

**Exam in Purchasing & Supply Management TEK416 – Fall 2020**Date: 26 Oct 2020

Time: 08:30-12.30 Morning session, 4 hours

Examiner: Professor Árni Halldórsson (Tlf. 031 772 1582)

**Information**

- The exam paper consists of this front page and a set of five questions (some of which may contain a, b, etc.). **Please answer all of the following five questions.**
- A standard calculator and an English dictionary are allowed.
- The results will be announced through Ladok.

**Instructions** for the exam and your answers:

- Your result from this exam (weight: 75%) will be added to your results from other graded activities in the course (weight: 25%). Together, these results make up your total grade in the course.
- A maximum of 75 points can be awarded for the written exam out of a total of 100 in the course. All course elements must be passed to pass the course overall.
- The weight of each question below is indicated by the number in parenthesis (points).
- Marks will be awarded for answers that reflect knowledge of theoretical principles from the literature supported by examples from cases and industry and indicate an awareness of the managerial implications of the issues raised.
- To get full points on a question, your answer must be comprehensive, well elaborated, illustrated/exemplified, and well-presented (written language, structure).
- You are welcome to draw a figure/diagram or a table as a part of an answer and insert it into your answer.
- All aids are allowed. However, it is not permitted to cooperate with or take help from another person.

**Tips** for answering:

- Read and analyse – briefly – all questions before you start answering the exam paper
- Plan the whole time according to your brief analysis of the exam
- Don't forget to allow for some time to review your answers in the end
- If you "get stuck" on one question – go to the next one
- Think about your handwriting; make sure it's easy to read your answers
- You are allowed to use a pencil for your answers

**Good luck!!!**

Please answer all of the following five questions:

**Question 1 (12 points)**

The West Link (Swedish: Västlänken) is a railway tunnel under construction under central Gothenburg. The purpose of the project is to increase capacity and reduce travel times on the Gothenburg network by changing the Gothenburg Central Station from a terminus to an underground transit station. The construction cost for the project was estimated at SEK 14.5 billion, using a price index of January 1, 2007. By 2012 the estimated cost had increased to 20 billion. The official construction start ceremony took place on 30 May 2018.

A construction company is hired to complete the project Västlänken in Gothenburg. The project is already ongoing, but a new contract has to be established since a new construction company will take over the project due to delays and increased costs. The project is lengthy and complex, and the scope of the work as well as the cost for performing part of the work are not well known beforehand.

- a) Define the project and its characteristics (scope of work, the share of risk, predictability, etc.) and analyse these with respect to the following two pricing strategies: 1) fixed cost, 2) cost-reimbursable contract. Based on this, which of these two would consider being appropriate to use? (8 points)
- b) Identify four challenges that may occur in the contracting process between the buyer and the supplier in the setting above, and illustrate these with respect to the context described above. (4 points)

**Question 2 (8 points)**

Cross Inc. has been buying its freight forwarding needs from the three winners of its last year's tender: Bring, Cargo and Trace. Last year was the first time Cross Inc. decided to select its freight-forwarding partners through such a tender. After a year of business, the management team would like to evaluate the three suppliers' performance and renew the contract with only two of them.

Reliability, price, and flexibility are the important aspects for this evaluation. The result from the internal survey on the importance of criteria has been as follows: **reliability** has been "almost strongly preferred" (numerical value 4) in comparison to **price**, and "very strongly preferred" to **flexibility** (numerical value 7). On the other hand, **price** was judge "slightly preferred" to **flexibility** (numerical value 2).

Based on the data from last year's performance, **Bring's** price was "strongly preferred" (numerical rating 6) to **Cargo**, but only "moderately preferred" (numerical value 3) to **Trace**, while **Trace's** price was "slightly preferred" to **Cargo** (numerical value 2). But, in reliability **Trace** was "moderately preferred" (numerical value 3) to **Bring**, and "strongly preferred" (numerical value 5) to **Cargo**. **Bring's** reliability was very strongly

preferred to **Cargo's** (numerical value 7). **Trace's** flexibility was also "almost strongly preferred" (numerical value 4) to **Bring**, and "slightly preferred" (numerical value 2) to **Cargo's**, which in turn (i.e. **Cargo's**) was "moderately preferred" (numerical value 3) to **Bring**.

