INTERNATIONAL UNIVERSITY OF EAST AFRICA
'Learning to Succeed'

FACULTY OF BUSINESS MANAGEMENT

END OF SEMESTER EXAMINATIONS - APRIL 2025

PROGRAMME: MBA
YEAR/SEM: YEAR 2/SEMESTER 1
COURSE CODE: MBA 841
NAME: PROJECT QUALITY MANAGEMENT

DATE:
TIME:

INSTRUCTIONS TO CANDIDATES:

SECTION A

SECTION A IS COMPULSORY -(40MARKS), ATTEMPT ONLY ONE CASE STUDY

Question 1:

Poor Quality Juice in Galkayo

In Galkayo, there has been a company called Galkayo Fruit Juice (GFJ) which produces fresh juice that has been liked by many people in the town. The problem is that some other company has started producing another quality juice which is proving to take away many of the customers that were formerly taking juice from GFJ. This has led to a very stiff competition between the two companies and the problem is that GFJ has lost many customers. Many of the customers have complained that the Juice from GFJ has been low on quality. The manager has noticed an increase in the number of customer complaints regarding the flavor of the juice served. There has been a concern among the teams in the company that they may lose their jobs because the company has been losing revenue. There has been speculation about which Management factors affecting Juice quality that have been identified including: the mixing of over-ripe and juvenile canes with sound, mature canes within a field; harvesting over-age cane; excessive delays between pre-harvest burning and processing ("kill to mill"); and excessive extraneous matter in harvested cane. It is suggested that heterogeneous cane can have up to 20% less available sugar concentration than good sound cane. An average of about 4% of the sugar originally available is lost per day of the "kill to mill" interval, although this value is strongly influenced by temperature. From 0.125 to 0.25 units of rendement are lost per one percent of extraneous

matter. The team in production is not convinced about all these factors that have been raised and they are calling for a meeting to discuss and find out the real cause of the quality problem in the juice.

QUESTIONS

i) As a student of Project Quality Management use the knowledge of the Ishikawa Diagram and explain to the Galkayo Juice Factory management and teams about the machine problems that may have caused the poor-quality effects (**6 Marks**)

ii) You are the quality manager of this product and you are going to present a paper on the long-term effect of the poor quality of the juice. Present the negative long-term effect of the poor-quality juice to the board of directors (**8 Marks**)

iii) The identified cause of poor quality of the juice is about the process, mention the problems cited in the processing of the Juice (**6 Marks**)

iv) If the cause of the problem of poor-quality juice is human resource, explain how, you, as a product quality manager will deal with the human resource causes **(10 marks).**

v) What quality planning inputs can be used in the improvement of the quality of the Juice in the case above?

(10 Marks)

Question 2:

CASE STUDY 2:

Sustainable Development in Project Quality Management – Tesla, Inc.

Tesla, Inc., a global leader in electric vehicle (EV) production and sustainable energy solutions, has revolutionized the automotive industry with its commitment to quality management and sustainability. As the company expands its product line, including solar energy solutions and battery storage, Tesla integrates sustainable practices into its project quality management to ensure long-term environmental and economic benefits.

Sustainability and Quality Management in Tesla’s Projects

1. Sustainable Product Design and Quality Standards

Tesla emphasizes innovation and sustainability in its product design by using high-quality, recyclable materials. The company ensures that its EVs meet stringent safety and performance standards through rigorous testing, automation, and artificial intelligence-driven manufacturing. By incorporating sustainable materials such as vegan leather in interiors and reducing reliance on rare earth metals, Tesla enhances both product quality and environmental impact.

2. Green Manufacturing and Process Improvement

Tesla's Gigafactories are designed with sustainability at the

core. These factories run on renewable energy sources such as solar and wind power to reduce their carbon footprint. The company also implements Lean Six Sigma principles to improve efficiency, reduce waste, and optimize production processes. Tesla continuously refines its battery technology to increase energy efficiency and extend product lifespan, contributing to sustainable development goals (SDGs).

3. Sustainable Supply Chain Management

Tesla enforces strict environmental and ethical standards in its supply chain. The company collaborates with suppliers who adhere to sustainable mining practices, particularly for critical materials such as lithium, nickel, and cobalt. Through transparency initiatives like blockchain tracking and ethical sourcing policies, Tesla minimizes the negative environmental and social impacts of its supply chain.

