

Rolls royce in contemporary business environment



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This assignment is aimed to critically evaluate a change management towards to the operations at Rolls Royce plc, ascertain a range of reasons for either success or failure to implement a operations management and to propose further improvements for the company's performance. The annual Rolls Royce report was used a primary source of business data. It was found that the firm's strategy and operations management conforms to the current trends in the operations, i. e. environmental needs, customised quality of products and flexibility of production, etc.; however, certain risks and global challenges may affect a success of the business, leading to losing a share in the market niche.

Introduction

Rolls Royce in Contemporary Business Environment

Rolls Royce is a global company providing a power product, judging on a basis of customer's demand or a niche market position – “ it's me”, for land, sea and air (Rolls-Royce, 2006). The company has a balanced business portfolio with the leading positions in civil aerospace, defence aerospace, marine and energy markets. One of key factors of Rolls-Royce's success is continuing expansion of its business globally. In the past five year RR started work on or opened facilities in Europe, the United States and Asia. Company employs over 38, 000 employees, 22, 700 are in the UK with the balance primarily in the US, Asia, Germany, Scandinavia and Brazil, which represents a global expansion of business operations, human resources for implementation of process and technology, i. e. resources for the status.

Rolls Royce is a highly focused power systems business, concentrating on manufacturing and services of power systems, including a gas turbine

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engine. There are approximately 54, 000 Rolls Royce gas turbines in service. With annual sales of around £4 billion and a forward order book of nearly £22 billion, its technology is applied over a wide range of products that generate high-value services throughout their operational lives. These operations give a value for the company's business. In response to increased orders from the market due to A380 production will recommence and Boeing787 production begins (Boeing, 2006), the firm implements a strategy towards to the best operations for turbine engine production.

Objectives of the Assignment

Manufacturing (WCM) is one of the broadest philosophies focusing primarily on production (Lind, 2001). Although Hayes and Wheelwright originally defined the WCM term (B. Flynn, 1997) to describe organizations which achieved a global competitive advantage through use of their manufacturing capabilities as a strategic weapon, there is no consistent definition of WCM (Maskell, 1991). So does Roll_ Royce represents the operations management?

In my opinion, the answer is clearly, yes, it does. A world-class organization is an organization that had established itself as the best (RR automotive has been doing it continuously since 1906) becomes the best with new product lines (such as gas turbines) and then sustains itself as the best in its field during a life cycle. It goes beyond TQM (Total Quality Management), which is an adaptive process. It also goes beyond the " learning organization" by keeping ahead of changes. World-class organizations practice Continuous Quality Improvement (CQI) - a management philosophy which focuses on

improving processes within an organization. Further these principles of the operations will be analysed and discussed.

Analysis and Discussion

2. 1. Ownership and Finance

Roll_ Royce is a Public Limited Company (plc). What are benefits or drawbacks to be a plc for the ? As firm is selling shares on a stock market, the business gets a huge capital injection allowing the company to expand quicker and invest in new products. In RR's case it allows them to use high quality machinery and materials to produce innovative and yet expensive products, entering a niche on the markets. Being on the stock market can have a positive effect on your publicity and suppliers are more willing to offer you a credit as they can see how secure finances are.

Plc-type organisation has also drawbacks. Financial information has to be published for shareholders and it also open for competitors. The company on a stock market have to pay its profit out to shareholders (Fig. 1), which reduces a financial security of the business. Also the shareholders may influence a management style, not always in the best way, in running the company. This could lead to a conflict of interests between ownership and management board, leading to decisions taking a long time to be made. In addition such a business may be affected by movements of global markets themselves, i. e. commodity prices, foreign currency exchange rates etc.

Fig. 1. Total Shareholders Return over five years [Rolls-Royce, 2006]

2. 2. Business Strategy

Roll_ Royce sets-up their strategy towards to be the best, i. e. "" and had a restructuring programme after 11 September 2001, increasing investments in both technology and capabilities to create competitive products. More satisfied customer's relations, which can last up to 25 years or more, is also important for the business as it gives more than 50% of revenue from after sales market service. As a result of this strategy RR's mission statement is described as " Roll_ Royce offers the best customers' business solutions from superior power systems and services" (Rolls-Royce, 2006).

RR's ambitious and yet timely objective is to help the environment. The company developed a re-engineering program to reduce as much waste as possible. Using the SMART concept Roll_ Royce come up with a consistent strategy:

Developing a competitive product portfolio (currently over 50 product programmes and £350 millions for development and introduction of new products) for four global markets Civil, Defence, Marine and Energy with 40-50% market share in the next 5 years.

Reducing operational and unit costs by increasing operations efficacy.

Responding to the challenge of climate change. £100 million annual investment for R&D, introducing an Environmental Engine Programme.

