Operations
Role of Operations Management

**Role of Operations Management**
- strategic role of operations management - goods/ services differentiation, cost leadership
- goods and services in different industries
- Interdependence with other key business function

**Strategic Role of Operations Management**

Operations management is defined as the design, operation and improvement of the systems that create and deliver a firm’s primary products and service.

Operations relates to managing inputs, processes and outputs.

**Inputs:** raw materials, a customer, finished product from elsewhere

**Transformation Processes:** uses resources to convert inputs in some desired output. They should add value.

---

**Case Study: Amazon**

**Syllabus Point: Role of Operations Management**

**Place:** UK

After ordering online, Amazon processes its customers demands in a large warehouse. The business uses production-line processes (with machines to aid manual labour) in order to streamline their day-to-day operations.

There is a great deal of specialization in which one person carries out the same tasks. This person then becomes skilled in a specific area of expertise and can then speed it up.

Strategic refers to the plans for the whole business, for the longer term (5 years).

**Cost Leadership**

All operation efforts are directed at low costs and achieving economies of scale (when a business produces greater output the costs per unit of production fall i.e. Cheaper to produce)

*“Make the product cheap or deliver it for a low price”*

**Good/ Services Differentiation**

Enhancing the quality of the product. Do something different from competitors (done through marketing/ branding)

*“Do something differently from competitors”*
Goods and Services In Different Industries

Standardised goods are those that are mass produced, usually on an assembly line. Standardised goods are uniform in quality and meet a predetermined level of quality. These are generally produced with a production focus.

Customised goods are those that are varied according to the needs of customers. These goods are produced with a market focus rather than a production focus.

Intermediate Goods: A feature of production processes is that sometimes goods may be processed more than once. This means that goods completed, having gone through one set of operational processes, may then become inputs into further processing e.g. A manufacturer converts steel into tiny screws.

The fast-food industry is an industry that aims to standardise the service. This differs from industries that are characterised by professionally educated and trained people. Accounting services, dental surgeries, medical services, legal services and so on are generally customised.

Self-service means encouraging the customers to take the initiative to help themselves. In this way, businesses can concentrate on customisation when a person cannot help themselves.

Interdependence with Other Key Business Functions

Interdependence refers to the mutual dependence that the key functions have on one another. The key business functions work best when they overlap and employees work towards common goals. Each function area depends on the support of the others if it is to perform at capacity.

In terms of the four key functions of a business (HR, Marketing, Operations and Finance) there is a distinct interdependence that is necessary for the business to function effectively.

<table>
<thead>
<tr>
<th>Operations</th>
<th>Marketing</th>
<th>Human Resources</th>
<th>Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>Sales and Advertising</td>
<td>Industrial Relations (IR)</td>
<td>Administration</td>
</tr>
<tr>
<td>Provision of services</td>
<td>Product Design</td>
<td>Human Resources Management (HRM)</td>
<td>Financial Management</td>
</tr>
<tr>
<td>Other value adding</td>
<td>Marketing Strategies</td>
<td>Personnel</td>
<td>Financial Planning</td>
</tr>
<tr>
<td>May be domestic or global</td>
<td></td>
<td></td>
<td>Management and Change</td>
</tr>
</tbody>
</table>

Case Study: Easy Start (Toilet Paper)

Syllabus Point: Goods/ Services Differentiation

Place: UK

The factory covers 54 acres, the size of a village... This allows an unprecedented capacity.

The toilet paper has special glue technology that prevents sticking and the first sheet breaking. (competitive advantage)

Additionally, they have formulated a chemical that drowns out the smell of faecal matter.

"as I put on my high-vis jacket, steel capped shoes and regulation factory ear plugs" - OHS. Safety is of paramount concern in each business.
There are various tasks that typify a certain area, some are as follows;

- **Operations** refers to the business processes that involve transformation or, more generally, ‘production’.

- **Marketing** is about meeting the needs and wants of consumers through provision of products (both goods and services) at prices that the market is prepared to pay.

- Reports such as income statements, which determine the amount of money the business has earned after its expenses have been paid, are very useful to managers and other stakeholders.

