

MARKING GUIDELINES



UNIVERSITEIT VAN PRETORIA
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DEPARTMENT OF BUSINESS MANAGEMENT
OBS 210 LOGISTICS MANAGEMENT

FINAL EXAMINATION
(online)

Date: 17 July 2020
Time: 4 hours
Marks: 60

Internal Examiner: Mrs Sharon Badenhorst
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ASSESSMENT INSTRUCTIONS:

1. All test and examination rules and regulations are applicable.
2. This assessment is an open book, online case-based assessment and consists of 12 pages.
3. Answer all the questions on the template Word document on your computer and clearly indicate the number of each of your answers. You will find the template Word document in the same link as for this exam paper. Remember to save your work regularly.
4. At the end of the assessment, please submit your saved answers online in ClickUP in the link titled: "FINAL EXAM SUBMISSION" (via Turnitin).
5. If, for any reason, you have technical problems, please try to keep as much evidence of your problems as possible (e.g. screenshots, etc.).

Please note: This case study has been written for educational and assessment purposes. Parts of it have been based on some real-life examples. Outeniqua Furniture is a fictitious firm. Any resemblance with existing firms is purely coincidental.

Please read through the case scenario and then answer the questions that follow.

Case: Logistics management at Outeniqua Furniture

Background

Sarah is the logistics manager at *Outeniqua Furniture*. *Outeniqua Furniture* is located in George in the Western Cape and manufactures and distributes furniture across South Africa. *Outeniqua Furniture* prides itself in its wide range of products that include, among others, bedroom furniture, living room furniture, dining room tables and chairs, coffee tables, TV and display units, closets, cabinets, and door frames. Over and above their wide product range,

Sourcing of raw materials

The furniture that *Outeniqua Furniture* make is bulky and heavy. They obtain a lot of their wood from the forests in the Outeniqua region in the Western Cape. There are not many suppliers for this wood and the wood is transported from the forest directly to the *Outeniqua Furniture* Factory. The wood from the different suppliers will then be transported to the *Outeniqua Furniture* plant. At the *Outeniqua Furniture* plant, the wood would be moved to where it was needed by a combination of, among other things, forklifts and trucks. *Outeniqua Furniture* sourced from two suppliers in the region. One supplier, *QB-Wood*, supplied *Outeniqua Furniture* with 75% of their woods. These woods, which include Blackwood, are processed and prepared by the suppliers. Blackwood forms the bulk of the wood from which they manufacture their furniture. It is very popular due to its superb quality.

As there is a growing demand for exclusive wood furniture, *Outeniqua Furniture* was planning to start importing Teak wood from India for some new furniture product lines. They are also considering importing Cedar wood from Malaysia as there is a growing demand for cedar wood furniture as well. In India, two potential suppliers were identified. Exhibit 1 shows the information collected for each of the two suppliers. Both

suppliers were located close to Mumbai which was close to both the international sea and airport. There was a rail network that linked the suppliers with these ports. The road network was also in a good condition, but the traffic around Mumbai was often heavily congested.

Exhibit 1: Supplier ratings for three suppliers from India

Supplier		ABC		DEF	
Factors	Weight	Rating	Value	Rating	Value
Capability	4	4		5	
Quality	1	3		3	
Price	3	3		3	
Reliability	2	4		3	
Supplier value					

By considering selecting a supplier from India, Sarah also knew that several different modes of transport will be required transport the wood from India to Outeniqua Furniture's plant and that the wood would *take much longer to reach Outeniqua Furniture* than was currently the case. This did not bother Sarah too much because the demand for the wood that they would be sourcing from the supplier was stable and very predictable. Sarah also realised that there would be an increase in documentation and other administrative processes and that they would probably have to pay the supplier in India in another currency such as US dollars.

Distribution

Outeniqua Furniture has its own warehouse which is currently being used to store finished furniture products. These furniture products are grouped according to the different retail outlets' orders and then distributed to the different retail outlets.

Outeniqua Furniture distributes to retail outlets in Johannesburg and Pretoria, Potchefstroom, Polokwane, Bloemfontein, Durban, Pietermaritzburg, East London, Port Elizabeth, George and Cape Town. *Outeniqua Furniture* recently started to export furniture to some neighbouring countries.

