growth and success. It has several very popular authors, who have a loyal following. After 10 years, the company decides to enter into the eBook business, but does not sufficiently market this new product. Moreover, the owner didn’t realize the work involved in converting and posting the books to formats that support the various reading devices on the market. The company’s focus on the eBooks caused them to lose focus on the sale of their printed material. Twelve months after the changes, the company is not making a profit. The owner calls in his board of directors one Sunday for an emergency meeting. They brainstorm and look at what made their company successful, and what initially worked. They also analyzed what they are currently doing with the eBooks. Someone asked the question, did they ever do a customer survey before they decided to offer the eBooks. The owner realizes he did very little market research before releasing the new product.

*Property may be destroyed
and money may lose
its purchasing power;
but, character, health,
knowledge and good
judgment will always
be in demand under all
conditions.*

ROGER BABSON



KEY TERMS (I)

Sometimes, purchasing, procurement, materials management, logistics, materials management, and supply chain management are used interchangeably. These essential activities are how organizations obtain and deliver materials. They relate not only to a company's cost reduction strategies but also to its return on capital investment (ROCI). For an organization to operate at optimum efficiency, supply management and procurement need to be clearly defined activities.

PROCUREMENT

Procurement and purchasing are similar terms. Purchasing is the process of locating a supplier, buying, negotiating, and ensuring delivery. Procurement on the other hand is a much broader term that includes purchasing. It also includes storing, transporting, receiving, inspecting incoming materials/supplies, and salvaging items. Proactive procurement is a process reflected in five outputs:

- Quality
- Cost
- Time
- Technology
- Continuity of the supply

UPSTREAM AND DOWNSTREAM

The upstream and downstream flow of goods, services, and finances is what links companies in a supply chain together. The terms upstream and downstream essentially represent the dynamics of a supply chain. Information can also be included in the upstream and downstream flow of a supply chain. Upstream relationships are those involving a company's suppliers. Downstream relationships are those involving clients or customers. An ultimate supply chain is the sum of all the companies involved in the upstream and downstream flow from the initial suppliers to the end customer.

RAW MATERIAL

Raw materials are the basic goods or resources used to manufacture products. For example, crude oil is used to make plastics. Iron is used to make steel. Sometimes, you might see the term commodities used instead of raw materials. Commodities are basic goods that can be sold or exchanged for other commodities. Commodities are often sold on large markets, like the New York Stock Exchange. Examples of commodities include resources such as crude oil, sugar, and gold.

FORECASTING

Forecasting is the use of historical data to predict future trends. Firms use forecasting of customer demand to drive the manufacture of goods as well as the acquisition of raw materials. If a supply chain makes in depth forecasting regarding raw materials, they can plan options to ensure those

raw materials are acquired at a reasonable cost. Forecasting improves the sharing of information and resources downstream and make scheduling and inventory management more efficient. Forecasting can be quantitative or qualitative.

CARRYING COST

Carrying cost refers to total cost of holding or possessing an item inventory.

Carrying costs includes the following:

- Handling charges
- Storage and facility fees
- Cost of equipment used to inventory
- Labor
- Operating costs
- Insurance
- Shrinkage or breakage
- Taxes
- Obsolescence
- Investment costs

The cost to carry is something a supply chain firm can calculate annually.

The calculations for annual carrying cost are:

Carrying cost per year = (Average inventory value) X (Inventory carrying cost as a % of inventory value)

Average inventory value = (Average inventory in units) X (Material Unit Cost)

PRACTICAL ILLUSTRATION

Select one product from Outback Camping to analyze and get to market. Outback Camping is a manufacturer of affordable tents and sleeping bags. Determine the following:

- Raw materials, procurement activities and how to add value to the customer for your product
- Forecast a hypothetical customer demand
- Determine carrying costs (hypothetical using a 25% inventory value).

*As far as the customer
is concerned, the interface
is the product.*

J E F R A S K I N



LARGE MOVING BOX

- Bedroom
- Bathroom
- Kitchen
- Dining Room
- Living Room
- Basement
- Garage
- Other

KEY TERMS (II)

In this chapter, we will look more closely at the concept of inventory control and more key terms in supply chain management. What does inventory entail? What are some important aspects of meeting the customers' demands for products and services? Lastly, how can supply chain firms effectively handle returns despite the number of organizations that may be involved?

