TOPIC 1

Operations

Introduction

The focus of this topic is the strategies for effective operations management in large businesses.

Outcomes

The student:
- H1 critically analyses the role of business in Australia and globally
- H2 evaluates management strategies in response to changes in internal and external influences
- H3 discusses the social and ethical responsibilities of management
- H4 analyses business functions and processes in large and global businesses
- H5 explains management strategies and their impact on businesses
- H6 evaluates the effectiveness of management in the performance of businesses
- H7 plans and conducts investigations into contemporary business issues
- H8 organises and evaluates information for actual and hypothetical business situations
- H9 communicates business information, issues and concepts in appropriate formats
- H10 applies mathematical concepts appropriately in business situations
Students learn to:
– examine contemporary business issues
– investigate aspects of business using hypothetical situations and actual business case studies

Students learn about:
– role of operations management
– influences
– operations processes
– operations strategies

Business operations are concerned with the creation of goods and the provision of services by businesses. It is integrated with the other key business functions, in particular marketing because operations produce products that satisfy the wants of the target market. Operations involves planning, purchasing inputs, inventory management, manufacturing techniques and processes used to convert inputs into outputs and the supply of outputs.

Operations managers must consider the influences from the environment. Globalisation has provided opportunities to expand and outsource operations overseas while technological developments have improved the efficiency and quality of operations.

Some businesses invest heavily into research and development to gain a competitive advantage while others will change and improve existing products. Operations managers are increasing their emphasis on quality management and achieving world’s best practice.

Corporate social responsibility is a necessary part of operations. Pressure from stakeholders and new legislation has meant that a business’s impacts on society and the environment must be considered and possibly included in the costs of the operation’s function.

At the end of this topic you should be able to:
– critically analyse the role of businesses in Australia and globally
– evaluate operations strategies in response to changes in the internal and external environment
– discuss social and ethical responsibilities of a business when managing operations
– analyse the operations process in a large and global business
– explain operations strategies and their impact on businesses
– evaluate the effectiveness of operations management
– plan and investigate current issues with respect to operations
– organise and evaluate information about actual and hypothetical business situations
– communicate business information, issues and concepts in appropriate formats
CHAPTER 1

Role of operations management
Operations is the key business function concerned with the **transformation** of **inputs** into **outputs**. The operations manager oversees this process by planning production, organising inputs, motivating employees, and monitoring and controlling the outputs. Outputs can be both physical goods and services. The output may be finished goods sold to final consumers, an intermediate good that will be used as inputs by other businesses or a service provided to consumers or businesses. Many businesses provide both a physical product and a complimentary service. For example, a restaurant will provide a good, the meal itself and the waiting service to the customer’s table.

**Transformation**
Any changes to inputs that adds value and converts them into outputs.

**Inputs**
The raw materials, components and parts used to produce a good or supply a service.

**Outputs**
What is made or supplied by the operations process.

**Productivity**
A measure of how efficiently goods and services are produced. It is usually measured in terms of output per labour hour.

**Competitive advantage**
Refers to the features implemented by a business that creates an advantage over its competitors.

Effective operations management adds value to the business by increasing **productivity**, reducing costs and improving quality. This is to achieve a strategic **competitive advantage** through lower costs and/or differentiated goods. The business can offer a better quality good at a cheaper price. To perform their role the operations manager will need all the skills and qualities discussed in Topic 2, Business management, of the Preliminary course. In particular, communication, decision making, delegating and complex problem solving.

In a large business using a functional organisational structure the operations manager will supervise the specialist line managers. In a small business, operations may be managed by an owner, factory manager or sales manager.

The operations manager will consider business operations as an entire system. A business will be able to produce goods and services that best satisfy the wants and needs of customers at a competitive price. Through their role the operations manager can add value to the product at each stage of operations. Ultimately with an effective and efficient operations system a business will achieve the short-term and long-term objectives of the business.
Strategic role of operations management

The operations manager will make strategic decisions about the overall design of the operations system. A strategic decision is one that affects the business in the long term. For example, where the business chooses to make its products will affect the location of operations. Or from where will the business get its inputs. Will the business buy inputs and raw materials from a local supplier or look offshore and buy from another country? The strategic goals are to improve productivity, efficiency and quality of outputs. Strategic operational decisions will also need to fit the overall strategic goals and vision in the business plan and fit the changing business environment.

