



STRATHMORE UNIVERSITY BUSINESS SCHOOL
BACHELOR OF COMMERCE
END OF SEMESTER EXAMINATION

BFS 1101: INFORMATION SYSTEMS FOR FINANCIAL SERVICES

DATE: Friday, 18th November 2022

TIME: 2 hours

INSTRUCTIONS

- 1) Answer QUESTION ONE and any other TWO QUESTIONS**
- 2) Question one is compulsory and carries 30 marks**
- 3) All other questions carry 15 marks each**

Question One (Total 30 marks)

Read the case below and answer the questions that follow.

DreamWorks Animation Turns to Technology for Production Support

Can technology help DreamWorks Animation do better? Its management certainly sees it as a key factor in their success. It uses world-class creative talent and advanced computer technology to produce such successful computer-generated (CG) animated films as Shrek, Shrek 2, Shark Tale, and Madagascar. To date, Shrek 2 is the third highest-grossing movie ever, and the number one animated film of all time.



Nevertheless, DreamWorks has plenty of competition. Pixar Studios, DreamWorks' archrival in computer animation, has prospered from a string of six blockbuster hits, including *The Incredibles*, *Finding Nemo* and *Monsters Inc.* Computer animation house Blue Sky Studios is another competitor, as is Disney. Sony Pictures Entertainment and Lucasfilm have also begun producing computer-animated films.

To gain an edge in this fiercely competitive market, DreamWorks Animation has set out to make entertaining films that appeal to all audiences, while leveraging the latest technology and finest talent available. With this strategy in mind, the company established a very ambitious production schedule that no other studio has ever tried before—the release of two animated movies per year. In order to meet this schedule, DreamWorks' staff often find themselves working on more than one movie at the same time, sharing technology among the various projects, and scaling up to work on multiple features.

How is DreamWorks able to make this happen? One of the solutions is to use the finest technology available. DreamWorks has implemented a high-speed network to link the powerful computers required for animation for three key animation pipelines, two in Los Angeles and one in Redwood City, California. A sophisticated video-teleconferencing system that projects nearly life-size images on the wall enables all three groups to collaborate as never before.

Additionally, DreamWorks animators use proprietary software developed in-house called EMO for nearly every stage of their work. In DreamWorks' *Madagascar*, this software enabled animators to adopt traditional “squash & stretch” techniques and place their characters in a digital environment. The software made each frame in *Madagascar* exquisitely detailed, right down to the animals' fur. According to the company's CEO Jeffrey Katzenberg, “Technically, we couldn't have made this movie a year ago.”

DreamWorks Animation's management believes that its exclusive software and other technology investments will pay off. DreamWorks Animation's investments in technology are leveraged across all pipelines and all future films as well. To render a CG film, DreamWorks technicians use a network of 2,700 Hewlett-Packard (HP) processors running the Linux operating system, which are organized to act as a single computer system that is distributed among the company's studios and an HP research lab facility in Palo Alto, California.

At the end of the day, it takes approximately 400 artists, animators, and technicians, over 200 characters modeled and surfaced, 15 terabytes of disk, 2700 processors, and over 10 million CPU rendering hours and 18 months of core production to complete any one film. DreamWorks Animation has orchestrated its people, processes, and physical assets into an effective balance that produces world class CG content effectively and efficiently.

Required:

- a) DreamWorks Animation seems to be at the state of the art for that time regarding Hardware and software. Explain the evolution of Hardware to that level and to the current level giving at least three perspectives of development such as the size of the hardware. **(6 marks)**
- b) Several elements of IT infrastructure are critical to the success of many organisations and for some it is considered the most important component for its success.
 - i). Identify three components of IT infrastructure and evaluate DreamWorks Animation in relation to those components illustrating with examples from the case. **(5 marks)**

- ii). What suggestions would you make in the areas identified for DreamWorks Animation to improve and how. **(3 marks)**
- c) DreamWorks Animation uses some networking to facilitate collaboration. Explain how intranets and extranets could help DreamWorks Animation in its operations. **(3 marks)**
- d) An area that may be considered a challenge for DreamWorks Animation given the amount of data it likely generates and the need to research and use big data for its films to make sense to various audiences is storage. Explain any two technologies that could be used by DreamWorks Animation given the high demand for storage it may have. **(3 marks)**
- e) Given the generation of information and data for DreamWorks Animation in digital form and the high competition to get films out, there are risks that could endanger the achievement of the goals ascribed to as a result of threats to information security. Describe how DreamWorks Animation can protect itself against any three information system threats. **(5 marks)**
- f) Explain how DA can use Business Intelligence to keep ahead of the competition. **(5 marks)**

Question Two (Total 15 marks)

Imara Medical Centre prided itself on being one of the first and most modern outpatient clinics in the City of Nairobi, Kenya. It was founded in 1992 to meet the ever-growing demand for different Medical Services in a convenient environment.