INVENTORY

The supply chain inventories are the commercial items being held for sale. Inventories also include the items used in the manufacturing of other products. The inventories in a particular supply chain can be as diverse as the firms in the chain. Inventory control involves the management of these items and should include determining carrying costs. Inventory drives purchasing decisions and high inventories sometimes relate to inflation. The topic of supply chain inventory can be broken into four categories:

- Inventory costs (which we have already discussed)
- Inventory types
- Inventory function
- Management of Supply Chain Inventories

ORDER GENERATION

Order generation is essentially the process of obtaining customer business for specific products or services. Order generation may require a number of departments within a supply firm: sales, marketing, product development, technical support, project management, research and development, merchandising and customer service. A supply firm can request customer's business through various means: direct sales, unsolicited and solicited proposals, and quotes. Once the customer recognizes a need and takes action to acquire the product or service, the order is generated.

ORDER TAKING

Customer orders can be taken a variety of ways once the need has been established and pricing negotiated. Some common ways of taking orders include: direct purchase order or sales orders via face-to-face sales, phone orders, blank purchase orders, purchase order cards, internet sales and online orders. In some cases, a contract may be drawn. When a contract is not drawn, the buyer may detail specifics regarding the need and make a request or invitation for bid (RFB/IFB), request for proposal (RFP), or Request for Quotation (RFQ). Basic order taking information should include at least eight items:

1. Date
2. Number (Identification)
3. Originator

4. Account(s) to be charged
5. Item description
6. Date service or item needed or will be shipped
7. Special shipping or delivery instructions
8. Signature or sales authorization

ORDER FULFILLMENT

Order fulfillment broadly speaking is the process from the point of sale to when the order is finally delivered to the customer. In particular, however, order fulfillment in the supply chain is a process involving at least four physical activities:

1. Acquiring the item (from inventory, purchase, or production)
2. Preparing the item for shipping
3. Scheduling the shipment of the item
4. Preparing shipping documentation

Effective and thorough order fulfillment allows a firm or customer to easily track the order once an order is shipped. One way a supply firm can provide its customers good service is by providing order status reports on the orders it fills by tracking orders and communicating the information to the customer on a timely basis.

RETURNS MANAGEMENT

Supply chain order processing should have plans for managing returns of faulty products or failed services. Returns management or cancellation policies protect both the supplier and customer. Cancellation and return terms should be established before the order is placed. Logistics of returns vary from industry to industry and according to the product. Some companies employ a returns management system, which generates a number for identification and tracking purposes. In the case of a service, returns may be a little more difficult to manage. However, some policy should be established for cancellations, malpractice, or failure to provide the contracted service.

PRACTICAL ILLUSTRATION

A medium sized manufacturing company in Taiwan produces upscale cases for cell phones. Since the introduction of Smartphones, their sales have quadrupled. They are not having difficulty in keeping up with the demand. Their ordering system used to involve representatives working with directly with buyers at various department and specialty stores and faxing orders or placing the orders online, online orders have to be verified before they are filled, which sometimes takes 1 – 2 days. Another huge issue for this company is one of their suppliers is sometimes slow in getting the raw plastic to them for the cases.

*Do the difficult things
while they are easy and do
the great things while they
are small. A journey of a
thousand miles must begin
with a single step.*

LAO TZU



THREE LEVELS OF SUPPLY CHAIN MANAGEMENT

The above quote applies just as much today in a global environment, as it did thousands of years ago. Small things do indeed lead to great things. Consider small companies that are now international corporations (i.e., KFC™, Coca Cola™). Moreover, management always begins with a single step that leads to successive steps or levels. In this chapter of the book, we will examine three levels of supply chain management:

