EASTERN UNIVERSITY, SRI LANKA
Faculty of Commerce and Management
Special Examination in Business Administration/Commerce -2007/2008
(Dec & Jan 08/09)
Final Year 2002/2003 & 2002 (A)/2003

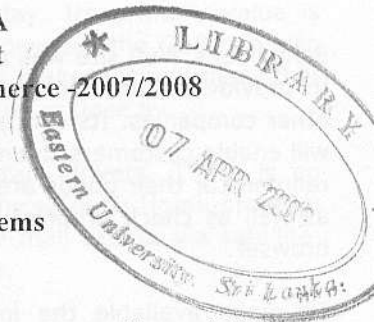MGT 3013 Management Information Systems

Answer all questions   **Time: 03 hours**

Q1. Read the Case Study carefully and answer the questions below.

Schneider National Keeps on Trucking with Communications Technology

Schneider National is far-and-away the largest truckload carrier in North America, with about 20,000 employees, 15,000 drivers and independent contractors, and a fleet of 48,000 truck trailers. Headquartered in Green Bay, Wisconsin, Schneider National services two-thirds of the Fortune 500 corporations, including such major clients as General Motors, Wal-Mart, Kimberly-Clark, Procter & Gamble, Chrysler, Sears Roebuck, and Staples. The company is privately owned and had annual sales in 2003 of about $2.9 billion

Schneider National was a major trucking firm with Don Schneider as its CEO when in the 1980s the federal government deregulated the trucking industry, revolutionizing the business environment of the industry overnight. Interstate trucking firms no longer had to follow the rules of a regulatory bureaucracy about what kinds of freight to carry and where to take it. These rules had made it difficult for customers to change carriers because only certain trucking firms could meet these regulations. Competition for customers heated up. Schneider National responded to these demands with a multipronged strategy based on the use of information technology, so that computer systems were now playing a powerful role in Schneider National's operations. Moreover the company also began treating its employees differently, a major step toward democratizing the company. The company made a paradigm shift. Several other competitors' responded to deregulation by merely lowering rates. They went bankrupt.

CEO Don Schneider's business philosophy emphasizes IT. Basic to his philosophy is Schneider National's communications with its customers. In its giant headquarters building, the ground floor contains its call center, a full acre in size, where 600 customer service representatives work. Using computers, they have easy access to any customer's history, enabling each customer service representative to answer customers' questions. The result is that the customer is satisfied and the jobs of Schneider National reps are eased. New customer service reps are given 4 to 6 weeks of training, much of it on the use of both the company's computer systems and on the Web.

The majority of Schneider National's customer orders are received either on the Web or on its electronic data interchange (EDI) system. Through the use of these electronic connections, the orders automatically arrives in Schneider National's computer system, resulting in improved ordering accuracy and higher productivity, thus lowering the cost of the whole ordering operation. Moreover, within 15 to 30 minutes of sending an order electronically, customers know what truck will arrive and when. The system also includes electronic invoicing. The reason electronic orders encompass only 50 percent of the total orders received is because the Web system is new whereas EDI is an older technology, dating from the 1960s, that is very expensive, so the small companies cannot afford it. However, the Web is very inexpensive and easy to use, and Schneider is trying to get all of its customers to use the Web ordering system.

Schneider's Web site was created by Schneider Logistics, a company spun off from Schneider to provide information technology and supply chain management services to Schneider and other companies. Its concept is for the transactions to be completely paperless. Ultimately, it will enable customers to enter their orders, check the status of their shipments—what truck or railroad car their goods are on, where they are now, and when they are scheduled to arrive— as well as check proof-of-delivery. All future services will be built to execute within a Web browser.

To make available the information that its customers require, and to plan its pickups, deliveries, and routes, Schneider National must gather a great deal of information about the trucks, both cabs and trailers. "Trucking companies are asset-intensive businesses," explained Donald Broughton, a senior transportation analyst at A. G. Edwards & Sons. He emphasized how crucial the use of the cabs and trailers are when he added, "The guy who has the higher rate of asset utilization wins."

In 1998 Schneider National became the first fleet trucking company to use OmniTracs. OmniTracs is a satellite-basedcommunications and positioning system produced by QualComm, the San Diego-based wireless communications company. Schneider National worked with QualComm in the development of the product. For it to operate, each tractor has a radio frequency identification tag, a computer with keyboard in the cab, and a satellite antenna with a GPS (global positioning system) on the back of the tractor. Using this system, the company knows where every truck is within 300 feet at all times. The driver and headquarters communicate as often as required. The dispatchers can send information to the driver on how to get to the delivery spot (if there is a problem), the location of the next pickup (usually from someplace nearby), directions to the pickup spot, the necessary papers (if any are required), and even traffic and road problems. The driver can respond with approval and raise any questions about the instructions, the truck, or the road. Schneider National sends and receives about four million messages per month. The system has been such a success that by 2001 more than 1,250 fleet trucking companies have started using it.

Schneider National worked with QualComm again to develop SensorTracs in order to collect engine data, such as speed, RPMs, and oil pressure, via satellite. The data not only contribute to better maintenance of the engines but also help drivers to drive more safely and to take better care of the vehicles. It can even increase the drivers' incomes. One element of a driver's monthly bonus is based on staying within certain key factor ranges when operating the vehicle.