Capturing aftermarket services opportunity and add value for customers through the provision of product-related services.

Environmental issues will dominate in the airline industry as more public issues have been arisen due to climate change, pollutions, noise and air quality (Fig. 2). The Advisory Council for Aeronautics Research in Europe (ACARE) has set a range of challenging environmental improvement goals to be achieved by 2020. Globally a rapid growth continued in manufacturing load in 2006 and will increase further for the company. It is also inevitable that turnover will increase within the next years due to a world growth of transportation business and energy demand. As a result one of the key objectives at Roll_ Royce is the environmental issue. The pollution produced by company's factories and produced engines has to be designed, monitored and checked regularly. The Environmentally Friendly Engine (EFE) is the latest demonstrator programme to be launched by Roll_ Royce to enable them to meet these targets: reduced fuel consumption, while lowering emissions and engine noise. In addition RR is developing renewable fuel cell systems that have the potential to be clean, quiet, cost effective and highly fuel efficient.

Fig. 2. This is an example of an increasing environmental pressure for aerospace industry - both manufacturers and carrier companies. Roll_ Royce aims to produce engines to meet the most stringent noise and emission requirements for future civil aircraft.

A company is successful if it has stable growing sales and thus financial resources for further business development towards to the level.

2. 3. Sales and Operations Management

Roll_ Royce press release shows the group ended 2006 with a net cash balance of £826million. Underlying aftermarket services revenues grew by 13% in 2006 and represented 53% of total sales and is expected to grow up to 63% further. Any threat to security of aftermarket revenues through a failure to provide an operational service which meets customers' expectations, would threaten a RR's level of profitability. Therefore Roll_ Royce is focused on providing a high standard of service to all its customers, investing in capabilities such as its recently established Operations Centres, which monitor engine operations in real time, co-ordinating and integrating data to enable Roll_ Royce to provide better predictive information and operational performance. A corporate report shows how well after-sale revenue has increased (Table 1).

*Reconciliation of underlying results is provided in notes 2 and 7 of the consolidated financial statements.

**Underlying revenues reflect actual US dollar exchange rates on settled derivative contracts.

A Roll_ Royce presentation (Rolls-Royce, 2006) contains a statement from each area referring to how well they have done in the previous year:

Civil Aerospace = Growing services/improving business mix

Defence = Well positioned on new programme

Marine = Continuing strong order intake

Energy = Introduced new products

These four sentences sum up how the business has done in relation to their strategies mentioned previously. But the markets in which company operates are highly competitive that is another challenge faced at Rolls-Royce's strategy mix to be the world-class. As Roll_ Royce does not offer products that can be sold over a till but more order based products over long periods, it is risky to have lots of pre-ordered products and therefore important to offer a good stock price to encourage potential investors.

Majority of Rolls-Royce's programmes are long-term in nature and access to the key platforms is critical to a business success. Although there is clearly a positive feeling to these four statements it is hard to measure these long-term objectives. One mentioned objective is that there is no reference to in their annual report is whether harmful waste has been disposed, protecting the environment, or it has resulted to increased emission tax, reducing a financial outcome. However the Managing Director of Roll_ Royce said that "2006 is developing, overall, in line with our expectations". Particular emphasis is being made on the most profitable engine market for long-haul aircrafts (Fig. 3, table 2). With more orders for new Trent engines to date is exceed 200 aircrafts valued £6billions with the major clients in Asia and Europe (Table 1, 2 in appendix) shown for coming new A380. This delivery is a real challenge to maintain the status at Roll_ Royce as a series of delays with the aircraft official launch showed this year. How this does affected the quality management will be discussed next.

Sources: Boeing Commercial Airplanes and Airbus

Figure 3: Delivered aircraft value and units (2006-2025)

Table 2: Long-haul large capacity aircrafts and turbine engine types

Aircraft passenger capacity

Output (to date)

Engine

Unit cost

Changes and benefits

Boeing 747-8 (400-500 passengers)

747 deliveries, 60% civil, 40% cargo. 747-8 to be launched in 2009

4 Ñ... GEnx-2B67

US\$ 240 millions

Reduced NOx emission, noise dB and better fuel efficiency.

Boeing 767-400 (245-375 seats)

767 deliveries, most companies have favoured B 777 instead of B767-400.

2 Ñ... PW40xx or Rolls Royce RB 211

with reduced noise and emission

Boeing 777 (300 pass)

791 ordered, 509 delivered.

2x PW 40xx

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RR Trent 8xx or

GE 90-94B

US\$ 220-240 millions

with reduced noise and emission

Boeing 787 (220-300 seats)

482 (452 firm, 30*** pending). The sales will continue till 2014.