- Strategic level
- Tactical level
- Operation level

STRATEGIC LEVEL

Strategic supply chain management involves what was once considered logistic issues. The new concept of supply chain management itself involves relating its practices to a company-wide strategy. The traditional approach with supply chains was to manage from an operational or planning level. However, to operate competitively in a global environment, supply chain management must be first of all aligned with the strategic

needs of the business. Sometimes, a big challenge for a supply chain is that large corporations may have goals that are both multidimensional and seemingly contradictory. To sufficiently address its needs, a supply chain firm (corporation) can start by taking three strategic actions:

1. Make current activities as efficient as possible
2. Manage the risks of current activities
3. Develop an internal capacity for learning, adaptation and innovation

TACTICAL LEVEL

The tactical level of supply chain management is very similar to the strategic level. It relates to logistics and is about how to deploy activities. While the strategy is a mindset, the tactic is the “go-to-market” decision or determination of which tools a firm will use. It is how the suppliers meet their capabilities to a supply chain firm’s needs. On the tactical level, the decisions also include factors such as will the supply chain do face-to-face negotiations or online orders? Will a firm issue a RFP, or will goods be purchased through an auction? Will they outsource? These are only some tactical questions. There are many.

OPERATIONAL LEVEL

For many years, supply chain management was approached from an operational level. Working with suppliers and sourcing were activities the purchasing and operations personnel in the business performed not the sales, product development, marketing, or customer service

department. Operations can vary from firm to firm within a supply chain. In some instances, one firm in the supply chain will take a leadership role. Regardless of who performs the operations, some way of monitoring, controlling and documenting operations progress needs to exist.

BULLWHIP EFFECT

The Bullwhip effect is a phenomenon that occurs when firms in supply chains fail to accurately estimate demand. To minimize trucking costs or simply to meet a phantom customer demand, firms may place full truckload orders and overstock inventory. The effect creates a cascade on inaccurate information. The supplier may interpret the firms' large orders as a sign to either carry additional inventory or increase lead times. The overall effect is inventory levels in the supply chain increase and the supply chain becomes bloated with this excess inventory that's been created to meet a 'fictitious customer demand.'

PRACTICAL ILLUSTRATION

PE Engineering top managers meet for a high-powered board discussion on how to turn their 40 year old company around. During the past 3 years, the company has been experiencing several supplier setbacks and a reduction in sales. The corporation's sales currently total \$300 million annually, which is about \$150 million less than it was 6 years ago.

PE Engineering is an internationally recognized civil engineering firm, supplying tools for water treatment facilities in Canada, US and Western Europe and has good relationships with its clients. However, over the

years it's faced some challenges with getting supplies on a timely basis, and has had shipments even lost by one supplier—two times. Additionally, transportation costs have increased in the past 2 years, which has seriously affected the company.

*Management, above all,
is a practice where art,
science, and craft meet.*

HENRY MINTZBERG



\$55000



Category	Sub-Category	Value	Percentage
A	A1	100	10%
	A2	200	20%
	A3	300	30%
	A4	400	40%
B	B1	150	15%
	B2	250	25%
	B3	350	35%
	B4	450	45%
C	C1	200	20%
	C2	300	30%
	C3	400	40%
	C4	500	50%
D	D1	250	25%
	D2	350	35%
	D3	450	45%
	D4	550	55%
E	E1	300	30%
	E2	400	40%
	E3	500	50%
	E4	600	60%



FIVE STAGES OF SUPPLY CHAIN MANAGEMENT

The supply chain has three levels of management. It also has five stages in which goods, services, or products cycle through the pipeline. Supply chain managers need an understanding of these stages to effectively plan and to assist with determining critical paths in the operation of a chain's firm.

The five stages are:

1. Plan
2. Source
3. Make
4. Deliver
5. Return

PLAN

The plan is the strategy used in supply chain management. Planning helps managers to determine where to allocate funds and efforts for the

firm's facilities, materials, and services. In particular, future construction or production requires competent planning to acquire raw materials or components that may be in demand or limited supply. The actual planning process should begin from information obtained from forecasts: sales, production and economic. The supply manager should use these forecasts to estimate material needs and then break the estimates down into monthly, quarterly or industry specific time period. The estimates should be related directly to trends and materials and adjusted accordingly. Another way to plan is to base materials on the analysis of a buyer or special project.

