CHAPTER 1

The History of Qantas

Qantas is Australia's largest domestic and international airline. Although Qantas is primarily a passenger airline, air freight is also an integral part of its core business. Other Qantas operations include catering, tourism and E-commerce devoted to transport and travel.

Qantas is the world's second oldest airline, and the oldest airline in the English speaking world. It was founded in the Queensland outback in 1920 as the Queensland and Northern Territory Aerial Service (QANTAS) Limited, by pioneer aviators Hudson Fysh, Paul McGinness and Fergus McMaster. The company began its operations with one aircraft providing joyrides and air taxi services. Regular scheduled mail and passenger services commenced in November 1922.

Qantas Poster (1929)  

Qantas Poster (1930)  
source: www.chariot.net.au

In 1922 Qantas began carrying airmail and by 1930 it covered north eastern Australia with air routes. Qantas moved its headquarters to Sydney in 1938. Qantas and Britain's Imperial Airways (the predecessor of British Airways or BA) formed Qantas Empire Airways in 1934 to fly the last leg of the London to Australia mail route (i.e. Singapore to Brisbane).

Qantas bought the British share of Qantas Empire Airways in 1947 and after taking delivery of long range pressurised Constellations, Qantas made its first Sydney to London flight in its own right. Qantas was later nationalised when it was purchased by the Commonwealth Government in 1947.
By 1950 the airline served most major cities in the Pacific Rim. Qantas inaugurated a route to Johannesburg in 1952 and opened the Southern Cross route to San Francisco and Vancouver via Honolulu in 1953. In 1956 Qantas carried the Olympic flame from Athens to Darwin as part of its journey to the Melbourne Olympic Games. In 1959 Qantas entered the jet age when it became the first airline outside the United States to operate the Boeing 707. In 1958 Qantas offered the first complete round the world air service. It bought 29% of Malayan Airways in 1959 and added several European destinations in the 1960s.

With a name change in 1967 to Qantas Airways Limited and a vastly expanded network with new jets, the airline placed an order for a new generation of aircraft: the Boeing 747. In 1987 Qantas bought a stake in Fiji’s Air Pacific. Later acquisitions included Australia-Asia Airlines in 1988, and 20% of Air New Zealand in 1990, but this share was sold in 1997.

The Australian airline industry was deregulated in the early 1990s and Qantas formed the regional Airlink in 1991. The next year it merged with Australian Airlines and in 1993 the Australian government sold British Airways a 25% stake in Qantas. Qantas was privatised in 1995 when its shares were floated on the Australian Stock Exchange (ASX) for the first time.

In 1999 Qantas joined the most global of the world’s airline alliances – OneWorld, comprising eight of the world’s leading airlines: Aer Lingus, American Airlines, British Airways, Cathay Pacific, Finnair, Iberia, LanChile and Qantas. Unable to gain regulatory approval, Qantas dropped its bidding war with rival Ansett to acquire regional carrier Hazelton Airlines in 2001. Also in 2001 Qantas agreed to acquire Impulse Airlines, an ailing Australian low fare carrier.

The terrorist attacks in the USA on September 11, 2001 had a major impact on Qantas and all carriers by reducing the demand for international travel. Qantas initially reduced its international flying capacity by 11%, and was spared a financial loss because of the collapse on September 12, 2001 of Ansett Australia. This event instantly increased Qantas’ domestic market share from 55% to more than 80% and enabled it to move capacity to Australia from depressed international routes.

Qantas launched Australian Airlines in October 2002. Its operating base is Cairns where it services inbound markets with flights from Fukuoka, Osaka and Nagoya in Japan and also from Hong Kong and Singapore.

The war in Iraq and SARS combined to decimate Qantas’ profitability in 2003. International operations were hit particularly badly, with the number of inbound visitors to Australia falling by more than 20% in some months and up to 45% on some Asian routes. Qantas responded by reducing flights, using accumulated leave to reduce staffing numbers, increasing redundancies to 2,000 and reducing capital expenditure including the retirement of some aircraft and the deferral of delivery of new aircraft.

With a gradual improvement in international tourism and a successful cost reduction programme Qantas recorded an 89% lift in net profit in 2004. Qantas also introduced two new airlines in 2004. Jetstar, a low cost domestic airline to compete with Virgin Blue for leisure travellers and Jetstar Asia, a low cost airline based in Singapore to serve the growing Intra Asia tourist market. Qantas’ relationship with British Airways ended in September 2004, after British Airways sold its stake in Qantas to institutional investors.

Qantas recorded another record net profit, up 17.8%, in 2005. The main drivers of this result were the successful introduction of Jetstar and cost savings.

Qantas had a much tougher year in 2006 due to the soaring price of fuel. Their fuel bill jumped from $1.5 billion in 2003 to nearly $3 billion in 2006. The escalation in fuel prices poses a greater commercial challenge to Qantas than terrorism and SARS. Qantas believes that it must continue to change to survive and in 2006 axed Australian Airlines, launched Jetstar International, expanded freight and restructured catering. In 2007 Qantas reported a boomer year in which net profit jumped to a record $673 million despite the failed APA takeover bid, fierce competition, aircraft delivery delays and record fuel prices.
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1920</td>
<td>Qantas is founded in Qld</td>
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<tr>
<td>1947</td>
<td>The Australian Government purchases Qantas</td>
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<tr>
<td>1991</td>
<td>The Australian domestic airline industry is deregulated</td>
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<tr>
<td>1993</td>
<td>British Airways buys 25% of Qantas</td>
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<td>1995</td>
<td>Qantas is privatised</td>
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<td>1999</td>
<td>Qantas joins the OneWorld Alliance</td>
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<td>2001</td>
<td>Terrorist attacks (September 11) reduce international travel, but this is offset by Ansett’s collapse on September 12</td>
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<td>2002</td>
<td>Qantas launches Australian Airlines</td>
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<tr>
<td>2003</td>
<td>The war in Iraq and SARS virus reduce travel and impact adversely on Qantas’ profits</td>
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<tr>
<td>2004</td>
<td>Qantas achieves a record net profit and launches two new discount airlines: Jetstar and Jetstar Asia. British Airways sells its stake in Qantas</td>
</tr>
<tr>
<td>2005</td>
<td>Qantas responds to increasing competition and rapidly escalating oil prices to achieve another record profit</td>
</tr>
<tr>
<td>2006</td>
<td>Profitability falls as a result of soaring fuel prices. Qantas launches Jetstar International, targets China and expands its freight business</td>
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<tr>
<td>2007</td>
<td>Net profit jumps due to the success of Jetstar, the strong economy and continued cost improvements</td>
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<td>2008</td>
<td>Qantas posts a record net profit but moderates its growth plans as it expects economic conditions to deteriorate. Alan Joyce replaces Geoff Dixon as CEO</td>
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<tr>
<td>2009</td>
<td>Qantas posts a worse than expected 88% fall in net profit. The global financial crisis, competitor growth and swine flu are the main culprits</td>
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<tr>
<td>2010</td>
<td>Qantas profit strengthens as it takes advantage of improved economic conditions</td>
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<tr>
<td>2011</td>
<td>Strong profit result despite rising fuel prices, continued global uncertainty and natural disasters and weather events</td>
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<tr>
<td>2012</td>
<td>Qantas reports a full year net loss. Qantas pins recovery on revamping its loss making international arm and an alliance with Emirates</td>
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<tr>
<td>2013</td>
<td>Qantas is back in the black posting a modest net profit. Qantas continues to build Jetstar in Asia</td>
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Qantas Time Line 1920 – 2014