The infrastructure at George (and close to *Outeniqua Furniture's* premises) is average to good. Some roads are maintained well. However, in some cases (especially to Port Elizabeth, East London and Cape Town), the roads have some huge potholes that, if struck, can cause severe accidents which may result in serious injuries to personnel and may damage the products too. The approximate distances between *Outeniqua Furniture* and their retail outlets are shown in exhibit 2.

Exhibit 2: Distances between *Outeniqua Furniture* and their retail outlets

<i>City/ Town</i>	<i>Distance (km)</i>	<i>City/ Town</i>	<i>Distance (km)</i>
Johannesburg	1,176	Pietermaritzburg	1,211
Pretoria	1,246	East London	603
Potchefstroom	1,094	Port Elizabeth	324
Polokwane	1,498	George	24
Bloemfontein	777	Cape Town	429
Durban	1,284		

Port Elizabeth has an international seaport and Cape Town and Durban have an international airport and seaport and there is a railway station next to the Cape Town harbour. There is a railway station within a 30 km radius from *Outeniqua Furniture* that is linked to the Cape Town railway station. The railway stations in Johannesburg, Pretoria and Cape Town are also located in close proximity of the retail outlets. The railway station close to *Outeniqua Furniture* was, however, not directly linked with the railway stations at Johannesburg or Pretoria. The furniture would first have to be transported to Worcester (in the direction of Cape Town), before it would be re-routed to Johannesburg and Pretoria. Careful planning was needed during peak demand seasons when huge quantities of furniture were ordered in Gauteng and surrounding provinces, which formed the bulk of *Outeniqua Furniture's* national market. At this stage, *Outeniqua Furniture* uses Port to Port transportation to transport their furniture to their warehouse. Recently, *Outeniqua Furniture* has decided to buy their own fleet of trucks.

Challenges

There have also been some serious events in the macro or uncontrollable environments in which *Outeniqua Furniture* operates. Some customers were complaining that the salespeople at *Outeniqua Furniture* were rude when dealing with their (i.e. the customers') enquiries. This happened on more than one occasion. In some cases, it happened when customers, for example, enquired why delivery was taking longer than promised. In one example, *Outeniqua Furniture* had promised delivery of goods within three weeks and it had already been five weeks when the customer called *Outeniqua Furniture's* customer service to try and find out what was causing the delay. The person who answered the call was very rude to the customer.

To address the problem of their late deliveries, *Outeniqua Furniture* had consultations with their suppliers, and it seems like there was a communication gap which led to an undersupply of wood. *Outeniqua Furniture* made a strategic decision to form a strategic partnership with their supplier *QB-Wood*. *Outeniqua Furniture* agreed to share more downstream demand forecasts with *QB-Wood*. In addition, *Outeniqua Furniture* also decided to reduce the number of products and furniture lines they would offer. Although they would reduce their product offerings, they would still manufacture enough standard sized furniture in different sizes and designs to still give customers several options to choose from their product ranges. In doing this, they would be able to order standardised wood from *QB-Wood*, which would significantly reduce the upstream supply lead time. Once customers and retailers placed their orders, *Outeniqua Furniture* would be able to assemble the furniture much quicker which would reduce the delivery times, and which would also enhance customer satisfaction.

Also, a few months ago a global pandemic was declared because of the outbreak of the COVID-19 virus. The virus has caused a massive economic downturn which in turn has impacted demand in a negative manner. The government declared the country a state of disaster in which they announced a nationwide lockdown. Only firms that formed part of essential goods supply chains could carry on their normal operations. Because furniture was not considered an essential good, *Outeniqua Furniture*, could not manufacture their normal quantities during April and May. Consumer spending on furniture also decreased significantly as consumers spent

more of their money on goods and services such as online entertainment and essential goods such as food and emergency goods.

Outeniqua's expansion

In order to lower production costs, Outeniqua set up a warehouse in China by joining forces with DiscountDealers, a large Chinese conglomerate. This partnership will give Outeniqua immediate access to DiscountDealers local distribution system. Not only furniture from Outeniqua but also goods from DiscountDealers will be stored in the warehouse, where it will be grouped according to an order and routed to the retailers.