SOURCE

Source relates to how the firm chooses as supplier. Sourcing is another term for purchasing. Successful sourcing in a supply chain should be driven by a strategic policy instead of tactical approach. A strategic approach allows the supply chain manager to develop a 'road map' with the supplier in providing the necessary materials and products. Strategic sourcing has five stages:

1. Discovery – finding potential suppliers
2. Evaluation –determining who to do business with
3. Selection – choosing the right supplier(s) through competitive bidding, negotiation or both
4. Development – Two way effort to refine relationships and cultivate optimal supply chain service

5. Management – Ongoing analysis and supervision of the supplier's ability to meet negotiated responsibilities

MAKE

Make is the manufacturing step. In this stage, the decision of whether to make or buy is always a critical step in any organization. This strategic decision can influence the entire operations of business. On a tactical level, whether to make depends usually on two factors: the total cost of ownership and the ability to produce the item. This stage involves the most metrics. In the past, large companies traditionally would opt for making products in house, which they branded. Now, outsourcing has become the trend for many large corporations. The key question is how much value will making a product add as a percentage of final product or service cost?

DELIVER

Deliver is the stage in which the supplier provides the agreed upon goods or services. Some people also call this step the logistics step because it is where decisions are made about how to coordinate receipt of items by the customer, how to warehouse products, how to select transporters for shipments and invoice customers for payment. At this point, customer satisfaction greatly depends on the efficiency and reliability of the delivery system. This stage is where the supplier's performance is heavily evaluated—(Did they deliver?). Delivery systems can vary from firm to

firm, but in supply chains an integrated system works the best. In some cases, multiple departments within one firm may even be involved.

RETURN

Return is a complex part supply chain management because it deals with how to return defective items or goods. The problem is that companies have varied policies and integrating within a chain's network can be quite challenging. Suppliers have to create a responsive and flexible system for receiving defective or excess products back from their customers in the supply chain. Moreover, supply chain managers must be proactive and diligent when supporting customers who have problems with products.

PRACTICAL ILLUSTRATION

All Clean laundering company recently acquired a municipal contract to for cleaning uniforms. This contract will now account for about 20% of the laundering company's business. Besides cleaning uniforms, All Clean also sells and launders commercial linens and floor mats. In the next, three years the municipality plans to increase its personnel by at least 10%.

Persistence prevails, like a stream that is temporarily blocked by boulders and then collects force enough to overflow onward.

VERNON HOWARD



THE FLOWS OF SUPPLY CHAIN MANAGEMENT

The flow of goods, products, and services has a definite pattern in supply chain, usually toward the end customer. A supply chain can also be a pipeline in which information and finances. The flow can be simple or complex. It can be multi-tiered or reversed. In this chapter, we will look at three flows of supply chain management:

- Product Flow
- Information Flow
- Finance Flow

THE PRODUCT FLOW

The product flow in supply chain management involves the conveyance of goods, products, and services from the supplier to the customer. This process also includes all back end processes as well as returns. Sometimes returns are also grouped as an activity under reverse supply chains. The product flow can be one of the following:

- Basic Supply Chain
- Extended Supply Chain
- Ultimate Supply Chain

Basic supply and extended supply are quite simple and linear. They essentially include a supplier(s), a focal firm, and customer(s). However, Ultimate Supply Chains are more complex and are more like networks rather than pipelines. In addition to the same groups that basic chains have, they also include third party firms and all other entities from the initial supplier to the end customer.

THE INFORMATION FLOW

The information flow involves the conveyance of information throughout the supply chain. This process includes the flow of information on orders and the status of deliveries. It includes information such as forecasting and metrics. It may also include information used for improving the knowledge base in a firm or for learning purposes and other systems. The information flow is an important process in the supply chain because information, whether qualitative or quantitative, drives every decision made.

THE FINANCES FLOW

The financial flow consists of any factors related to money flowing through a supply chain. This process flow includes credit terms, payment schedules, and consignment and title ownership arrangements. It includes invoicing and quotes. It may also include how returns and customer credits are issued.