Long-term decisions will cover three broad areas:

- planning production and delivery
- controls to manage quality
- improving operations.

Therefore, all strategic decisions will focus on lower costs to an industry benchmark through efficiency and producing a good or service that is different to and competitive against rivals in the market.
Table 1.1 Strategic decisions

<table>
<thead>
<tr>
<th>Area of strategic decision</th>
<th>Examples of questions to decide</th>
</tr>
</thead>
</table>
| Product                    | • What new products need to be developed?  
                              | • What products are reaching the end of their life cycle and need to be deleted from operations?  
                              | • How will products be made different to competitors, such as better quality?  
                              | • What services will be provided?  
| Process                    | • How much capital and how much labour?  
                              | • What developments in technology will there be that could be used in operations?  
| Capacity                   | • How large does the factory need to be?  
                              | • How much will the business need to make and supply per hour or day?  
| Location                   | • Stay, move to a different location in Australia or relocate overseas?  
                              | • Can the business provide its services using the internet?  
| Factory layout             | • How will the manufacturing be physically set out: using production lines in a process layout, or use a product layout or fixed position layout?  
| People                     | • How many employees will be needed in the future?  
                              | • What experience and skills will employees need?  
| Quality                    | • How will quality be measured?  
                              | • How will quality be improved?  

Activity 1.1 Comprehension

Examine the two advertisements for operations managers below and answer the questions that follow.

Operations manager
Dela Cruz Mining is seeking a talented manager of operations with a background in the management of mineral processing facilities. Applicants will need effective communication, organisation and negotiation skills as well as the ability to take a hands-on, practical approach to work. Technical knowledge of process operations and related equipment is essential. Key areas of responsibility include implementation of health, safety and environmental policies and ensuring production meets targets. Industry leading remuneration and compensation for relocation will be provided. Applications are to be directly submitted to the CEO of Dela Cruz Mining, Kalgoolie, WA.

Head of operations
An ambitious and talented IT executive is required for this rapidly expanding firm. Applicants are required to have an awareness of innovative technological solutions in e-commerce to manage new product development and customer delivery. Applicants must have keen interest in banking and finance and be highly motivated and self-reliant. Strong interpersonal skills, vision, flexibility and the ability to solve complex IT-based problems are required.

Applications online at www.pictor.com. Please quote ref no. 694822.

1 Identify skills that the operations managers will need for these positions. Explain why these skills are needed.
2 Give an example of the strategic decision that each job requires.
Cost leadership

A cost leadership strategy is where a business aims to be the lowest cost manufacturer within its industry. The products are the basic, no-frills type with fewer features, perhaps lower quality and using low-cost packaging. Low costs can be achieved through economies of scale in production and distribution, access to cheaper raw materials or inventing an innovative method of production. The business will expect a small profit margin on each item it sells, balanced by a high volume of sales to generate satisfactory revenue. Other areas in operations where low costs may be achieved include:

- outsourcing product servicing so that the business focuses on its core function rather than after-sales service and warranty administration
- exclusive access to a large source of low-cost inputs
- distributing the product using dealers who work with lower profit margins.

If the business is able to achieve cost leadership and sustain it over the long term and is also able to sell its products at prices at or near the industry average, then it would be an above-average performer with healthy sales and profits.

The challenge for a business using this strategy is to achieve long-term benefits. The issues that operations managers need to be aware of when using a cost leadership strategy are:

- Competitors can use the same strategy and may achieve even lower costs. Small businesses are able to implement strategies to reduce costs much faster than larger firms.
- The business’s product is not perceived by customers to be equal to its competitors because competitors offer better technology, features and service.
- Developments in technology change consumer preferences. A business may have invested a considerable amount of finance into low-cost manufacturing of a particular product only to find that the wants of its customers have changed to a new technology item.
- Consumer preferences change and the market for a ‘low-cost, low-quality’ product shrinks. Consumers may even feel that these types of ‘throwaway’ products are not environmentally sustainable.
- A strong competitor uses aggressive marketing with heavily discounted prices or loss leading prices. The business using a cost leader strategy cannot make a profit even with its cost advantage.
- Being ‘leapfrogged’ by a business that can afford a large financial investment in research and development.