In 2008 Qantas capitalised on a very positive operating environment to post another net profit record of $970 million. Qantas finally saw the arrival of the first of its A380s and Geoff Dixon retired as CEO, replaced by Alan Joyce (former head of Jetstar). The severe global economic downturn saw Qantas posting a 88% fall in
profit in 2009, despite Qantas' efforts of grounding planes, delaying and cancelling orders of new aircraft and raising $500 million from investors.

In 2010 global operating conditions improved with recovery in demand in both passenger and freight markets. Qantas records a strong profit result; all segments were profitable with Jetstar's results again the highlight. CEO Alan Joyce lauds the success of its 2 brand strategy which gave the airline the flexibility to ride out the economic cycle.

In 2011 Qantas' underlying profit before tax increased by 46% over the previous year. It was Qantas' best result since the GFC. There were a number of natural disasters and weather events which adversely impacted on Qantas profitability like Cyclone Yasi in Queensland, Christchurch earthquake and Japan's tsunami. Continued global uncertainty precipitated a complete review of Qantas International to restore the business to competitiveness and profitability. This review included a desire to seek more strategic alliances (currently with American and Malaysian airlines) and creating a new premium airline based in Asia under a new brand and a new low cost carrier – Jetstar Japan. These new plans as well as increased outsourcing put Qantas on a collision course with many of its unions including the pilots, engineers and baggage handlers. Industrial action during 2011 caused flight cancellations and delays for Qantas customers.

Qantas reported an underlying profit before tax of $95 million in 2012, which was paramount to a $245 million loss. This was caused by big losses from its international operations, industrial disputes and intense competition especially from Virgin Australia on its domestic routes. In response Qantas has been forced to revamp and restructure its international arm, cancel orders for new planes and further downsize jobs. In 2013 Qantas' underlying earnings more than doubled to $192 million. This was despite tough competition on international and domestic routes and high fuel prices. However in December 2013 Qantas warned of a first half loss of up to $300 million and outlined plans to axe at least 1000 jobs across the company.

Chapter 1: Review Questions

1. When and where was Qantas established?

2. Outline how Qantas expanded its operations domestically and internationally between 1920 and 2014?

3. What is meant by deregulation? How did the deregulation of the Australian airline industry in 1991 impact on Qantas?

4. What is meant by privatisation? How did the privatisation of Qantas in 1995 impact on Qantas?


6. Discuss the rationale for Qantas' 2 brand strategy.

7. What are the potential benefits to Qantas of being part of the OneWorld alliance and a new alliance with Emirates?
CHAPTER 2

Operations

Students should investigate aspects of business using case studies to
- Describe the features of operations management for business in a tertiary industry
- Assess the relationship between operations and the other key business functions in actual businesses
- Explain how operations strategy can help a business sustain its competitive advantage
- Recommend possible operations strategies

Source: Board of Studies NSW (2010) Business Studies Syllabus p9

The Role of Operations

Operations is about how organisations produce goods and services (getting things done). Operations is the engine room of the business. Of all the functions in a business:
- It contributes most directly to business revenue;
- It normally employs the majority of the labour resources utilised by the business;
- It consumes the majority of the business expenditure;
- It interfaces most directly with the business customer/client;
- It utilises and is responsible for the largest proportion of the business assets.

Operations management is the real time day to day decision making and oversight of the business. The range of such decisions can be very wide. In the case of Qantas it can include the scheduling, cancellation or rescheduling of flights, the monitoring and response to an industrial dispute, determining staffing levels, the reallocation of labour to cover absences in key areas, delivery of new staff training, the arrangement of emergency mechanical repairs to an aircraft, reaction to the late arrival of aircraft and the weather as well as solving customer complaints.

Operations management in Qantas has demonstrated its ability to respond quickly to recent challenges such as terrorism, SARS, rapid increase in fuel prices, volcanic eruptions, the global economic downturn and the success of rival low cost airlines.

a) Strategic Role of Operations Management

No matter how grand Qantas’ plan its strategy can only become a meaningful reality in practice if it is operationally enacted. Qantas operations are strategically important because most organisational activity comprises the day to day activities within the operation function. The relationship between Qantas’ strategy and its operations is a key determinant of its ability to achieve long term success or even survival.
b) Cost Leadership

This is the competitive advantage a business holds over its rivals by having the lowest production cost. Qantas' main costs are staff (24%), aircraft operating e.g. maintenance (20%), fuel (26%), depreciation (9%), marketing (4%), property (3%), IT (3%) and other (11%).

To gain cost leadership, operations management at Qantas must find ways to minimise costs. Qantas has cut its costs by over $5 billion in the last 10 years. The aim is to use the least amount of inputs to deliver one unit of output. A number of methods are available:

• Economies of Scale. These are minimisations of cost because of the size of the business. The bigger the business, the more ‘purchasing power’ it can exert in obtaining its inputs.

The economics of the aviation industry which requires a large labour force and large reserves of capital has made strategic alliances necessary. The benefits from these alliances include expanded route networks and streamlined processes, thereby improving customer service, increasing passenger volumes and reducing costs through economies of scale. Qantas is a member of the OneWorld Alliance which features 13 of the world’s leading airlines; it also has well over 20 code share arrangements with other airlines.