Outeniqua partnered with DiscountDealers as cultural values dictate a large portion of the social trends in China. Factors such as family size, population growth, dictate how the market operates and as a result, it also ensures that social values are kept in line with the cultural needs. At the same time, consumer behaviour is quite different than the South African market. Having someone who understands the local culture, languages and tastes can be a benefit. According to Chinese law, foreign companies may not own more than 49% controlling interest in the partnership, as a result, DiscountDealers own 51% of the partnership.

Some worry that Outeniqua and companies pursuing a similar strategy might be overdoing it. Too much dependence on China could be dangerous if political, economic, or other problems disrupt production and the company's ability to supply global markets. The socialist Chinese government is known for making unsettling changes to policies overnight and this affects both Chinese and foreign traders. The strong presence of the Communist Party is also another factor that all businesses must keep in mind at all times. If any product or service or any of its peripherals are deemed to be against the ideals of the Communist Party, then it will be strictly banned. So, all advertisements and marketing strategies need to be revised accordingly when dealing with the Chinese market. The Chinese economy is currently performing at an all-time high and with the present GDP rate, it will soon surpass the U.S. economy. The consumer purchasing power is constantly increasing and at the same time, the labour costs are some of the lowest in the world. As a result, foreign brands profit from hiring Chinese workers as much as selling to Chinese consumers.

A new strategy Outeniqua would like to pursue in China is selling furniture online. However, there are almost 450 million internet users in China, and this dictates their purchasing pattern. But at the same time, there are hardly any stable online payment methods in China and barely negligible credit card penetration. E-commerce is still a fairly new sector in China and the development of its legality will largely aid the current developmental model that the economy is following.

Unfortunately, Outeniqua is not alone in China. Other global players such as The Furniture Barn and Discount Furniture are also interested in developing operations in China. There is also a large home-grown competitor by way of Express Furniture, part of the powerful conglomerate Power Group, the largest company in China.

END OF CASE

Answer the questions that follow in the Word template document provided to you. You can find this Word template in the same ClickUP link as for this exam.

QUESTION 1

[7 Marks]

Question 1.1 [2 marks]

Calculate the total supplier value for each supplier.

Guideline answer: Refer to the Tables below; one mark per correct total.

Exhibit 1: Supplier ratings for three suppliers from India

Supplier		ABC		DEF	
Factors	Weight	Rating	Value	Rating	Value
Capability	4	4	16	5	20
Quality	1	3	3	3	3
Price	3	3	9	3	9
Reliability	2	4	8	3	6
Supplier value			36		38

Question 1.2 [1 mark]

Refer to exhibit one. What is the most important selection criteria when selecting a supplier from India for Outeniqua Furniture? Why do you say so? (1 mark)

Guideline answer:

Capability, because the weight (4) is higher. (1 mark) [student must give the reason too.]

Question 1.3 [1 mark]

Based on the information in exhibit one, which supplier from India must Outeniqua Furniture select?

Guideline answer:

Supplier DEF (1 mark)

Question 1.4 [1 mark]

What is the next step in the procurement process after placing an order at the new supplier in India?

Guidelines answer:

Student can write either:

Follow up and expediting AND/ OR receiving and inspecting goods (1 mark)

Question 1.5 [2 marks]

Distinguish between suppliers for bottleneck products and suppliers of strategic products by specifically referring to supply risk and impact on financial results. Provide an example from the case of products for one of these two categories.

Guideline answer:

[One mark for distinguishing both; one mark for example]

Suppliers of bottleneck products: Supply risk = High; Impact on financial results = Low

Suppliers of strategic products: Supply risk = High; Impact on financial results = High

Example: Supplier of wood – because wood will be a big spend and suppliers are few (1 mark)

QUESTION 2

[7 Marks]

Question 2.1 [2 marks]

Briefly explain outbound transportation as a function of transport. Provide evidence from the case to support your answer.

Guidelines answer:

Outbound transport: The outbound side refers to the finished goods on pallets in containers or tautliner trucks (also called curtainsider trucks) to distribution centres or direct store deliveries in the case of full truck or container loads. (1 mark)

Evidence from the case: (1 mark)

“...furniture products are distributed to retail outlets...”

