EASTERN UNIVERSITY, SRI LANKA
Faculty of Commerce and Management
Department of Management
Third Year/1ˢᵗ Semester Examination in BBA/B.Com - 2008/2009 (September 2009)
(Proper and Repeat)
MGT 3213 Management Information Systems

26 OCT 2009

Answer all five (5) questions   Time: 03 hours

Q1. Case Study: Information Systems Help KIA, Solve its Quality Problems

A decade ago, few Americans had heard of Korean car maker Kia Motors. The company only started selling cars in the United States in 1994, promising high-quality vehicles at prices well below the competition. That year, Kia sold 12,163 vehicles. By 2004, Kia had sold 270,000 cars and expects to sell 500,000 annually in the U.S. market by 2010. Kias are 10 to 15 percent cheaper than comparable vehicles by competitors.

From a marketing and sales standpoint, Kia has been a phenomenal success. But until 2002, Kia ranked at the bottom of J.D. Power and Associates' annual initial-quality survey of new vehicle owners. In 1997, when the average North American car had 1.1 defects per vehicle, Kia had 2.75. In 2002, Kia had improved to 2.72 defects per vehicle, but the industry average was 1.33. Kia had a long way to go, and this was affecting its ability to sell cars, retain customers, and keep operational costs down.

Kia has tried to keep customers happy despite its quality problems by offering a 10 Year/100,000 Mile Warranty Program, which provides coverage until either the yearly or total mileage figure, is reached, whichever occurs first. That means that Kia must pay for repairs on all warrantied items in its vehicles for many more years than its competitors are willing to do for their products, which raises operating costs and eats into profits.

Like all manufacturers of vehicles sold in North America, Kia had to create a system by December 1, 2003, to report any defects, accidents, or injuries involving its vehicles to the U.S. National Highway Traffic Safety Administration (NHTSA). This was a major challenge for the company. The information Kia had to report was stored in at least seven different systems run by Kia's warranty, parts, consumer, and legal affairs departments.

Fragmentation of this information in different systems prevented Kia from getting a complete picture of defects. Parts sales are the first indicator of a defect, warranty claims the second, and consumer complaints the third. Looking at parts sales alone won't provide an answer. A sudden increase in brake pad orders from Kia dealers making repairs indicates there might be a problem with a particular pad.

By examining warranty claims, Kia might discover that brake pads were only being ordered for four-wheel drive models of one of its vehicles and not for two-wheel drive models. This additional information might show that the problem was actually a result of excess vibration caused by the vehicle's design rather than the brake pads. Kia could have created a series of stopgap software programs to extract the required information out of these various computer systems and collate it manually. But this would have been time-consuming and would not provide any other benefits to the company. So Kia's management decided instead to create a defect early warning system that could identify potential problems, such as faulty brake parts, by combining warranty claims, parts orders, field reports, and consumer complaints.

Kia enlisted Infogain, a Los Gatos, California, software consulting firm to help it design a new system solution. Infogain created a software "engine" that examines six Kia systems for warranty claims, parts sales, vehicle identification number master storage files, and vehicle inventories and stores the essential information in a single common data repository. The system automatically breaks down and categorizes reports based on individual components, such as steering assemblies or headlights, and links to Kia's clarify customer relationship management system, tracking consumer complaints received by phone, e-mail, or postal mail.

Once the data have been stored in a single place, Kia can use Crystal Analysis software to analyse them, highlighting events, such as spikes in warranty claims related to a particular vehicle model, unusual increases in parts orders, or high numbers of accidents resulting in serious injury or death, on an early warning dashboard. Managers are able to analyze the data by daily, weekly, or monthly reporting periods and by specific car models, model

years, and components. They also can break down the data in detail to see how many complaints or warranty claims are associated with a specific item, such as a steering assembly.

Information from this system is helping Kia pinpoint the sources of defects and determine what percentage of its vehicles is likely to have problems. The company can then improve its production processes before the problems become more widespread, thus lowering costs for warranty repairs. This information also helps Kia determine the most cost-effective strategy for dealing with its quality problems. For example, should Kia recall all batteries if battery defects occur in extreme heat or limit recalls to states in the southern United States?

Kia's quality has indeed improved. In quality rankings released on May 18, 2005, J.D. Power reported that Kia had 1.40 problems per vehicle; finishing second for quality in the compact-car category bind the Toyota Prius. According to Hirofumi Yokoi, an analyst with auto industry consulting firm CSM Worldwide, today "Kia quality is relatively comparable with established U.S automakers.

(Source: Craig Simons, Kia Makes U.S Inroads and Builds for Future Growth," Cox News Service, March 14, 2006; Mel Duvall, "Kia Motors America: Lemon Aid." Baseline Magazine, June 2005; and www.kia.com accessed June 18, 2006 (as in Laudon and Laudon 2009, pp.48-49)

Questions:

(a) Why was it so difficult for Kia to identify sources of defects in the cars it produced?

(04 marks)

(b) What was the business impact of Kia not having an information system to track defects? What other business processes besides manufacturing and production were affected?

(08 marks)

(c) How did Kia's new defect-reporting system improve the way it runs its business?

(06 marks)

(d) What management, organisation, and technologic issues did Kia have to address when it adopted its new quality control system? **(07 marks)**

(e) What new business processes were enable by Kia's new quality control systems?

(03 marks)

(Total 28 marks)

Q2.

(a) Is there a relationship between applications of IT/IS in an organization and its business performance? Argue with examples.

(06 marks)

(b) Identify the information systems which are serving the various functional areas, levels of management, and an enterprise application level in a business.

(06 marks)

(c) What are the critical success factors that must be considered by an organization in aligning its IT plans with business plans?

(06 marks)

(Total 18 marks)

Q3.

(a) Analyse the relationships among ethical, social, and political issues that are raised by information systems.

(06 marks)

(b) The Grid Computing, On-Demand Computing (Utility Computing), Autonomic Computing and Edge Computing are some of the emerging trends in the hardware platform to solve certain type of problems faced by the organizations. List out the existing problems in connection to each type of computing.

(06 marks)

(c) Identify two service providers each in Internet Service (ISP), ERP, E-commerce service and Internet Payment Gateway in Sri Lanka.

(06 marks)

(Total 18 marks)

Q4.

(a) Identify the different roles of a telecommunication system and relevant devices or technologies responsible for each role.

(06 marks)

(b) Why a traditional file management environment, leads to many problems in managing data resources in business organizations? Discuss. **(06 marks)**

4

(c) Describe major challenges and problems in building e-commerce or e-business systems or applications in small and medium scale enterprises in Sri Lanka.

(06 marks)

(Total 18 marks)

Q5.

(a) Design an organizational framework for security and control of information systems in an organization.

(06 Marks)

(b) "How much should a firm spend on IT infrastructure depended on several internal and external factors". Identify with appropriate examples the relevant internal and external factors in connection with the above statement.

(06 Marks)

(c) "Organizations can improve their efficiency by using computer technology. Government institutions handling especially a large volume of data can use technology effectively to make things easy for people. However, bureaucracy, inefficiency and corruption coupled with lack of IT skilled top officials make things worse and the institutions lose valuable data within a few seconds creating serious issues in government service." Do you agree with this statement? Explain your answer with real world examples from Sri Lanka.

(06 Marks)

(Total 18 marks)