- **The function of human resources** is to deal with the people the business employs and the issues arising from their employment.

---

**Learn to: Easy Start (Toilet Paper)**

**Learn to: Assess the relationship between operations and the other key business functions in two actual businesses**

**Operations and Finance**

There is a close relationship between operations and finance at SCA paper. Every decision made by operations managers will have financial implications for SCA paper. For example, decisions about daily production targets impact costs of production such as staff, and electricity, which MUST be budgeted for. In addition to daily decisions, the strategic plans of the business (e.g. New products like the 2 in 1 odour neutralizing paper require close planning + communication between operations + finance to ensure financial viability and operational capability.

**Operations and Human Resources**

Operations is closely linked to Human Resources as the latter provides the man-power to enable operations to function. The expansive functions of SCA paper must be fulfilled by a wide range of staff. There are certain elements of HR that are mentioned concerning Easy Start, these including:

- **OHS:** The company must maintain safety standards to avoid legal feuds (refer to quotation above)

- **Rostering:** In order to avoid over/under working staff, a rostering system is implemented to keep the flow of operations and keep staff confidence/ mentality high.

**Operations and Marketing**

In every business, operations of a business often translate into the basis for the marketing campaign. This is certainly true for Easy Start. This business has developed a product that combats a common pitfall of toilet rolls, the first sheet breaking. As a result, Easy Sart has conducted their marketing and tandem with this operational advantage. This is important for the business as the marketing must be a true reflection of the general advantages of the product. In addition to this, the business has also implemented perfume within their various products. Due to the unappealing idea of ‘smell’ in advertising campaigns, the business attack the sensual side of scent.
Influences

- Globalisation, technology, quality expectation, cost-based competition, government policies, legal regulation, environmental sustainability
- Corporate Social Responsibility
  - the difference between legal compliance and ethical responsibility
  - social responsibility and environmental sustainability

Globalisation | Technology | Quality Expectations | Cost-Based Competition | Government Policies | Legal Regulation | Environmental Sustainability

Operations management is influenced by external business environment (things beyond the business’ control). These influences can apse both threats and opportunities to businesses.

Globalisation

Globalisation is a process of increased integration of world economies, facilitated by:
- Removal of trade barriers.
- Creation of trade agreements
- Technology
- Changing Governments syllabuses

Globalisation is a very significant influence on operations management. Large businesses are increasingly orienting their practices towards the global market, with a view to meeting the needs of global consumers. Global consumers seek global brands and tend to seek standardised products. Impact on supply chain management; “global web” and sourcing of raw materials. For Example: Nike outsource their production to Asia due to cheaper labour costs.

Technology

Technology may be defined as the application of innovations in design, constructions, production methods and equipment for practical purposes.

Technologies can be applied to, and integrated with, the range of processes that characterise the operations function in business. At an administrative level, technologies assist with organisation, planning and decision making and are in control of operational processes. At a processing level, technologies are used in manufacturing, logistics and distribution, quality management, all aspects of inventory management, supply chain management and sourcing.

Case Study: Woolworths

This business has introduced an IT system that directs workers to the aisles and rows with the quickest route. Woolworths have used “stocksmart” and “auto stock” to give the business an indication as to when they will need to replenish supplies. This has helped laving their operations costs.

Quality Expectations

Quality refers to how well designed, made and functional goods are, and the degree of competence with which services are organised and delivered.
The expectations that people have of businesses determine the way that products are designed, created and delivered to customers. Clearly, this implies that operations processes must follow particular standards or prescribed minimum levels of excellence. E.g. Virgin Airlines distinguish between classes, like any airline.

Learn to:

Learn to: Discuss the balance between cost and quality in operations.

There is a strong relationship between cost and quality, they inform each other both positively and negatively. If a business is focused on cost leadership (i.e. Leading the market with cheap prices) then there is often a compromise on quality [conflicting goals].

Through effective operations strategy, a business can achieve a balance i.e. streamlining production.

Cost-Based Competition

Another influence on operations is the actions of competitors and how they price their products. Cost based competition is derived from determining breakeven point (the level at which the business matches total costs with total revenue) and then applying strategies to create cost advantages over competitors.