Schneider National is worked with QualComm to develop a trailer-tracking system. It too is wireless. Each trailer has a radio frequency identification tag, which is read by devices that are placed at various points along the rail lines and in the rail yards. The data are directly linked to Schneider National's fleet management and logistics systems. They tell the dispatchers and the customer reps if the trailers are empty or full and if they are hooked onto a cab, sitting in a yard, or, rolling on a train. "Ultimately revenue is the measurement of how well we load and move these trailers, " said Paul Mueller, president of Schneider Technology Services, a unit of Schneider Logistics. "It is not uncommon to have to send drivers off-route to get [empty] trailers." When they arrive, the trailer isn't there or it might be loaded." Schneider National sees the new trailer-tracking system as a way to improve customer service through more on-time deliveries and better in-transit knowledge. It should increase drivers' satisfaction by increasing their billable miles and so their earnings. Ultimately it will increase trailer utilization and efficiency. The company does not intend to use it to reduce the number of trailers it owns because its orders are increasing. However, it does want to reduce the number of new trailers it needs to purchase so that it can use the saved funds elsewhere.

Schneider's Global Scheduling System (GSS) helps to optimize the use of both the company drivers and the loads throughout the country. The system processes about 7,000 load assignments daily, looking at all the possible combinations of drivers and loads on any one day. It accesses more than 7,000 possible combinations of drivers and loads per second, and

of course the loads and trucks are at different locations each day. Its primary value is servicing customers by satisfying their requests to move freight. However, the GSS can also save the company money because fuel is expensive, and the system makes it more likely that when the trucker delivers his or her load, the next load to be picked up is close by.

Information technology is also being used to help Schneider retain drivers. There is an industry shortage of 80,000 to 100,000 drivers a year. The company's Touch Home program uses the existing in-cab computer technology to give the drivers e-mail access via satellite. The system thus enables drivers to stay in contact with their families.

The company is forging ahead. For example, currently it is working with *Network Computing* magazine on a Web site in which the entire logistics transaction will be accomplished electronically, including the order, its acceptance, pickup, delivery, billing, payment, and reporting. "Then order management will be a no-touch process from front to back," declared Steve Matheys, Schneider's vice president for application development. "That's a huge cost-saver and customer satisfaction play."
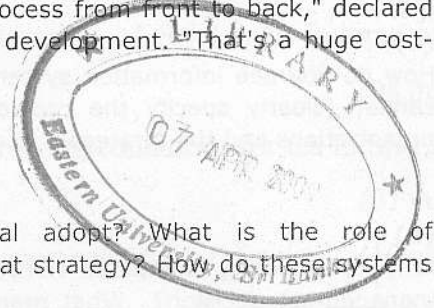
Questions

1. What business strategy did Schneider National adopt? What is the role of telecommunications and information systems in that strategy? How do these systems provide value for Schneider?

(07 marks)

2. What organization, management, and technology issues did Schneider National have to address when information technology became so pervasive in its operations?

(07 marks)

3. How did Schneider's information systems change its business processes?

(07 marks)

4. Has Schneider National's reliance upon information systems been successful? Is the company transforming itself into a digital firm? Why or why not?

(07 marks)

(Total 28 marks)

Q2.
(a)
What kinds of information systems and technologies would be the most important for a Sri Lankan Multi National Company? And explain how that company has used information technology to gain sustainable competitive advantage?

(10 marks)

(b)
Analyse how information systems support various business strategies for competitive advantage.

(08marks)

(Total 18 marks)

Q3.
(a)
Identify the main moral dimensions of an information society and specify principles for that can be used to guide ethical decisions.

(10 marks)

(b)
List out the advantages of distributed database system in a banking enviroment in Sri Lanka, and specify common database management related technological trends generally.

(08 marks)
(Total 18 marks)

Q4.
(a)
How do you see information systems development and implementation in the context of Sri Lanka? (clearly specify the problems of Information systems development in Sri Lankan organizations and the strategies to overcome it)

(09 marks)

(b)
Why is selecting computer hardware and software for the organisation and important management decision? What management, organisation, and technology issues should be considered when selecting computer hardware and software?

(09 marks)

(Total 18 marks)

Q5.
(a)
Discuss the Status of ICT Laws in Sri Lanka by indicating their specific names and applicable areas.

(10 marks)

(b)
"It was a year of consolidation for IT with the major task for 2006 being the completion of the "Hot Backup" - Disaster Recovery solution. Several "Role Swap" operations were carried out to confirm its effectiveness and more such operations would continue to be carried out at regular intervals to ensure the functionality of the Backup machine. Along with this, a comprehensive IT Disaster Recovery Centre was established. The IT Disaster Recovery Plan was suitably updated incorporating the functioning of the IT Disaster Recovery Centre.

The IT security environment was further strengthened with the introduction and implementation of best practices and policies".
(Source : Annual report,(2006), Commercial Bank Ltd, Sri Lanka)

What are the goals of security and control measures of Information systems in the above organization? In connection with above statement correctly identify and name the types of control they try to implement regarding their information systems (in respect to general control category).

(08 marks)
(Total 18 marks)