In 2011 Qantas signed a Joint Business Agreement with American Airlines expanding Qantas’ network into US destinations.

In 2013 Qantas signed an agreement with Emirates. Qantas benefits from the alliance because it puts passengers flying overseas to Europe on Emirates flights instead of paying for its own aircraft. This involves the airline only having to fly its own aircraft to a hub in Dubai, where passengers could then transfer to an Emirates flight to fly onto Europe. Qantas passengers also pay lower prices because Emirates has lower unit variable costs than Qantas (Dubai Airport has lower airport charges).

Another economy of scale is that Qantas can negotiate lower fuel costs than smaller airlines because of the much greater quantity of fuel it requires.

• Standardisation. The more variations to Qantas’ services like the types and frequency of routes the higher production cost per unit. Qantas has recently cut back on some services to destinations to reduce costs.

• Technology. The adoption and application of advances in technology directly impact on production costs, most commonly through the reduction in labour costs. Qantas adopted latest computer technology for online booking and online ticketing; more recently it moved to online check in thus eliminating the need for Qantas staff to be available to interface the customer.

• Waste Minimisation. Minimising waste will deliver the lowest production cost. ‘Waste’ can take the form of excess production, underutilisation of labour or equipment, faulty or defective production and excess inventory. Waste does not add to revenue but it does add to cost. Qantas has recently achieved electricity, water and waste reductions through various measures such as recycling, energy efficient lighting, water saving devices, energy efficient materials and sustainable design.

c) Differentiation of Product/Service

This approach does not mean competing on cost but by adding features to differentiate its product/service from its competitors. Key elements of differentiation at Qantas are:
• Qantas is Australia's largest airline offering the most comprehensive domestic and international coverage. Qantas City Flyer express service means that there are flights every 30 minutes in peak periods between the major capital cities in Australia. Qantas also services about 76 international destinations.

• Jetstar is aimed at price conscious customers but its level of service is more no frills whereas Qantas is a full service airline which includes things like meals and inflight entertainment.

• Qantas offers First, Business, Premium Economy and Economy on international flights and Business and Economy on domestic flights,

• Qantas includes comfort based features such as skybeds, special menus, lounges, online check in and self service kiosks.

d) Interdependence with Other Key Business Functions

Because of its central role, operations at Qantas must be performed in coordination with other business activities. Human resources, finance and marketing – exist because of and to support the operations function. However, operations cannot succeed without their contribution to and direct participation in the transformation of inputs into the final outputs.

Operations uses human capital (people) as a major input. The human resource managers deliver the following services:

• Recruitment of staff. For Qantas this means everyone from pilots to baggage handlers and cleaners;

• Training and development of the staff. For Qantas to receive the new Boeing 787, there will be a need to train pilots, maintenance crews and cabin staff to effectively integrate the new craft. Existing junior pilots need to be programmed for development training to widen the number of craft they are accredited to fly; maintenance staff need to maintain their accreditation through periodic refresher training;

• Retaining staff through monetary and non-monetary rewards. Qantas has invested heavily in training pilots and maintenance staff to the high level required in this industry, so they want to retain them.

The finance function at Qantas monitors, records, and analyses the financial transactions. It provides regular and periodic reports on the financial performance for operational management and decision making. Also operational activities like purchasing and leasing new planes rely on funds.

The marketing function connects operations with the customer by providing market requirements. Operations in turn effects marketing decisions by determining the capabilities and constraints in pricing, product design, promotion etc.
Influences on operations management

The business environment has a significant impact on operations management at Qantas. Figure 1 below shows some of these influences and current operational responses by Qantas.

**Figure 1: Influences on Operational Management at Qantas**

<table>
<thead>
<tr>
<th>Influences on Operational Management at Qantas</th>
<th>Prompting Operational Responses</th>
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<tbody>
<tr>
<td>1. Globalisation</td>
<td>Launching new airlines in Asia, cost minimisation to be more internationally competitive</td>
</tr>
<tr>
<td>2. Rapidly developing technology</td>
<td>Newer planes, newer operational processes, more training required</td>
</tr>
<tr>
<td>3. Higher quality expectations</td>
<td>New generation check in, new Q Bag Tags, newer planes, specially designed menus</td>
</tr>
<tr>
<td>Demands for better service</td>
<td>Outsourcing, reform to HR practices, employing more labour saving techniques, online bookings</td>
</tr>
<tr>
<td>4. Increased cost based competition</td>
<td>Deregulation and the carbon tax has placed pressure on operations to minimise costs</td>
</tr>
<tr>
<td>5. Government policies</td>
<td>More resources devoted to compliance</td>
</tr>
<tr>
<td>6. More government regulation</td>
<td>Purchasing new, environmentally sensitive aircraft, recycling, fuel conservation</td>
</tr>
<tr>
<td>7. Environmental impacts are more transparent</td>
<td>Health surveillance program, energy and water conservation, recycling</td>
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<tr>
<td>8. Increased ethical and social sensitivity</td>
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1) Globalisation

Operations must source its inputs on the basis of lowest overall cost, consistent quality and timeliness of delivery. There can be cost savings in locating some of the business operations in a different country. Qantas has been increasingly outsourcing some of its functions like maintenance and IT to lower operational costs.

Globalisation has enabled Qantas to access new markets overseas. More than 70% of Qantas’ assets are geared to the global market. Expansion into new and emerging overseas markets is essential for Qantas to achieve its growth potential, a continuing return to shareholders, the service it provides to customers and the spread of Qantas as a brand name recognised internationally. Qantas has recently set up a number of low cost airlines in Asia under the Jetstar brand to take advantage of the growth in that region.

However, operating globally can introduce overseas companies which can compete for cost leadership. Qantas has to compete on an uneven playing field; 70% of the 40 airlines which fly to and from Australia receive financial and bureaucratic assistance from their governments. This distorts the market and makes it hard for Qantas to compete.
2) Technology

The adoption and continued upgrading of available technology is inherent to Qantas maintaining cost leadership and competitive advantage. It allows Qantas to offer a superior level of service. Less total labour can be the outcome, but the requirement is a more skilled staff, so there will be increased training costs and higher wages to those staff.

Newer planes have greater capacity and are more efficient. The new A380 (Airbus) in use by Qantas generates half the noise, uses less fuel and carries more passengers than the 747. Developments in-flight entertainment systems and seating have made travel more comfortable. Qantas Business Class passengers can now operate laptops during flights and send email and text via mobiles and personal electronic devices in flight.

