STRATHMORE UNIVERSITY BUSINESS SCHOOL
BACHELOR OF SCIENCE IN SUPPLY CHAIN & OPERATIONS MANAGEMENT
END OF SEMESTER EXAMINATION
SCM 2204: BUSINESS INFORMATION IN SUPPLY CHAIN

Date: 2nd December, 2022 **Time:**2 hours

Instructions

1. This examination consists of **FIVE** questions.
2. Answer Question **ONE (COMPULSORY)** and any other **TWO** questions.

QUESTION ONE (30 MARKS)

Read the case study on "ALBRIGHT LTD" and answer the questions that follow;

CASE STUDY – ALBRIGHT LTD

Albright Ltd operates a small chemical import-export operation with customers across Europe and North America. Its operations are based in Central Europe and involve the purchase of bulk chemicals, which it breaks down into smaller packages for redistribution. Albright Ltd sells and distributes chemicals from an online catalogue under its own brand. It also fulfils orders for other organisations, whose online orders from customers go straight to Albright's website and into Albright's system. These orders are then distributed by Albright direct to the customer.

Currently, Albright's customers are many and varied and include manufacturers, health organisations and laboratories. Some of the products supplied are hazardous and include hazards such as flammability, toxicity and environmental concerns. Accuracy of information in relation to packaging, storage and distribution requirements is absolutely critical.

Albright's supply chain is complex. Albright sources globally and has been subject to regulations and many changes from individual countries. There have also been trading restrictions and Albright has had to deal with adverse currency fluctuations. Albright varies its product range regularly, to mitigate the risk of chemicals becoming restricted, meaning alternatives have to be found and introduced quickly. Monitoring restrictions and new developments are therefore essential for Albright. The import and export legislation varies depending on the location and also aspects such as safety, data sheets, controls and transportation requirements. There are many factors which are subject to change; such changes can stop deliveries of individual orders and impact upon the viability of a product and market.

Albright has developed plans to invest in IT systems to deal effectively with orders, either directly to the Albright website or via customer websites.

Albright had identified a need to unify its systems into one integrated supply management system. Having found that there was no suitable system on the market to fulfil this requirement, Albright launched a project to develop one. This was a significant undertaking since the whole company would be dependent upon the system operating correctly, providing accurate information to all functional areas.

Three things have recently caused concern regarding the development of the IT system project. Firstly, the head of IT, who was responsible for developing the system, has been recruited by a rival organisation. Secondly, system integration problems have caused delays in the progress of the project and increased cyber-security requirements are now necessary. Finally, this is a large and complex project, which is already behind schedule and over budget.

In another development, a global pharmaceutical organisation, MakIt, approached Albright to fulfil all of its chemical supply requirements for research and development facilities across the world. Albright's directors are concerned by some of the contractual terms set out by MakIt. These terms include long-term fixed prices, penalties for late supply, extended credit periods, disposal of unused product responsibilities and fixed currency transfer rates. All these represent a high potential risk for Albright.

While the projected margins look initially attractive, Albright's directors are concerned as the new customer, MakIt, would become its single largest account, taking up to 30% of turnover if the sales projections prove to be correct. The directors are also concerned that, unless progress with the IT project quickens, Albright will not have the capability to supply MakIt.

Overall, Albright is facing significant challenges in a number of areas of trading and operations. It is also considering other opportunities which may be lucrative, but also carry significant risk.

(a) Suggest FOUR solutions that an Enterprise Resource Planning (ERP) System would provide to Albright in management of its operations. **(8 Marks)**

(b) Develop a risk register for Albright citing THREE potential groups of risks arising from its operations. **(6 Marks)**

(c) Explain the process that Albright might use to develop a contingency plan to address the risks associated with the MakIt contract **(8 Marks)**

(d) Explain FOUR benefits that would accrue to Albright if it deploys Database approach in the management of its operations. **(8 Marks)**

QUESTION TWO (20 MARKS)

a) Suggest FOUR anomalies that a rises due redundancy created by the file based system approach while describing ways that each can be resolved through the database approach. **(8 Marks)**

b) ICT Authority of Kenya has organized a conference whose main theme is "The Role of Database Management System in the new age". You have been invited as one of the key note speakers to discuss the topic "Components of Database Management System" Suggest FOUR content areas of your presentation while detailing why such content will be relevant to the theme of the conference **(8 Marks)**

c) Highlight FOUR elements that should be included in a disaster recovery plan (DRP) incase of system failure. **(4 Marks)**

QUESTION THREE (20 MARKS)

a) With relevant examples, differentiate the following terms as applied in Database Management
   i) Unique and non-unique keys **(2 Marks)**
   ii) Entity class and Entity Instance **(2 Marks)**
   iii) Non Key attribute and Key attribute **(2 Marks)**

b) Explain what is meant by the term normalization of database tables and why it is important. **(2 Marks)**

c) "All relations are tables but not all tables are relations" explain the narrative from relational database perspective highlighting FOUR distinctive characteristics of a relation. **(4 Marks)**

d) Herbert Simon in 1960 suggested that a business decision making follow a step by step graduating process. Explain how his theory can be used in Business Process Reengineering (BPR). **(8 Marks)**

QUESTION FOUR (20 MARKS)

a) One of the ways of ensuring data quality in the database is through the referential integrity constraint. With relevant example, explain how this would be best effected. **(4 Marks)**

b) Explain TWO reasons why organizations may have different risk appetites **(2 Marks)**

c) The cloud is the newest way in which data is stored by organizations today. Suggest FOUR reasons why it has gained prominence **(8 Marks)**

d) Briefly explain how standards, guidelines and procedures may be applied in Business Information Systems **(6 Marks)**

QUESTION FIVE (20 MARKS)

a) Explain the roles of functional dependency between attributes in the database. **(3 Marks)**

b) With relevant examples explain the recommended approaches to risk management in each segment of a risk assessment grid. **(8 Marks)**

c) Describe the type of decisions in an organization highlighting ONE kind of information system that can be used in each type of decision. **(9 Marks)**

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