Your task: Use the analytical hierarchy process (AHP) to assess which two suppliers should the company renew its contract with and provide an explanation that motivates your selection.

**Question 3** (16 points)

There are three common ways to design the PSOs organizational structure: Centralized, decentralized, and hybrid. Describe these three structures and discuss each of them by arguing for what in situations the structures may be best suited. Illustrate key points with examples.

In addition, explain the three different types of pooling/organization within the hybrid structure.

**Question 4** (23 points) – concepts and their usefulness to purchasing professionals

Explain the following concepts and discuss in brief their usefulness to purchasing professionals. Illustrate key points with examples:

- a) Asymmetric information (5 points)
- b) Functional specifications (5 points)
- c) Withdrawal as a purchasing strategy to increase power (5 points)
- d) Negotiation is a core skill in purchasing and supply management. There are several information-processing barriers to constructive negotiation that prohibit people from reaching mutually beneficial, integrative agreements. These barriers can be studied according to three principles: (1) cognitive heuristics, (2) naïve realism and (3) ego defensiveness. Please choose one of these principles; motivate your selection, and explain and exemplify what the principle means. (8 points)

**Question 5** (16 points)

*As an external consultant, with expertise in purchasing and supply management in particular, you are asked to consider the following background, context and tasks.*

**The supplier:** Bean2Cup has since the 1990s has had a successful history as a fast-growing designer and manufacturer in the market for industrial/commercial coffee machines offered to hotels, cafés, restaurants, and hospitals with a strong presence on the market in Europe. Currently, the assortment consists of two brands; "Quick", which comes in four different varieties that are sold to customers through local dealers, who manage all contact with the customers. This brand aims to cover the low-cost, not-so-

demanding customer segment. For this market, competition is fierce, fuelled by entrance of new players offering cheap models with simple, standard features. Interestingly, a number of big and well-established customers are increasing considering quality and environmental footprint of the products and services they are buying. However, almost without exception, these customers do currently regard coffee machines and related services as merely a routine item. The other brand of coffee machines ABCM offers, "Best", is regarded as a high-quality product, allowing ABCM to demand a premium price on the market. The customer offering includes

coffee machines and related accessories and services. Customers buying "Best" are offered a complete service package, ranging from coffee beans, cups and mugs towards full, 24/7 up-time of the coffee machines. Bean2Cup makes use of the latest sensor technology to monitor in real-time the usage of each individual coffee machine, and keep track on need for maintenance or replacement of components such as steam wand, nozzle, cup warming tray, portafilter, control panel and drip tray.

**The buying organization:** Jackie Brown is heading the purchasing department of Blue Hotels -- a big hotel chain with more than 90 hotels in the Nordic countries. Until today, each individual hotel side has been responsible for sourcing of all types of coffee machines, normally from local vendors. Such multiple sourcing is regarded as less than optimal, for both environmental and economic reasons. A next step for Jackie Brown is to develop a new sourcing strategy for coffee machines and related accessories (cups, coffee beans) and services (repair, maintenance, recycling). In contrast to the current local and multiple sourcing, the new sourcing strategy would ideally rely upon few or even one key supplier such as Bean2Cup. It is though not certain that one solution can fit all types of purchasing situations. The hotels use coffee machines such as "Quick" for staff and other back-office locations at the hotels. The "Best" solution are needed at locations and operations that are customer-facing (e.g. breakfast room, and where operational efficiency in and around customer service is crucial. To assist this transition, a new, central purchasing organization will be established by Blue Hotels.

With insight into theories, frameworks and concepts in purchasing and supply management (the course TEK416), you have been appointed as an external consultant, working for the customer in the setting above, to provide an input into a new sourcing strategy.

- a) Analysing the context above as being "sourcing services", what do you see as the three most important challenges for the buying organization with respect "supply risk"? (10 points)
- b) What approach to "supplier relationship management" would you like to suggest to address the issues you identify in question a)? (6 points)