Fixed costs are those that do not change regardless of the business activity level, whereas variable costs are those that vary according to the business activity level (production level). E.g. Coles: Down-Down prices are down. Ways to reduce costs:

• Bulk buying
• Eliminating waste
• Use automated production systems

Case Study: Pacific Brands

• The lowering of tariffs has had a major impact on Pacific Brands, an Australian company whose brands include: Bonds, Holeproof, King Gee etc
• The company could not compete with imported goods and needed to lower its manufacturing costs.
• As labour costs were too high in 2009 and 2010 it shut down 10 factories in Australia and New Zealand, resulting in 3000 job losses, and moved part of its manufacturing offshore to China.

Government Policies

Government policies are methods used by government that encourage the operations function of a business to be more innovative and competitive in their operations as it ultimately produces more income for the nation. The reduction of protection in clothing manufacturing in the textiles, clothing and footwear industry (TCF) has forced many businesses to relocate operations to a country where resources are cheaper. Important Policy areas; tax, trade, innovation/competition, Government Spending & Monetary Policy.
**Legal Regulation**

The range of laws with which a business must comply with in a range of issues such as; safety, quality, reporting and environmental impact. **Compliance costs** are the expenses associated with meeting the requirements of legal regulations, i.e. abiding by all laws.

- OH&S – Work Health and Safety Act 2011 – in regards to operations: employee must be given appropriate safety training, use of protective equipment that abide by noise, pollution and safety standards.

**Environmental Sustainability**

Environmental sustainability (ecological sustainability) means that business operations should be shaped around practices that consume resources in a way that doesn’t threaten the future health of the environment. There are two aspects to environmental sustainability;

- The sustainable use of renewable resources
- A reduction in the use of non-renewable resources.

The operations management function is significantly affected by the rise in climate change awareness and the need to integrate a long-term sustainable view of resource management into business planning and practice. e.g. Moves to recycle water, glass, paper and metals, and reduce their carbon footprint.

**Corporate Social Responsibility**

**Social Responsibility** is the responsibility of an organisation, for the impacts of its decisions and activities on society and the environment, through transparent and ethical behavior.

---

**Learn to:**

**Learn to: Identify the breadth of government policies that affect operations management.**

**Interest Rates:** If businesses are in need of a loan, heightened rates will affect the production levels.

**Tax Changes:** If consumers have to contribute more income to tax they will spend less thus affecting businesses. An increase in company tax would remove profitability and investment opportunities.

**Competition Changes:** Governments restrict or rather promote competition, this can lead to a change in the way businesses are run i.e. new products.

---

**Learn to:**

**Learn to: Explain why corporate social responsibility is a key concern in operations management.**

A business’ perception in the public forum is often dictated by its CSR policies. A business must satisfy the criteria to achieve a respectable standard of CSR. The reason why this is important for businesses is because operations, the basis of the business, includes processes that define a business i.e. Toyota, in response to environmental threats, have designed a series of electric cars. Apart from the environmental factors, a business must also have good working conditions and these factors will dramatically change operations management and furthermore the perception of the business’ CSR.

---

**The Difference Between Legal Compliance and Ethical Responsibility**

**Legal compliance** is about adhering to the laws setup by the government and are heavily enforced by government enforced agencies such as health inspectors and police.
Ethical Responsibility: How a company carries out its operations and overall regard for stakeholders, in the areas of the environment and community.

National Employment Standard (NES). Some businesses choose to exceed this and offer more benefits to staff. Concerning Ethical Responsibility, some businesses choose to exceed these standards and offer more benefits to staff e.g. NAB allowing each of their workers to choose a day off each period.

