

CHALMERS

Exam of Management of Physical Distribution, TEK620

Date: 18 March 2020

Question 1 Purchasing of distribution services

9 points

- a) The company AA (see below for description of the case) is planning to purchase all its physical distribution services in one “package”. You have been asked by the purchasing manager at AA to explain to him **what is important for the company to consider in the different steps** of their coming transport purchasing process. In addition to this you should also specifically **explain** of **how they should perform their work in order to find and select a suitable service provider**. (5p)

Grading

The information in the case description should be used and analysed and you should offer explanations, as stated in the question. This includes, but is not limited to, stating that it is a complex service etc and motivate this (could include a comparison between traditional logistics services and third party logistics) and then the different process related to this could give separate points. The points are divided into 2p for selection of suitable provider 3 p for the rest.

1p per step in the process focused on the specific case and what is important (link this to specifics of the case, e.g. number of type of services, geography etc). The provider selection could mention e.g. focus on the management aspects, including tiering of providers, price models.

Important aspects when buying complex services that could be included in the answer are: Clearly define: processes, roles and responsibilities, objectives; Establish a baseline for costs and services; Supply comprehensive and accurate tender documentation

- b) The company AA is also aware that they will have to reduce their environmental impact, including that from their distribution. Explain how the **transport purchasers at AA can contribute to the reduction of the environmental impact of transport**. You should present **explanation based on what transport purchasers at AA can do before as well as after the contract** with the new service provider has been signed. (4p)

1p for each explanation, if related to the case, at least one of them should be before or after contract since both sides must be included.

Examples of actions are e.g which should be related to the specific situation (e.g. limit express freight by air, centrally located distribution centre): Make environmental demands, Pay more for a environmentally adapted transport, Change the service demands, Cooperate with the transport service providers. See also the process model where Sara Rogerson illustrates how ordering of transport influence modal split, lading factor etc which will influence the environmental impact.

Question 2 Pricing

11 points

- a) The company AA (described in question 1), needs help with deciding what type of price model is suitable for them if they finalised the purchase outlined in question 1. **Explain how they should reason when choosing one or several price models to be used for the package of distribution services being bought.** (3p)

Grading:

Suggest a model (based on good arguments) and the market structure should also be considered. For instance "At cost" (and what type) at first since there are a number of unknown elements that takes time to eliminate. This could give 1p and/or the benefits of the model could give 2p and the negative aspects could give 1p

One point could also be given for specific requirements for the different price models.

- b) **If it is possible to make any of the suggested changes would any of them result in an increased profit? If you consider all aspects that may be included as basis for a decision, what do you recommend AGST to do, and why? When making this recommendation you will use available information and make reasonable assumptions.**(8p)

Grading

4p for the calculations: a loss of 50 000 if price increased to 320, profit of 850 000 if price 380 or 200, $P = 460 - 0,004Q$, $Q = 35\ 000, 20\ 000, 65\ 000$, fixed cost = 6 000 000

1 for recommendation

3-4p for motivation and discussion about if it is possible to make the changes. Is it price discrimination?. What is required for price discrimination . Discussion about the market necessary, what type of market is it? What will happen if the price is changed, how will the competitors and the customers react? Is the solution with two prices possible?

Question 3 Urban freight

11 points

- c) In a medium sized European city (more than 500 000 inhabitants) different stakeholders are working together in a so-called freight partnership to create better conditions for urban logistics. This group has asked you to help them the evaluate different urban freight concepts for supplying small businesses in the city centre. They are interested in the **concept off-peak (or off-hour) deliveries**, but they would also like you to present **an alternative transport solution that provides them with similar benefits**. You have been asked to present your result in the form of a systematic evaluation of urban freight systems (an evaluation tool developed by Sönke Behrends, since the stakeholders are used to this after having used it in an earlier collaboration with this researcher). **You are not only supposed to present a table you should also explain and motivate your evaluation.** (6p)

It is not possible to suggest a solution that the users of OHD has no use of.

Relating to the context e.g. that it is a medium sized European city and what that implies, that it is a matter of similar benefits, etc could give up to 2p

The analysis of the two concepts OHD (off peak) and another suggested by you will each give 2p (2X2) and a correct use of the intended table will give 1p, and additional points could be given for good comments.

