

Botswana College of Distance and Open Learning

In Collaboration with

Zimbabwe Open University

Business Information Systems (D-IS 01)

Sessional Examination, 2010

Duration: 3 hours

Marks: 100

Instructions

1. This paper is divided into three sections
 - Section A: Multiple choice/True or false questions – **All** questions **MUST** be answered.
 - Section B: **Case Study** - **ALL** the two questions are compulsory and **MUST** be answered
 - Section C: **TWO** questions **ONLY** to be answered
2. Answer all questions in the answer booklet provided.

SECTION A: Multiple choice /true or false questions (10 marks)

Please note that you must make only one selection for each question; further, there is just one answer for each question. All questions are compulsory.

1. Which of the choices below is not a competitive force organizations may have to deal with today, according to Porter?
 - A. Rivalry among competitors
 - B. Bargaining power of suppliers
 - C. Threat of governmental intervention
 - D. Substitute products or services

2. Institutional Decision Support Systems (DSS) are designed to help decision makers make a one-time decision. TRUE/FALSE

3. Which choice below is not correct about data warehouses?
 - A. They hold all organization's data
 - B. Data goes through an ETL procedure prior to being loaded into the warehouse
 - C. Meta data are closely associated with warehouse data as a kind of index for the data
 - D. Data marts are a subset of data warehouses

4. Local Area Networks are telecommunications networks that connect information-processing devices within a limited physical area. They cover areas such as:
 - A. Classrooms
 - B. Buildings
 - C. Manufacturing plants
 - D. All of the above

5. Telecommunications networks interconnect computers of all sizes and types TRUE/FALSE

6. The following are the advantages of fibre optics except:
 - A. Carries digital signals, as well as analog signals thus increase communications and capability
 - B. Immunity to Electrical Noise
 - C. Fiber optic cables are somewhat susceptible to damage from the environment.

 - D. Can be used undersea for transatlantic use.

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7. Many large organisations have established a computer intranet for the purpose of:
- A. Providing quick, effective and improved communication amongst staff using chat rooms
 - B. Providing quick, effective and improved communication to staff
 - C. Providing quick, effective and improved communication to customers
 - D. Providing quick, effective and improved ordering procedures in real life.
8. The main advantages of a database management system include:-
- A. The development of separate data sources
 - B. Unlimited access and open communication
 - C. End-user flexibility and devolution of responsibility
 - D. Data integrity and elimination of duplication
9. Local Area Networking is used for
- A. Communication between computers within a limited geographical area
 - B. Structuring an organisation within a division or business unit
 - C. Exchange of information through a trade association or region
 - D. Managing a complex operational issue by global interface with trade associations and professional bodies.
10. An Expert System describes
- A. A database built upon past knowledge and experience
 - B. A powerful shelf software solution
 - C. An on-line library of operating advice and handy hints
 - D. An electronic version of working papers assembled by Research and Development department

SECTION B: CASE STUDY**(40 marks)**

ALL TWO questions are compulsory and MUST be attempted.

All questions in this section relate to Vinylattac Co Case Study.

CASE STUDY – Vinylattac Co**Introduction**

In 1992 Botshelo Maswe set up a company Vinylattac Co that supplied rare vinyl records to individuals within his local area. Botshelo had a large collection of records and was an avid collector of all types of music. He originally began his business as a way of supplementing his income. However Botshelo was soon turning his passion and hobby into a business venture. He had just completed a computer science degree at a local university and he was keen to exploit technology he had learned about. He successfully used the recently developed internet to advertise his business. During the following two years, as Botshelo's business began to grow, he was surprised at the number of new clients who were contacting him for requests and information. Botshelo had numerous contacts in the record industry and personally knew many of the record suppliers and record shop owners who specialised in this business area. In 1995 he quit his job as a computer programmer/analyst in order to pursue his business interests full time. He expanded his services and began to supply audiotapes and compact discs (CDs) through the website.