Qantas spends about $300 million a year on training. Any significant change requires staff to learn new skills especially where new technology is introduced. When the airline’s reservation system was shifted onto Amadeus some 10000 staff had to be retrained.

3) Quality Expectations

Operations must recognise that customers will make the purchase decision on an expectation of quality. If the customer finds the transaction to be a good one, he/she will be satisfied, and on the basis of that experience, choose (or make a favourable recommendation to a friend) to buy a similar product from the same source in the future – this is the concept of ‘customer loyalty’.

However, poor operations performance in delivering that product to the customer will have the opposite effect; not only will he/she not be satisfied, there will be dissatisfaction resulting in unlikely future purchases from that source, and friends informed accordingly.

The constant pressure on Operations at Qantas is to ensure customer expectations are fully met, and if possible, to be exceeded. This includes arriving and departing on time and comfort based features such as online check in, self check in kiosks, in flight entertainment and specially designed menus etc.

4) Cost-based Competition

Qantas faces significant competitor growth in all markets which impacts on their market share and profitability. This means an ongoing focus on cost minimisation. Many of Qantas competitors have significant cost and structural advantages such as lower labour rates, lower rates of taxation, cheaper financing, lower airport charges and favourable depreciation.

To achieve the lowest competitive cost Qantas has sought to introduce technology, seek alliances, outsource, reform human resource practices and restructure. Cost minimisation cannot be pursued without attention to quality – there must be a balance between the two. Qantas has been under some criticism of late with the quality of its services with increased safety incidents and the shut down of its services in the battle with the unions in 2011.

5) Government Policies

All businesses operating in Australia are subject to policies applied by three levels of government – Local, State or Territory and Federal. Government policies have a big impact on Qantas.

For example their economic policies (monetary, fiscal policy etc) has a direct impact on the level of economic activity and therefore the demand for its services.

The Federal Governments new policy the Fair Work Act (which scrapped Work Choices) is a lot more pro worker which has increased Qantas’ operating costs.
The domestic airline industry has been deregulated for some time, however recently the Federal Government has been increasing access to Qantas protected international routes for airlines like Delta, Virgin, Emirates, Etihad, Qatar etc. The increased competition has made these routes less profitable for Qantas. In 2008 Australia and the US signed an Open Skies Agreement which removed restrictions on Australia and US services between the two countries.

Qantas is likely to face hundreds of millions of dollars in expenses as a result of the previous government’s new environmental policy. Under the new emissions trading scheme Qantas is charged $20 per tonne of carbon dioxide produced. At the time of writing the new Abbott government is trying to have this legislation repealed.

6) Legal Regulation

This influence arises from laws enacted or regulated by all three levels of government. To remain in operation, a business like Qantas must comply with these regulations. Penalties for non-compliance can be severe.

Examples are:

- Qantas is subject to the regulatory control of the Civil Aviation Authority and is required to hold operating licences.
- Under the Qantas Sale Act 1992, the federal government restricts foreign investment to 49% restricting its access to equity capital.
- The Federal Government has recently introduced random alcohol and drug testing for safety sensitive roles.
- Qantas is subject to the economic regulation of the ACCC. Recently the ACCC has knocked Qantas back on an alliance with Air New Zealand as well as fining them $20 million for illegally increasing their freight charges in concert with other airlines. Qantas’ recent alliance with Emirates is currently awaiting regulatory approval.
- The Federal Government has also implemented new security regulations in response to terrorism.
- State Government regulations on labour such as OH&S, anti-discrimination, workers compensation etc.

7) Environmental Sustainability

Growing public concern and awareness has put pressure on business to make maximum use of renewable resources such as solar-generated energy and plantation timber thus ensuring their availability long term into the future. Public expectation is also that businesses like Qantas support and participate in the renewal process.

Some resources however are finite and not renewable, for example water and fossil fuels. The expectation is that these resources be conserved and made to last as long as possible into the future, for example by recycling of water, and developing more fuel efficient engines. For Qantas, the Boeing 787 and Airbus A380 are significantly more fuel efficient than the ones replaced. In 2012 Qantas and Jetstar operated Australia’s first commercial flights powered by sustainable bio fuel. They produce a 60% reduction in carbon footprint.

Fleet renewal offers the greatest benefits to fuel efficiency. The new Boeings and Airbuses are significantly more fuel efficient that the ones being replaced. Qantas’ average aircraft age is now 7.9 years the lowest since privatisation. Other fuel efficiency activities include using bio fuel and optimised flight planning. Fuel compromises 95% of Qantas’ emissions.
Qantas recently launched a trigeneration plant to power their Sydney office and operations complex cutting emissions by about 14000 tonnes per year, the equivalent of taking 3500 cars off the road. Water used to clean aircraft is also recycled.

8) Ethical and Social Responsibility

Modern society expects more of business like Qantas than just profitability. It is not enough for management to simply satisfy the requirements of legal compliance. There is an over-riding public expectation as to how the business behaves within society in making that profit. This is the concept of 'ethical and social responsibility'; there is no standard list or legal requirement set down, each business is free to define its own additional contribution to the community. Operations management must take into account the consequences of their decisions on stakeholders and ensure those decisions are socially and morally responsible. Examples are:

- In respect of quality of working life, Qantas has a health surveillance program which continually monitors workplace conditions; they have flexible work practices which foster work life balance.
- In respect of cultural diversity, Qantas’ Reconciliation Action Plan is a program which focuses on employing Indigenous Australians.
- It is estimated that aviation accounts for 2% of greenhouse gases. Qantas has invested millions of dollars in recent years to reduce its carbon emissions. They launched a new scheme in 2007 that gives passengers the option of paying extra to offset the carbon dioxide emitted by their flight.
- New aircraft now being delivered use less fuel per passenger
- They donate millions to charitable causes across the community, environment, education and the arts.
- They are reducing their energy use and cutting emissions from their flights and property.

Operations Processes

Operations at Qantas produces services by changing inputs into outputs using an input-transformation – output process shown in Figure 2 below.

**Figure 2 Input – Transformation – Output Processes at Qantas**

- Transformed resources
  - Materials
  - Information
  - Customers

- Input resources

- Transforming resources
  - Human Resources
  - Facilities

- The Transformation Process

- Output services

- Customers
1. Inputs

Inputs are classified as:

- Transformed resources; and
- Transforming resources.

a) Transformed Resources.

