UGANDA MARTYRS UNIVERSITY

FACULTY OF BUSINESS ADMINISTRATION AND MANAGEMENT

DEPARTMENT OF ACCOUNTING AND FINANCE

COURSE: OPERATIONS SERVICES MANAGEMENT(OSM)

Course code: **MBA 1105**

Level of course: **MASTERS IN BUSINESS ADMINISTRATION AND MANAGEMENT (MBA PT LUBAGA, MASAKA, MBALE)**

DATE: **9th DECEMBER 2023**

Time allowed: **3 hours:**

Instructions to Candidates:

1) Do not write anything on this question paper.
2) Attempt any Four(4) questions.
3) **Question one is Compulsory.**

Question One (Compulsory question)

Case Study: Uganda airlines losses hit shs 500bn

The Chief Executive Officer of the Uganda National Airlines Company, Jenifer Bamuturaki has said that the national flag carrier needs at least three more years to break even. According to reports by the Auditor General, Uganda Airlines' financial performance was poor for the last three consecutive financial years. They posted huge losses; 104 billion Shillings in FY 2020/21, 164 billion in FY 2021/22, and 234 billion 2022//23 – all totaling 502 billion Shillings. The Auditor General's reports which were submitted to Parliament prompted further scrutiny of the operations of the Airlines by the Public Accounts Committee on Commission, Statutory Authorities, and State Enterprises – COSASE to help shape the entity's strategic plan.

In an interview, Bamuturaki explained that while the audit reports portrayed the airline negatively, the losses the entity recorded during the period under review were justifiable, citing inevitable variables and administrative costs.

To curb losses, Bamuturaki says the company has invested in managing the cost of fuel and oil, maintenance, rentals, and crew through personnel training, process automation, airplane seat configuration, and extension of routes among others to enable the entity to move towards break-even.

Bamuturaki revealed that her administration has set a timeline of at least three years from now to be able to break even as the airline currently generates up to 85 percent revenue to meet its direct operation expenses such as maintenance costs, crew costs, landing fees, and navigation charges among others.

Asked about his expert opinion on the performance of Uganda Airlines, Abderahmane Berthé, the General Secretary of the African Airlines Association – AFRAA, to which Uganda is a member observed that since its revival in 2019 after 18 years of absence, the future of Air Uganda is commendable, especially as it acquires new flight routes to expand network.

The Airline had envisioned having 19-21 routes opened in the first 2 years, but only 12 have been opened Since 2019, with six aircraft, Uganda Airlines flies to about 12 destinations including Nairobi, Dar-es-Salaam, Bujumbura, Mogadishu, Zanzibar, Mombasa, Kinsasha, Juba, Lagos, and South Africa among others. It also operates intercontinental flights to Dubai, Mumbai, London, and Guangzhou.

At its infant state of revival, Uganda Airlines notably suffered global shocks inflicted by COVID-19 global travel restrictions as nations attempted to mitigate the spread of the killer virus. Developments like Brexit also further slowed down launch plans for London.

Aviation fuel prices increased globally due to the conflict in Ukraine from USD 1.3 per litre to USD 3.5 per litre, leading to losses in 2022/2023.

nother driver of the loss was that the Airbuses started operating the Dubai route. The ıirbus' operating costs are over USD 15,000 per hour. In the new strategic plan, Uganda Airlines plans to procure a mid-range aircraft to bridge the Airbus and the CRJ Bombardier. The midrange will reduce the operating costs on Dubai and other routes like Johannesburg.

At the continental level, many African airlines made losses in 2022. Kenya Airways remained insolvent with the highest cost base among regional airlines, even as it met 75% of its targeted cost reduction in the year 2021/22. In 2022, Air Tanzania had incurred losses of Tsh 60 billion ($25.8 million). The African Airlines Association (AFRAA) estimated revenue loss for 2022 to be $3.5 billion.

While Uganda Airlines had won public admiration and support for its top-notch customer care, there is fear that the high flight delay rate could damage both the airline's market reputation and passengers' loyalty. Asked why Uganda Airlines is registering increased flight delays which was not the case when the national carrier launched commercial flights in 2019, Shakira the Airlines spokesperson responded: "It is complicated. There are many reasons. It can be weather or a bird strike or maintenance of an aircraft." She said the Airline usually books hotels or buys lunch for passengers whenever Uganda Airlines faces flight delays.

