MAKERERE UNIVERSITY

2017/18

College of Engineering, Design, Art and Technology

Bachelor of Science in Computer Engineering

Module title	Computer Systems and Network Security
Module Code	CMP4013
Assignment number	2
Assignment type	Class assignment
Mark	This assignment is worth 30% of overall course mark

A European Non-Governmental Organisation (NGO) established a social enterprise in an underdeveloped area of Uganda with the stated purpose of developing micro businesses to generate jobs and training for the literate population in Internet Services and to develop eFARM markets for local farmers. The business employs 25 full-time personnel with 5 of these development specialists from Europe. It also employs at any one time up to 100 part-time micro workers.

Business Processing Outsourcing (BPO)

Illustration 1: BPO Centre

BPO involves outsourcing processes that are not core to a company but are relevant and essential for the company's smooth operation. For many businesses, customer acquisition and retention is key to the success of the business. These are heavily driven by customer experience from time of brand interaction to service or product purchase and consumption.

Consumer experience is managed and controlled by the different processes in the service or product line, some core and others not core.

The NGO has the ability to manage all data related organisation functions that are not part of a company's core competences but are relevant for the success of the business. They focus on maximising efficiency and ensuring better customer experience in a controlled environment.

Unlike with Knowledge management, process management works best in business areas that are non-competitive & non-strategic and competitive and non-strategic as seen below.

BPO products are:

- **Data entry**: This is the electronic entry of data into a system or computer programme. For example legal data, numeric data, Database data, handwritten data, surveys and questionnaire data, insurance data, process forms.
- **Data processing**: This is carrying out operations on data to retrieve, transform, and classify it. It involves collection, aggregation, analysis, validation, sorting, reporting and manipulation. For example catalogue and product profile processing, data capture & extraction, data mining and form, image & survey processing.
- **Data conversion**: This is the change of data from one file type to another. For example business cards & eBook, catalogues, documents, audio transcription, image & document tagging.

The NGO also has the capacity to handle projects originating from both local and international markets; particularly in the international space, there are diverse engagements with clients from the American and European markets and this is a result of their confidence in the enterprise's highly efficient and reliable operations.

The NGO BPO offers a unique approach to its clients. As a social enterprise, the NGO is mandated to give back to communities in which they operate. The NGO engages is training and hiring youth as micro workers at their centres. This has provided learning and income earning opportunities to this youth. To date, 600 youths have directly earned a livelihood by providing labour in micro work. Another approximately 1,500 people have also benefited as dependants of the micro workers.

The NGO BPO wing is scalable, reliable, fast, accurate and secure.

eFARM

Illustration 2: Village eFARM and ICT Training centre

eFARM is an initiative of the NGO aimed at harnessing the power of Information and Communication Technologies (ICT) in enabling farmers to efficiently reach and exploit a fair market for their produce. At the same time, it increases efficiency in the agriculture value chain providing a platform for farmers to share information and execute electronic transactions.

Agriculture Information services are provided using a Commodity Resource Platform (CRP) specifically tailored for farmers to improve their crops production by means of providing on-line, accurate, relevant and verified information and using its online trading facilities connecting buyers and sellers directly with easy payment facilities.

Most transactions on the eFARM platform can be completed on a basic mobile telephone handset, making it accessible to farmers in remote locations, many of whom do not own internet-linked mobile phones. Farmers and agro-pastoralists are encouraged to register with eFARM.

Information Security

The CMP4103 group has won a contract to offer Information Security services to the NGO who has no internal expertise to draw from. It involves a team from CMP4103 for 2 hours per day over 3 days providing Information Security services as follows:

13 October 14:00 hrs	Team work session to discuss the business and overall approach
14 - 26 October	Team members develop their individual assignments
27 October 14:00 hrs	Submit hardcopy and soft-copy of individual assignments

When carrying out the assignment it is important to consider the role and the assigned function carefully. Read the documents referred to in the notes that are relevant to the function. Read beyond these texts also. Write the report using the following formatting rules:

Font: **Liberation Serif** or **Times New Roman**
Font size: **12 point**
Line spacing: **0.85 cm**
Citation Format: **IEEE**
Word count (not including references): **1,200**

Name		Assigned function
Joshua	Asiimwe	HR Employment Policies
Ronald	Matovu	Physical Security
Nickson	Mungujakisa	Data Breach Incident Management Policy
Emmanuel Hian	Ogwal	BPO Product Data Storage & Processing
Daniel	Ssendiwala	BPO System Setup, Project Management
Paulus	Jjagwe	BPO Risk Assessment
Derrick	Ssemanda	BPO Vulnerability and Penetration plan
Phiona Mary	Kigali	BPO Stakeholder Management Plan
Analeah	Meek	BPO Software Development Plan
Edward	Walusimbi	BPO potential impacts of the Uganda DPPB 2016†
Benedict Clive	Misagga	eFARM Data Storage & Processing
Flavia	Nimanya	eFARM System Setup, Project Management
Dan	Machese	eFARM Risk Assessment
Brenda Teddy	Nakandi	eFARM Vulnerability and Penetration plan
Justus	Nasasira	eFARM Access Security
Timothy	Muyomba	eFARM Stakeholder Management Plan
Daniel	Olili	eFARM Software Development Plan
Arthur Arnold	Namwoyo	eFARM potential impacts of the Uganda DPPB 2016†
Gertrude	Nakiryowa	eFARM potential impacts of the Uganda ETR 2013‡

† Uganda, Data Protection and Privacy Bill, 2016 should it come into law.

‡ Electronic Transction Regulations 2013, The Uganda Gazette No. 49 Volume CVI dated 30th Sept, 2013

It is essential that the Makerere Academic Integrity Policy is complied with and the work must be properly referenced (https://www.ieee.org/documents/ieeecitationref.pdf).

Failure to participate in the work session and/or submit will involve a loss of the assignment marks.