These are the resources which are changed by the operations processes. The main transformed resources are:

- Materials. There are two broad categories of materials used as inputs to the operations process:
  - Raw materials. Substances in their natural state such as mineral ore, timber, oil and water. For Qantas the best example is fossil fuel;
  - Intermediate goods. Goods which have already undergone some transformation from their ‘raw’ state and become inputs for further transformation processes. For Qantas, examples are the food ingredients for their catering services, stationery and computers.

- Information. A great deal of information is available from both internal and external sources. Externally it might come from government statistics, market and industry reports, media reports and academic papers. Internally it comes from financial and operational statistics, particularly data on previous performance of the processes. Information becomes a transformed resource when this gathered data is analysed and used to directly input the actual processes in the business. For Qantas the individual bookings (information) made by the customers (be it on line or through Qantas or a travel agent) are analysed and transformed into decisions as to which aircraft to use, which services to offer etc.

- Customers. The customer becomes a transformed resource as the outcome of utilising the output of the business. By availing of or using the product of the business, the customer is transformed. For Qantas, customers are transformed by having their location changed from their starting point to the new destination.

b) Transforming Resources.

These are the resources which effect the changes in the operations process. They cause the transformed resources to be changed. They are:

- Human Resources (Labour). Sometimes referred to as Human Capital, these are the people who assemble the inputs, operate and maintain the machinery and equipment used in the processes, fulfil the sales function, distribute the output and deal with the customers. For Qantas this means everyone from the cleaners and baggage handlers to the pilots and sales managers.

A successful business is one that can attract and retain high quality staff by providing good wages, working conditions, benefits and motivation.

- Facilities (Capital). These are the physical assets owned or leased which are required to produce the business output. For Qantas this includes the terminal buildings and their contents, maintenance facilities, spare parts holdings, aircraft, and even computers and motor vehicles.
A successful business is one that has located, designed and fitted out its facilities in optimum circumstances for efficiency and minimum operational cost. Obviously Qantas must have some facility at every airport from which it operates, but opportunities will be available to co-share with other airlines for mutual benefit.

2. Transformation Processes

a) The influence of Volume, Variety, Variation in Demand and Visibility

Operational processes must be focused on how much or what quantity of output to produce. The transformation processes to satisfy that requirement will be influenced by factors known as the ‘Four V’s’.

a) V1 – Volume. How much output is produced. The transformation process must be able to adjust quickly to the inevitable changes in volume ordered; not being able to produce enough leads to lost sales; producing too much leads to wastage and /or higher inventory costs.

High volume businesses usually produce more standardised products which require basic repetitive labour skills; low volume ones usually produce more customised product which require more specialised labour skills.

b) V2 – Variety. The mix of outputs produced. The more variations the more complex is the transformation process. The greater the variety, the more flexible the transformation process needs to be to change from one product to another, and, in general terms, the more expensive will the process be.

c) V3 – Variation in Demand. How demand changes over time. Seasonal change can cause wide variations in demand (for example an air conditioning business) but the variation is to a degree predictable.

Qantas experiences a predictable major increase in demand for school holidays and special events (World Cup, Olympic Games).

More difficult management problems arise from unpredictable variations. Qantas and other airlines had to cope with major decreases in demand following September 11, 2001 and the SARS epidemic. In 2011 the Christchurch earthquakes, the Thailand floods and the Japanese tsunami all resulted in sharp falls in airline bookings.

In general it is more difficult to respond to demand decreases than to demand increases. It follows then that predicting demand is a highly significant marketing input to the operational process and businesses put serious effort, expense and sophistication into this task.

d) V4 – Visibility. How much of the process directly involves the customer. Service industries have high visibility while manufacturing ones have low visibility. Qantas is obviously high visibility because there is customer contact throughout the whole process.

Where a business is placed between high and low in these four factors will influence whether it will be a low cost operation. If a business can operate at high volume and low variation in demand, there will likely be economies of scale and low labour skills required. If there is low visibility, fewer resources (cost) are necessary to manage the customer.

b) Sequencing and Scheduling

Sequencing is the order in which tasks must be performed. Obviously planes need to be cleaned and checked by qualified engineers before they can take off. Scheduling accounts for the time duration each
of these tasks must take for completion. Qantas' flight schedule that a customer sees shows departure and arrival times. It also includes making sure that each flight has the pilots, cabin crew, catering, airport and engineering support. More flights are put on certain routes and more flights are put at certain time periods. Qantas uses Sabre Air Flight Suite Systems (complex scheduling software) which automates its flight scheduling.

c) Technology, Task Design and Process Layout

Research and science develop new tools which, when applied, enable a business to do entirely new tasks or do existing tasks at lower cost. Technology at Qantas has facilitated increased productivity, very often by directly replacing human capital. Examples include online check in, online booking, electronic bag tags etc.

Task Design is the breaking down of the full transformation process at Qantas into the individual tasks to be performed. From this breakdown, analysis and assessment is undertaken by human resource and operations to determine the number of operative staff that will be required, the skills they need, whether training or retraining is necessary and, if required, the recruitment of additional or more specialised staff.

A major business expense for Qantas is the terminal, hangar and maintenance space in which the operations process takes place. Optimum process layout at Qantas is where machines and equipment are grouped together by function. This enables Qantas to utilise space and labour efficiently and eliminate bottlenecks.

d) Monitoring, Controlling and Improvement

Having created a plan for the operations through sequencing and scheduling, each part of Qantas' operations has to be monitored and controlled to ensure that the plan is adhered to. Monitoring and controlling at Qantas involve detecting any discrepancy between planned and actual activity, taking corrective action and intervening to impose new plans if necessary.

Outputs

This is the final service delivered to Qantas' customer.

Customer Service

Customer service refers to how well Qantas meets the needs of its customers. Customer service statistics are a valuable internal input to the planning process and in forecasting future customer needs and expectations. Not only does the feedback support continuous improvement it provides a direct communication between the customer and operations managers.

Qantas continues to focus on delivering the highest levels of customer service. Qantas has adopted the "Net Promoter Score" as a key measure of customer service. Qantas Closed Loop Feedback Program enables direct feedback from its frequent flyers.
Operations Strategies

There are a number of strategies for improving operations at Qantas. These are shown in Figure 3 below.