Therefore, a cost leadership strategy may not be sustainable in the long run unless the benefits can be maintained with effective marketing, finance and human resources strategies.
**Good/service differentiation**

A business may decide that a better strategy to achieve a sustainable advantage in a competitive market is to differentiate its products rather than aiming to be the lowest cost supplier. Customers have ever-increasing expectations about quality, service and technology. A product may achieve a greater market share because it is uniquely different to its competitors. Differentiation through operations may be achieved through:

- better quality
- faster delivery
- custom-designed products
- more features and applications
- incorporation of new technology
- clever design.

Good examples of a differentiation strategy are the ‘thumbwheel’, ‘click wheel’ and ‘touchscreen’ technology used in Apple products from iPods, iPhones and iPads.

A differentiated product can command a higher premium price in the market as customers are attracted to the product and build up brand loyalty. The higher price will cover higher costs from investment in a highly creative and skilled product-development sales team to promote the advantages of the product and technological innovation.

The risks associated with this strategy are that competitors can imitate the market leader’s innovations and consumer preferences can still change.
Goods and/or services in different industries

There are significant differences between manufacturing and service-based businesses. Manufacturing outputs are tangible, that is, they physically exist and can be touched and felt. Therefore, the outputs can be stored before distributed to customers; however, once made, they cannot be changed or customised. The productivity of the business making the goods is easy to measure as physical goods can be counted. Services, in contrast, are not tangible. For example, services like financial advice, a doctor’s consultation or being represented in court by a barrister are real but do not exist in a physical sense. While manufactured goods use a lot of equipment – that is, they are very capital-intensive – services are much more labour-intensive. Services require a lot of interaction with customers who consume the service where it is provided; for example, at a hair salon. The advantage of services over manufacturing is that it is easy to modify and customise the service to suit the desires of the customer. However, productivity is much harder to measure due to each service being different for different customers.

A business can provide a physical good or a service, and very often provides both. There are also similarities between serviced-based and manufacturing operations. They both:

- use technology
- must make predictions about consumer demand
- deal with customers and suppliers
- make decisions about capacity, location and physical layout of the business.

It is in the services sector where the most development in operational management is occurring.

There is a great variety in the output of the operations of different businesses. It is easier to classify them according to industry sector and new types of industry are developing with technological change. There are a number of ways of classifying different types of businesses in Australia.

Grouping different businesses by industry type gives a good indication of the range of goods and services in different industries.

Table 1.2 Australia industry sectors

<table>
<thead>
<tr>
<th>Sector</th>
<th>Examples</th>
<th>Nature of the goods and services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>Cubbie Station Ltd</td>
<td>• Australia’s largest cotton producer, located in Queensland</td>
</tr>
<tr>
<td>Banking and finance</td>
<td>Macquarie Bank</td>
<td>• Provides banking, finance, advisory and investment services for businesses</td>
</tr>
<tr>
<td>Construction and engineering</td>
<td>Brookfield Multiplex</td>
<td>• Construction and development of large buildings and major projects</td>
</tr>
<tr>
<td>Education</td>
<td>Bond University</td>
<td>• Australia’s first private, not-for-profit university located in Queensland</td>
</tr>
</tbody>
</table>