Environmental Sustainability and Social Responsibility

Environmental Sustainability refers to ensuring that business practices and decisions preserve the environment for current and future generations (Woolworths). Whereas Social Responsibility refers to a business’ obligation to contribute to the community and consider the impacts of their decisions and actions on all stakeholders.
Operations Processes

Operations Processes

- **Inputs**
  - transformed resources (materials, information, customers)
  - transforming resources (human resources, facilities)

- **Transformation Processes**
  - the influence of volume, variety, variation in demand, visibility (customer contact)
  - technology, task design, process layout
  - sequencing and scheduling - Gantt charts, critical path analysis
  - monitoring, controlling, improvement

- **Outputs**
  - warranties
  - customer service

Operations are the processes involved in the transformation of inputs into outputs (i.e. the production system)

**Inputs**

Inputs may be classified as materials, people or physical resources and further categorised as transformed or transforming resources.

**Transformed Resources: Materials, Information, Customers**

Inputs are the resources used in the transformation (production) process. Some of the inputs are already owned by the business, while others will need to be purchased from suppliers. There are 4 common direct inputs:

- **Labour**: human effort both mental and physical
- **Energy**: in the form of electricity or fuels
- **Raw materials**: components needed to manufacture a good
- **Machinery and technology (capital equipment)**

**Materials** are the basic elements used in the production process and consist of two types: raw materials and intermediate goods.

**Information** is the knowledge gained from research, investigation and instruction, which results in an increase in understanding.

**Customers** are also an input because it is their needs and desires that ‘drive’ the operations of the business.

**Transforming Resources: Human Resources, Facilities**

These are the resources that remain in the businesses and are applied to the inputs to change them to add value - staff and facilities. They change and convert transformed goods and services.
Human resources are the staff who contribute to transformation of a business. Facilities refer to the plant (factory or office) and machinery used in the operations processes.

Transformation Processes
This is the series of steps taken to convert inputs (resources) to outputs (g/s). Transformed and transforming inputs are brought together.

Operations is about value adding. As inputs are added and processed into final goods for consumption value is added.

The Influence of Volume, Variety, Variation in Demand and Visibility (Customer Contact)

<table>
<thead>
<tr>
<th>Influence</th>
<th>Definition</th>
<th>Impact on Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>How much of a product is made.</td>
<td>If businesses cannot quickly adjust to changes in market demand, it can over produce, which may lead to wastage and increased inventory costs. Alternatively, if back orders cannot be quickly fulfilled, it can lead to lost sales. See the following Snapshot for an example.</td>
</tr>
<tr>
<td>Variety</td>
<td>The mix of products made, or services delivered through the transformations process.</td>
<td>Will alter the amount of choice -&gt; more machinery will be needed to produce the goods. This will in turn affect the planning/ scheduling of product creation. Bulk buying allows economies of scale.</td>
</tr>
<tr>
<td>Variation in Demand</td>
<td>the amount of a product desired by consumers at a certain time.</td>
<td>Constant Demand: Predictable Maintain economies of scale (Long term negotiation of supplies) Staffing- Full time or Part Time? No idle machinery or stock</td>
</tr>
<tr>
<td>Visibility</td>
<td>the nature and amount of customer contact (feedback).</td>
<td>Businesses use both direct and indirect information to alter or better their operations. <strong>Direct</strong> - Surveys, interviews and letters. <strong>Indirect</strong> - Market analysis</td>
</tr>
</tbody>
</table>

Sequencing and Scheduling - Gantt Charts, Critical Path Analysis

Sequencing refers to the order in which activities in the operations process occur. Scheduling refers to the length of time activities take within the operations process.

**Gantt Charts**

The Gantt chart is a type of bar chart that shows both the scheduled and completed work over a period of time. It is often used in planning and tracking a project. The Gantt chart provides a visual representation of the task and allows the business to monitor actual progress against goals. They force a manager to plan the steps needed to complete a task and to specify the time required for each task.