2 Ñ... GEnx or Trent 1000

US\$ 140-188 millions

137 orders for Trent 1000, 170 orders for GNex

Airbus 380 (pass 555-853)

To date 166 orders from 15 customers.

Expected sales of 750 jets A380s over the next 20 years at 420 jets for breakeven.

4 Ñ... GE/PW GP72xx or 4 x RR Trent 9xx

US\$ 296 - 316 millions

86 orders for RR Trent, 80 for GE72xx. Fuel consumption of 2.9 litres per passenger km - the current industry average is 5 litres per passenger km.

Airbus 350 (pass 270-350 seats)

Planned from 2013.

2 Ñ... GE/PW GP72xx or CEnx or 2 x Trent XWB

US\$ 200-240 millions

Engines will have a thrust of 75000-95000 lb

Sources: Boeing Commercial Airplanes and Airbus. Trent is Roll_ Royce trademark for aeroengines.

[http://www. answers. com/topic/list-of-aircraft-engines](http://www.answers.com/topic/list-of-aircraft-engines)

Another challenge is to reduce operations and unit costs. Cost of kerosene, which is main aircraft fuel, and other energy resources is continued growing within the industry, although it has achieved almost 50% improvements in fuel use in the last 20 years [1]. Advanced machinery and production tools offer further reduction of energy use to manufacture an aeroengine. If in the short term Roll_ Royce could invest in faster machinery or more productive workforce it could cut down the forward orders and thus optimise the production. In the long run, however, it would mean larger wage bills and higher risk of depreciation on the automated machinery.

Cutting staff to reduce the costs by making people redundant is only really necessary if there is a major financial worry, which is the case for many airlines but not yet widely applicable for Rolls-Royce, who is moving production to more labour-effective countries. Therefore company's strategy, to increase quality and reduce waste products, seems to give the results. The production method itself will rely on quality of the product. Roll_ Royce

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at its current level of business operations has a high quality product, which needs to be maintained and improved continuously. In the long run it would be better but forward orders (Table 2, Appendix) could also decrease due to energy crisis. It would also lead to staff working longer hours and as a result staff morale decreases. Note that many airlines has either cut a number of flights or increased a fuel charge per passenger. This will affect new production orders from Rolls-Royce.

One objective that could change for Roll_ Royce is to continue establishing themselves as a leading supplier in the four growing markets. Since the company has positioned itself in the key markets, it has substantial customers to get orders. If one market slows down, e. g. a civil aerospace department after the delay of A380 launch, it can fall back on the other three markets maintaining the business. A disadvantage of this strategy is the significant resources spent for employing experienced workers and management staff to keep the operations in these four markets. It is there Roll_ Royce would need to realign the core objectives to the global challenges to maintain the world-class operations and attract new shareholders.

2. 4. Quality Management

Within the factories Roll_ Royce manages complex production programmes with demanding technical requirements against stringent customer schedules and a capital intensive form of production, which allows products such as turbine engines to be made fast and all of the same quality. Failure to achieve sustainable quality goal would have significant financial implications for the Group. Car production facilities at Roll_ Royce have

labour intensive operations due to handmade cars, causing it to be a far slower and more expensive process. Thus RR cars made by orders have an upper price and a market niche. When producing a product such as a jet engine Roll_ Royce employs a batch production method, which tends to be highly customised. It took several years for the company to change productions to lean system and receive an ISO certification.

Quality at Roll_ Royce is intangible because of its world-renowned reputation for many years. The company employs three methods of quality testing. Firstly, Quality Control involves checking of the project at the end of production. But there is a drawback to this form of checking. If errors identified results in a waste being produced, this adds extra costs to operations. Another technique - Quality Assurance is also employed at the production; however because there is more time taken on producing a product the cost of originally implementing the product although short term could be significant. As quality needs to be assured it means regular inspections need to be undertaken to ensure quality is achieved. Overall this is a better form of quality testing than quality control as changes can be made to product as it goes through production to increase quality.

Final form of quality testing is Total Quality Management (TQM). It involves ' Building Quality In'. All three of these methods of quality testing contribute to the overall quality produced by Rolls-Royce, which manufactures approximately 30 per cent by value of its gas turbine products and some 70 per cent is provided through external supply chains. Any quality failure happened in the supply chain would present a risk to the RR's ability to meet customer requirements and to achieve its financial goals. If quality is not met

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it could mean lack of sales due to reasons such as loss of reputation. It is not just Roll_ Royce that has to deal with quality. All businesses have to ensure they are producing quality goods otherwise people won't buy their products.

A supporting infrastructure for quality management, a key element of world-class manufacturing, is an important element (Flynn, 1999). Roll_ Royce has an impressive investment plan totalling to more than £3billion for advanced technology, capability and infrastructure, offering improved performance and better energy efficiency of products, environmentally friendly operations and long-term competitiveness. £30million is spent annually on training and some £250million is directed annually on capital projects.

