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**Guidelines for the examination paper in Telecommunications Economics. Winter 2013/2014, date 18.12.2013.**

**Criteria for top performance in assessments of examination in 'Telecommunications Economics'.**

*To obtain the highest grades in the assessments of examination in 'Telecommunications Economics' the following general criteria shall be met:*

*The student shall*

- *demonstrate knowledge of all the relevant concepts and factual items regarding the questions raised and of the relationships between these*
- *be able to design an analysis to give a thoroughly description of the problem and find possible solutions to the questions raised*
- *give a survey of the relevant economic issues regarding the questions raised*
- *explain constraints and uncertainties in the presented solutions, often in the form of trade-offs between different objectives.*

*As more concrete criteria - depending on the actual questions raised in the examination - the following shall be demonstrated:*

*Knowledge of*

- *the main trends and relationships in the ICT sectors (ICT=Information and Communication Technology) regarding demand, supply, prices, market players, technical solutions, regulation etc.*
- *the main economic and technical concepts and items used in the ICT sectors, especially for telecommunication, the Internet and supply of radio and TV channels.*

**The minimum criteria for passing the examination.**

*The student shall demonstrate knowledge of*

- *the most important concepts and factual items that are relevant for answering the questions raised*
- *the most relevant trends and relationships in the ICT sectors*
- *the possibilities and limitations of the use of relevant economic analyses.*

*Acceptance of a limited amount of small and medium failures in the analysis presented, but normally no major failures can be accepted.*

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### Question A.

There are different ways to answer the question. It is important to show an understanding and overview of different relevant concepts and to organise the presentation in a well-structured way.

The answer shall include several of the following issues:

- The concept of network neutrality can be defined in different ways: The main point is that telecom operators are not allowed to discriminate traffic or to differentiate prices for end-users for broadband access, related to the category of content, they receive, or especially related to the supplier of the content.
- Present the concept of managed and unmanaged services and the concept of Quality-of-Service QoS.
- Present the dilemma about the OTT players that receive increasing revenue, and the network operators that need to make big investments in network capacity caused by increasing traffic volumes.
- Present the possible remedies that might be used to regulate behaviour that may be in conflict with an objective of network neutrality.
- Discuss pros et cons for a strict regulation of network neutrality, seen from the operators, the OTT players and the customers point of view.

### Question B.

There are different ways to answer the question. It is important to show an understanding and overview of different relevant concepts and to organise the presentation in a well-structured way.

The answer shall include several of the following issues:

- Present the dual regulation of sector specific telecommunication regulation (mainly ex ante) and regulation based on competition legislation (mainly ex post).
- Present the concept of a dominant player in the telecommunication market. Describe how analyses of dominance are made: define the market in relation to demand and supply substitution and the so-called SSNIP test.
- Describe how incentives in the market place might cause prices to be decreased towards the level of marginal costs, because of the cost structure with high fixed costs and small variable costs for telecom operators.
- Present with simple formulas or describe verbally how predatory pricing, margin squeeze and bundling tests are defined for a dominant company.
- Discuss on this background the effects from the competition legislation tests on the long term profitability of telecommunication services and the industrial structure.