NB even if the sum could be more than 6p it is not possible to get more points than that

- d) What can the public sector do to manage urban freight, what is it actually doing and what measures can be taken in order to implement the most beneficial actions? You should **select a specific industry/business sector and assess 5 of the initiatives (presented by Ivan Sanchez-Diaz) that the public sector can use to manage urban freight.** (5p)

Grading:

Each initiative assessed from the perspective of a specific industry/business will give 1p i.e. in total 1x5. If there is no industry link but the answer is good there will be 0.5p for each initiative.

Question 4 Evaluation of distribution systems, cost and capacity utilisation

10 points

- a) Take the starting point in two different companies, one small/medium sized supplier to the automotive industry and one large food retailer and explain the different challenges these companies may face and how they may improve the balance between the required and available load capacity. (4p)

For each type of company 2p (total 2x2=4). The answer must be related to the companies.

For full point (2p) it is necessary to relate to the work by Santén (from her lecture or her writing) otherwise the max for each part is 1,5p

Each 2p is divided into: 1p challenges 1p how to improve balance (both could include the different levels etc, required and available and what to influence)

- b) Explain how to evaluate the important role of transport cost for a Swedish export company and how its revenues will be influenced by changes in the transport cost. (4p)

Grading

Revenues are correlated to size of the market, which could be described as the market area which is a function of the distance to customers which is influenced by the transport cost.

The answer to the question could be found in the book Economy of transportation systems, chapter 6 and the following figures were shown at lecture 3 about transport cost analysis Figure 6.1, 6.2, 6.3, 6.5, 6.6

Reducing the variable costs can result in the company reaching a larger market (see Figure 6.1). 2p, but it is not only that customers could be located further away, the transportation costs will influence the company's market square fold because if the variable costs decrease, then the market area (MA) increases with the square of the distance from the production location to the customer (see Figure 6.2). 2p

Discussions based on figure 6.5 has also been awarded points.

- c) In order to analyse a manufacturing company's physical distribution, one may have to internalize different intangible effects into a total cost. Give different examples of intangible effects that may need to be internalized if a total cost analysis should be performed and also how to perform this internalisation. (2p)

Grading

Service aspects influencing the revenues...0,5 + 0,5 how to analyse: 1p

Environmental aspects0,5 + 0,5 how to analyse: 1p

Question 5 Distribution structures and Division of roles

12 points

- a) Explain what **threats and opportunities** an increasing use of **horizontal collaboration and crowd logistics** respectively offer logistics **service providers**? Your answer should not only consider when providers are collaborating, but also how they are influenced by **these general trends**. (4p)

Grading:

Total 2p horizontal collaboration among providers: legal aspects to this etc, 1p opportunities cost, service, market position 1p threats: reliability, dividing the gains, 1p

total 2p collaboration among shippers and crowd logistics influencing the providers Opportunities: Shippers offer a package that increase efficiency, consolidate, increase load factor, collaboration with crowd logistics 1p Threats: Shippers gain power and pressure providers, crowd logistics becomes a competitor 1p

- b) The high-tech company ABC (see below) needs to improve their distribution system. Use the case description below and the course material to discuss how **different solutions** can be used by ABC to potentially improve their distribution system performance. You should specifically explain how they should **structure and organise** their distribution system from a **cost and customer perspective** considering their current situation and goals. (8p)

Very open question which however must be firmly related to the case description. Explicitly based on this you suggest solutions and discuss them in the following for dimensions:

Structure (2p) and organise (2p)

Cost (2p) and customers (service) (2p)

Question 6 Information systems

10 points

- a) The company ABC described in question 5 is in need of improved information that can support their physical distribution in a good way. The company ABC is now working on a new information system strategy and it needs your help to better understand the potential role smart transport management could have in this. **Discuss both advantages and disadvantages** of implementing the **different parts of smart transport management** in **this company**. (5p)

Grading:

General presentation of advantages and disadvantages for different parts can only give max 2p if there is no link to the company ABC in question 5.

A correct answer, with reference to the company may still only get 4.5p if there some specifics for the case company is lacking.

- b) The logistics manager of the company Apelsin has contacted you again and asked you to explain how the company (where you have been working as a consultant) should choose a suitable **Transport Management System (TMS)** based on the distribution solution you previously have suggested. **What type of system do you recommend** for Apelsin's distribution and what are the **advantages of using TMS** for **the company?** (5p)

Grading:

5p requires clear connections between solution and benefits with details from case company. The answer should elaborate on types of TMS and what is specific in the case of Apelsin. Even if the answer contains this there might be a lack of Apelsin specific points in in some parts and therefore not full points given.