FEEDBACK TUTORIAL LETTER

1st SEMESTER 2019

Assignment number 1 & 2

Business Operations
BOP611S
Dear Students,

Let me congratulate you in completing your assignment number 1 & 2 for Business Operations in the first semester.

- In general, your performance in this assignment has been good; we are particularly impressed by the way you made use of sources to expand your answers. I would like to however caution you on how you make use of sources you consult for references.

- Please avoid using direct quotes from these sources, without citing as this is classified as plagiarism. Plagiarism is an unethical behaviour that can result in you losing marks. Please avoid this by all means. Instead, try summarising other people’s work in your own words and then acknowledge the source. This demonstrate your own understanding and contribution to the assignment, which is what we seek in the assignments.

Specifically, for Assignment 2:

- An important aspect to consider is the calculations. Please show all formulae and calculations as marks are awarded for each step.

- The question on ISO: you were to answer it two-fold, alluding to the standards and then their application:
  - Explain what these ISOs mean for a construction company

We would also like to commend those who made efforts to seek assistance from tutor-markers where they did not understand, this is the way to go in distance education. I have highlighted issues pertaining to your assignment number 1 & 2 below; please go through and make sure you understand, as these may be of vital importance for your preparation for the exam.
Assignment 1

Question 1: Multiple Choice (10 Marks)

1. A large percentage of the revenue of most firms is spent in the Operations Management function.
   a. True
   b. False

2. Core functions in all organisations are:
   a. marketing, personnel, operations
   b. marketing, accounting, personnel
   c. marketing, finance, operations
   d. product/services development, operations, marketing (including sales)

3. Operations can be classified according to their volume and variety of production as well as the degree of variation and visibility. Which of the following operations would be classified as high volume, low variety?
   a. A family doctor
   b. A fast food restaurant
   c. A front office bank
   d. A carpenter

4. The value added will determine whether goods or services will be seen as an order qualifier. An order qualifier is when...
   a. Customers compares different manufacturers’ products/services to determine which they will buy
   b. Customers returns a product that are faulty
   c. Customers decide beforehand that they will not buy a product
   d. Customers ask others to buy the product for them

5. One of the other departments or functions within an organisation is referred to as servitization. Which of the following statements describes servitization.
   a. Managing the cost of the organisation’s labour, raw materials, and overheads
   b. Providing management with the relevant information that will enable it to manage effectively and efficiently
   c. Purchasing raw materials, machinery and equipment for the organisation
   d. Selling the goods or services of the organisation
   e. A transformation process wherein production organisations embrace a service orientation and/or develop more and better services

6. Which of the following is not a dimension for the assessment of quality goods
   a. Reliability
   b. Validity
   c. Durability
   d. Safety
   e. Aesthetics

7. Which of the following is the final step in the design process?
   a. System design
   b. Detailed design
   c. Production initialisation
   d. Testing and improvement
8. Exponential smoothing is characterised by all but one of the following:
   a. Sophisticated method
   b. Smoothing constant
   c. Actual demand
   d. Previous forecast
   e. Regression

9. Which of the following is not one of the four V’s of operations management:
   a. Value
   b. Variety
   c. Variation
   d. Volume
   e. Variability

10. Which of the following is not a feature common to all forecasts?
    a. The underlying system of the past will be present in the future
    b. No precise prediction can be made
    c. The shorter the time horizon the less reliable the forecast
    d. Forecasts for groups of items are more accurate
    e. All of the above options are features common to all forecasts

Question 2: Supply chain management

i. A supply chain is a set of organisations directly linked by upstream and downstream flows of products, services, finances and information from suppliers to customers and finally end users.

    SCM is the management of a network of interconnected organisations involved in the production of goods/services required by consumers in the chain and involves logistics, production and storage of inventory from the point of origin to the point of consumption.

