

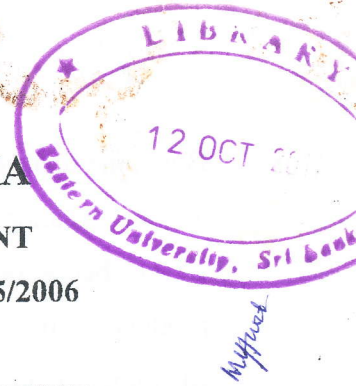
EASTERN UNIVERSITY, SRI LANKA

FACULTY OF COMMERCE AND MANAGEMENT

Final Year/ Second Semester Examination in BBA 2005/2006

(July/August-2011) (Proper/Repeat)

MGT 4214 OPERATIONS AND QUALITY MANAGEMENT



Answer all questions

Time: Three Hours

Q1.

Read the case and answer the questions below

Toyota Motor Company: Losing its Quality Edge?

This case study is about quality management at Toyota Motor Corporation (Toyota), the world's leading automaker. Over the years, the Japanese automaker had built up a reputation for manufacturing reliable cars and trucks. Toyota's products were a byword for quality for customers so much so that its manufacturing techniques were followed by its competitor's world over. Toyota's commitment to manufacturing world class and quality automobiles was entrenched in its entire manufacturing philosophy right through the development stages to manufacturing. At Toyota, quality was built into each manufacturing process and employees from all divisions ensured that defective items did not pass on to the next process.

At the core of the company's success was the Toyota Production System (TPS), which made use of concepts like genchi genbutsu, Just-in-Time (JIT), Kaizen, Kanban, and Jidoka to reach a high level of efficiency in production.

Toyota recognized quality as one of the most important factors affecting customer satisfaction and strove to achieve excellence in manufacturing quality products. To ensure zero defects in the finished product, Toyota set up quality assurance systems across various divisions, including development, purchasing, and production. To overcome quality assurance problems caused due to rapid globalization, Toyota adopted the "Toyota Way" - a set of management principles and communicated them to all its overseas manufacturing plants. Due to its efficiency in manufacturing, Toyota became one of the most trusted brands in the global automobile industry.

But some analysts felt that Toyota had become a victim of its own success. In the mid-2000s, Toyota expanded its production facilities rapidly in a bid to grow globally and to achieve its goal of becoming the number one auto maker in the world. Toyota's rapid growth affected its product quality with the company reportedly compromising on its manufacturing techniques. Customers began to face safety related problems in Toyota vehicles. Later a series of recalls followed which put the company's hard-earned reputation for quality at risk. Analysts opined that constant recalls had damaged the reputation and brand image of Toyota and hindered its return to profitability. In a quest for market share, Toyota had sacrificed its legendary quality and ignored its own management principles and customers, they said. To verify the cause of recalls and improve quality, Toyota set up a committee headed by its president Akio Toyoda in early 2010. The committee was to inspect every process in the Toyota Production System to ensure delivery of quality products to customers.

- a) What are the quality management practices at Toyota that helped it earn a reputation for quality? Explain. (07 Marks)
 - b) Examine the reasons for the quality-related problems faced by Toyota? (07 Marks)
 - c) Discuss and debate whether Toyota was losing its quality edge? (07 Marks)
 - d) Explore strategies that Toyota could adopt in the future to regain its quality edge? (07 Marks)
- (Total 28 Marks)**

Q2.

- a) What activities are involved in the operations function? How does an operation interact with other functional areas? (05 Marks)
 - b) Discuss four common barriers that firms may experience as they try to enter a new industry? (06 Marks)
 - c) Describe how e-business has affected / impacted on operations management? (07 Marks)
- (Total 18 Marks)**

Q3.

- a) Briefly describe the dimensions of quality, for which a consumer looks in a product and apply them to a specific product.

(05 Marks)

- b) Describe briefly what is meant by 'product layout' and state what do you consider the main advantage of such a layout.

(06 Marks)

- c) What is the difference between "an order winner" and "order qualifier"? Discuss how you have used the two concepts in a purchasing decision?

(07 Marks)

(Total 18 Marks)

Q4.

- a) Why do you need safety stock? And what are the factors to be influenced to decide the amount of safety stock in a company?

(05 Marks)

- b) A regional warehouse purchases hand tools from various suppliers and then distributes them on demand to retailers in the region. The warehouse operates 5 days per week, 52 weeks per year. Only when it is open can orders be received. The following data are estimated for 3/8 -inch hand drills with double insulation and variable speeds:

Average daily demand = 100 drills

Standard deviation of daily demand (σ_d) = 30 drills

Lead time (L) = 3 days

Holding cost (H) = \$9.40/unit/year

Ordering cost (S) = \$35/order

Cycle-service level = 92 percent

The warehouse uses a continuous review (Q) system.

i. What order quantity Q , and reorder point, R , should be used?

(09 Marks)

ii. If on-hand inventory is 40 units, one open order for 440 drills is pending, and no back-orders exist, should a new order be placed?

(08 Marks)

(Total 22 Marks)

Q5.

a) What is meant by the term 'Quality Circle'? How does it operate?

(06 Marks)

b) What type of layout(s) would be appropriate for?

- i. A grocery store
- ii. Home construction
- iii. Electronics assembly
- iv. A University

(08 Marks)

(Total 14 Marks)