**Critical Path Analysis**

Critical Path Analysis (CPA) is a scheduling method or technique that shows what tasks need to be done, how long they take and what order is necessary to complete those tasks. The critical path is the shortest length of time it takes to complete all tasks necessary to complete the process or project. It shows that tasks can be performed simultaneously. Because each activity on the schedule must be completed to make the final product, the critical path is actually the shortest path through the process (having completed all tasks).
Technology, Task Design and Process Layout

Technology
Technology: Technology is the application of science or knowledge that enables people to do new things or perform established tasks in new and better ways.
Examples of technology in transformation:
• Computers - Processes speed, Controlling machines, Design, Software

<table>
<thead>
<tr>
<th>Acquiring</th>
<th>Developing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheaper - Less risk</td>
<td>R’N’D costs</td>
</tr>
<tr>
<td>May not be 100% fit</td>
<td>Trial and Error</td>
</tr>
<tr>
<td></td>
<td>Competitive Advantage</td>
</tr>
</tbody>
</table>

Improved Efficiency || Lower Costs Over Long Term || Higher Quality || Competitive Advantage

Task Design
Task Design: Task design involves classifying job activities in ways that make it easy for an employee to successfully perform and complete the task. Task Design is important in operations processes as it allows employees to understand establish their purpose.

Operations managers must/could consider the following things:
• Quality control as part of the worker’s job: Now often referred to as “quality at the source”, quality control is linked with the idea of empowerment, that is giving employees a sense of purpose in working effectively.
• Cross Training of Workers: As companies downsize the remaining task force should be able to conduct/ substitute where possible.

Process Layout
Process layout is the arrangement of machines such that the machines and equipment are grouped together by the function (or process) they perform - it is all about creating efficiency. For example a hospital layout is such that each person is categorised into various ward that are then divided once more in to specific room, allowing doctors and nurses to aid their patients efficiently.

Monitoring, Control and Improvement

Monitoring
Monitoring is the process of measuring actual performance against planned performance. During operations processes monitoring is crucial. Monitoring involves the measuring of all aspects of operations, from supply chain management and the use of inputs, through to transformation processes and outputs. Monitoring is generally assessed using key performance indicators (KPI):
• lead times/wait times/idle time
• direct and indirect cost analysis.

Control
Control occurs when KPIs have been assessed against predetermined targets corrective action is taken if required i.e. If there is a discrepancy between performance and goals, changes and improvements can be made. All operations managers should exercise strict controls over the transformation processes. This can be done by setting challenging but reasonable performance targets. The business performance is then closely measured and those measurements are constantly scrutinised.
Improvement refers to systematic reduction of inefficiencies and wastage, poor work processes and the elimination of any bottlenecks. Improvement typically is sought in the following areas:

**Time:** through the minimisation of bottlenecks, an assessment of the necessity in all transformations processes and wait times (including lead times)

**Efficiency:** through the reduction of waste and the creation of greater output per unit input.

## Outputs

Outputs are those physical products and services that satisfy consumers and create a competitive advantage.

### Customer Services

Customer service refers to how the business communicates and interacts with the consumer at all stages of the transaction. The better the market search, the more latitude the business has in determining its prices (increased market share).

### Warranties

A warranty is a legally binding agreement provided by the business that the product meet certain standards or possesses certain attributes. There are several implications on an operations level for supplying an extended warranty:

- Need to parts available/ technical expertise available
- Enough resources to fulfill the resources that you promise
Operations Strategies

Performance Objectives

Performance objectives are goals that relate to particular aspects of the transformation processes. An operations manager wants to create a competitive advantage.

Quality

Quality refers to the standard of something as measured against other things of a similar kind. Quality performance objectives include: Quality of design, Quality of conformance, Quality of service. Good quality prevents costs caused by product recalls and repairs made under warranty.

Speed

Speed refers to the time it takes for the production and the operations process to respond to changes in market demand. Speed of response is important in terms of customer satisfaction and repeat business.

Dependability

Dependability, as a performance objective, refers to how consistent and reliable a business’s products are. McDonalds has a high dependability. The greater the number of warranty the claims the less reliable the business’s product or service is.

Flexibility

Flexibility refers to how quickly operations processes can adjust to changes in the market. Time and flexibility are related: the quicker the processing time the greater the likelihood that processes can be adjusted quickly.

Customization

Customisation refers to creation of individualised products to meet the specific needs of the customers. Managers would need to work with marketing to determine which customisations are most sought after and would appeal to new markets.
Cost

Cost as a performance objective refers to the minimisation of expenses so that operations processes are conducted as cheaply as possible. Efficiency is a key objective of operations and cost objectives are concerned with keeping costs as low as possible.