Figure 3 Operational strategies at Qantas

- global factors
- overcoming resistance to change
- quality management
- inventory management
- performance objectives
- new product/service design and development
- supply chain management
- outsourcing
- technology

a) Performance Objectives

The operations function at Qantas can provide a competitive advantage through its performance of 6 performance objectives – quality, speed, dependability, flexibility, customisation and cost. This is shown in Figure 4 below.

Figure 4 Performance Objectives at Qantas

<table>
<thead>
<tr>
<th>Objective</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality</td>
<td>Being RIGHT</td>
</tr>
<tr>
<td>Speed</td>
<td>Being FAST</td>
</tr>
<tr>
<td>Dependability</td>
<td>Being ON TIME</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Being ABLE TO CHANGE</td>
</tr>
<tr>
<td>Customisation</td>
<td>Being ABLE TO PROVIDE MORE OPTIONS</td>
</tr>
<tr>
<td>Cost</td>
<td>Being PRODUCTIVE</td>
</tr>
</tbody>
</table>

Quality

Quality means Qantas consistently producing its services to customer expectations. In other words doing things right. It is a major influence on customer satisfaction or dissatisfaction at Qantas. For Qantas, quality means things like the aircraft is clean and tidy, staff are courteous, helpful and friendly, their web site is user friendly etc.
CHAPTER 2 Operations

Speed

Speed means the elapsed time between Qantas customers asking for their service and getting it (in a satisfactory condition). Qantas has implemented a number of operational strategies to increase the speed of their service. These include booking flights online, on-line check in, check in kiosks and Q Bag Tags.

Dependability

Dependability is how reliably and consistently the product performs against expectations. Dependability at Qantas is measured by on-time departures and arrivals. This is shown in Figure 5 below. Although Qantas has outperformed its rivals in these statistics its dependability has been seriously eroded in recent years because of mechanical failures, industrial disputes and the 2011 shutdown without notice.

Figure 5 On-Time Departures and Arrivals at Qantas

<table>
<thead>
<tr>
<th>Qantas Airlines Domestic On-Time Departures %</th>
<th>Qantas Airlines Domestic On-Time Arrivals %</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY07  84.9</td>
<td>FY07  66.4</td>
</tr>
<tr>
<td>FY08  79.4</td>
<td>FY08  79.7</td>
</tr>
<tr>
<td>FY09  80.4</td>
<td>FY09  81.1</td>
</tr>
<tr>
<td>FY10  85.2</td>
<td>FY10  68.2</td>
</tr>
<tr>
<td>FY11  80.1</td>
<td>FY11  76.9</td>
</tr>
<tr>
<td>FY12  80.1</td>
<td>FY12  79.1</td>
</tr>
<tr>
<td>FY13  80.1</td>
<td>FY13  76.1</td>
</tr>
</tbody>
</table>

Flexibility

Flexibility is Qantas' ability to respond to changes in market demand, either by changing the products offered, changing the mix of products, changing the volume of product or by changing the delivery times. Because of seasonal demands like holidays and special events Qantas must operate to a flexibility performance objective to be able to adjust to major increases in passenger demand. Jetstar, with its variable fare (and baggage/catering options) structure demonstrates flexibility in product and product mix. Jetstar is Qantas' response to the competition of other low cost carriers.

Customisation

Customisation means giving Qantas customers more options by varying the product in minor ways. Qantas does this through its membership in the Oneworld Alliance where it can offer services to more than 883 destinations in 151 countries. Qantas also varies its product by offering Jetstar as a more no frills alternative and offering different classes of seating (economy and business on domestic flights) and (economy, premium economy, business and first class on international flights).

Cost

Qantas has an interest in keeping their costs as low as is compatible with the levels of quality, speed, dependability and flexibility that their customers require. Productivity is the best measure. Strategies Qantas uses to reduce costs can be found on page 52 and 53. Airlines use passenger load factor as their
measure of productivity. It is a measure of how much of an airline’s passenger carrying capacity is used. It is passenger-kilometres flown as a percentage of seat-kilometres available. Qantas load factor in 2013 was 79%. A comparison between previous years can be seen on page 57.

b) New Product/Service Design and Development

Competitive pressure or an emerging demand in the market place can make it necessary for a business to develop a new product (or service). Businesses like Qantas, to ensure their survival, must find new services or upgrade and update existing services to maintain their competitiveness and profitability. The process to bring a new service to market involves research and analysis to identify the market opportunity, designing the product to satisfy that opportunity and fully testing the product before embarking on production. Factors such as new technology and new markets opening up often trigger new product development.

The strategic decision to develop a new product or service cannot be taken lightly. It entails a serious commitment in cost, time and resource either diverted from existing operations or financed as an additional expense.

Qantas has recently launched new airlines Jetstar Asia, Jetstar Pacific, Jetstar Japan and Jetstar Hong Kong (waiting on regulator approval) to take advantage of the growth in the Asian aviation market.

c) Supply Chain Management (SCM)

Supply chain management refers to controlling the flow of supplies through Qantas’ whole operations process from sourcing the raw materials like fuel to final delivery to and service of the customer. The intention is to achieve efficient and cost effective production through reduced inventory in particular, increased transaction speed and increased customer satisfaction. Inventory is a major expense in the operations process. Raw materials such as fuel must be sourced and purchased, they must be stored and be available, they must be moved and they must be transformed.

Using SCM as an operational strategy involves four key components:

- Sourcing. This is basically the purchasing function. A business must forecast its quantity and quality requirement of every input needed in the operations process. Potential suppliers must be assessed for dependability and flexibility.

- Global sourcing. Modern operations involve increasing levels of global sourcing – obtaining supplies without being constrained to local sources. This has advantages in lower cost because the materials might be cheaper elsewhere, or not available in Australia, lead times might be shorter. There are some risks involved because of changing exchange rates and coming under the laws and customs which apply in other countries. Qantas has employed some pilots in New Zealand, and some cabin staff in Asia at lower wages than paid in Australian and has some engine maintenance carried out in Malaysia on a cost benefit basis.

- E-commerce. This is simply buying and selling on the internet. This technology has had a major impact on SCM. It has replaced time consuming and costly manual processes of the past; it provides for real time information on quantity, quality, availability, source and price of all goods and services to be instantly accessible from a range of suppliers local and international. It also provides for payment through electronic funds transfer.