    Supplier is an entity that provides raw material, semi-finished goods, finished goods and services to another organization

ii. Mavunfa Toys and Novelties Possible supply chain

![Supply chain diagram]

iii. Procurement is important in the supply chain of Mavunfa Toys and Novelties to ensure the right suppliers who can offer the best and lowest possible prices (discounts & economies of scale when bought in bulk), the right quality of products (considering the unique non-toxic paint specifications) and the right quantities (product availability).
Question 3: Design of goods and services (12 Marks)

a. An understanding of key customers/groups/markets
b. Understanding the voice of the customer – short- and long-term needs and expectations
c. Building of customer relationships through,
   - Commitments that promote trust and confidence, Accessibility to customer and market
     information, Setting of effective service standards, Appropriate training of customer contact
     employees, Effective and efficient after-sales service
d. Effective complaint management process
e. Clearly defined Key Performance Indicators (KPIs) to measure customer satisfaction,
   appropriate interventions for improvements
f. Careful consideration of competitors and their role in market

Question 4: Forecasting (14 Marks)

Actual demand/sale of iPhoneXS in Windhoek for the first six month of 2018 were as follows:

<table>
<thead>
<tr>
<th>Month</th>
<th>Actual demand</th>
</tr>
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<tbody>
<tr>
<td>January</td>
<td>82</td>
</tr>
<tr>
<td>February</td>
<td>76</td>
</tr>
<tr>
<td>March</td>
<td>63</td>
</tr>
<tr>
<td>April</td>
<td>83</td>
</tr>
<tr>
<td>May</td>
<td>97</td>
</tr>
<tr>
<td>June</td>
<td>124</td>
</tr>
</tbody>
</table>

Use this information and determine in whole numbers:

i. \(\frac{82+76+63+83+97+124}{6} = 525/6 = 87.5 \approx 88\) (1)

ii) Month 1: \(88 + 20\% = 88 + 17.6 = 105.6 \approx 106\) (3)
    Month 2: \(106 + 10\% = 106 + 10.6 = 116.6 \approx 117\)
    Month 3: \(117 + 5\% = 117 + 5.85 = 122.85 \approx 123\)

iii) SMA: make a forecast for July using a three months (period) simple moving average.
    \[
    F_t = \frac{\sum A_i}{3} = \frac{83 + 97 + 124}{3} = 304 / 3 = 101.3 \approx 101
    \] (3)

iv) WMA: make forecast for July, using a four months (period) weighted moving average
    where the weights are 0.4 for the most recent period; 0.3 for the second most recent period, 0.2 for
    the third most recent period and 0.1 for the fourth most recent period, respectively.
    \[
    F_t = \frac{\sum (weight \ for \ n \ periods) \ (demand \ in \ period \ n)}{\sum \ weights} \\
    = \frac{(124 \times 0.4) + (97 \times 0.3) + (83 \times 0.2) + (63 \times 0.1)}{0.4 + 0.3 + 0.2 + 0.1} \\
    = 49.6 + 29.1 + 16.6 + 6.3 \\
    = 101.6 \approx 102
    \] (4)
v) Make a forecast for January, using the exponential smoothing technique. If the forecast for June was 138 and the smoothing constant is 0.4.

\[
F_t = F_{t-1} + \alpha (A_{t-1} - F_{t-1})
\]

\[
F_t = 138 + 0.4 (124 - 138)
\]

\[
F_t = 138 - 5.6 = 132.4 \approx 132
\]
Assignment 2

Question 1 (10 marks)

Which of the following are True or false. Please motivate your answer briefly.

a. There are some components of a supply chain where value is not added because they are simply a point of transit. **False**, each link of the supply chain adds value to the next link.

b. A supplier is an entity that will sell only goods for which the supplier would be paid an agreed price to another organisation or individual. **True**, suppliers sell and expect to receive payment. This is where willing-buyer-willing-seller comes into play.

c. A bullwhip effect comes into being when there is no change in final consumer demand. **False**. The bullwhip effect comes into play when a small change in final customer demand is amplified as one moves back in the supply chain.

d. Inventory held in order to decouple the production process is called Safety stock. **False**. This type of stock is referred to as buffer stock.

e. Efficient capacity is utilised by processes that are involved in customisation. **False**. Input capacity is a measurement used for low volume, flexible processes such as customised products.

