

Home examination in INF 5210 Information Infrastructure 2003

English text.

The final home examination is divided in two themes with questions for each part. In this exam, you will be using the different parts of the theoretical material from the course on the cases described below. When you use theories and terms from the syllabus and other relevant literature, you must explain your use of them and use correct references as in an academic article. Where it is asked, you will have to provide more detailed explanation.

The themes below are described in a Norwegian context. You may, if you are not a Norwegian student, choose to find a corresponding context in your own country. When doing so, you have to explain and document your cases, and provide sufficient links to relevant sites with English text. Enquiries about this can be discussed with the course teachers (Sturle H. and Arild J.).

You can define and interpret the content of the questions, but this must be clearly documented in the essay.

*The essay should be about 6000 words long; not counting references and attachments. It must be handed in before **Friday the 5th of December** at 3 p.m. as stated on the course web.*

Case description:

The first theme deals with the hotel sector and tourism in Norway: One of the larger hotel chains initiates cooperation with smaller hotel chains and local hotels, motels, inns etc., to build an ICT infrastructure. The aim is to offer different services to the potential customer and support the cooperation between service providers within the tourist industry. In this way, this initiative should promote Norwegian tourist destinations and help visitors to plan and organize their travel in Norway. The cooperation may include public and private organizers of different arrangements/activities and cultural happenings. It should be open to cooperation with other areas of expertise.

The purpose with this new infrastructure can be:

- To function as a net portal for distributing information, marketing, communication with guests; and to help planning and organize traveling that needs transport and accommodations in more than one location.
- Offer booking of rooms/tickets for arrangements, adventures, transport, equipment rental and more.
- Joint network for cooperation, available means for administrative aid, as e.g. accounting, salary, purchasing and more.
- A common, safe and secure way of electronic payment on charge cards. (Pay over net.)

This is not a complete list and you may include other common services if you find them of any importance.

The different actors have a diversity of technical solutions; many have already established their own web sites. The solution (infrastructure) is then to be a portal for these web sites and in addition provide its own services for all participants. The premises for the cooperation is that each individual participant will exist as an individual enterprise and maintain its own ICT solution (as e.g. LAN/intranet)

This cooperation involves coordination of some selected functionalities as e.g. electronic forms for booking, exchange of data about the customers, economical data and more. The extent of the cooperation must be determined in the future project work.

There exist already other actors in the market providing similar solutions and one of the challenges will be to develop a concept that is feasible and serves its purpose for the potential participants.

Theme 1 (50%) Developing a hotel sector infrastructure.

Propose a strategy for building this type of information infrastructure. Here you are to sketch *how* the work should be done, *what considerations* to be made, *what factors* you have to pay attention too in this work etc. Make *a figure* as illustration. You are to apply the theory from the syllabus as arguments for the actions proposed. You shall answer the following questions:

- a) *Sketch a proposal* for a superior architecture for this new information infrastructure. State what parts (layers, sections) that are integrated and a general description of the *functionalities*. Illustrate this using a figure. State what type infrastructure (s) are involved? (You may use examples from the net (www) which has similar functionalities and argue why these are relevant.)
- b) Describe briefly these terms; *installed base, network externalities, path dependency, lock-in bootstrapping, gateways* and their relevance for this work.
- c) This project entails that many actors with different cultural and professional background; different interests and goals will interact in this work and thereby influence the work. You must then carry out *an analysis* with the help of the *ANT framework*. (*ANT – Actor Network Theory*) where you describe some of the expected conflicts of interest that may arise and how you suggest to deal with them in the development process and use of the infrastructure. In this analysis you are to use the most common concepts of ANT.

Theme 2 (50%) Strategy for broadband development in Norway

As you are familiar with, there has been an intense debate, both in professional/technical sectors as well political, regarding development of broadband in Norway. There are vast amounts of information about this subject. The following links provides relevant information:

Nærings- og handelsdepartementet : <http://www.enorge.org/>

Høykom-sekretariatet : <http://www.hoykom.net/>

The assignment is to sketch elements in a strategy for the further building of broadband network in Norway (or any chosen country). It must include the following:

- a) Based on the analysis in the deliverables, there were identified *different problems (challenges) in the development of an infrastructure*. Describe some of these and argue what can be *learned* from these with relations to a national ICT broadband infrastructure.
- b) Find 2 (two) *short articles/chronicles* (from www or papers) that discusses the development of broadband in Norway (or a chosen country). Comment on these with basis on the information infrastructure theory.
NB: The articles are to be delivered along with the paper as attachment
- c) Make a *sketch of your own strategy proposal* for this work, where you build on the deliverables and otherwise theories and case descriptions from the syllabus and lectures.

End of the questions.