- Logistics. This is the task of ensuring that Qantas has all the physical inputs in the quantities needed
in the right place at the right time (e.g. pilots, cabin crew, baggage handling, maintenance and catering) for the operations process (flights) to take place undisrupted and hence at optimum efficiency.

d) Outsourcing

Outsourcing is the use of external providers to perform some part(s) of the operations process. A decision to outsource is based on the expectation that this will be cheaper and more efficient than performing the task in-house. Having made that assessment, management must seek and select suitable suppliers and their location, and develop contracts for supply which include critical KPI’s on quantity, quality, timeliness, dependability, flexibility and cost. The practice of outsourcing is increasing at Qantas, but it brings disadvantages as well as advantages. Qantas currently outsources nearly all of its IT operations and some call centre operations, flight attendants and maintenance functions.

The opposite of outsourcing is vertical integration in which the business performs ALL the tasks and makes all the inputs in-house with no external contribution. For example Qantas has its own catering division which supplies all its meals and its own travel agencies such as Qantas Holidays and Jetset (joint venture).

Advantages of Outsourcing for Qantas

In using outsourcing as an operational strategy the advantages can be significant:

• Saving in capital outlay – factory space and machinery are provided by another business at their expense;
• Saving in labour – staff management and expenses are born by the other business;
• Increased dependability – more than one external supplier can be accessed, thus ensuring security of supply;
• Saving in cost – the other business can provide the input at a lower price than it can be done in-house;
• Access to higher level skills – the other business contains skills that do not exist in-house;
• Increased flexibility – variations in demand are managed by the other business.
• Saving in management – Having set up the contracts, management can concentrate only on the tasks it does perform in-house.

Disadvantages of Outsourcing for Qantas

There are, however, issues which need to be balanced against the advantages:

• Dependency – the operations process is now dependent on another party for supply of inputs; failures in that external supply chain can cause major internal disruption and expense;
• Loss of control and security – there can be a loss in control of standards and vulnerability to proprietary and patent data and information accessible by the supplier;
• Quality - control is no longer exercised over the inputs used by the outsourced supplier;
• False economy – outsourced inputs can become more expensive over time so constant review of the decision is warranted;
• Cost – the one-off expense of redundancies to staff no longer required is an offset to the savings from outsourcing;
• Industrial problems – can arise from down-sizing as an outcome of the outsourcing.
• Damage to public image – as a result of publicity about jobs going offshore.

e) Technology

Qantas relies heavily on technology, but airline technology is complex and continually being advanced and updated. Attempting to provide this special input in-house can be very expensive both in cost, specialist skillsets and development time. It is therefore a common practice that businesses adopt an operational strategy of outsourcing these tasks. There are two broad categories:

1) Leading edge

This is technology still undergoing development and at the very forefront of research. The rewards for successfully integrating it into the business can be very significant in terms of competitive advantage and thus market share and premium prices for the product (higher revenue and profit). High reward also attracts high risk:

• The decision to adopt might be made too early, before the new technology is fully developed and adapted for the purpose intended;
• Competent technical support might not be readily available because the technology is so new;
• Supporting software may be found to need debugging in the early stages of usage.
• If the wrong or premature decision is made, serious costs and time are wasted with inevitable damage to customer satisfaction levels and competitive advantage.

2) Established technology

This is technology already well stabilised, well serviced, widely used and proven in the market place. This would include for example the use of computer aided design, computed aided manufacture, electronic funds transfer, software for Gantt charts and CPM. These are all sound tested applications which attract virtually no risk to the operations process. Because of their universal availability established technologies may not confer competitive advantage, but the absence of their use may well result in competitive disadvantage.

It is almost impossible to operate in the modern business environment without using a large measure of technology; this is the era of E-commerce. As an operational strategy however, choosing the level of technology employed and the timing of its adoption is a key operational management decision; going too early has high risk, going to late can mean customers are lost. So finding the balance point is critical. Qantas was one of a number of airlines who placed advance orders for the new Airbus A380, but they opted to make sure they were NOT the airline to receive the very first ones.

f) Inventory Management

Inventory refers to the raw materials, work in progress (unfinished goods still undergoing the transformation process) and finished goods held by the business at a point in time. The extent of these holdings is an important operational strategic decision, because they represent significant capital outlay (cost) which is yet to yield revenue. Obviously then it is desirable to hold only that amount essential for smooth, efficient operation of the business. To hold excess quantities imposes additional cost on production, but to hold too little can result in disruption to production and loss of sales because customer demand cannot be met. This is more of an issue for manufacturing businesses than for Qantas because they do not ‘store’ product to meet customer demand like a manufacturing one does. Inventory management is the system that manages the ordering, storage and recovery of the material inputs used in production.
g) Quality Management

This operations strategy involves the processes applied to maintain consistency, reliability and suitability of the output. Quality is measured by the customer in relation to the extent the product meets or exceeds their expectation. Quality characteristics applied to Qantas are shown in Figure 6 below. Customer satisfaction enhances the prospect of future orders and favourable customer recommendation to friends. Higher quality usually means higher price, so a business must strike a balance between the two and strive to maintain the desired optimum quality outcome. For many years Qantas has marketed as a high quality, perfect safety record, full service airline and commanded premium fares; at the other end of the spectrum is Jetstar which has traded quality for price and markets as a no frills low cost airline. During 2011 the Qantas market plan has taken a battering with mechanical breakdowns and the sudden shutdown of all services with consequent serious loss of customer satisfaction.

**Figure 6 Quality Characteristics Applied to Qantas**

<table>
<thead>
<tr>
<th>Quality Characteristic</th>
<th>Management at Qantas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functionality – how well Qantas services do their job</td>
<td>Safety, in-flight meals and entertainment, seat width and comfort, ease of booking and check in</td>
</tr>
<tr>
<td>Appearance – aesthetical appeal, look, feel of Qantas services</td>
<td>Decor and cleanliness of aircraft, lounges and crew</td>
</tr>
<tr>
<td>Reliability – consistency of Qantas’ services over time</td>
<td>On time departure and arrivals</td>
</tr>
<tr>
<td>Durability – ability of Qantas to compete over a long period of time</td>
<td>Keeping up with trends in the industry i.e. latest aircraft, in flight technology etc</td>
</tr>
<tr>
<td>Recovery – ease with which problems can be resolved by Qantas</td>
<td>Resolution of service failure i.e. natural disasters, industrial action, mechanical failures</td>
</tr>
<tr>
<td>Contact – person to person communication</td>
<td>Knowledge, courtesy and helpfulness of staff</td>
</tr>
</tbody>
</table>

There are three aspects to quality management at Qantas:

- **Quality control (QC).**

Programmed inspections are carried out at key stages of Qantas’ service (on a continuing basis) to ensure the process is meeting specified standards. If not, then management intervenes and corrective action is taken to bring the process back within standard. It attempts to solve the root cause of quality problems at Qantas.

