Global Operations & Supply Chain Management- Notes

Subject Overview and Intro

Operations and supply chain management refers to the design, operation, and improvement of the systems that create and deliver a firm's primary goods and services

Operations and supply chain management is concerned with managing the entire production/delivery process.

Operations and supply chain management includes:

- Product design
- Purchasing
- Manufacturing
- Service operations
- Logistics
- Distribution

Success in operations and supply chain management is linked to:

- Business strategy
- Processes to deliver products and services
- Analytics to support the decisions needed to manage the firm

Key Terms

Operations → refers to manufacturing and service processes used to transform resources into products

Supply chain → refers to processes that move information and materials to and from a business

Goods → refers to a tangible product that has a physical form

Services → refers to an intangible product that does not have a physical form, and requires interaction with a customer

Process Activities

Any process encompasses a number of stages, including: planning, sourcing, making, delivering and returning

- Planning – refers to the process needed to operate an existing supply chain

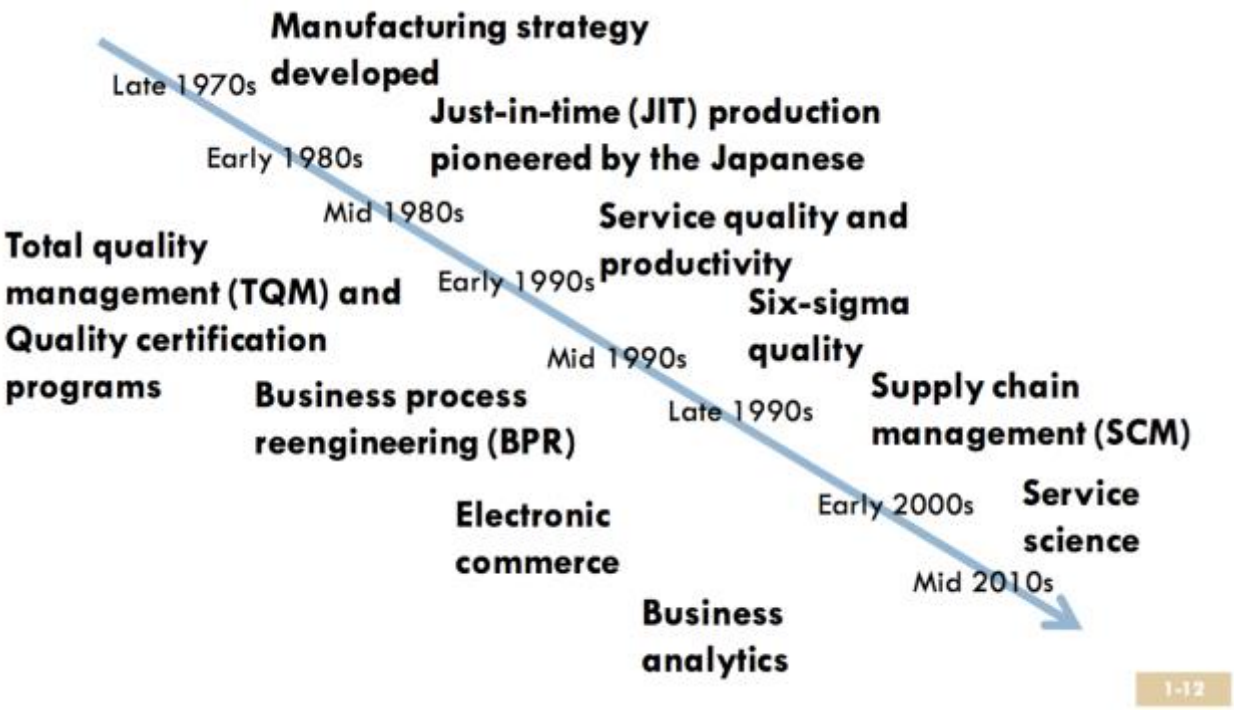
- Sourcing – refers to the process of selecting suppliers that will deliver the materials needed to manufacture a business's products

- Making – refers to the production of a good or service

- Delivering – refers to the process of selecting carriers and coordinating the movement of goods and services, and collecting payments from customers

- Returning – refers to the process of customers returning worn-out, excess or defective products

The History of OSCM



Current issues in OSCM

There are a number of issues in operations and supply chain management, including;

- Coordinating and maintaining relationships between members of the supply chain
- Optimizing global network of suppliers, producers, and distributors
- Managing customer touch points
- Sustainability and triple bottom line

Key Principals of OSCM

OSCM is inherently linked to efficiency, effectiveness and value

- Efficiency – refers to manufacturing at the lowest possible cost

- Effectiveness – refers to doing the right things to create the most value for your customer

- Value – refers to the attractiveness of a product to a customer relative to its cost

Effective operations and supply chain management helps to achieve the operational objectives of:

- Price – make a product or deliver a service at the lowest possible price
- Quality – whilst reducing the price, maintain and produce a good quality product
- Delivery speed – make and deliver a product quickly
- Delivery reliability – deliver a product when promised
- Changes in demand – have the capacity to swiftly respond to changes in demand
- Flexibility in production – have the capacity to swiftly add or stop the production of products