[If student mentions or implies where OF will use trucks to transport furniture products to their warehouse and also to the retail outlets across the country.]

Question 2.2 [3 marks]

How will *Outeniqua Furniture* transport furniture from their premises to the retail outlets in Cape Town? Justify your answer by covering the entire route and linking the mode(s) of transport to specific stations/ seaports/ airports and providing at least one advantage for each mode.

Guideline answer

- Trucks to the railway station close to OF (accessibility of trucks) (1 mark)
- Train to Cape Town station. (capacity, low cost, nature of goods being transported) (1 mark)
- Trucks to retail outlets (accessibility of trucks) (1 mark)

Question 2.3 [2 marks]

Can variable transportation costs and direct transportation costs be the same? Justify your answer with an example.

Guideline answer:

YES (1 mark); e.g. fuel costs, maintenance costs, lubricant costs (1 mark)

Explanation to check- not required

- Variable costs: The opposite of a fixed cost in that it varies with respect to the distance that the vehicle travels. It varies according to the amount of

operational activity and is often called running cost. These costs include fuel and lubricants.

- Direct cost: Costs directly attributable to a cost centre (vehicle), such as fuel, vehicle road licence and vehicle insurance.

QUESTION 3

[Total: 7 Marks]

Question 3.1 [4 marks]

Briefly explain (a) production complexity and (b) long supply lead times as possible supply chain complexities in your own words and provide evidence for each from the case to justify your answer. (4 marks)

Guidelines answer:

- Production complexity – The wider the product range the more complex production becomes. OF are manufacturing many product lines. (1 mark)
Evidence from case: “... wide range of products that include...” OR “...bedroom furniture, living room furniture, dining room tables and chairs, coffee tables, TV and display units, closets, cabinets, and door frames.” (Students don’t have to mention all these.) OR “Outeniqua Furniture also manufactures furniture according to individual customers' orders in their factory” (1 mark)
- Large supply lead times. Longer time before supplier delivers goods. (1 mark)
Evidence from case: “...wood would take much longer to reach Outeniqua Furniture...” (1 mark)

Question 3.2 [2 marks]

Briefly explain what supply chain integration entails and how it can be used to reduce supply lead times. Provide evidence from the case to support your answer.

Guideline answer:

SCI entails improvement of integration between functions and/ or between different firms. (1 mark)

Evidence from the case: (1 mark)

“...Outeniqua Furniture made a strategic decision to form a strategic partnership with their supplier QB-Wood...”

OR

“...*Outeniqua Furniture* agreed to share more downstream demand forecasts with QB-Wood...”

Question 3.3 [1 mark]

Provide evidence from the case to show how production constraints can be a source of variability in supply chains.

Evidence from the case: (1 mark)

Because furniture was not considered an essential good, *Outeniqua Furniture*, could not manufacture their normal quantities during April and May

Marking guidelines

QUESTION 4**[Total: 10 Marks]**

You have the following information concerning forecasts and actual sales of Outeniqua Furniture's top selling TV cabinets (in units):

Month	Forecast	Actual sales
December 2019	680	780
January 2020	430	540
February 2020	680	630
March 2020	630	580
April 2020	580	620
May 2020	780	690

Question 4.1 [1 mark]

Based on the information use a four-month moving average to make a forecast for June 2020.

Memo:

$$\frac{690 + 620 + 580 + 630}{4} = 630 \checkmark$$

Question 4.2 [1 mark]

Based on the above-mentioned data use a two-month weighted average to make a forecast for June 2020. Use a weighting scheme of 0.7 and 0.3. (Round up your answer to the nearest whole number).

Memo:

$$\frac{690(0.7) + 620(0.3)}{2} = 663 = 663 \checkmark$$

Question 4.3 [1 mark]

Use the year-to-date average method to calculate the forecast for June 2020.

Memo:

$$\frac{690 + 620 + 580 + 630 + 540}{5} = 612 \checkmark$$

Question 4.4 [2 marks]

Determine the economic ordering quantity (EOQ) for the TV cabinets that will be ordered for the Outeniqua Furniture store. Outeniqua Furniture store needs 1 500 TV cabinets per year. The ordering cost is R 100 per order while the calculated carrying cost is R30 per unit. (Round up your answer to the nearest whole number).

