

BUSINESS STUDIES

CHAPTER 1: ROLE OF OPERATIONS MANAGEMENT

1.1 Strategic role of operations management – cost leadership, good/service differentiation

- Operations refers to the business process that **involves transformation or, more generally production.**
- Involves the production of both goods and services.
- **Transformation** = conversions of inputs (resources) → outputs (goods + services).
 - This can add value.

Cost Leadership

- Cost leadership involves aiming to lower the costs of the business to a point where it can still run and be profitable.
- Costs: *inputs, labour, inventory, quality management.*
 - Can be achieved through economies of scale.

Product differentiation

- Differentiating products from competitors.
 - Goods – product features, quality.
 - Services – Time spent on service, level of expertise, qualifications, experience.

1.2 Goods and/or services in different industries

- Affects the way business produce their products and how they are manufactured.
- Standardised goods: Mass produced, normally on an assembly line, uniform quality.
- Customised goods: Varied according to the needs of customers, market focus.
- Perishable goods: High standard quality, short life times, quick distribution, appropriate packaging and storage.
- Non-perishable goods: Importance on quality, inventory and management.

1.3 Interdependence with other key business functions.

Marketing

- Design and sale of products.
- Operations acquires inputs of products so marketing can establish desired products.

Finance

- Finance may invest in new technology or machinery increasing speed and quality of production.

Human Resources

- Operations will determine the type of skill/knowledge a worker will need.
- Operations may decide to outsource.

CHAPTER 2: INFLUENCES

Globalisation	<p>Globalisation = Process of increased economic integration between economies with high trade and freer movement of resources.</p> <p>Impacts</p> <ul style="list-style-type: none">• <u>Production</u> → Supply chain on international level (different prices and qualities).• <u>Distribution</u> → Operations may focus on standardisation or customisation. More global markets.
Technology	<p>Technology involves new and innovative equipment for a range of business functions (manufacturing, marketing relations, hiring...).</p> <ul style="list-style-type: none">• Can <u>assist with admin and planning</u>.• <u>Processing level</u> (manufacturing, distribution...).
Quality Expectations	<p>Quality is the perception/raw materials used in the final product.</p> <ul style="list-style-type: none">• Must ensure there are processes that lead to the product meeting consumers expectations.
Cost-based Competition	<p>Cost-based competition is where prices are relatively fixed so businesses must find cost advantages to gain profit.</p> <ul style="list-style-type: none">• Reduce production costs or reduce fixed costs (materials).
Government Policies	<p>Government policies include a range of initiatives such as taxations and WH&S standards.</p> <ul style="list-style-type: none">• Costs may increase in response to a new policy, affecting operations.
Legal Regulation	<p>The expenses associated with meeting the costs of legal regulations is termed <u>compliance costs</u>.</p> <ul style="list-style-type: none">• WH&S costs including training.
Environmental Sustainability	<p>Environment sustainability refers to business operations that are shaped around practices that consume resources today without compromising the future.</p> <ul style="list-style-type: none">• Minimise waste, recyclable packaging, minimise carbon footprint.

2.2 Corporate Social Responsibility

Corporate Social Responsibility (CSR) refers to open and accountable business actions.

- Respect for people, community/society, broader environment.
- Not simply for profitability but community concerns and social expectations.

2.2.1 The difference between legal compliance and ethical responsibility

Legal Compliance	Ethical Responsibility
Must oblige by law, e.g. <i>deceptive/misleading advertising</i>	Meets legal expectations and take its further, pleasing the community

2.2.2 Environmental sustainability and social responsibility

- Principle of ecological sustainability requires businesses to evaluate the full environmental effects on their operations.
- Social responsibility = increased sales (may boycott if polluting environment).

CHAPTER 3: PROCESSES

3.1 Inputs

Inputs are the resources used in the transformation process. They can be owned by the business or come from suppliers.

Transformed Resources Resources are inputs that are changed or converted in the operations process.	
Materials	Raw = Copper, Oil – Intermediate = Chip → Computer.
Information	External (ABS) – Internal (Reports).
Customers	Contact with customers influences production and products . <i>E.g. transformed through service (knowledge, education).</i>
Transforming Resources Inputs that carry out the transformation process.	
Human Resources	Employees co-ordinate and combine other resources (tech + raw) to produce goods and services.
Facilities	Plant + machinery used in the operations process: <ul style="list-style-type: none">• Centralised or spreads out.• Aware of zoning restrictions.• Optimum plant + process layout.

3.2 Transformation process

Main concept of operations and differs between businesses. The process is **value adding** that allows for profit.

