Re-Sit

UNIVERSITY OF ESWATINI

DEPARTMENT OF BUSINESS ADMINISTRATION

RE-SIT EXAMINATION PAPER

AUGUST 2021

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TITLE OF PAPER : STRATEGIC INFORMATION SYSTEMS

COURSE CODE : BA 402 /IDE

TIME ALLOWED : THREE (3) HOURS

INSTRUCTIONS:
1. THE NUMBER OF QUESTIONS IN THIS PAPER = SIX (6)
2. SECTION A IS COMPULSORY.
3. ANSWER ANY THREE (3) QUESTIONS IN SECTION B
4. THE MARKS TO BE AWARDED FOR EACH QUESTION ARE INDICATED ALONGSIDE THE QUESTION.

NOTE: MARKS WILL BE AWARDED FOR GOOD COMMUNICATION IN ENGLISH, AS WELL AS FOR ORDERLY AND NEAT PRESENTATION OF WORK. FURTHER MARKS WILL BE AWARDED FOR USE OF RELEVANT EXAMPLES.

SPECIAL REQUIREMENTS: NONE

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR.

Re-Sit

SECTION A

CASE STUDY

Modernization of NTUC Income

NTUC Income ("Income"), one of Singapore's largest insurers, has over 1.8 million policy holders with total assets of S$21.3 billion. The insurer employs about 3,400 insurance advisors and 1,200 office staff, with the majority located across an eight-branch network. On June 1, 2003, Income succeeded in the migration of its legacy insurance systems to a digital web based system. The Herculean task required not only the upgrading of hardware and applications, it also required Income to streamline its decade-old business processes and IT practices.

Until a few years ago, Income's insurance processes were very tedious and paper-based. The entire insurance process started with customers meeting an agent, filling in forms and submitting documents. The agent would then submit the forms at branches, from where they were sent by couriers to the Office Services department. The collection schedule could introduce delays of two to three days. Office Services would log documents, sort them, and then send them to departments for underwriting. Proposals were allocated to underwriting staff, mostly at random. Accepted proposals were sent for printing at the Computer Services department and then redistributed. For storage, all original documents were packed and sent to warehouses where, over two to three days, a total of seven staff would log and store the documents. In all, paper policies comprising 45 million documents were stored in over 16,000 cartons at three warehouses. Whenever a document needed to be retrieved, it would take about two days to locate and ship it by courier. Refiling would again take about two days.

In 2002, despite periodic investments to upgrade the HP 3000 mainframe that hosted the core insurance applications as well as the accounting and management information systems, it still frequently broke down. When a system breakdown did occur, work had to be stopped while data was restored. Additionally, the HP 3000 backup system could only restore the data to the version from the previous day. This meant that backups had to be performed at the end of every day in a costly and tedious process, or the company would risk losing important data. In one of the hardware crashes, it took several months to recover the lost data. In all, the HP 3000 system experienced a total of three major hardware failures, resulting in a total of six days of complete downtime.

That was not enough. The COBOL programs that were developed in the early 1980s and maintained by Income's in-house IT team also broke multiple times, halted the systems, and caused temporary interruptions. In addition, the IT team found developing new products in COBOL to be quite cumbersome and the time taken to launch new products ranged from a few weeks to months.

At the same time, transaction processing for policy underwriting was still a batch process and information was not available to agents and advisors in real-time. As a result, when staff

processed a new customer application for motor insurance, they did not know if the applicant was an existing customer of Income, which led to the loss of opportunities for cross-product sales, as staff had to pass physical documents between each other and there was no means of viewing an up-to-date report on a customer's history on demand. Furthermore, compatibility issues between the HP 3000 and employees' notebooks caused ongoing problems, especially with a rise in telecommuting.

All this changed in June 2003, when Income switched to the Java based eBao Life System from eBao Technology. The software comprised three subsystems - Policy Administration, Sales Management and Supplementary Resources — and fulfilled many of the company's requirements, from customer orientated design to barcode technology capabilities, and the ability to support changes in business processes.

Implementation work started in September 2002 and the project was completed in nine months. By May 2003, all the customization, data migration of Income's individual and group life insurance businesses and training were completed.

The new system was immediately operational on a high-availability platform. All applications resided on two or more servers, each connected by two or more communication lines, all of which were "load balanced." This robust architecture minimized downtime occurrence due to hardware or operating system failures.

As part of eBao implementation, Income decided to replace its entire IT infrastructure with a more robust, scalable architecture. For example, all servicing branches were equipped with scanners; monitors were changed to 20 inches; PC RAM size was upgraded to 128 MB; and new hardware and software for application servers, database servers, web servers, and disk storage systems were installed. Furthermore, the LAN cables were replaced with faster cables, a fiber-optic backbone, and wireless capability.

In addition, Income also revamped its business continuity and disaster-recovery plans. A real-time hot backup disaster-recovery center was implemented, where the machines were always running and fully operational. Data was transmitted immediately on the fly from the primary datacenter to the backup machines' data storage. In the event of the datacenter site becoming unavailable, the operations could be switched quickly to the disaster recovery site without the need to rely on restoration of previous day data.

Moving to a paperless environment, however, was not easy. Income had to throw away all paper records, including legal paper documents. Under the new system, all documents were scanned and stored on "trusted" storage devices - secured, reliable digital vaults that enabled strict compliance with stringent statutory requirements. Income had to train employees who had been accustomed to working with paper to use the eBao system and change the way they worked.

Re-Sit

As a result of adopting eBao Life System, about 500 office staff and 3,400 insurance advisors could access the system anytime, anywhere. Staff members who would telecommute enjoyed faster access to information, almost as fast as those who accessed the information in the office.

This allowed Income to view a summary of each customer over different products and business areas. As a result, cross-selling became easier, and customer service could be improved. Simplified workflows cut policy processing time and cost by half, and greatly reduced the time required to design and launch new products from months to days.

Additionally, the systems allowed for online support of customers, agents and brokers.

Questions

1. What were the problems faced by Income in this case? How were the problems resolved by the new digital system? 20 marks

2. What types of information systems and business processes were used by Income before migrating to the fully digital system? 20 marks

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SECTION B

Question 1

Discuss each of the following

(i) The business value of IT. 10 marks

(ii) IT as enabler of corporate governance & compliance. 10 marks

Question 2

In detail, how can IT drive revenue growth? 20 marks

Question 3

Discuss the 5 different themes of IT governance. 20 marks

Question 4

What are the difficulties that arise from Legacy Systems? 20 marks

Question 5

Why do companies enter into large scale outsourcing relationships? 20 marks