



**STRATHMORE INSTITUTE
DIPLOMA IN ENTREPRENEURSHIP
END OF SEMESTER EXAMINATION
DE 1103: INNOVATION AND TECHNOLOGY IN ENTREPRENEURSHIP**

DATE: April 24th 2020

Time: 2 Hours

Instructions

1. This examination consists of **FIVE** questions.
2. Answer **Question ONE (COMPULSORY)** and any other **TWO** questions.
3. Do not write on the question paper.

QUESTION ONE (1) (30 MARKS)

There is a quote from Thomas Edison that goes “There’s a way to do it better – find it. That’s just what Ken did.

Smart Tap provides a hand washing solution to high population density institutions. The mobile hand wash solution can be attached to existing plumbing systems or installed as a standalone solution complete with its own water and liquid soap supply. The Smart tap uses technology to dispense just the right amount of water and soap to the user. It is able to distinguish between an adult and child user and dispense just the right amount of soap and water. Its inbuilt water recycling system allows for the collection and treatment of waste water as people wash their hands. This water can be recycled. By attaching an irrigation system or high pressure cleaning system, the water can be used in the garden or for cleaning buildings or cars.

Ken the founder of Smart Tap acknowledges that his invention would not have seen the light of day were it not for good partnerships. It has taken ten times more money to bring the idea to market. When Ken started out, he was sure the 10 million grant funding from the Climate and Innovation Centre was going to be more than enough. He had grossly underestimated the cost associated with putting together a team that could build, test, rebuild and market the product.

“Our initial version simultaneously washed hands for up to four people and used a slower technology so that there was a delay between the user being detected and the soap and water being dispensed. As soon as we built the first version and carried out a pilot in a primary school, we discovered an improvement in the technology component we were using. We had to build another version and incorporate the new technology” observes Ken.

Ken chose to randomly select schools to install the hand wash system, an error he attributes to his lack of business background. “My criterion in choosing schools was location. I did not know that I should have been seeking institutions that would help me push the concept to the mass market”.

Ken believes his product offers a real value proposition that appeal to the broader market. The main limitation right now is that his was system requires an external power source or a rechargeable battery system. Once he figures out a fix for the power source, he plans to scale into Uganda.

Required:

- a) Define Technology Entrepreneurship (2 Marks)
- b) Using examples from the case study, discuss the four primary drivers of technology ventures (8 Marks)
- c) Define market value (1 Mark)
- d) List the five steps of Design Thinking Ken would have taken to ensure his product had market value. (5 Marks)
- e) Using the tool SCAMPER, demonstrate how Ken can innovate on his hand washing system (14 Marks)

QUESTION TWO (2) (15 MARKS)

- a) Peter Drucker identified five principles of innovation, Explain any three (6 Marks)
- b) Describe the Creative Process (5 Marks)
- c) Distinguish between invention and innovation (2 Marks)
- d) Distinguish between innovation and creativity (2 Marks)

QUESTION THREE (3) (15 MARKS)

- a) Describe the three breeds of entrepreneurs (3 Marks)
- b) Explain the three sources of innovation that can be found outside an organization or industry (6 Marks)
- c) Using examples, explain the three degrees of innovation (6 Marks)

QUESTION FOUR (4) (15 MARKS)

- a) Bill Gross, Founder of Idealab, examines five essential elements that lead to successful start-ups. Identify the five elements and explain how they contributed to start up success. (10 Marks)
- b) Amazon operated for 14 years before making a profit. Using Amazon as an example, discuss any two ways in which patient capital supports innovation (4 Marks)
- c) Define Equity Financing (1 Mark)

QUESTION FIVE (5) (15 MARKS)

- a) Describe De Bono's six thinking hats and what each hat represents (6 Marks)
- b) Explain the three ways in which entrepreneurs can define problems as they seek to find innovative solutions. (6 Marks)
- c) Identify the three components of creativity (3 Marks)