Trade-Offs

A business focused on low-cost production may not be able to quickly introduce new products, or a business focused on quality production may not be able to manufacture at the lowest possible cost

Strategy

Strategy refers to how a business plans to create and sustain value for its current shareholders

- Shareholders – refers to individuals or companies that legally have an equity stake in a business
- Stakeholders – refers to anyone that has a vested interest in a business – Ie: suppliers, customers, the government, etc…

Sustainability & Strategy

Incorporating a sustainability element to strategy means that a business must create and deliver value to meet the needs of consumers without compromising the ability of future generations to meet their own needs

A key element of sustainability is triple bottom line reporting, which evaluates a business against social, environmental and economic criteria

Operations and Supply Chain Strategy

Operations and supply chain strategy refers to the process of establishing policies and procedures around the use of a business's resources – this must be linked to firm's corporate strategy

Note: corporate strategy provides the overall direction and operational goals of a business

Formulating an Operations and Supply Chain Strategy

1. Develop/refine the strategy (done yearly)

Each year, a business must define their vision, mission and objectives. This is usually aided by a strategic analysis that helps to link their strategy to their competitive priorities

2. Translate the strategy to operations and supply chain initiatives (done quarterly)

Strategy must be linked to operations and supply chain processes and procedures

3. Major focus points and projects

Strategy must be linked to major focus points, and operations and logistics initiatives

Productivity Measurement

Productivity is a measure of how well resources are used

Productivity is generally measured by dividing inputs by outputs. There are different productivity measures:

- Partial productivity measures - compares output to a single input
- Multifactor productivity measures - compares output to a group of inputs
- Total productivity measures - compares output to all inputs

Partial measure	$\frac{\text{Output}}{\text{Labor}}$ or $\frac{\text{Output}}{\text{Capital}}$ or $\frac{\text{Output}}{\text{Materials}}$ or $\frac{\text{Output}}{\text{Energy}}$
Multifactor measure	$\frac{\text{Output}}{\text{Labor + Capital + Energy}}$ or $\frac{\text{Output}}{\text{Labor + Capital + Materials}}$
Total measure	$\frac{\text{Output}}{\text{Inputs}}$ or $\frac{\text{Goods and services produced}}{\text{All resources used}}$

Partial measures:

Business	Productivity Measure
Restaurant	Customers (meals) per labor hour
Retail store	Sales per square foot
Chicken farm	Lb. of meat per lb. of feed
Utility plant	Kilowatt hours per ton of coal
Paper mill	Tons of paper per cord of wood

Example:

Input and Output Production Data ($1,000)		Productivity Measure Examples
Output		Total measure
1. Finished units	$10,000	$\frac{\text{Total output}}{\text{Total input}} = \frac{13,500}{15,193} = 0.89$
2. Work in process	2,500	
3. Dividends	1,000	Multifactor measures:
Total output	$13,500	$\frac{\text{Total output}}{\text{Labor + Material}} = \frac{13,500}{3,153} = 4.28$
		$\frac{\text{Finished units}}{\text{Labor + Material}} = \frac{10,000}{3,153} = 3.17$
Input		
1. Labor	$ 3,000	Partial measures:
2. Material	153	$\frac{\text{Total output}}{\text{Energy}} = \frac{13,500}{540} = 25$
3. Capital	10,000	
4. Energy	540	$\frac{\text{Finished units}}{\text{Energy}} = \frac{10,000}{540} = 18.52$
5. Other expenses	1,500	
Total input	$ 15,193	

Design of Products and Services

Companies continually bring new products to market, and therefore product design is integral to success. Product design differs significantly depending on the industry

Core Competency

Core competency refers to the one thing a business can do better than its competitors

A core competency has three characteristics:

- It provides potential access to a wide variety of markets
- It increases perceived customer benefits
- It is hard for competitors to imitate

Brainstorming

Brainstorming refers to a general method of problem solving. It involves building on the ideas of others, staying focused on one topic, and encouraging group input

6 Phases of the Generic Development Process

There are generally 6 distinct phases that a business moves through when developing a new good or service

Phase 0: Planning

The planning phase begins with corporate strategy, and includes the business identifying their market objectives and mission statement, and then getting initial project approval

Phase 1: Concept Development

Concept develop refers to a business identifying the needs of the target market, and then designing numerous product concepts and evaluating them against each other. Generally, one product concept is selected for further development and testing

Note → a product concept refers to a description of the form, function, and features of a product

Phase 2: System-Level Design

System-Level design refers to a definition of the product architecture – a decomposition of the product into subsystems and components

Important parts of this phase are:

- Defining the final assembly scheme for the product system
- The geometric layout of the product is defined
- The functional specifications of each subsystem are defined
- A preliminary process flow diagram is established

Phase 3: Design Detail

During this stage, a final design is made on the geometry, materials, and tolerances for all parts, and a tooling mold is designed

Phase 4: Testing & Refinement

During this stage, preproduction versions of the product are constructed and evaluated, and prototypes are tested to determine if the product will work as designed

Phase 5: Production Ramp-Up

In this final stage, the product is made using the intended production system. Workers are trained and any problems are resolved. Products may be supplied to preferred customers for evaluation and there is a transition to ongoing product