Meanwhile, the incidence of a Kikuubo trader aboard Uganda Airline selling grasshoppers sometime back might have done more good than bad for the airline. It now turns out that many passengers are travelling with Uganda airlines hoping to taste some grasshoppers as part of the menu served. Whereas at the start, the Nsenene sell incident looked ugly, it is now the hot story associated with Uganda Airlines. Though Uganda Airline is an international airline, 70% or so of its passengers are either Ugandans or from the East African region and grasshoppers are a delicacy within the region. Incidentally most food served on this airline is already Ugandan like Rolex, Lato yoghurt, Lato milk, Wavah water, Lato butter and Uganda Waragi. This is also good for Uganda 'Buy Ugandan Build Uganda'(BUBU) policy.

"But there are plans to nip in the bud some of the high operating costs for the Airline. The Airline started its self-handling project in November 2023 at its hub in Entebbe in the areas of passenger handling, that is, check-in, baggage handling, security, cabin grooming, and ramp services, among others. This will reduce operational costs by 60%," said Uganda Airlines.

Another cost reduction area is starting the Approved Maintenance Organisation (AMO) which is expected to reduce the cost of outsourcing maintenance for the fleet as well as spare parts because it will be executed in-house by the Airline Engineers.

Recently, a short video on social media showed the Ag CEO Jennifer Bamuturaki serving economy passengers. That was an added surprise, as world over, CEOs or senior leaders participate in company activities to identify themselves with either their customers or prospective customers.

Required:

(a) State the ideal mission statement for Uganda Airlines in the above case. (3 Marks)

(b) Do a SWOT analysis for Uganda Airlines above. (8 Marks)

(c) Illustrate the steps of strategy development process that Uganda Airlines should follow in order to arrive at the ideal strategies to employ to turn around Uganda Airlines into a profitable venture. (6 Marks)

(d) Identify and discuss the various operational strategies that should be devised to turn around Uganda airlines. State the challenges associated with implementing such strategies? (8 marks)

Question Two

Centenary bank is a diversified bank offering a wide range of financial products and services, including consumer banking, business banking, corporate and SME banking. Centenary bank has over the recent past had innovations in its services offer to remain competitive. However, Centenary bank has been registering various complaints from its various customers who encounter challenges of network failure, failed transactions, frauds, to mention.

Required:

(a) Describe the various Web-enabled Services offered by Centenary bank. Show how effective the mentioned web enabled services can help make Centenary bank a more competitive bank. (9 Marks)

(b) Explain what is meant by the following and advise Centenary bank on how to employ them in order to remain competitive:

- Field Service Management
- Customer Relationship Management
- Call Centre Operations and Management
- Tele marketing (16 Marks)

Question Three

Write short notes on any Five(5) of the following as used in Operations Services Management:

- Costs the company is likely to incur in inventory management.
- Benefits of customer satisfaction in operations management.
- Challenges of having Just-in-time (JIT) inventory management in Uganda.
- Centralized and Decentralized storage in Stock management.
- Poka Yoke systems
- Steps for developing benchmarks (25 Marks @ 5 marks)

uestion Four

(a) Managers of companies make a number of informed decisions that enable an organisation to become competitive in the areas where they operate from. Failed companies are often due to bad and uninformed decisions made at the strategic level in an organisation.

Required:

Explain what would entail the make or buy decision in an organization like ROKO Construction Ltd. (7 Marks)

(b) Product selection, definition and design take place on a continuous basis because so many new product opportunities exist. Five factors do influence market opportunities for products. Operations managers must be aware of these factors and be able to anticipate changes in product opportunities, the products themselves, product volume and product mix.

Required:

Discuss four(4) factors that influence the market opportunities for products. (6 Marks)

(b) Manufacturability and value engineering are important activities of product design and specifications at the research, development, design, and production stages of product development because of many benefits they realise.

Required

Provide a detailed analysis of the contribution of Value engineering to operations. (6 Marks)

(c) Due to the extreme cost of interrupting production, a firm has two standby machines available in case a particular machine suffers a breakdown. The machine in use has a reliability of 0.87 and the backups have reliabilities of 0.80 and 0.70. In the event of a failure, either backup can be pressed into service, and if all fails, the other backup can be used.

Required:

Explain the meaning of reliability and Compute the system reliability in the above case. (6 Marks)

Question Five

a) Cogma Ltd assembles printed circuit boards with a quality rating that is both deplorable and dropping. Indeed, it is worse than any of the company's other plants. To complicate matters, labor relations are difficult and morale low, resulting in high turnover and absenteeism. The new plant manager, who has been sent in to straighten things out, believes that the facility will be closed unless dramatic productivity and quality improvements are made. Quality has become too important a factor in the industry.