Memo:

$$\sqrt{\frac{2 \times \text{annual demand} \times \text{ordering cost (OC)}}{\text{holding cost (HC)}}}$$

$$\sqrt{\frac{2 \times 1500 \times 100}{30}} = 100 \text{ units } \checkmark \checkmark$$

Question 4.5 [5 marks]

Based on the inventory information for the Outeniqua Furniture store below, classify the stock by using the ABC/Pareto analysis:

Product	Number of inventory pieces	Unit cost
Dining room tables	2	R 7 500
Coffee tables	13	R 3 000
Closets	12	R 10 000
Cushions	360	R 100
Door frames	50	R 1 800

Classification of products will be according to the percentage (%) of inventory value that each product represents:

- A products – account for 70% of inventory value
- B products – account for 25% of inventory value
- C products – account for 5% of inventory value

Memo:

Product	Number of inventory pieces	Unit cost	Inventory value	% of inventory value	Cumulative % of inventory value	classification
Closets	12	R 10 000	R 120 000	40%	40%	A✓
Door frames	50	R 1 800	R 90 000	30%	70%	A✓
Coffee tables	13	R 3 000	R 39 000	13%	83%	B✓
Cushions	360	R 100	R 36 000	12%	95%	B✓
Dining room tables	2	R 7 500	R 15 000	5%	100%	C✓
			300 000			

QUESTION 5

[Total: 8 Marks]

Question 5.1 [2 marks]

Identify the global distribution strategy used by Outeniqua to enter the Chinese market. Provide evidence from the case study (**IN YOUR OWN WORDS**) to support your answer.

Memo:

Joint venture✓

Evidence: "In order to lower production costs, Outeniqua set up a manufacturing facility in China by joining forces with DiscountDealers, a large Chinese conglomerate. This partnership will give Outeniqua immediate access to DiscountDealers local distribution system."

OR

"According to Chinese law, foreign companies may not own more than 49% controlling interest in the partnership, as a result, DiscountDealers own 51% of the partnership."

Question 5.2 [2 marks]

Identify one advantage and one disadvantage evident in the case study of the global distribution strategy used by Outeniqua. Provide evidence from the case study (**IN YOUR OWN WORDS**) to support your answer.

Memo:

Advantages: *(any one of the following)*

- **Investing partner being allowed to use knowledge and specialised skills of local partner**
 - "At the same time, the consumer behaviour is quite different than the South African market. Having someone who understands the local culture, languages and tastes can be a benefit."
- **Immediate access to local distribution system**
 - "This partnership will give Outeniqua immediate access to DiscountDealers local distribution system."

Disadvantages:

- **Often the local firm enjoys the benefit of majority ownership**
 - “According to Chinese law, foreign companies may not own more than 49% controlling interest in the partnership, as a result, DiscountDealers own 51% of the partnership.”

Question 5.3 [4 marks]

Identify four uncontrollable global logistic elements evident in the case study. Provide evidence from the case (**IN YOUR OWN WORDS**) to support your answer

Any four of the following

Political and legal systems of foreign markets

“According to Chinese law, foreign companies may not own more than 49% controlling interest in the partnership, as a result, DiscountDealers own 51% of the partnership.”

OR

“The socialist Chinese government is known for making unsettling changes to policies overnight and this affects both Chinese and foreign traders. The strong presence of the Communist Party is also another factor that all businesses must keep in mind at all times. If any product or service or any of its peripherals are deemed to be against the ideals of the Communist Party, then it will be strictly banned. So, all advertisements and marketing strategies need to be revised accordingly when dealing with the Chinese market”

Regional and global economic conditions

“The Chinese economy is currently performing at an all-time high and with the present GDP rate, it will soon surpass the U.S. economy. The consumer purchasing power is constantly increasing and at the same time, the labour costs are some of the lowest in the world. As a result, foreign brands profit from hiring Chinese workers as much as selling to Chinese consumers.”

Technological forces

“A new strategy Outeniqua would like to pursue in China, is selling furniture online. However, there are almost 450 million internet users in China, and this dictates their purchasing pattern. But at the same time, there are hardly any stable online payment methods in China and barely negligible credit card penetration. E-commerce is still a fairly new sector in China and the development of its legality will largely aid the current developmental model that the economy is following.”