3.2.1 The four V's

Volume	<ul style="list-style-type: none">• <u>'How much'</u> can we produce.• <u>Lead time</u> = Time taken to fulfil order from the moment it's made.• Flexibility allows for change to be met:<ul style="list-style-type: none">• <u>Overproducing</u> = waste + inventory cost.• <u>Underproducing</u> = not meeting demands, losing sales.
Variety	<ul style="list-style-type: none">• Product mix (choice available).• Enables business to easily expand when operations allow for product mix (<i>e.g. Coca-Cola can produce beer, why not!</i>).
Variation in Demand	<ul style="list-style-type: none">• Businesses ability to change production to meet demand levels.• Faced with challenge of trying to predict trends in demand.• Increased demand can be hard to meet if:<ul style="list-style-type: none">• Suppliers cannot supply quickly.• Labour is not flexible enough, skilled or available.
Visibility (Customer Contact)	<ul style="list-style-type: none">• Customers preferences shape the production decisions of business.• Occurs through feedback, shopping habits, warranty claims, complaints, interaction, sales data.• Businesses seek to maximise sales and will take on this information.

3.2.2 Sequencing and Scheduling

Sequencing – Refers to the order in which activities in the operations process occur.

Scheduling – Refers to the order in which activities in the operations process.

Gantt Chart						
	Jan	Feb	March	April	May	June
Obtain lease and refit shop	■	■				
Purchase stock		■	■			
Select and train staff			■	■	■	
Advertising campaign				■	■	■
Commence trading						■

Critical Path Analysis						
<pre> graph LR A((A)) -- 5 days --> B((B)) B -- 2 days --> E((E)) B -- 6 days --> F((F)) E -- 4 days --> C((C)) F -- 5 days --> C C -- 3 days --> D((D)) C -- 2 days --> D </pre>						

- Type of bar chart that shows both scheduled and completed work over a period of time.
- Used in planning and tracking a project.

- Scheduling method as technique that shows what tasks need to be done, how long they would take and what order is necessary.
- **The critical path is the shortest length of time it takes to complete all activities necessary to complete project.**

3.3 Technology, task design and layout

Technology

Office Technology

- High speed workplace with communication.
- Work from home.
- Must decide purchase or lease as large expense that can become outdated.

Manufacturing Technology

- Robotics & Computer-aided design.
- Used in operations process from **design → distribution → transformation and production.**

Task Design

- Involves classifying job activities in order for employees to successfully conduct the job (overlap with HR).
- Skills Audit – Formal process used to determine the level of skilling and any shortfalls in the business.

Task Layout

- Workplace Layout – Depends on the operations of a business.
- Process Layout – Machines grouped together by their function.
- Product Layout – Sequence of tasks performed → natural flow.

- Fixed Position Layout – Product remains in one location due to bulk (*machinery*).
- Office Layout – Aims to lead to efficiency in the workplace, done through organisation of workstation.

3.4 Monitoring, controlling and improvement

Monitoring: Measuring actual performance against planned performance (KPI's).

Controlling: Changes will be made in the transformative process if KPI's are not met.

Improvement: Systematic reduction of inefficiencies and waste, poor work process and the elimination of any bottlenecks.

3.5 Outputs

Outputs refer to the end result of the business efforts – the product that is produced and delivered to the customers.

1. Customer Service

- Relates to how well a business meets and exceeds the expectations of customers in all aspects of the business.
- **Benefits** – *Charge more, growth, market share, profit.*

2. Warranties

- Guarantee of quality.
- Promise that business will correct any defect involved in the goods that they produce or deliver.
- Allows for individual quality aspects to be monitored

CHAPTER 4: STRATEGIES

4.1 Performance objectives

Quality	Customers' expectations. 1. Product design. 2. Conformance (meets expectations). 3. Service.
Speed	<ul style="list-style-type: none">• Time taken or production in response to market.• Goals around speed; reducing wait and processing time.
Dependability	Dependability (reliability) is how consistent and reliable a business's products are. This can be measured by warranty claims and complaints.
Flexibility	How quickly operations process can adjust to changes in the market.
Cost	Refers to minimising expenses in the operations process, reducing costs will directly improve profit.
Customisation	<ul style="list-style-type: none">• Creation of individualised products to meet the specific needs of consumers.• Some products are a mix of standardisation and customisation.• Mass customisation allows standard products to be personally modified (e.g. CPU on Mac).

4.2 New product or service design and development

New products allow for businesses to better meet the needs of customers or to take advantage of new technology.

Market research → Product design → Prototype testing → Production → Product launch.

4.3 Supply chain management

Supply chain management (SCM) involves integrating and managing the flow of supplies throughout the inputs, outputs and transformative process in order to best meet customer needs.

Logistics

- Logistics is a term referring to distribution but includes transportation, storage, warehousing and packaging centres.

E-Commerce

- Involves the buying and selling of goods and services via the internet.