New Product or Service Design and Development

An important strategy for the operations processes of business is the creation, or design and development, of new products (goods and services). The design, development, launch and sale of new products enables a business to grow and to attain a competitive advantage.

Explicit service is also called the tangible aspect of the service being provided, such as the application of time, expertise, skill and effort.

Implicit service is based on a feeling and is therefore intangible. The implicit aspects of a service are the psychological well-being — the feeling of being looked after — that comes with the provision of the service.

Supply Chain Management

Supply chain management is the management of a network of interconnected business involves in the ultimate provision and product and service required by end customers.

Logistics

Logistics is a term broadly referring to distribution but includes transportation (including transportation modes), the use of storage, warehousing and distribution centres, materials handling and packaging.

E-Commerce

E-commerce involves the buying and selling of goods and services via the internet. With reference to supply chain management, e-commerce is relevant to particular forms of sourcing. The impact of e-commerce may be explained with reference to the business and its sourcing, and the customer and their orders that are received electronically.

Global Sourcing

Global Sourcing is a broad term that refers to businesses purchasing supplies or services without being constrained by location. In the supply chain management activity, global sourcing means buying or sourcing from wherever the suppliers are that best meet the sourcing requirements.

Outsourcing

Outsourcing: When a business decides to hire outside contractors to perform certain tasks and activities, rather than performing the tasks themselves.

Advantages and Disadvantages

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allows a business to focus on core business functions</td>
<td>Cost and uncertainty associated with payback</td>
</tr>
<tr>
<td>Efficiency and Cost savings</td>
<td>Loss of standards control and information security</td>
</tr>
<tr>
<td>Increased process capability</td>
<td>Competitors may outsource the same business thus a business can lose it’s competitive advantage</td>
</tr>
<tr>
<td>Increased accountability</td>
<td></td>
</tr>
</tbody>
</table>
**Advantages** | **Disadvantages**
--- | ---
Access to skill/resources lacking within the business |  

## Technology

**Technology** is the equipment and knowledge that are available to help businesses perform certain functions or make products.

### Leading Edge

**Leading Edge:** being the first to develop and implement new technology (cutting edge). An example in education is the shift to online forums, tutorials, and workbooks. For example, the HSC Business Studies textbook can be downloaded online with a special code.

**Issues in being leading edge:**
- Cost related to R&D
- Gain Competitive Advantage
- Risk; Could Fail
- Staff are unaware with the technology

### Established

**Established:** Technology has been tried and proven and is therefore very reliable and dependable. Example: Foxconn

## Inventory Management

Inventory management involves making decisions regarding how much stock to have on hand at any one time and the most appropriate systems of storage and the methods of handling. The aim of inventory management is to minimise the cost of holding stock.

### Advantages and Disadvantages of Holding Stock

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simplification</td>
<td>The cost and uncertainty associated with payback</td>
</tr>
<tr>
<td>Efficiency and cost savings</td>
<td>The cost and uncertainty associated with payback</td>
</tr>
<tr>
<td>Increased process capability</td>
<td>Issues with communication and language</td>
</tr>
<tr>
<td>Increased accountability</td>
<td>Loss of control of standards and information security</td>
</tr>
<tr>
<td>Provides a capacity to focus on core competencies thus improving in-house performance and several strategic benefits.</td>
<td>Loss of corporate memory and costs associated with IT, organisational change, redesign and management of hierarchies.</td>
</tr>
<tr>
<td>Access to skill/resources lacking within the business</td>
<td></td>
</tr>
</tbody>
</table>

### LIFO (Last-in-First-Out)

The **LIFO** (last-in-first-out) method of pricing inventory assumes that the last goods purchased are also the first goods sold and therefore the cost of each unit sold is the last cost recorded. The advantage of using LIFO is that the prices
used to calculate the cost of sales, and therefore the gross profit, are more recent and therefore more closely reflect their economic value. However, in times of falling prices, LIFO overstates profits and maximises taxes.

**FIFO (First-in-First-out)**

The FIFO (first-in-first-out) method of pricing inventory assumes that the first goods purchased are also the first goods sold and therefore the cost of each unit sold is the first cost recorded.

