Rolls royce erp case study

Education

In the following assignment I will outline what Enterprise Resource Planning is and the costs and benefits frequently associated with the system. I will then go on to write acase studyregarding a major company which has implemented an ERP system, providing a detailed account of the costs and benefits which arose as a result. I will start this case study with a brief contextual background of the company. Literature review The purpose of Enterprise Resource Planning, or ERP, is to effectively integrate all departments and functions within any given business onto one computer system.

If implemented appropriately, ERP should serve the needs of these departments by centralising any required information, making it easily accessible and vastly improving interdepartmentalcommunication. A good ERP system should serve all levels of an organisation, from senior managers to production workers, with information being provided independently and made readily available by and to said levels. Typically, the benefits of implementing ERP include improved communication, better visibility, integration of all departments, and business process reengineering often resulting in a strategic advantage over competitors.

Communication across different areas of a business is improved because information has become centralised, eliminating any “ information islands” as data is made easily accessible and readily available to those who require it. The reliability of said information is also improved, as appropriate sources can be confirmed. It can also be guaranteed that information and data is both sent and received by the right people/departments, with feedback being provided by both parties; this can greatly improve the time it takes to

make decisions within a business, which in itself is an advantage over competitors.

It is this coordination of departments which vastly improves a businesses ability to deal with any problems in its supply chain; if any area of the business was being hindered by or had an issue with another, for example, ERP would ensure fast, easy communication between these two departments and each could present their dispute to their respective management, who could then make a well-informed decision in regards to solving any problems within the business after observing the information provided through ERP.

This is business process reengineering. When a business can quickly and effectively olve any problems in its operations it becomes a great deal more efficient as a result of increased flexibility; a direct result of coordinating all areas of a business collectively and closely. This is the main benefit of using ERP (a culmination of the numerous other benefits), businesses become able to make decisions and adapt more quickly than their competitors. However, as with anything else, the implementation of ERP has certain drawbacks. These include the fact that ERP is very expensive to purchase and is equally costly to customise, this often results in management being reluctant to invest in ERP.

Aside from the initial cost of purchasing the system, ERP has to be customised so as to work as effectively as possible within any given organisation. As expertise on ERP is limited and customisation requires both specialised skills and knowledge it is very expensive and often time consuming. There are also costs associated with the maintenance of an ERP system, as changes/adaptations must be made in order to ensure the system

remains effective and relevant. Of course, a business will always have the option to design its own system, although the costs associated with this are also high due to the specialised skills that are required.

Another frequent drawback is management, employees or both being resistant to change within the business, and refusing to or disliking having to use ERP. While this can be overcome with training in order to familiarise employees with the new system, (even with training it often takes time for employees to become used to using a system, as seen in a typical “ diffusion of innovation curve”) this is yet another outlay the company must be aware of and can often put management off the decision altogether.

Case study The nature of today’s modern international markets requires companies to maximise their flexibility and ability to respond quickly to an ever changingenvironmentin order to remain competitive, whereas in the past businesses would compete on one or two performance objectives, such as price and quality. It is therefore a necessity for a key player in any market to be able to make quick decisions both within its own supply chain and as a result of moves made by its competitors.

In this part of my project, I will discuss a case study from Rolls Royce detailing the implementation of an ERP system, along with the costs/benefits and a final conclusion. Rolls Royce is ? 10, 414million (2009 revenues) global power systems and services company based in London. It employs nearly 39000 people and is the world’s second largest manufacturer of aircraft engines, providing engines for aircraft such as the Nimrod, Boeing 707 and countless other military and commercial aircraft.

The company also has major businesses in the marine and energy sectors and was listed as the 32nd largest company on the FTSE 100 as of august 2010. The company's most popular engine was the Merlin, with over 160, 000 being produced. Rolls Royce used over 1500 information systems before their implementation of ERP. The majority of these systems were very old, expensive to run and maintain, and increasingly difficult to develop. These legacy systems were not providing the company with accessible, accurate, timely or reliable information and as a result were not appropriate for a company operating within the modern manufacturing sector.

The existing systems did not communicate well with each other as a result of differing file names and formats and the business was not able to establish direct communication with suppliers, customers or partners. This made co-ordination between departments very difficult as information could not be relayed in a timely fashion. The company's newest system had been developed in the 1980's, and while being reasonably functional, it had difficulties communicating with other, older systems which were still in place at some manufacturing sites.

