

University of Eswatini
Faculty of commerce
Department of Business Administration
Supplementary examination
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Title of the Paper : Operations Management

Degree : Bachelor of Commerce

Course : BUS431 F/T, BA438/506 (IDE)

Time allowed : Three (3 hours)

Instructions:

1. THIS PAPER CONSIST OF SECTION A AND SECTION B)
2. SECTION A IS CASE STUDY AND IT IS COMPULSORY QUESTION
3. ANSWER ANY TWO QUESTIONS FROM SECTION B

Note: You are reminded that in assessing your work, account will be given of accuracy of language and the general quality of expression, together with layout and presentation of your final answer.

THIS PAPER MUST NOT BE OPENED UNTIL THE INVIGILATOR HAS GRANTED THE PERMISSION

Section A: Compulsory case Envirodeck

An entrepreneur who has experienced challenges and ultimately overcame them is Warren Graver, founder and director of Envirodeck, and winner of the 2012 Small Business Entrepreneur of the Year® title. Envirodeck was established in 2004 as a supplier of environmentally friendly decking materials to the local building industry. Over the past decade, composite decks have grown in popularity as demand for 'green' products increases.

They have maintained their leading position by constantly researching and staying abreast of technologies used locally and abroad. Envirodeck began extensively marketing and distributing boards for the construction of composite decks as an alternative to traditional wooden decking after recognizing an opportunity to offer sustainable solutions to the outdoor leisure market.

Envirodeck's offering stretches far beyond the supply of decking boards, however, and the driving factor behind their operations is to consciously improve the lives of their customers by adding value throughout the supply chain, from manufacture, right through to the installation of composite decks – all while contributing to a more sustainable future.

Envirodeck's success is founded in providing high-performance decking that sets itself apart from the competition. The biggest challenge of this innovative industry is providing a consistently high-quality decking product that not only performs well but also looks attractive, using inconsistent raw materials.

Warren Graver states that as a recognized pioneer in the industry, they understand the technical as well as the straightforward aspects of manufacturing, supply and installation of composite products. They have actively partnered with innovative business partners and invested in state-of-the-art technology concepts to deliver a truly evolved product to the local market. Professional contractors have come to rely on the value and consistency for which Envirodeck is known. 'We take pride in our emphasis on patented product quality and good service and we are a company that offers a truly sustainable building solution to our market and we also take an active stance towards minimizing our ecological footprint'.

Graver furthermore says that Envirodeck has not always been a successful business and that he had to overcome a significant number of challenges in the early years of the business. 'I could not have made worse business decisions

than in the first two years of opening the business, which was doomed by me not focusing sufficiently on market, product or supplier research’.

‘The first challenge that I faced was that although I noticed a considerable gap in the market, I was unsure on how to present the product to an existing market that I had no experience in. It was also a market that was very reluctant to change to new products, as timber was traditionally the only way that decking had ever been done, and it proved extremely tough to penetrate a market when no one had ever seen or heard of such innovative products’.

Graver says that another challenge he encountered was establishing a supplier network. ‘I did not do sufficient supplier research and subsequently after landing the first shipment, the supplier closed its doors. This error in judgment on my part meant that the initial start-up capital was quickly absorbed into obsolete inventory that would never be sold even at discounted rates’.

He also touches on the importance of managing cash flow. ‘The most critical element of a start-up business is managing cash flow versus inventory management, a concept that I failed to understand and subsequently a year later I had no start-up capital left’.

However, the business was saved through continual focus on the gap in the market. Through intense global product sourcing, supplier canvassing and a life-saving loan, Graver managed to slowly recover and turn the business around so that by 2009 it had broken even.

Source: compiled from Envirodeck (2013) and finweek (2012). Reprinted by permission of Envirodeck. Text by Gallo Images/Finweek.

Questions1

Operations management people play a strategic role in many strategic decisions in a business organization.

- a. Discuss any 10 strategic operational management decision areas Envirodeck should use in their business (30 marks).
- b. Explain how Envirodeck should use the four qualitative techniques forecast to gather information on to how penetrate a market when no one had ever seen or heard of such innovative product (10 marks).

Section B

ANSWER ANY TWO (2) QUESTIONS FROM THIS SECTION

Question 2

A electrical contractor's records during the last five weeks indicate the number of job requests:

week	1	2	3	4	5
Requests	20	22	18	21	22

a. Predict the number of requests for week 6 using each of these methods

- i. Naïve method. **2 marks**
- ii. A four-period moving average. **3 marks**
- iii. Exponential smoothing with $\alpha = 0.3$ Use 20 for week 2 forecast. **5 marks**

b. Using seasonal relatives. Apple's citrus Fruits farm ships boxed of fruit anywhere in the world. Using the following information, a manager wants to forecast shipments for the first four months of next year

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	NoV	Dec
Seasonal Relative	1.2	1.3	1.3	1.1	0.8	0.7	0.8	0.6	0.7	1.0	1.1	1.4

The smoothing forecast equation being used is

$$F_t = 402 + 3t$$

Where f_g = January of last year; F_t = Forecast of shipments for month t

- i. Determine trend for the first four months of the next year: January $t = 24$; February $t = 25$, etc **8 marks**

- ii. Multiply each monthly trend by the correspondence seasonal relative for that month. **8 marks)**
- c. A wrapping paper company in Matsapha produces 2,000 roles of papers one day. Labor costs is E160, material cost was E50 and overheard was E320. Determine the multifactor productivity (**4marks**).

Question 3

The University of ESwatini is considering expanding its strategic capacity planning to ensure that stakeholders are satisfied with the service they rendered to the community.

- a. Explain to management any 5 importance of strategic capacity decisions the University should be included in strategic capacity planning **15 marks**.
- b. Discuss any five determinants of effective capacity that have impact on the operations decision (**15 marks**).

Question 4

Operational manager of Swaziland Bank need to design the facility layout.

- a. Identify and define process and product facilities layout (**6 marks**)
- b. Explain the 3 advantages and 3 disadvantages of process design and 3 advantages and 3 disadvantages product layout design (**24 marks**).