2. 5. Leadership Style and Management Culture

Roll_ Royce has Democratic paternalistic style of management. Although the company has department it also has a management board, making all the decisions and having centralised power over company. An extreme management style is an authoritarian style, which would be noted in a military organisation – such as Rolls-Royce's military division. Another extreme in management style is a laissez-faire style that gives almost 100% control of a company to workers. Roll_ Royce is though none of the extreme management as it has CEO and a chairman who overlook all decisions.

Styles of management are summed up in McGregor's Theory Y and X.

Another form of measuring management styles is through the Tannenbaum and Schmidt Continuum (Dawson, 2005). None of these theories has been fully taken at the company but it seems to be more towards the McGregor X theory of management, which has an important role of managers and

therefore it is further to the left (Fig. 4). It is thought that manger sells technique where people at the top make the decision but invite people questions.

Degree of Workers Authority

Degree of Manager Authority

Rolls Royce

Manager Manager

Tells Delegates

Allows people to function independently

Makes a decision and announces it

Fig. 4. Management style at Roll_ Royce

Power culture dominates in the company because of its top-mangers. This type of culture is normally linked with an autocratic or authoritarian style of management. It is not solely a power culture as it has many leaders at the top where a position does play a role. However RR has many departments run by leaders that work under one brand name for one goal. A person-type culture can also be found inside Roll_ Royce as skilled employees are able to make their own decisions; however, it does not change much to the overall culture. This links to a hierarchy organisation that is a tall structure but it has a certain degree of openness between CEO and regular employee.

2. 6. Communications Management

Roll_ Royce is very process focused firm and it continues to reduce operating costs through standardisation but as ever IT, with investments to be at around 2. 5% of sales, has been playing a significant role in Rolls-Royce's growth, with strong project management and very aggressive timescales being the norm at the company. Roll_ Royce aims to implement a Global Supply Chain management structure at Enterprise Resource Planning (ERP) systems which will allow them to consolidate commodity management and increase US dollar based proportion of a purchase bill. The ERP convergence programme has 18, 000 SAP users and is allowing us to open up our capacity and improve effectiveness. A substantial CAD/CAM product lifecycle project was to cut design and development times on the back of technology and monitor a process change down to the second phase. The next stage of Rolls-Royce's IT strategy will be nine major teams looking at pushing forward a global supply chain and engineering level.

Increased globalisation of the business and advances in technology has resulted in more data being transmitted across global communication links, posing an increased security risk. This puts higher responsibility and risk for being attacked by competitors (The Times, December 3, 2007). Therefore, the company has a corporate IT department and the latest security technology responsible for data management at the company as well as communication specialists at each department.

A global company may have certain language and cultural barriers if using a phone is the only way to contact a client. The company uses IT for e-mails. As aforementioned e-mails can have attachments, which makes sending <https://assignbuster.com/rolls-royce-in-contemporary-business-environment/>

images or documents far quicker and easier than by post. Other electronic devices such as telephones are used to record voicemail and a factory wide public address system to notify staff. However this form of communication is open, as it is not used for restricted information such as redundancies.

Externally RR's business uses e-mail to place orders or inquire about business. However it isn't entirely fool proof if a company urgently needs to contact supplier e-mail, although may take a few days before it is read and replied too. Apart from contacting suppliers or customers Roll_ Royce has the website. It provides an alternative way of selling products and giving information away to the public such as potential buyers and shareholders.

Dramatically increased IT and operations costs due to market growth and disruption caused by shortages of raw materials could diminish the RR's aims towards to operating and unit cost reduction at UK factories.

3. Conclusion

The Roll_ Royce achievements indicated that WCM practices were related to competitive performance, and that the addition of new manufacturing and management practices has resulted in further improvements in competitive performance - such as gas turbines assembly line replicated for four key markets and after-sales services, including training. The WCM implementation was recognized as having been an economic success by the company itself and by partner-businesses. Being a world-class company gives to Roll_ Royce a certain advantage on a stock market, where so-called " alpha and beta investors" do prefer using rather a traditional approach (quality of management and production) to analyse a financial performance of a company, than quantitative approach to investment analysis. Thus more

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investors do believe in RR, especially after a series of financial crunches on the world markets.

Roll_ Royce aeroengines aims to maintain the no. 1 market position by offering industry leading technology at the best environmental and operational performance, minimising airline costs throughout a total product lifecycle, and innovative technical and business solutions maximising customer value. Combination of the technology and after-sales support has created the growing demand at stable price for the new engines. In my opinion, further improvements towards to the world-class require four components: Vision, Active Leadership Involvement, Hierarchy of Trained People, and Constancy of Improvement Activity.

(3468 words excluding references)

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