4. Quality Control and Continuous Improvement

Tesla employs advanced quality control mechanisms, including artificial intelligence (AI) and real-time data analytics, to detect defects and enhance product reliability. The company’s direct-to-consumer model enables it to collect user feedback and implement continuous improvements in its vehicle software through over-the-air (OTA) updates, ensuring long-term customer satisfaction and sustainability.

Tesla's commitment to sustainable development in project quality management has set a benchmark for the automotive and energy industries. By integrating green manufacturing, sustainable supply chains, and cutting-edge quality control mechanisms, Tesla demonstrates how

businesses can achieve high-quality outputs while reducing their environmental footprint. This case study highlights the importance of aligning sustainability goals with quality management principles to drive long-term success.

Questions;

1. Describe how Tesla integrates sustainability into its project quality management processes. Provide examples of specific initiatives undertaken by the company. **(10marks)**

2. Discuss the role of Lean Six Sigma in Tesla's manufacturing processes. How does this approach contribute to sustainable development and quality improvement? **(10marks)**

3. Tesla utilizes artificial intelligence and real-time data analytics for quality control. Explain how these technologies enhance product quality and contribute to sustainability. **(10marks)**

4. Evaluate the challenges Tesla might face in maintaining a sustainable supply chain. Suggest strategies the company could implement to overcome these challenges. **(10marks)**

SECTION B

ATTEMPT THREE QUESTIONS ONLY FROM THIS SECTION-(60MARKS)

Question 1:

Abdirisak, Jovia and Saida Abdi started a project in Uganda, they decided to produce sanitary pads, they all studied project and product quality management. They have been arguing that since they are all in management they cannot be involved in quality management. It is only the teams that must ensure the quality of the project and product.

Required

As a student of project Quality management help and explain to Abdirisak, Jovia and Saida that leadership, management and Teams have a part to play in creating, and maintaining the Total quality environment in ensuring quality. **(20marks)**

Question 2:

Every business survives when the company understands that it is not the company that determines what it produces, but it is the customer that decides what product to produce and how to produce it such that the customer gets satisfied.

Required

You are an expert of Project quality management and you have been identified by the chamber of commerce to train the business community for quality excellence, describe and explain the phases of customer driven project management improvement methodology to business owners in your country. (**20 Marks**)

Question 3:

The government of Somalia, working under the East African alliance program on “Animal improvement for Beef Export” has decided to send a team of fresh graduates to Kenya to benchmark on goat and sheep rearing so as to compete very well in the beef market in Qatar.

Required

a). As a consultant with a degree in PQM from a reputable university, advise the government of Somalia on the key elements of benchmarking efforts that should be emphasized **(10 Marks)**

b). As a consultant, outline and explain the benchmarking steps to the team that is travelling to Kenya to carry out the benchmarking exercise **(10 Marks).**

Question 4:

The project manager in one of the biggest poultry farm in Lower Shabelle has been threatening to leave the company because of the numerous obstacles to his efforts to improve total Quality management.

Required

a) As a consultant in PQM, advise and explain the obstacles to the implementation of Total Quality management to the owners of the company on the obstacles before the manager leaves **(10 Marks).**

b) As an expert, explain clearly the elements of Total quality management to the owners of the company such that they make informed decisions on quality in the company **(10 Marks)**

Question 5:

Explain the role of stakeholders in defining and ensuring quality standards in a project. How can project managers align stakeholder expectations with quality deliverables? **(20marks)**

Question 6:

Discuss the importance of quality metrics in monitoring project performance. Provide examples of effective metrics and how they can be measured. **(20marks)**

Question 7:

Explain the concept of continuous improvement in project quality management. How can methodologies like Six Sigma or TQM contribute to sustained quality in projects? **(20marks)**

Question 8:

Assess how quality management integrates with other project areas, such as scope, time, and cost management. Provide real-world examples to illustrate your points. **(20marks)**

Question 9:

a) Explain the purpose and process of conducting quality audits in projects. How do audits contribute to overall project success? **(10marks)**

b) Evaluate how technological advancements, such as AI and automation, are transforming project quality management practices. **(10marks)**

Question 10:

Discuss the relationship between quality management and risk management in projects. How can effective quality management mitigate risks?. **(20marks)**

Question 11:

Explain the three main processes of project quality management (Quality Planning, Quality Assurance, and Quality Control), providing examples of how each is applied in real-world projects. **(20marks)**

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