Operations Management

Test 1 Fragenkatalog 23.4.2013

1. Definieren Sie Operations Management, Prozess, Produktionssystem.
2. Erarbeiten Sie den Unterschied zwischen taktischen und strategischen Entscheidungen.
3. Welche Punkte beinhaltet die Firmenstrategie (cooperate strategy)
4. Was meint man mit Betriebsablaufstrategie (operations strategy)
5. Specify seven competitive priorities and subdivide them into Cost, Quality, Time and Flexibility.
6. Explain core competencies in connection with
    a. Workforce
    b. Facilities
    c. Market and Finacial Know-How
    d. Technology
7. Explain make-to-order, assemble-to-order (postponement) and make-to-stock strategies.
8. Do the same as in 7. for services (standardized services, assemble-to-order services, customized services)
9. Decision tree similar to metal decision group. (confer Appendix to this document)
10. Erklären Sie das “Game against nature”
11. Erklären Sie das Zeitungsjungenproblem; Anwendungsbeispiel aus der Wirtschaft (Airline)
12. Entscheidungskonzepte/findung unter Unsicherheit (Maximin, Minimax regret...)
13. Entscheidungskonzepte/findung unter Risiko (EMV, EPPI, EVPI, Value of Information)
14. Erklären Sie Pareto-Koopmans Effizienz.
15. Erklären Sie die Grundidee der DEA (Data Envelopment Analysis).
16. Zu vorgegebenen Daten das CCR/BCC primal/dual Modell aufstellen.
17. Was ist das „Production Possibility Set“
18. Listen Sie verschiedenen Typen von Ineffizienzen auf und erklären Sie.
19. Fragen zu zentralen Prozessentscheidungen:
    a. Give examples for a job process:
    b. Give examples for a batch process:
    c. Give examples for a line process:
    d. Give examples for a continuous process:
    e. Erklären Sie die Produkt-Prozessmatrix
    f. What’s a job shop? (Was ist eine Werkstattfertigung?)
    g. What does vertical integration mean? Explain backward and forward integration.
    h. Explain network companies (in connection with vertical integration and not in the connection with a computer network)

Appendix

A government committee is considering the economic benefits of a program of preventative flu vaccinations. If vaccinations are not introduced then the estimated cost to the government if flu strikes in the next year is £7M with probability 0.1, £10M with probability 0.3 and £15M with probability 0.6. It is estimated that such a program will cost £7M and that the probability of flu striking in the next year is 0.75.

One alternative open to the committee is to institute an "early-warning" monitoring scheme (costing £3M) which will enable it to detect an outbreak of flu early and hence institute a rush vaccination program (costing £10M because of the need to vaccinate quickly before the outbreak spreads).

Draw a decision tree that helps to answer the questions, what recommendations should the committee make to the government if their objective is to maximise expected monetary value (EMV)? Solve it.

A company faces a decision with respect to a product (codenamed M997) developed by one of its research laboratories. It has to decide whether to proceed to test market M997 or whether to drop it completely. It is estimated that test marketing will cost £100K. Past experience indicates that only 30% of products are successful in test market.

If M997 is successful at the test market stage then the company faces a further decision relating to the size of plant to set up to produce M997. A small plant will cost £150K to build and produce 2000 units a year whilst a large plant will cost £250K to build but produce 4000 units a year.

The marketing department have estimated that there is a 40% chance that the competition will respond with a similar product and that the price per unit sold (in £) will be as follows (assuming all production sold):

	Large plant	Small plant
Competition respond	20	35
Competition do not respond	50	65

Assuming that the life of the market for M997 is estimated to be 7 years and that the yearly plant running costs are £50K (both sizes of plant - to make the numbers easier!) should the company go ahead and test market M997? Draw a decision tree and solve it to answer this question.

A householder is currently considering insuring the contents of his house against theft for one year. He estimates that the contents of his house would cost him £20,000 to replace.

Local crime statistics indicate that there is a probability of 0.03 that his house will be broken into in the coming year. In that event his losses would be 10%, 20%, or 40% of the contents with probabilities 0.5, 0.35 and 0.15 respectively.

An insurance policy from company A costs £150 a year but guarantees to replace any losses due to theft.

An insurance policy from company B is cheaper at £100 a year but the householder has to pay the first £x of any loss himself. An insurance policy from company C is even cheaper at £75 a year but only replaces a fraction (y%) of any loss suffered.

Assume that there can be at most one theft a year. Draw the decision tree, if x = 50 and y = 40% and his objective is to maximise expected monetary value (EMV). Solve it.