(continues)
<table>
<thead>
<tr>
<th>Industry and Region</th>
<th>Company Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and beverage manufacturing</td>
<td>Coca-Cola Amatil Arnotts</td>
<td>Bottler of non-alcoholic drinks; 144-year-old biscuit and snack food maker</td>
</tr>
<tr>
<td>Healthcare</td>
<td>Douglass Hanly Moir</td>
<td>Medical testing laboratory services and pathology services</td>
</tr>
<tr>
<td>Infrastructure and utilities</td>
<td>AGL Energy</td>
<td>Provides natural gas and electricity energy for homes and businesses and energy services</td>
</tr>
<tr>
<td>Insurance</td>
<td>NRMA</td>
<td>All types of business and personal insurance as well as motoring services</td>
</tr>
<tr>
<td>Information technology</td>
<td>NetApp</td>
<td>Provide innovative data storage, management and security systems</td>
</tr>
<tr>
<td>Legal</td>
<td>Mallesons Stephen Jaques</td>
<td>Ranked in the 100 largest law firms globally, providing commercial legal services</td>
</tr>
<tr>
<td>Leisure and gaming</td>
<td>Aristocrat</td>
<td>Supplies slot machines, gaming systems, accessories and services worldwide</td>
</tr>
<tr>
<td>Media</td>
<td>PBL Ltd</td>
<td>Owns Nine Network, ACP Magazines, Ticketek and Acer Arena</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>Toyota Motor Corporation Australia</td>
<td>Cars first assembled in Melbourne in 1963; first Australian built Hybrid is released in 2010</td>
</tr>
<tr>
<td>Mining and energy</td>
<td>BHP Billiton</td>
<td>Began in Broken Hill, NSW, in 1885, mining silver, lead and zinc; merged with Billiton in 2001 to be global leader in the resources industry</td>
</tr>
<tr>
<td>Property</td>
<td>Westfield Group</td>
<td>World’s largest listed retail property group operates a global portfolio of 119 shopping centres in Australia, New Zealand, the USA and the UK</td>
</tr>
<tr>
<td>Retail</td>
<td>Harvey Norman Holdings Ltd</td>
<td>Operates in Australia, NZ, Slovenia, Ireland, Singapore and Malaysia, offering franchises within the store to retailers of home and office products</td>
</tr>
<tr>
<td>Small business</td>
<td>7-Eleven</td>
<td>Convenience stores first opened in Australia 1977; in 2010 had 650 stores</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>Telstra</td>
<td>Formerly a government business enterprise, privatised in 1991, providing landline, mobile and internet services with interests overseas</td>
</tr>
<tr>
<td>Tourism</td>
<td>Hamilton Island Enterprises</td>
<td>Leading resort located in the Whitsunday Islands, Great Barrier Reef; 1992 in receivership; relaunched in 2003</td>
</tr>
<tr>
<td>Transport and logistics</td>
<td>Linfox</td>
<td>Provides supply chain solutions to leading companies across the Asia-Pacific; began in 1958 delivering soft drinks with one truck</td>
</tr>
</tbody>
</table>
Qantas’s core physical product is the planes it uses, such as the new A380. This product includes a seat on such a plane, ranging from economy, premium economy, business and first class flyers. The economy class seat is 18.1’ wide, ergonomic, with an adjustable headrest, storage space and personal in-flight entertainment screen. In contrast, business class Skybeds are seats that can recline fully flat, have a massage feature, extra ergonomically designed cushioning, storage and a larger widescreen entertainment screen. Qantas offers a full range of services to accompany its product. Flight attendants serve meals, clean up and provide refresher towels. The timetable is also a service as it is intangible. Other services include Qantas holidays, Frequent Flyer and even a limousine service.

Activity 1.2 Comprehension

1 Identify the range of services provided in the tourism industry.
2 Outline the mix of goods and services provided in the media industry.
3 Describe the differences in the nature of service-based businesses and those that produce goods.
4 Explain how a beverage manufacturing business can achieve product differentiation through operations.
5 Analyse the importance of technology when providing services in the healthcare industry.
Interdependence with other key business functions

There will be a constant flow of information between operations and the other key business functions: marketing, human resources and finance. Each function relies on the other so that the business can achieve its goals. Therefore, with specialisation of the business functions there must be interdependence.

To illustrate the interdependence between the key business functions consider the following interactions between each. In marketing, research identifies the nature of goods consumers’ desire and marketing strategies encourage purchases. Operations must supply a product that has the features and quality consumers demand as well as reliably distributing this product to the market. The finance manager will create budgets and make funds available to purchase inputs, equipment, repairs and maintenance. Production costs will be minimised in order to maximise profit margins. Human resources will ensure that enough employees with the appropriate skills are available for the operations function. The human resources manager will use their leadership style and rewards to ensure quality work is done by employees in the operations function.