Business Expansion

In 1997 Botshelo purchased a commercial outlet, which consisted of a retail shop, small warehouse and office space. He employed eight people to help with the business expansion. Botshelo continued to invest in technology, setting up electronic links with suppliers and maintaining a comprehensive customer database and stock recording system. Four years ago, when Vinylattac was seeking further expansion, Botshelo required extra financial support and actively sought financial backing. Eventually Moses Mengwe, a former university colleague, provided the financial support. Moses is a successful business entrepreneur with an interest in music. He does not share Botshelo's enthusiasm with the music business but has proved to be an able and willing business partner.

Current Position

Vinylattac is in a highly competitive market. There are threats from many other companies who also provide online purchasing facilities and the mass illegal copying/pirating that is becoming common practice in the music industry. Vinylattac is currently supplying CDs, DVDs, audiotapes and vinyl records throughout the country. The company has recently moved to larger premises and now employs fifteen staff. Even in the new larger premises space is at a premium. There are two full time members of the technical team. This team maintains and modifies the website and organises the product, supplier and customer databases. There are over two million titles on the product database, in the region of one hundred thousand customers and over thirty suppliers.

Vinylattac receive supplies from many of the major music distributors, but due to the size of its operation it cannot achieve the economies of scale of large retailers such as

supermarkets and national music suppliers. Moses has suggested that they form a consortium with local independent retailers with whom they currently conduct business, to purchase the latest recordings and thus benefit from bulk purchasing. Furthermore, Gloria, who manages the three purchasing clerks, encourages the clerks to continually scan the supplier's databases and websites to ensure that Vinylattac is purchasing its products at the lowest prices available. Vinylattac has developed some excellent working relationships with a small number of suppliers and receives very competitive prices for certain purchases. Orders with a limited number of suppliers are handled completely electronically, with deliveries being staggered to meet customer requirements. In some cases Vinylattac has negotiated a sale or return agreement with its major suppliers.

Online purchasing

The online ordering system permits customers to place an order and make payment via credit card on secure lines. When an order is received it is normally despatched within twenty four hours. However, older selections and particularly rare vinyl recordings can take up to four weeks before being despatched. Despatch times are communicated to customers upon receipt of order. Botshelo is aware that Vinylattac does not use its customer information to promote sales and analyse customer purchasing habits. This is a major weakness in Vinylattac's information systems strategy and as a result of this Vinylattac's expansion has slowed down in the last two years. Additionally, during this period, there has been increased competition in this market.

Vinylattac offers a unique search service to individuals and small record shop retailers. Customers requesting particularly rare recordings often do not know the title or artist. In such cases customers often supply clues such as 'it was recorded in the seventies and has three men on the sleeve, and I think one of them is sitting on a sofa', 'it was on a pink label and it had an amazing reworking of something or other by Bach which went on for a whole side of the LP', etc. To fulfil such queries is both time consuming and requires expert knowledge. There is little financial payback from this service but it does provide a unique selling point. Queries of this nature have been increasing during the last few years. Moses Mengwe has suggested that they should employ teleworkers to deal with this side of the business. He is aware that Botshelo has several personal contacts worldwide with expert knowledge, who would welcome the idea of earning extra money while working from home.

Due to the expansion of the business and the lack of space in Vinylattac's premises Moses also believes that other functions of the business could be adequately served by teleworkers. Botshelo is a little apprehensive about employing teleworkers. He has always managed the business in a personal manner, often employing friends and people with a genuine interest in the music business. Botshelo believes that the workers at Vinylattac are colleagues and friends rather than just employees. The majority of the employees share Botshelo's enthusiasm and commitment to the business and they often voluntarily extend their working hours to complete tasks.

Computing facilities

The computing facilities within Vinylattac are advanced for such a small sized company. Botshelo has not lost his enthusiasm for technology. Each department is equipped with the latest personal computers (PCs) and they are supported by a modern client server based technology. The software includes the latest versions of standard office systems and a relational database management system. The systems provide access to company information as and when required. Botshelo controls user access rights.

Botshelo is continually developing the Vinylattac website and wishes to pursue this as a business strategy. He is currently planning to introduce a monthly magazine that will be posted on the site. The magazine will provide customers with the latest news and previews of forthcoming releases. The electronic magazine will also include a section for customers to publish news items and comments.