Global Sourcing

- Sourcing refers to the purchasing of inputs for the transformation process.

- Global sourcing – **cost advantages, access to new technologies** // **relocation, storage + distribution, increased complexity**

4.4 Outsourcing – Advantages and Disadvantages

Outsourcing: Using external providers to perform business activities.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Simplification (focus on key activities). • Efficiency and cost saving. • Greater flexibility. • Increased capability. • Access to skills. • Less capital expenditure. • Increased accountability (3rd party firms are contactable bound to KPI's). 	<ul style="list-style-type: none"> • Loss of control standards and security. • Payback period and cost (over time could experience cost savings 2/3 yr.). • Communication and language. • Loss of jobs. • Outsourcing company may go out of business.

4.5 Technology

Leading edge: Most advance/innovative at the time, allows for cost leadership and product differentiation → PO's (PRICE + QUALITY).

Established Technology: Developed and widely used, accepted e.g. *barcodes*.

4.6 Inventory management – Advantages and disadvantages of holding stock, LIFO, FIFO, JIT

Inventory or stock refers to the amount of raw materials, work-in-progress and finished goods that a business has on hands at any particular point.

Holding Stock	
Advantages	Disadvantages
<ul style="list-style-type: none"> • Customer demand can be met. • Reduces lead and delivery times. • Satisfied consumers. • Stocks are an assets. 	<ul style="list-style-type: none"> • Storage charges, spoilage, insurance, theft, handling expenses. • Cost of obsolescence (out of date). • Difficult to accurately monitor inventory.

Valuing inventory directly impacts the balance sheet, income & cash flow statement.

<u>LIFO</u> Last in First Out	<ul style="list-style-type: none"> • Stock that comes in last → sells first. • Method of pricing/valuation assumes that the last goods purchased are the 1st goods sold and therefore the 1st goods sold is the price of the last to come in. • Overstates cost, understates GP, stock may be undervalued.
<u>FIFO</u> First in First Out	<ul style="list-style-type: none"> • The 1st products that's purchased is the 1st product sold and there the cost of each unit sold is the first cost recorded. • Understates stock cost, overstates profit, remaining stock may be overvalued.
Average Cost	Takes the weighted average of all units available for sale during the accounting period and then uses that average cost to determine the value of COGS and ending inventory.

	Sales (\$2/Loaf)	COGS/Loaf	Total COGS	Inventory
FIFO	\$400	\$1	\$200	\$250
LIFO	\$400	\$1.25	\$250	\$200
Ave. Cost	\$400	\$1.125	\$225	\$225

Just in Time (JIT)

- Ordering raw materials just in time for production to reduce wasting space.

Advantages

- Cost savings for smaller storage space.
- Reductions in waste and scrap.
- More working capital as not being used in stock/raw materials.

Disadvantages

- Unable to meet sudden increases in customer demand.
- Heavy reliance on suppliers.
- Loss of discounts to bulk billing.
- Requires that suppliers be located close to the manufacturer's factory, and capable of providing defect-free materials consistently.
- Also requires reliable transport links, efficient handling of materials once they arrive, and very good production planning.

4.7 Quality management

- Refers to those processes that a business undertakes to ensure consistency, reliability, safety and its fitness for a stated purpose.

1. **Quality control measures**

- Involves the use of inspections at various points in the production process to check for problems and defects.
- First standards must be defined, determined or measured.
- Staff training or use of machines may act to improve or standardise quality.

2. **Quality assurances measures**

- Involves the use of a system to ensure that set standards are achieved in production.
- Series of international standards to ensure products meet a minimal quality.

3. **Quality improvement**

- Continuous improvement is an ongoing process where a business's goods/services may be improved through gradual time or an innovative breakthrough.

4.8 **Overcoming resistance to changes**

Operations management needs to manage and be responsible to change.

Financial costs.

- Purchasing new equipment.
- Redundancy payments.
- Retraining.
- Reorganising plant layout.

Inertia (tendency to stay in a state of inactivity) **and psychological resistance to change experienced by employees.**

- Overcome through;
 - Communicating.
 - Gathering widespread support for change.
 - Use change agents (initiates/facilitates change).
 - Apply change models.

4.9 **Global factors**

There are several global factors that present opportunities when assessing the operations strategies available for operations managers:

1. **Global sourcing.**

- Finding suppliers offshore or in multiple countries.

2. **Economies of scale.**

- Become more efficient through large scale production, bulk purchasing and transport.

3. **Scanning and learning.**

- Learning from what others are doing and finding the best practice for the specific business (*e.g. Japan's production line*).

4. **Research and development.**

- Companies that invest in R&D can have a competitive advantage over competitors through the understanding consumers needs and producing a product that satisfies it.