This meant work at sites could not be tracked accurately, which resulted in problems in regards to taking stock and creating a reliable inventory. Co-ordination of the entire chain of production was suffering as a result of the company's inability to interact effectively with its various departments, and growth of the business was being hindered due to the fact Rolls Royce could not keep up within a fiercely competitive and fast paced market. Rolls Royce required a system that provided quick and easy communication between its

various sites and departments in order to make well informed, competitive decisions.

In 1996 it was decided that Rolls Royce required a new, more up to date system that could handle its various, ever expanding requirements. The company formed a partnership with EDS (electronic data services) and outsourced its existing IT department, making EDS solely responsible for the development of a new system. Rolls Royce decided that as EDS was a world leading IT outsourcing company with years of experience and expertise specialised around the erospace industry, that it would benefit the company far more than if it were to design and implement its own system. This also prevented the business from becoming side tracked and gave them the chance to concentrate on the creation and production of engines. EDS provided specialist consultants with prior knowledge of Rolls Royce's legacy systems and vital knowledge of cross-functional business relationships. In addition, ERP planning teams were organised, responsible for implementing working changes and providing training for the new system.

The main elements of the new system were designed to provide quick and easy interdepartmental communication as well as direct online access to information provided independently by these departments, to connect certain areas of the business more closely with its core processes, to provide accurate and timely updates of production and inventory and to standardise data formats across the entire company. These elements were categorized into 3 separate " suites" and implemented one after the other.

The first stage of suite one was " plan the supply chain" which involved reviewing future sales potential and identifying minimum and maximum

levels. The supply chain capacity was then reviewed accordingly. The second stage was to “ master schedule key programmes” which involved supporting the sales and operating review board and strategically planning engine sales with factory capacity. The second suite involved “ planning and scheduling the factory” which uses information from suite one to plan factory capacity and produce the required components, eliminating and over/under production.

Suite two also included a process called “ schedule the shop” which uses information gathered from the previous phase to calculate when to launch materials onto the shop floor and when the materials should meet identified stages of the manufacturing process. The third suite is “ operate the factory” which deals with the control of workflow and inventory management throughout the entire manufacturing process. These stages all collect detailed operating data, making it much easier to track the progress of manufacturing as well as monitor stock levels.

In the case study, the problems Rolls Royce encountered during the implementation of the new system are grouped into three categories; cultural, business and technical difficulties. The ERP planning teams anticipated a high rate of acceptance amongst existing Rolls employees, as the new system was of higher quality and eliminated any problems associated with the older legacy systems. However some processes and features were not fully appreciated by certain employees.

The planning team decided that the best way to deal with this was to illustrate the changes/improvements included in the new system to the company as a whole, and training seminars were organised. These seminars

were split into two groups, general usage and specialist usage, with the latter being technically based and the former being done with the use of IT consultants. These seminars were supported with presentations and practical demonstrations within the workplace. All in all, over 10, 000 people were to be trained.

Another problem with the implementation of a new system was that it required a rigid business structure in order to work effectively. This meant changing the way that Rolls Royce does business through internal process engineering. This was obviously a huge task for the teams to overcome, as it involved mapping the entirety of the businesses processed and modifying them accordingly. This is hugely expensive and time consuming, as the system also had to be modified in order to accommodate these changes. The main technical problem that had been encountered by Rolls Royce was the accuracy of the data as provided by the numerous older systems.

The development and implementation of an ERP system required that old data to be collected modified into an appropriate and standardised format and stored within the new system. Another problem that arose during this task was the possibility of data duplication, as in a few special areas the older systems had been left running until they could be phased out by the new system. The study mentions that “ The CAD system used by Rolls-Royce remained the same, as the process to alter the file formats would be too expensive and require use of valuable resources that are needed for the core implementation. However it was ensured that in other areas of the business data duplication was not a problem, though this was, as mentioned, expensive and time consuming.

Rolls Royce, being such a large company fully understood the magnitude of the task they had set for themselves. It is mentioned in the text that implementing an ERP system into a business process as large and complex as that of the business is equivalent to combining ten medium sized businesses. The administrative and technical difficulties encountered by the company were dealt with quickly and efficiently as they had hired those with the right skills to get the job done.

It is not really mentioned how the implementation of a new system has affected the company, as it is required to have at least one stable year of operation before being honed a success. However an IT project on this scale is never going to run as smoothly as a smaller one, and it is assumed that after all the smaller problems are ironed out that the risks will be worth it and Rolls Royce will be able to grow and compete to a better degree, making full use of its new and improved ERP system.