![Diagram showing interdependence between key business functions]

**Figure 1.5** The interdependence between the key business functions.

**Figure 1.6** The interrelationships between operations and other business functions.
Chapter summary

- Operations is the key business function concerned with the transformation of inputs into outputs.
- The operations manager oversees this process by planning production, organising inputs, motivating employees, and monitoring and controlling the outputs.
- Effective operations management adds value to the business by increasing productivity, reducing costs and improving quality. This is to achieve a strategic competitive advantage through lower costs and/or differentiated goods.
- A cost leadership strategy is where a business aims to be the lowest cost manufacturer within its industry.
- A differentiated product is one that has unique features based on quality, features and technology and can command a higher price in the market.
- Business operations will be significantly different between a business in a manufacturing-based industry and a business in a service-based industry. Operations will have elements of both.
- Owing to specialisation between the key business functions there will be considerable interdependence as there will be a constant flow of information between operations, marketing, finance and human resources.
- In a customer-focused business operations must produce a product that satisfies the needs and desires of its target market.

Chapter revision task

Copy and complete the following table on the characteristics of manufacturing and serviced-based businesses.

<table>
<thead>
<tr>
<th>Characteristic of operations system</th>
<th>Service based</th>
<th>Manufacturing based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature of output</td>
<td>Intangible product</td>
<td>Stored in a warehouse</td>
</tr>
<tr>
<td>Inventory</td>
<td>Generally small</td>
<td>Large facilities</td>
</tr>
<tr>
<td>Size of operations</td>
<td>Labour-intensive</td>
<td></td>
</tr>
<tr>
<td>Use of equipment</td>
<td>Difficult to measure (customer feedback)</td>
<td></td>
</tr>
<tr>
<td>Measurement of quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact with customers</td>
<td>Short response time to changes in the market</td>
<td>Low customer contact</td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td>More centrally located</td>
</tr>
<tr>
<td>Adaptability</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Multiple-choice questions

1. What is included in the function of operations?
   (A) The actual production of a good
   (B) The production of a physical good and provision of a service
   (C) The processes involved in turning inputs into outputs
   (D) The processes involved in planning and organising raw materials and inputs

2. What is output of a serviced-based business?
   (A) Quality products
   (B) Final products ready for sale
   (C) Fast delivery times for services
   (D) Satisfied customers

3. Which of the following are strategic decisions of the operations functions?
   (A) Reducing the amount of waste by 10% over 18 months
   (B) Forecasting the amount of inputs required for production
   (C) Organising repairs to a breakdown in the assembly line
   (D) Assessing the potential location for the business in 2015

4. Which of the following are examples of inputs into a service-based business?
   (A) People, machines, energy
   (B) People, information, raw materials
   (C) People, office equipment, managers
   (D) Raw materials, buildings, tools

5. A feature of a cost leadership strategy is?
   (A) New features developed for existing products
   (B) Market research
   (C) Assembly-line manufacturing
   (D) Outsourcing of non-core operations functions

6. An advantage of a differentiation strategy is?
   (A) Increase in revenue and market share
   (B) Operational costs can be reduced
   (C) Employees are highly specialised and skilled
   (D) Quality is improved

7. Which of the following is an example of a strategic operations decision?
   (A) Organising the working roster
   (B) Having repairs made to equipment
   (C) Plans for routine maintenance and updating equipment
   (D) Ordering inputs from overseas supplier
8 Which example illustrates interdependence between operations and the finance key business function?
(A) Operations supplies a product that satisfies the needs of the target market
(B) Operations supplies a quality product that generates revenue from its sales
(C) Human resources employs enough skilled employees within the wages budget
(D) The product research and development create a prototype for a new product

9 In what industry are tangible products produced by the operation function?
(A) Tourism, retailing and information technology
(B) Mining, manufacturing and transport
(C) Manufacturing, construction and agriculture
(D) Construction, infrastructure and insurance

10 Which management skill is most important when coordinating the key business functions with the operations function?
(A) Communication skills
(B) Interpersonal skills
(C) High ethical standards
(D) Flexibility and adaptability to change

Short-answer questions

1 Explain why the operations of service-based industries are more labour-intensive than manufacturing businesses.

2 Explain why communication between operations and the other the key business functions is a critical success factor for a business.

Extended-response question

Outline the strategic role of operations and explain how the role of the operations manager can help a business achieve a competitive advantage.