



CHALMERS

IDY035 Economics of Innovation: Take home exam autumn 2010

Handout and hand-in of your exam

The take home exam can be downloaded from the study portal from Wednesday 13 October 2010 at 17:00.

Deadline for uploading the hand-in on the study portal is Friday 22 October at 12:00.

Please contact Magnus Holmén (examiner) and/or Daniel Ljungberg (course assistant) if you have any questions.

The link to the course evaluation survey will be soon be provided on the study portal.

Grades

The maximum number of points is 100, which is the sum of the results from the take home result (max 80 points) and project 2 (max 20 points).

You are awarded two bonus points if you answer the student evaluation form.

- 80 points or more give grade 5.
- 65 points but less than 80 points give grade 4.
- 50 points or more give grade 3.
- Less than 50 points means that you have failed to pass. To pass you also need to have \geq 40 points (50% of the total) on the exam.

Rules of the exam

You are only allowed to draw on the course material. Explanations or concepts that are found “elsewhere” are not considered.

You must write all of the answers in full by yourself!

You can be selected to take an oral examination after your hand in of the exam. This is to make sure that cheating will not take place.

For question 1 and 2, you need to provide an abstract that outlines the key message(s). An abstract is a short synthesis of your entire reasoning, capturing all essential details. Your full answer must derive the abstract in the sense that it provides a richer description of your abstract.

You must show who has defined the concepts, models or frameworks that you draw on. It must be clear to a reader when you use the concepts or explanations of others and when you make your own contributions.

You do not need to write down a full reference list of the course articles that you use. However, you need to write e.g. (Nelson and Winter 2002) or “According to Nelson and Winter (2002)...” when you refer to them in text. (You can use another reference standard if you apply the same rules).

When you refer to the course books you do need to refer to the page(s) that is relevant.

Any quotes must be properly referred to including the page(s), e.g. Nelson and Winter (2002, p. 26).

There is a word limit on question 1 and 2 and a “time limit” on question 3.

The course material includes the two books, the papers, the slides, and your own work on project 1 and project 2.

Format of your hand-in

- Please write your names and page number on all of your submitted pages
- Use consistent formatting and use spell check

QUESTION 1: THE THEORY OF INDUSTRIAL DYNAMICS (35 points)

You are a somewhat disgruntled PhD who is rather tired of the sloppy use of the word “competition”, which tends to rely on metaphors (“war,” “lean and mean”, “roller coaster ride”, “management by fear”, “management by perkele”) or ad hoc explanations. Therefore, you have decided to provide a rigorous explanation of the *competitive process*. To do this, you need to a) identify an empirical phenomenon that b) you explain by applying c) a set of well-defined and explicitly related concepts.

More precisely, your first task is to set up a framework to analyse the competitive process. This entails identifying key concepts (maximum 12) that you draw from the course literature and outlining the relations among the concepts. This framework will become your explanation once you apply it to your phenomenon. Note that this framework is your own creation and that it is *based on* existing concepts, frameworks and theories.

Your second task is to identify a relevant phenomenon. Your phenomenon is the *transformation of industries* which consists of changes in the relations among actors over time.¹ Empirically, you will take one industry that you are familiar with and briefly *describe* how it has changed during the last decade in terms of actors, what they do and their relations. (Draw on the industry you analysed in Project 2 for this; alternatively deal with another industry that has been covered in the course. Note that if whatever you analyse has not changed in a way that you can identify; instead explain why the competitive process has not – yet ? – changed the industry).

Your third task is to ensure that your explanation complements, rejects or advance other explanations. You do this by comparing your framework with one or two relevant and related frameworks / explanations / theories that you find in the course material (papers, books, slides). (You can assume the reader is familiar with these so you can be brief here. Don’t write more than a page altogether).

Your final task is to apply your framework to *explain* these changes. (This explanation is your theory).

The maximum amount of words is 3500, excluding the abstract and figures/models (if any).

You answer starts with an abstract, maximum 120 words that outline your key messages. *Please note that you entire essay must lead to what you claim in the abstract!*

QUESTION 2: FIRST WE TAKE MANHATTAN (25 points)

You are the manager of Reliable Gadgets (RG); a newly started company that has developed a small sensor (μm) that has unique advantages in measuring instantaneous pressure changes, radiation vectors, and temperature changes over long periods of time. There aren’t any noticeable disadvantages with it compared to other sensors on the market.

¹ An actor is any type of player relevant to your explanation and your phenomenon. A relation refers to any type of dependence or interdependence among actors that is relevant to your explanation and your phenomenon.

In addition to yourself, your staff consists of three experienced and well known engineers. RG does not have any resources to speak of apart from a set of standard tools in a garage where the company presently resides. The sensor has been developed in the spare time between consultant work.

The company's sole revenue stream consists of consultant work but apart from that you don't have any financial assets. However, you can get funding from an investor if you can present a plausible business plan.

From an estimation of the potential potential market size, you have identified the a) automotive, b) nuclear power plant operations, c) respirator monitoring as interesting.

You want to formulate a strategy for your company in terms of how you should prioritize entry into different industries from the likelihood of becoming profitable. As a first step you need to formulate and compare possible ways of viewing the problem and come up with your own framework. The second step is to apply this framework to your setting. Please state whatever assumptions you need to use in your analysis.

The maximum amount of words is 2500, excluding the abstract and figures/models (if any).

You answer starts with an abstract, maximum 120 words that outline your key messages. *Please note that you entire essay must lead to what you claim in the abstract!*

QUESTION 3: INNOVATION IS A DIRTY BUSINESS (20 points)

Not all progress is beneficial, indeed some changes or ongoing activities may have dire consequences for the economy. Indeed, a group of billionaires believe that in order to make economic growth beneficial to mankind, it is a must to better understand where qualitative and quantitative changes in the world economy may go wrong. These people have come to realize that there are so many notions, claims, myths and metaphors that are in use that some more rigorous approach is warranted. As a first step, the nature of the problem must be formulated. Consequently, they have given you the assignment to provide a list of concepts and how they are related in order to explain why progress may lead to negative societal effects for society / the economy.

Please explain² this by relating different levels of analysis to one another by drawing on course concepts. Do this by identifying a set of concepts (maximum 10) that you systematically relate to one another.

Report your argument in terms of slides; your presentation is to last ten minutes and not more.³

Please note that you can *only* concepts or sources that are not part of the course. *It is not allowed to use any other material!*

² This means that it is not acceptable to come up with claims of likely consequences. Instead these needs be demonstrated. Trivial relations or facts do not count as explanations, such as "we are richer so we consume more".

³ The project 2 rules for writing your slides applies here; you can show some additional information as notes if that is equivalent to what you will say.