DATA WAREHOUSES

Data warehouses contain a collection of data, which organizations use to support management decisions. Data warehouses are important because they can provide businesses a coherent picture at a single point in time. They also provide a place to pinpoint information. Data warehouses may include processes to extract data from operating systems as well as databases that managers can use. Databases may be stored on a server or desktop. The term data warehousing usually refers to the combination of many different databases across an enterprise. In a supply chain, data warehousing is more complicated because of the various relationships and flows that exist.

PRACTICAL ILLUSTRATION

Create an Ultimate Supply Chain process flow diagram for a popular retailer. This retailer sells almost everything home goods, food, over the counter drugs, clothing, shoes, electronics, small appliances, home entertainment, books, music, pet supplies, toys, tools, and car maintenance items. It has 1200 stores across the US. Consider that this retailer tries to purchase many of its products from within the US; however, its suppliers span the globe.

*Inventories can
be managed, but people
must be led.*

H. ROSS PEROT



INVENTORY MANAGEMENT

Inventory management is the critical stage in supply chain management because it helps to establish inventory and sales patterns, increase working capital, and turn inventory in cash. Inventory management involves various metrics and forecasting. It also involves how firms move their inventory and maintain accurate records. Data warehousing plays a large part in successfully managing inventories in a supply chain.

LEVELS OF INVENTORY

Inventory carrying costs are major expenditures in any business. Inventories vary according to the form and function and include raw materials, finished product, dead stock, perishables, and work in progress goods. Supply chain managers will need to coordinate between various departments, but especially production and customer service to determine appropriate levels of inventory. Supply chain managers will also want to examine all relevant forecasts when setting final inventory levels.

JUST-IN-TIME INVENTORY

Just-in-time (JIT) inventory is a commonly used method used to manage inventory levels and production. In this scenario, items are produced right

before they are needed for the next step in a process. Items are not produced ahead of time and kept in inventory for a long period of time. JIT production greatly reduces costs and in-process inventory.

KEEPING ACCURATE RECORDS

To keep inventory at appropriate levels and ensure customer satisfaction, supply chains must maintain accurate records. In most cases, 95% accuracy or better is recommended. Accurate record keeping helps firms plan, control and organize inventory so the right products are ordered to meet customer demand. Accurate record keeping also help firms achieve economies of scale and reduce inventory costs. Supply chains should have a dedicated software and database system for maintaining accurate records.

INVENTORY CALCULATOR

An inventory calculator measures the inventory turnover rate. Inventory calculations provide supply chain managers important data for setting inventory levels. Inventory calculators help determine the rate inventory items are sold and replaced in a specific period of time, such as a year. Inventory calculations can also help supply chain managers determine the quality of goods and set benchmarks.

The calculation for inventory turnover is

$$\text{Turnover} = \text{Cost of goods}/\text{Average inventory}$$

Managers can use the below calculation to determine the average days in inventory:

$$\text{Average days in inventory} = 365 \times \text{Turnover}$$

PRACTICAL ILLUSTRATION

JIT Productions, Inc. manufactures novelty bags for retailers. Their sales are seasonal, the holiday seasons and special promotions are the bulk of their sales. They also make bags specifically for customers and some with themes from cartoon characters or recent events. Inventory management is a key piece in successful operations of this business, and unfortunately something they have not had a good handle on. The holidays are coming and they are anticipating sales to increase 10% from last year. They sold about 1,000,000 bags to 50 customers last year. Their average inventory is 1,000,000 pieces at an average cost of .20 per unit.

*Better understated than
overstated. Let people be
surprised that it was more
than you promised and
easier than you said.*

JIM ROHN



SUPPLY CHAIN GROUPS

Supply chains are complex relationships among groups that interact to move goods, products, and services from suppliers to customers. In most instances, supply chains operate like networks rather than linear chains. Additionally, the relationships are more like partnerships in which members share risks and rewards. The types of groups involved in supply chain management include: suppliers, producers, customer's, customer customers.

THE SUPPLIERS

The supplier in a supply chain is actually where the chain begins. The supplier provides raw materials and unfinished products that are converted into finished products and goods. The supplier can also be the beginning point of a stream of information. The supplier may also have suppliers or partners who provide raw materials.