Over ninety per cent of Vinylattac's current business is conducted in the home country. Overseas clients normally make specific requests for recordings that are no longer available in their home countries. The cost of postage and packaging for overseas clients is often more than the purchase price of the order. Moses has suggested they should contemplate entering the global market place. In a recent meeting with Botshelo he stated, 'Our business should take advantage of the global marketplace. We should expand and rise to the challenge; I am sure we can provide a global service and reap the benefits.' Botshelo responded, 'It's not that easy to expand and provide our services in the global market. To make such a change may involve a complete rethink of our business strategy.' Gregory replied, 'I thought the business strategy was to exploit technology and make as much profit as possible'.

Question 1**(20 marks)**

An analysis of Porter's five competitive forces can help organisations identify opportunities for information systems to provide a strategic advantage.

Required:

- (a) Briefly describe each of Porter's five competitive forces and explain how an understanding of each can help an organisation to develop an information systems strategy. (10 marks)
- (b) Produce a five forces analysis of Vinylattac, showing how IT/IS has been used to manage the threats so far. (10 marks)

Question 2**(20 marks)**

- (a) Discuss why the relationship between business strategies and information systems strategies has changed during the last few decades. (10 marks)
- (b) Evaluate how effective Vinylattac has been aligning its business and information systems strategies. (6 marks)

- (c) With reference to the conversation between Botshelo and Moses (in the last paragraph of the case study) concerning globalisation, identify technical and economic factors that may influence the decision. (4 marks)

SECTION C**(50 marks)**

Choose only TWO questions

Question 1**(25 marks)**

- (a) Discuss how the introduction of information systems can raise ethical questions for individuals and organisations. (8 marks)
- (b) Describe the possible disadvantages of using email for communication and business information management within organisations. (8 marks)
- (c) Differentiate between **Data** and **Information**. (4 marks)
- (d) Explain the difference between a business strategy and an information systems strategy. (5 marks)

Clue: An information systems department will usually have policies for dealing with risk, disaster and recovery

Question 2**(25 marks)**

Teac Investment Co provides financial services to several thousand clients. Many clients with large financial investment portfolios, run and controlled by Teac Investment often make enquiries concerning new investments and changes to their overall portfolio. All the information is currently maintained on a relational database supported by a management information system (MIS), permitting financial consultants to access the clients' current financial status. Following an enquiry from a client, the financial consultant studies the portfolio using the information received from the MIS and his knowledge of successful portfolios, including the spread of investments, the length of the proposed investment and several other financial indicators. The financial consultant then contacts the client and gives his recommendation. This process can often take days and has led to complaints from several clients who are threatening to take their business elsewhere. The CEO of the company is concerned about the current processes and the difficulty in maintaining the current level of competent financial consultants. Following an initial consultation with an information systems consultant he is contemplating investing in the development of an expert system (ES).

- (a) For the information provided by management information systems and expert systems to be useful to the organisation, it should possess particular qualitative characteristics.

Required:

Explain, in the context of management information systems and expert systems, the terms timeliness, relevance/volume, accuracy/completeness, and user confidence. Your answer should emphasise any differences between the two contexts. (8 marks)

- (b) With reference to Teac Investment Co assess the advantages and disadvantages of implementing an **Expert System**. (12 marks)
- (c) Each management level has a special type of information system that best serves its need. State five examples of Functional Information System and give functions of each. (5 marks)

Question 3

(25 marks)

- (a) Describe how data is logically stored and accessed when using a Relational Database. (6 marks)
- (b) A Database is made up of three different elements. Differentiate between the following:
- Table
 - Records
 - Fields
- (6 marks)
- (c) Databases are a major part of any organization. Because of the Information Technology developments, we find many conceptual categories of databases being used in different organizations. State and explain four major databases that we find in computer-using organizations. (8 marks)
- (d) Differentiate between a **hub** and a **router**. (5 marks)

END OF EXAMINATION