- **Quality assurance (QA).**

The minimum level of satisfactory quality at all stages of the process is continually monitored at Qantas by actual measurement and comparison against pre-determined standards. It attempts to broaden the organisational responsibility for quality at Qantas.

- **Quality improvement (QI).**

Maintaining competitive advantage is not only a matter of maintaining quality of output; the aim must be to improve quality over time by reducing error, and finding better ways of performing the tasks leading to lower cost or higher quality at the same cost. All staff are invited to participate with suggestions and ideas. It also involves Qantas’ customers and suppliers. It attempts to make quality both central and strategic within Qantas.
h) Overcoming Resistance to Change

There is a range of factors which encourage, precipitate or even force necessary changes in a business operation. In the aviation industry in recent times has been the September 11, 2001 terrorist attacks, the SARS epidemic in 2003, rapid increases in fuel prices, the GFC, changing customer requirements and the rapid emergence of low cost international and domestic carriers. The response must be to review the current business model and find greater efficiencies.

It is one thing to identify and plan for the necessary change, but quite another to achieve implementation. There are significant restraints and restrictions to implementing change at Qantas; they fall into two categories:

- **Financial Restrictions**
  
  Resistance to change at Qantas can arise because of the direct and immediate cost of those changes.

  a) **Cost of New Equipment.** Qantas has spent billions of dollars on new equipment:
  
  b) **New and more efficient aircraft ($US 22 billion between 2011 and 2018);**
  
  c) **New passenger and surveillance screening (over $1 billion since 2001);**
  
  d) **Upgraded and new information technology and systems;**
  
  e) **New and upgraded engineering facilities (over $300 million since 2005).**
  
  f) **Redundancy Costs.** To implement staff reductions incurs mandatory redundancy payments to the workers retrenched ($260 million in 2012 and $122 million in 2013). The alternative to redundancies is to rely on attrition and recruit casual and part time workers.
  
  g) **Retraining Costs.** Significant change incurs retraining expenditure. The adoption of the new reservation system, introduction of new Business Class, annual security training and engineering and maintenance for new aircraft are typical examples.
  
  h) **Plant Layout Costs.** Acquiring new aircraft requires re-organisation of maintenance operations to seek increased capacity and efficiency. Jetstar is replacing Boeing 717s with Airbus A380 so a new heavy maintenance base becomes necessary because the existing one cannot accommodate the larger planes. The A380 also requires refurbishment of the Qantas Jet Base.

- **Human Restrictions**
  
  Resistance to change at Qantas can arise because of the impact, real or imaginary, on the individual and on the established working groups.

  a) **Inertia.** The unenthusiastic response of some managers, some staff and even some of the owners is an impediment to change and will be evident and will have to be overcome;
  
  b) **Change in skillset.** Staff will be apprehensive about what the changes mean. Their current skills may no longer be required. They will be required to learn new skills especially in IT. This gives rise to feelings of personal insecurity and inadequacy, particularly in older staff.
i) Global Factors

In present day markets, businesses like Qantas cannot avoid the influence of global factors.

1) Global Sourcing

This is the sourcing of any task or component for the operations process from a location which results in a cost advantage. The most obvious example is having labour-intensive tasks performed in countries with lower wage rates than ours such as China. There are other benefits such as access to new technology or special resources or special labour skills not yet in the home country. Global sourcing decisions bring their own challenges:

- Greater management complexity;
- Different legislative and regulatory frameworks, especially in contract and proprietary protection law;
- Different cultural behaviour and different languages;
- Some increased costs such as relocation and in logistics;
- Exchange rate variations

Qantas has employed cabin staff in other countries where wages are lower and New Zealand pilots for the same reason; they have also announced the intention to set up a complete new low cost carrier based in Asia to reduce production cost and thus compete with other Asian carriers.

2) Economies of Scale

This is the opportunity for lower production cost derived from larger production runs in another country than would be justified in the home country. High volume production runs yield lower unit cost of product. By global standards, Australia is quite a small market and small local production runs can have a high per unit capital cost. Global sourcing is an especially important strategy for businesses which already market globally or seek to grow by expanding globally.

It is for economies of scale that Qantas has decided to have maintenance of the new A380 carried out in Asia. Asian carriers have contracted for large numbers of A380 and consequently have decided to set up their own maintenance facility. It makes no business sense for Qantas to do the same, especially when Asian labour rates are lower and the work will be carried out to ISO standards anyway. This Qantas decision however attracted serious trade union disquiet and industrial action because jobs were being ‘exported’ and the action threatened job security for existing engineering staff.

3) Scanning and Learning

Increased globalisation brings increased competition, more new technology and hence continuing change in the business environment. To remain competitive Qantas must stay abreast and fully informed of global developments and continually test for their application to current operations. Management at Qantas must find, absorb, learn from and test an increasing volume of data and information for potential input to or changes to the operations process.

4) Research and Development (R & D)

The market place exerts continual pressure on management to remain competitive by responding to changing market conditions and customer preferences. Research and development is the activity
engaged in to anticipate and stay ahead of these changes. Qantas carries out few tasks which could be termed R & D because it is a service business. The R & D to develop new aircraft is done by Boeing (in USA) and Airbus (in Europe).

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Chapter 2: Review Questions

1. Outline how operational decisions can have a strategic role at Qantas.
2. Identify the main operational costs at Qantas.
3. Identify the operations strategies used by Qantas to reduce costs.
4. Describe how globalisation affects the operations at Qantas.
5. Describe how technology can increase the speed and quality of operations at Qantas.
6. Discuss the impact of the Federal Government's carbon pricing will have on Qantas.
7. Identify the main inputs, transformation and outputs at Qantas.
8. Explain how Qantas’ flight timetable performs the functions of sequencing and scheduling.
9. Explain why it is important to monitor and control the operations process at Qantas.
10. Analyse how changes in market demand and other factors require Qantas to be flexible in its operations.
11. Discuss the role of outsourcing at Qantas.
12. Identify the 3 different approaches to quality management at Qantas.
13. Outline the forms of resistance to change which impact on the operations function at Qantas.
14. Explain the impact of global factors on operations management at Qantas.