Course Syllabus
ME2096 ICT Innovation Study Project

KTH Royal Institute of Technology
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Course coordinator and teachers

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Course description and main content

This course covers two different fields with similar concepts, methods and/or tools: innovation and marketing. The course is based on student driven projects and case studies. During the course, students will have the opportunity to learn about innovation theories and marketing theories and practicies, analyse real technical innovations in relation to business and societal settings, as well as to develop new knowledge, ideas, and strategies for innovation theory and marketing.

Intended learning outcomes
After passing the course, the students should be able to:

1. Apply, synthesise and evaluate previously acquired knowledge of innovations and marketing for a specific innovation area
2. Carry out a marketing analysis, make a decision about and design recommendations or justify decisions in a real environment
3. Choose between and apply relevant concepts and methods and/or tools as well as collect relevant data to implement a business analysis and make decision in a real environment
4. Apply concepts, methods and tools to identify and evaluate the value of an technological innovation in a sector, market and/or organisation and the innovation and commercial possibilities that they result in
5. Produce a professional text about a subject related to marketing analysis. With this, also write an academic text up to social science standard with references to the academic literature

Course structure
This course consists of 10 sessions, including 2 student-driven sessions (flipped classroom) where students present their studies. The course framework includes an individual assignment and a group project carried out in collaboration with a company.

Sessions and related literature

Sessions 1a - Course Introduction

Sessions 1b - Industrial Transformations and Technical Change part (Johan Nordensvärd) - Read Abernathy and Utterback (1978), Arthur (1989), Christensen and Rosenbloom (1995), Dosi (1982) and Unruh (2000)

Sessions 2 – Understanding the Market (Anna-Maria Nyquist)
Read chapter 1-7 in Kotler, Armstrong and Parment (2020).

Sessions 3 – Navigating the Market (Anna-Maria Nyquist)
Read chapter 8 - 14 in Kotler, Armstrong and Parment (2020).

Sessions 4 – Innovation Management (Johan Nordensvärd) Read chapter 1-4 in Tidd & Bessant (2013) and Stabell. & Fjeldstad (1998).

Session 5 – Brief online lecture on the assessments

Session 6 – Digital Marketing and Value creation (Mana Farshid

Session 7 – Marketing New Technical Innovations (Flipped classroom)
Discussions and feedback based on individual report drafts.

Session 8 – Q & A session with Johan Nordensvärd

Session 9 - Innovation Processes (Flipped classroom)
Read Abernathy and Utterback (1978) and Karakaya and Sriwannawit (2016). Review again Christensen & Rosenbloom (1995) and Dosi (1982).

Session 10 – Concluding Lecture with Johan Nordensvärd

See full literature list and additional resources in canvas under *Modules > Course information > Literature and other resources.*

Digital Support (Canvas)
Additional, course-related, material and information will be made available in a Canvas course room for students registered on the course.

Language
The course language is English. This means that lectures, workshops, course literature and material, student presentations and reports is to be delivered in English.

Teaching Philosophy
The teaching philosophy is that of *learner-centered teaching*, which means:
- The teacher is facilitator and guide.
- Learners take responsibility for their own learning.
- Content is used and not just covered.
- Students teach others what they have learned.
- Students participate in self-assessments.

Participants' responsibilities
- Every student is expected to provide an input of not less than 160 working hours for this course.
- Students are expected to study related chapters and selected cases in advance.
- Learning to work in a team is both important and necessary. Individual students are responsible for, and expected to, do their part within their respective team's activities. Failing to participate in team activities will affect your grade!
- Plagiarism will be dealt with in accordance with the University rules. Any copying or unethical use of sources may lead to severe disciplinary actions.
- Students are required to engage and actively participate during the lectures and seminars.

Examination
- INL2 - Assignment, 2,0 credits, grading scale: A, B, C, D, E, FX, F
- PRO2 - Project, 4,0 credits, grading scale: A, B, C, D, E, FX, F

Formula used for combining the grades:

PRO2 \ INL2	A	B	C	D	E	F
A	A	A	B	B	C	F
B	B	B	B	C	C	F
C	B	C	C	C	D	F
D	C	C	D	D	D	F
E	C	D	D	E	E	F
F	F	F	F	F	F	F

Examination adapted to students with special needs
The following applies for students with functional variations who have a statement from KTH's FUNKA unit on recommended support measures during examination:
- Support measures under code R (i.e. adjustments relating to space, time, and physical circumstances) are granted by the examiner.
- Support measures under code P (i.e. pedagogical measures) are granted or rejected by the examiner after the examiner has been contacted by the student in accordance with KTH's rules. Normally, support measures under code P will be granted.