THE PRODUCERS

The producers are the members in a supply chain who design and manufacture the goods, services, and products. The producers work directly with suppliers and customers as well as other third party firms,

such as financiers, market research, technical consultants, delivery services, and distributors. The producers also must maintain adequate inventory levels and efficiencies in production to meet customer demand. They must ensure they produce quality products at a reasonable cost. The producers' have a great responsibility within the supply chain since customers may deal directly with customers.

THE CUSTOMERS

Customers are the parties in the supply chain who purchase the products, goods, or services. A supply chain can have many customers. For instance, a producer is a customer of the supplier. Intermediate partners are customers for each other. In the supply chain the customer's demand drives production and inventory levels. Forecasting is based on the customer sales. Customer and consumer are interchangeable terms. The consumer in supply chains choose the type and quality of purchases as well as select the appropriate suppliers.

THE CUSTOMER'S CUSTOMERS

The customer's customers in a supply chain are sometimes referred to as final customers. They are the parties who purchase the final products, the consumers. For instance, the customer's customer for a producer may be a wholesaler or retailer. The customer of the retailer is the general consumer or ultimate customer. A big job of product developers and marketing is the influence the behavior of these customers.

PRACTICAL ILLUSTRATION

TeleCOM1 is a leading telecommunications equipment firm. Their product portfolio manufactures relatively expensive, highly engineered products that lack some features of their competitors. TeleCOM1 is at a pivotal point in its business, in terms of how it will move forward. In a recent podcast and press conference, its CEO indicated the firm is at the brink of 'stormy weather.' As the company struggles to keep abreast industry changes and respond to customer demand, it struggles with high supplier costs and excessive inventory levels. Moreover, many of its processes are currently spread across a large enterprise, which affects lead times.

*Our role is to monitor
and maintain a framework
in which fair competition
can flourish.*

ARTHUR LEVITT



TRACKING AND MONITORING

Tracking and monitoring inventory, production, and sales is important for supply chains as with any enterprise. However, with supply chains these activities can be more complex and require a great deal coordination. In this chapter, we will look at ways to track and monitor supply chain activities. Some key agents for tracking and monitoring include:

- Dashboard
- RFID's
- Alert Generation
- Stock Keeping Unit (SKU)

DASHBOARD

Dashboards help supply chain managers monitor, analyze, and manage supply chain performance. Dashboards are important management tools and provide visual real time information. Dashboards should include details on the inventory and alerts for when inventories reach certain levels. Supply chain managers can use a dashboard to gauge the status of the supply chain and make critical decisions.

RFID'S

The Federal Trade Commission estimates US businesses lose almost \$300 million in goods and inventory that's been lost or undelivered. One way to track goods through a supply chain is to use radio frequency identification (RFID) technology. The technology uses handheld computers, barcodes, scanners, and RFID tags to track inventory. Shipments are barcoded and scanned as they proceed through the chain. If a shipment becomes missing, managers can refer to information that's been uploaded to a server to trace its location.

ALERT GENERATION

Alert generation helps prevent surprises in supply chains and improve the overall efficiency of operations by provide automatic messages or alarms. This technology may be coupled with a dashboard or some other monitoring equipment. Alert generation not only refers to the actual alert but methods for dealing with alerts. The methods should identify levels response.

STOCK KEEPING UNIT (SKU)

The stock keeping unit (SKU) is yet another method to keep track of inventory. SKUs are numbers assigned to identify specific products. Optimally, SKUs are created from real products. However, a challenge in supply chain management is the proliferation of SKUs. After crosschecking, sometimes managers find multiple SKUs for the same product.

PRACTICAL ILLUSTRATION

ATU leads the medical supply industry in producing high quality orthopedic prosthetics. The firm has won many industry awards and recently assigned a task force to help improve its lean manufacturing techniques. The task force includes: independent consultants, suppliers, product development engineers, production managers, an information technology expert, a world-renown orthopedic surgeon, and a supply chain manager.

*While we are not
in a crisis situation, we are
taking proactive steps.*

LEE BROWN



SUPPLY CHAIN EVENT MANAGEMENT

Supply Chains are complex networks with special requirements for successful operation. At any point within the chain, events can occur to upset the flow further downstream. The primary role of a supply chain manager is to not only manage purchase, track and monitor assets, but to understand the different problems that can occur to impede flow and prevent these.

