

Name student

Student number

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Coursecode

MOT1433

Signature

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| Course: | Technology and Strategy | Section: | Technology, Strategy and Entrepreneurship |
| Coursecode: | MOT1433 | Type exam: | Closed book |
| Date: | 17-4-2013 | Time: | 9:00-12:00 |
| Teacher: | Dr. G. van de Kaa Prof.dr. C.P. van Beers | Total pages: | 12 |

Instructions

- Closed book
- Write your name on each exam page
- Do not take your exam pages with you
- Limit your answers to the boxes
- Write clearly and readable
- No (graphical) calculator

Additional

- Total number of open questions: six (each has a, b, c or d-questions)
- 58 points is 6,0

Advices

- First read the questions.
- Think before you write on the exam sheets. Write your answer on scratch paper.
- Arguments are important.
- Formulate clearly and careful: it is not about what you meant but what you write on paper.

Question 1

The American economist William Baumol argues that the success of a capitalistic economy can be explained by routinization of innovation processes in big firms. Big firms have sufficient resources to maintain a continuous process of producing innovations. The Austrian-American economist Schumpeter developed an innovation theory in two parts, so-called Schumpeter I and Schumpeter II.

1a. Describe both parts of Schumpeter's innovation theory and explain whether or not Baumol's ideas are related to either one or both of them.

The focus of big firms on routinization of innovation processes triggers governments to formulate policies aimed at stimulating collaboration schemes through technology clusters.

1b. What are technology clusters and how do these stimulate innovation

1c. Is the following statement *in italics* true or false? Explain why.

Technology clusters as a way to stimulate innovations originate from the line of thinking that can be found in the Linear Innovation Model

1d. The new manager of a Research and Development (R&D) department of a large pharmaceutical company has to decide on allocating his annual budget. He can choose between allocating it such that his R&D department will focus on basic research or on applied research.

What would you advise him? Explain why.

Question 2

The main aim of a firm's strategy formulation is to achieve sustainable competitive advantage by reducing uncertainty of the firm's external environment. Two instruments to do so are the Five-Forces Analysis of Porter and the Value Net Analysis of Brandenburger and Nalebuff.

2a. Describe how both instruments can be used to formulate a strategy.

A recent phenomenon in the strategic management literature is the concept of frugal innovations.

2b. What are frugal innovations and how do they fit in the strategic management literature.

2c. Is the following statement in *italics* true or false? Explain why.

Using quantitative methods for choosing which R&D projects to pursue are the recommended methods in a rapidly changing technological environment.

Question 3

A central element of a firm's strategic commitments is that these should be able to alter the competitor's behavior.

3a. What are the requirements of strategic commitments in order to change the competitor's behavior? Apply these to the real world example of Airbus vs. Boeing with regard to the respective plans and production of the A380 and the 747X.

3b. Explain what it means if a strategic commitment is *tough*.

3c. Describe shortly whether in the Microsoft case – as dealt with in class – the standard innovations protection mechanisms as summarized in the anti-trust laws did or did not work.

Question 4

4a Explain which aspects affect the value of a technology to users besides its technological standalone value in markets that are characterized by increasing returns to adoption.

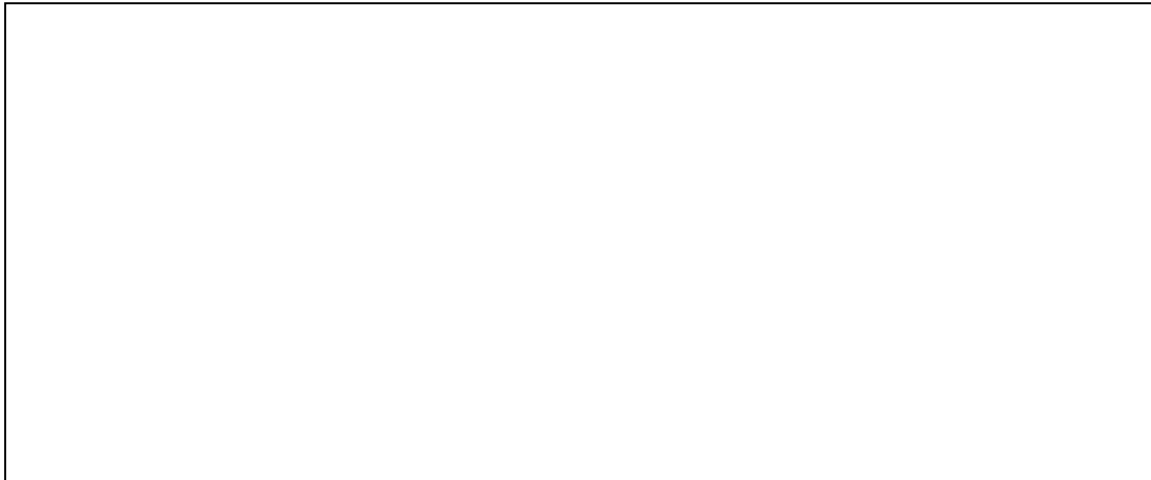
4b Firms can take advantage of the fact that users rely on both objective and subjective information in assessing the combined value offered by a new technology. Explain by describing the two subjective components that determine the value offered by a new technology. Also, mention at least one strategy that can be applied by firms to affect these two subjective components.

Question 5

5a Explain what is meant by path dependency and explain how it can relate to the phenomenon of technological lock-in.



5b Explain why in some markets, which are characterized by increasing returns, multiple technologies may co-exist and achieve market dominance. Make use of a sketch.



Question 6

6a Explain what is meant by the concepts installed base, availability of complementary goods and network effects, and explain how these factors for standard dominance are related to each other and to the concept of standard dominance. Make use of a conceptual model.

6b Extend the conceptual model (answer to question 6a) by including three other factors for standard dominance and argue how they relate to the factors in the model.