**JIT (Just-in-Time)**

Just-in-time (JIT) is an inventory management approach which ensures that the exact amount of material inputs will arrive only as they are needed in the operation process.

**Quality Management**

Quality management refers to those processes that a business undertakes to ensure consistency, reliability, safety and fitness of purpose of product.

- **quality control** — inspection, measurement and intervention
- **quality assurance** — application of international quality standards
- **quality improvement** — total quality management and continuous improvement.

**Total Quality Management (TQM)** commonly known as kaizen relies on continuous improvement in all functional areas, not just operations. This approach is a holistic one in which quality becomes a commitment and the responsibility of every employee. Controls are put in place to ensure poor-quality goods are not passed on to the consumer.

**Control**

Quality control involves the use of inspections at various points in the production process to check for problems and defects. If a business were to discover too late that its product was defective, this would result in lost customers, damaged goodwill, and possibly the recall of products.

**Assurance**

Quality assurance (QA) involves the use of a system to ensure that set standards are achieved in production. Many businesses seek to achieve quality certificates from Standards Australia and the widely used International Standards Organisation: ISO 9000 series.

**Improvement**

Continuous improvement is an ongoing commitment to improving a business’s goods or services.

**Total Quality Management (TQM)** commonly known as kaizen relies on continuous improvement in all functional areas, not just operations. This approach is a holistic one in which quality becomes a commitment and the responsibility of every employee. Controls are put in place to ensure poor-quality goods are not passed on to the consumer.

**Overcoming Resistance to Change**

**Financial Costs**
Financial costs are the consequences of purchasing new equipment, redundancy payment, reorganizing plant layout and reducing inertia.

**Purchasing New Equipment**

- Operations managers often resist change as the high financial costs of the new equipment may not be returned to the business in the form of increased profits.

- The operations manager must consider all the costs associated with purchasing the new equipment and weigh up the long-term costs saving against the short-term impact on the business. Case Study example: Qantas replacing its jets.

**Redundancy Payments**

- This occurs when an employee’s skills are no longer required because their job no longer exists or they have been replaced by technology or equipment. It is common to occur during restructuring and downsizing.

- These employees are entitled to financial compensation in the form of a redundancy payout. This can be very expensive.

**Retraining**

- Any significant change requires staff to learn new skills, especially with changing technology. This can be very costly, along side with the costs for new plant and equipment. The time lost while training will affect the business’s productivity during this time.

**Reorganizing Plant Layout**

- The business will need to re-organise where equipment is laid out and how the production process operates so that manufacturing occurs in the most efficient manner and bottlenecks are avoided.

- The costs of reorganising can be a disincentive to change as it can require closure of the business while the equipment is physically moved. Workers will also need to be trained in the new layout. E.g. Swerve and Co. Had a new table labeling system due to a new plant layout.

**Inertia**

- People are resistant to change – they are more comfortable acting in the way that they have in the past, even if it's clearly not best practice. Inertia is a term that describes a psychological resistance to change as there is a feeling of uncertainty or fear of the unknown.

**Global Factors**

**Global Sourcing**

- This is the strategy of acquiring inputs from around the world in order to lower costs and/or improve quality.

- It may also allow the business to produce a greater variety of goods as it can access inputs that are not available domestically.

**Economies of Scale**

This is the cost advantages that can be gained by producing on a larger scale. By increasing its size the business can spread its costs over more units therefore decreasing the total cost per unit.

Reasons are:

- Fixed costs which remain constant with an increase in demand are spread over more units.
• Discounts can be received for buying in bulk.

**Scanning and Learning**

• This refers to the systematic process of acquiring information about changes and trends in external economic conditions and using them to make decisions about operations. **Scanning** is looking overseas to find new business ideas and trends whereas **Learning** is the implementation of this information by changing processes at home.

**Research and Development**

• This is the systematic work undertaken to improve or create new products and production processes, or to extend product life cycles. Although costly it is vital for business innovation. It aims to improve efficiency and the quality of operations.

N.B. R & D is often very expensive, so is usually undertaken more by larger firms.