Required:

(i) Explain in detail how the manager for Cogma Ltd can turn this plant around, build a quality product and instill quality into the workforce? (10 Marks)

(ii) With an illustration, show how the four M's of a cause-and-effect diagram can be employed in Cogma Ltd to improve the quality of its products. (5 marks)

(iii) Of what significance can a quality loss function (QLF) be in the improvement of quality at Cogma Ltd. (5 Marks)

(iv) Explain how the 'Pareto principle' can assist in quality improvement at Cogma Ltd. (5 Marks)

Question Six

a) Define the term queuing and State the characteristics of a queuing system in service delivery. (5 Marks)

(a) Nkozi Clays Ltd currently employs 1 worker whose job is to load half-bricks on outgoing company trucks. An average of 2 trucks per hour arrive at the loading platform, according to a Poisson distribution. The worker loads them at the rate of 3 trucks per hour, following approximately the exponential distribution in his service times.

Required:

Analyse the queue results achieved by one worker.

(Hint: Compute: *Ls, Ws, Lq, Wq, P, Po*) (8 Marks)

(b) The company believes that adding a second half-brick loader will substantially improve the firm's productivity. It estimates that a two-person crew at the loading gate will double the loading rate to 6 trucks per hour.

Required:

Analyse the queue results achieved by two workers.

(Hint: Compute: *Ls, Ws, Lq, Wq, P, Po*) (8 Marks)

(c) The Nkozi clays Ltd manager estimates that the cost of customer waiting time, in terms of customer dissatisfaction and lost goodwill, is USD 10 per hour of time spent waiting in line. Nkozi Clays Ltd pays USD 8 per hour to each employee for loading half bricks.

Required

Compute the total cost of each alternative and advise Nkozi Clays whether to employ one half-bricks loader or two half-bricks loaders. (4 Marks)

FORMULAE:

Table D.3 ■ Queuing Formulas for Model A: Simple System, also called M/M/1

λ = mean number of arrivals per time period

μ = mean number of people or items served per time period

L_s = average number of units (customers) in the system

$$= \frac{\lambda}{\mu - \lambda}$$

W_s = Average time a unit spends in the system (waiting time plus service time)

$$= \frac{1}{\mu - \lambda}$$

L_q = Average number of units in the queue

$$= \frac{\lambda^2}{\mu(\mu - \lambda)}$$

W_q = Average time a unit spends waiting in the queue

$$= \frac{\lambda}{\mu(\mu - \lambda)}$$

ρ = Utilization factor for the system

$$= \frac{\lambda}{\mu}$$

P_0 = Probability of 0 units in the system (that is, the service unit is idle)

$$= 1 - \frac{\lambda}{\mu}$$

$P_{n>k}$ = Probability of more than k units in the system, where n is the number of units in the system

$$= \left(\frac{\lambda}{\mu}\right)^{k+1}$$

TABLE D.4 ■ Queuing Formulas for Model B: Multichannel System, also Called M/M/S

M = number of channels open

λ = average arrival rate

μ = average service rate at each channel

The probability that there are zero people or units in the system is

$$P_0 = \frac{1}{\left[\sum_{n=0}^{M-1} \frac{1}{n!}\left(\frac{\lambda}{\mu}\right)^n\right] + \frac{1}{M!}\left(\frac{\lambda}{\mu}\right)^M \frac{M\mu}{M\mu - \lambda}} \quad \text{for } M\mu > \lambda$$

TABLE D.4 ■ *(continued)*

The average number of people or units in the system is

$$L_s = \frac{\lambda\mu(\lambda/\mu)^M}{(M-1)!(M\mu - \lambda)^2} P_0 + \frac{\lambda}{\mu}$$

The average time a unit spends in the waiting line or being serviced (namely, in the system) is

$$W_s = \frac{\mu(\lambda/\mu)^M}{(M-1)!(M\mu - \lambda)^2} P_0 + \frac{1}{\mu} = \frac{L_s}{\lambda}$$

The average number of people or units in line waiting for service is

$$L_q = L_s - \frac{\lambda}{\mu}$$

The average time a person or unit spends in the queue waiting for service is

$$W_q = W_s - \frac{1}{\mu} = \frac{L_q}{\lambda}$$

TABLE D.5 ■ Queuing Formulas for Model C: Constant Service, also Called M/D/1

Average length of queue: $L_q = \frac{\lambda^2}{2\mu(\mu - \lambda)}$

Average waiting time in queue: $W_q = \frac{\lambda}{2\mu(\mu - \lambda)}$

Average number of customers in system: $L_s = L_q + \frac{\lambda}{\mu}$

Average waiting time in system: $W_s = W_q + \frac{1}{\mu}$