Buffer: is the inventory needed to ensure the effective and efficient running of production. The operations manager would like to decouple the production process by keeping buffer stock that ensure that operations continue even when there is a breakdown in the preceding operation.

Safety stock is stock kept to prevent stock outs that occur from late supplies or unexpected rise in demand

Question 2 (14 marks)

Taleni Production CC is a small business producing roof tiles and bricks from Namibian clay. As part of your business operations assignment, you are required to help them with capacity planning.

a. What is capacity planning? **2 marks**

Capacity is the highest performance margin of an operations process within a specified time when the process is operating within an ideal environment. Capacity planning is therefore planning the entire operations process, considering these specifications in order to maximise production unit and meet customer demands.

b. Which 6 pertinent capacity questions will you address that will be useful as part of the expansion strategy under discussion and why? **12 marks**

All these questions are correct as long as motivation is relevant to Taleni CC. Two marks per question & motivation
How much capacity is required
- Facilities, equipment, machines, labour, etc.
- Does the organisation predict demand changes and if, must additional facilities be erected?
- The type of capacity required by the organisation and when it will be required
- Should organisation erect new facilities to meet impending demand?
- When will organisation require the capacity

**Question 3** (14 marks)

TropiZone’s Mushrooms uses 800 packing crates a month to transport their produce. Each crate is purchased at a cost of N$12.00. Through his experience, the manager has determined that the carrying cost per crate is 25% of the purchase price. To place an order will cost the organization N$28.00. To minimize cost, the manager orders crates once a month. The reason for this is that the crates damage easily. You are required to:

a. Determine the EOQ.
b. Determine the total cost for the current ordering process.
c. The total cost if the EOQ total is ordered.
d. Compare the cost and determine any saving that can be achieved.

\[ Q_0 = \sqrt{\frac{2DS}{H}} \]

\[ = \sqrt{\frac{(2)(9600)(28)}{3}} \]

\[ = \sqrt{\frac{537600}{3}} \]

\[ = \sqrt{179200} \]

\[ = 423.32 \approx 423 \text{ orders per year.} \]

(b)

Total cost (present) = \[ \left( \frac{Q}{2} \right) H + \left( \frac{D}{Q} \right) S \]

\[ = \left( \frac{800}{2} \right) \times (3) + \left( \frac{9600}{800} \right) \times (28) \]

\[ = 400(3) + 12(28) \]

\[ = 1200 + 336 \]

\[ = N$1536.00 \]
(c) 

Total cost (EOQ) = \( \left( \frac{Q}{2} \right) H + \left( \frac{D}{Q} \right) S \)

\[ = \left( \frac{423}{2} \right) (3) + \left( \frac{9600}{423} \right) (28) \]

\[ = 211.50(30) + 22.70(28) \]

\[ = 634.50 + 635.60 \]

\[ = \text{R}1 270.10 \]

(d) 

The following savings can be achieved if the EOQ quantity is ordered:

N$1 536.00 minus N$1 270.10

= N$266.00
Question 4 (12 Marks)

Ohorongo Cement (Pty)Ltd, the only cement manufacturer in Namibia, obtained its certification of having met the International Standards of ISO 14001:2009 and ISO 9001:2008. What does this mean to you as a construction company? (please let the marks allocated guide the depth of your answer)

The International Organization for Standardization (ISO) established the Environmental Management System to encourage companies to evaluate all areas of business where its activities have an environmental impact. ISO 9001 – Quality Management system provides guidance and tools for companies and organizations who want to ensure that their products and services consistently meet customers’ requirements, ensure that quality is consistently improved, and that high quality standards and procedures are maintained. 6 marks

For a construction company it means that the cement produced by Ohorongo is of the **highest quality** and that it can be used in the construction of buildings with assurance that **safety and longevity**. It ensures that there will be **no spectacular failures of buildings** and their components which may **result in claims not only for repair but also for criminal and civil damages being awarded against both the contractors and Ohorongo**. There will be **confidence** in the cement for contractors which will in turn lead to them **earning trust from their clients**. 6 marks