In this chapter, we will examine:

- Inventory alerts
- Supplier alerts
- Bottlenecking
- Being Proactive

INVENTORY ALERTS

Inventory alerts allow the supply manager to know when inventory levels are low. As inventory reaches a minimum level, the supply manager can then decide whether to purchase additional stock or keep levels low. Inventory alerts should provide information on devices in the network as

well as provide reports. The inventory reports give managers a quick a snapshot of the chain.

SUPPLIER ALERTS

Supplier alerts are similar to inventory alerts because they provide status information. However, supplier alerts are from the supplier and tell managers when it is time to order new inventory or when shipments may be late. Supplier alerts may come by email or some other electronic means. They are usually preset automatically to a list commonly ordered from the supplier.

BOTTLENECKING

A bottleneck is occurs when the performance or capacity of an entire system is affected by a single event. Bottlenecking can occur anywhere in the supply chain. For instance, a limited number of components or resources can delay or even stop production. This further affects deliveries to customers.

BEING PROACTIVE

Supply managers have a great responsibility in keeping the free flow of products, information, and finances through a chain. Any number of events can occur to impede that flow. The best method for managing supply chains is for managers to be proactive. Managers should use resources such as monitoring reports and KPI (*Key performance indicator*) metrics

to make informed predictions about what may happen in the chain and work to ensure that supply chain performance is optimized.

PRACTICAL ILLUSTRATION

Bluepool Corporation is the world's leading home appliance manufacturer. They had begun to lose business to competitors because of their inability to keep up with customer needs and newer technology. At one point, their sales were down 92%. Things were looking pretty bad. They had massive layoffs and were at the brink of bankruptcy. At the last minute, the board brought in a consultant, who made some turnaround suggestions.

*Failure lies not in
falling down. Failure lies
not in getting up.*

CHINESE PROVERB

CLOSING THOUGHTS

- **Jack Welch:** An organization's ability to learn, and translate that learning into action rapidly, is the ultimate competitive advantage.
- **Henry R. Luce:** Business, more than any other occupation, is a continual dealing with the future; it is a continual calculation, an instinctive exercise in foresight.
- **Peter Drucker:** Checking the results of a decision against its expectations shows executives what their strengths are, where they need to improve, and where they lack knowledge or information.



Rick Chisholm made history when he single-handedly changed the professional Audio Visual industry by breaking all the rules and capitalised over 50% market share in Australia with very little capital, no partners, mergers or lenders and set up the first franchise operation of its kind in the world in the late 1990's and early 2000's.

As a 7x founder of companies and 30x businesses such as Innovest, AI Machine, Lightsounds, LSW, Light Emotion with revenue in excess of \$300 million and having employed more than 1,000 staff over the last 35 years. Rick is known as the Start-Up and SME Guru and is Author of a number of books including Business Success for Life. Unlike many mentors, he actually walks the talk and has a number of businesses under management in such areas as Automation, Events management, Importing, Distribution, Retailing and E-commerce.

His BIG passion is Business Education empowering Businesses Owners through knowledge and skills. Whilst Rick has experienced great success, he has also endured many failures. Rick has faced and overcome the exact same challenges you are facing now.



Tala Chisholm is an SME specialist who has owned and managed several small to medium sized businesses in the last 20 years, several of which were eventually sold. She has extensive experience in the fields of retail, franchising, licensing, dealerships, education, importing, distribution and consulting.

Her expertise lies in building and implementing customised cross-platform database and software solutions for businesses, automation, IT, web marketing, advertising, graphic design, business administration, process refinement and implementation. Her business experience ranges from bricks-and-mortar Giftware retailing to highly technical fields such as Security, CCTV, Entertainment Lighting and Audio sales, hire and installations as well as e-commerce.

Throughout her career she also trained and mentored Franchise business owners as well as internal division managers. Some areas of training included retail operations, management practices, business strategy, accounting, cash-flow, marketing, customer service and IT. She has also headed up the drafting of Operating Compliance Manuals for Franchise operations and implementation of all the elements involved.

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