The company, started and managed by Dr. Jane Onyango and four other doctors, was located on the ultra-modern building in Westlands area of Nairobi occupying three floors and is considering having branches in two major cities. The company was well established as a one-stop outpatient medical centre and exploited this recognition to many of its services. Imara was focused almost entirely on providing outpatient medical and diagnostic services. It offered a range of medical services that are centralized to cater for diverse aspects of healthcare. It provided both general outpatient medical services to employees of large private and public organizations in Kenya, including the City Council of Nairobi¹. Services offered include:

- Infant & childcare** - General Paediatric Care Clinic, Neonatal Clinic, Paediatric Chest Clinic, Paediatric Gastroenterology Clinic, Paediatric Neurology Clinic, Paediatric Nephrology Clinic, and Well-Baby Clinic.
- Primary Care**- Family Medicine Center, Dental Clinic, General Vaccines and Paediatric Vaccines
- Women's Services** – Gynecology and Obstetrics, Prenatal and Antenatal
- Diagnostic Services**- Laboratory, Radiology, Orthopantomology, Physiological measurement Unit and Ultrasound.
- Specialist services**- these services are provided by consultants in all areas
- Pharmacy**

As a service centre, Imara held inventories – in the form of office supplies, clinic supplies, lab supplies and pharmacy drug supplies. Imara grew steadily and formed close relations with several corporate customers in the city. The company developed a reputation for excellent service and responsiveness. Imara also became known for its thrift. Jane bought much of the company's

equipment and machines at auctions held after other medical centres went out of business or upgraded their systems. Once in place, a piece of equipment was typically used for as long as it was serviceable.

Jane is getting increasingly frustrated and she feels diverted from her core area, which is delivering first rate medical services, by operational activities. Recently there have been cases of shortage of cash to settle bills that have fallen due and she has had to borrow money from the bank to meet the shortfall. On investigation, she finds that there are some clients especially the insurance companies that are holding on to money owed ostensibly due to ‘lack of justification’ for the treatment, She has found that she needs to hire more and more administrative staff to keep track of bills, handle the many service requests, keep track of inventory and so on.

In a recent medical conference, Jane had a chance to sit next to one of the doctors who runs his own hospital complete with a doctors’ plaza and with more than four satellite sub-hospitals. She wondered aloud how he manages given the magnitude of operations. “I don’t know what I would do if I didn’t have the specialised ERP that I installed four years ago!”, he exclaims chuckling, “it even handles many of the transactions online.”

Required:

- a) With reference to the concept of ‘total cost of ownership’ outline for Imara Medical Centre the pros and cons of their policy of using second-hand equipment. **(5 marks)**
- b) Explain how the ERP could assist Jane in the running of Imara’s operations. Ensure you address the current problems Jane is facing as well as any other two aspects that an ERP could make easier. **(6 marks)**
- c) If Jane decides to take the information systems online, explain any two elements of the e-commerce infrastructure that could facilitate the environment for Imara. **(4 marks)**

Question Three (Total 15 marks)

Data warehouses, data marts and data mining are some of the contemporary concepts that are being exploited to support organisations in their operations. Many people like to use the terminologies but do not really understand the terms very well.

Required:

- a) Distinguish between the three terminologies as used in information systems. **(4 marks)**
- b) clearly outline their role in data management in financial services **(6 marks)**
- c) Explain any three possible challenges in effective use of these concepts. **(5 marks)**

Question Four (Total 15 marks)

You have been attached to a company that is involved in agency services for the various banks including recruiting new customers and opening their accounts, depositing and withdrawal of money, loan processing and even assisting clients in forex trading sometimes. On the date of your orientation, the director of the company gives you a few minutes of his time and what sticks out from the conversation is that he desires the company to grow by using technology. “Other firms in this sector are happy with serving a small number of customers and diversifying to many other activities, some

even sell cakes and soda to stay alive! For us we would like to concentrate on the core elements of giving our customers the best all round experience by using state of the art equipment to offer services that are way above normal to our clients” he says. You are determined to make an impression in the company and play your part in making the company achieve its vision.

Required:

- a) Recommend, with reasons, the input and output devices that you feel would help meet the needs of the company. **(6 marks)**
- b) Recommend, with reasons, the software that you feel would meet the needs of the company. **(5 marks)**
- c) Recommend, with reasons, the storage devices that in your view would be best suited for this company. **(4 Marks).**

Question Five (Total 15 marks)

- a) Distinguish between the following terms as used in information systems
 - i).Peer to peer and client server networks **(3 marks)**
 - ii).Internet and World wide web **(2 marks)**
- b) Will apps eventually make the Web irrelevant? Why or why not? **(3 marks)**
- c) Explain any two unique features of e-commerce **(3 marks)**
- d) The three most common applications software used in organisations and by individuals are word processing, spreadsheets, and presentation software

Required:

Explain why this statement above is true by bringing out major uses of ONE of the three software and the importance of these uses for organisations. **(4 marks)**