Competitive forces

“Unfortunately, Outeniqua is not alone in China. Other global players such as The Furniture Barn and Discount Furniture are also interested in developing operations in China. There is also a large home-grown competitor by way of Express Furniture, part of the powerful conglomerate Power Group, the largest company in China.”

Social and cultural customs

“Outeniqua partnered with DiscountDealers as cultural values dictate a large portion of the social trends in China. Factors such as family size, population growth, dictate how the market operates and as a result, it also ensures that social values are kept in line with the cultural needs. At the same time, consumer behaviour is quite different than the South African market.”

QUESTION 6

[6 marks]

Question 6.1

(3)

Explain the type of warehouse that is used by Outeniqua in China. Provide evidence from the case study (IN YOUR OWN WORDS) to support your answer

A distribution centre (1 mark) Goods are coming from various manufacturer, are sorted and routed to the retailers (1 mark)

Evidence: Outenique but also goods from DiscounDealers will be stored in the warehouse, were it will be grouped according to an order and routed to the retailers.

Question 6.2**(3)**

Explain the difference between two of the activities performed in a warehouse that is creating bulk and breaking bulk. Provide evidence of one of these activities from the case study and link it to the specific activity.

Breaking bulk separating bulk units into multiple units so that it can be transported to outlets. Creating bulk accumulate stock from various suppliers and then moving this stock with one vehicle. (1 mark)

Breaking bulk (1 mark) These furniture products are grouped according to the different retail outlets' orders and then distributed to the different retail outlets. (1 mark)

QUESTION 7**Question 7.1****(2)**

Vertical supply chain integration occurs in three ways namely full integration, partial integration and quasi integration. Which one of these integration strategies is evident in the case study? Provide evidence from the case AND briefly explain what this evidence means in your own words.

Quasi integration (1 mark)

Furniture made a strategic decision to form a strategic partnership with their supplier QB-Wood (1 mark)

Question 7.2**(4)**

Quteniqua furnishers improved their supply chain effectiveness after they formed a strategic partnership with QB Wood. Provide evidence from the case study of 2 supply chain practices evident in the case study after they formed the partnership.

Information and knowledge sharing practices

Quteniqua Furniture agreed to share more downstream demand forecasts with QB-Wood.

Postponed practices

Once customers and retailers placed their orders, *Outeniqua Furniture* would be able to assemble the furniture much quicker which would reduce the delivery times, and which would also enhance customer satisfaction.

QUESTION 8

[9 marks]

Question 8.1

(5)

Identify the 6 external environmental risk categories, evident when Outeniqua decided to set up a manufacturing plant in China. Provide evidence from the case study.

Any 5 of the following :

Political

The socialist Chinese government is known for making unsettling changes to policies overnight and this affects both Chinese and foreign traders. OR The strong presence of the Communist Party is also another factor that all businesses must keep in mind at all times ((1 mark)

Legal

According to Chinese law, foreign companies may not own more than 49% controlling interest in the partnership, as a result, DiscountDealers own 51% of the partnership. (1 mark)

Competitor

There is also a large home-grown competitor by way of Express Furniture, part of the powerful conglomerate Power Group, the largest company in China. (1 mark)

Customer wants

At the same time, consumer behaviour is quite different than the South African market. (1 mark)

Technology

But at the same time, there are hardly any stable online payment methods. ((1 mark)

Culture

Factors such as family size, population growth, dictate how the market operates and as a result, it also ensures that social values are kept in line with the cultural needs (1 mark)

Question 8.2

(2)

Risks in the supply chain process risk category is within the control of the company. Identify the supply chain process risk category that is evident in the case study. Provide evidence from the case study.

Partnering (1 mark)

Furniture made a strategic decision to form a strategic partnership with their supplier *QB-Wood* (1 mark)

Question 8.3

(2)

Explain the trade-off between uncertainty and time with reference to one of the risks identified in question 8.2

Uncertainty reduces as time passes. (1 mark)

As time passes you would get more information about QB Wood suppliers and the uncertainty about the partnership will become less. (1 mark)

END OF SECTION B

END OF EXAM