More information is available on KTH's website.

Assignments
INL2 – Individual assignment (related to ILO 1 and 4)
An analysis report of a self-selected technology (draft of the report, presentation, feedback, and final report + guest lecture reflections)

For this assignment, you are tasked with analyzing an existing technological innovation, focusing on its innovation and development processes as well as its marketing strategies. Your report should delve into both the market risks and opportunities associated with the chosen technological innovation, supported by rigorous application of technological, innovation, and marketing theories. This analysis will cover various market forces, including but not limited to competitors, suppliers, partners, and other stakeholders, as well as broader elements such as the economic and technical context, sustainability considerations, legal obligations, digitalization impacts, business models, and strategic approaches.

1. The report

Begin your report with a front page that includes the report's title, your name, and the date of submission. Follow this with an introduction that outlines the significance of the chosen technology, includes relevant theoretical background, and presents your main research question, setting the stage for a detailed exploration (approximately 0.5-1 page).

The body of your report should be the investigative section where you provide thorough factual content about the technology and a comprehensive analysis using the aforementioned introduction as a theoretical basis. Ensure you cite all sources of information to support your claims and analysis throughout this section (approximately 1-2 pages).

Conclude the report by summarizing your findings, answering the research question posed in the introduction, and suggesting actionable marketing strategies for this technology based on your analysis (approximately 0.5-1 page).

Additionally, you will include a references section at the end of the report listing all references you have cited. The appendices should include at least two sections: one where you relate the content of the report to insights shared by the guest lecturers, and another documenting how you have incorporated feedback to enhance your report. Furthermore, you may use appendices to add extra information about your analyses.

You will present a draft of your report and engage in a peer review process, providing and receiving feedback with at least two other students. This will be an opportunity to refine your analysis and enhance the quality of your report based on the feedback received.

The success of your report will be judged based on the depth and accuracy of your analysis, the relevance and effectiveness of your suggested marketing strategies, and your adherence to the report's structural guidelines. This is a chance to demonstrate your ability to integrate theoretical knowledge with practical analysis and produce a comprehensive, well-substantiated analysis of a technological innovation and its market challenges.

Checklist when writing your report
- Should be 1500 - 2500 words, excluding cover sheet, table of content, references and appendices.
- Include a minimum of five scientific sources (e.g. course book and scientific articles).
- Make sure every statement or information has a reference or data for validation.
- The report should include following parts (but not necessarily these headings):
  - Cover sheet with a title of your study, the course name, and your full name
  - Introduction to the phenomenon, aim and/or research question, theoretical framing, short method description (approximately 1-3 sentences)
  - Results (data) and analysis
  - Conclusion (base it on your analysis and answer the research question from the introduction)
  - References
  - Appendices

2. Presentation

Each student will present their report. The presenter needs to prepare a PowerPoint (max 5 slides) and discuss the reports' highlights for a maximum of 5 minutes. After each presentation, reviewers will orally give feedback (highlights from the written feedback) to the presenting student for a maximum of 5 minutes. There will also be an allotted 5 minutes for additional discussions where all participants can contribute.

3. Feedback

Giving feedback is an excellent way to develop your own analytical and writing skills. Thus, in addition to teachers' feedback, peer assessments for the first draft will be an important part of this assignment and you are required to provide written and oral feedback to two other students. Feedback schemes will be available under *Modules > Course information > Feedback schemes.* It is expected that the reviewers are provided with the drafts via email directly from the student that is authoring the report. This email should be sent parallel to the submission in Canvas. The reviewers are expected to have analysed their reviewees' drafts and prepared a written and oral feedback before the workshop. It is also important that participants keep to the deadlines so that reviewers have enough time to review the drafts.

Written feedback – Checklist for your written feedback

- ✓ Is the report in line with the instructions? (Why/why not?)
- ✓ Does the report have a front page with a title and the student's name?
- ✓ Is there an introduction with a research question?
- ✓ Is there a conclusive part answering to the research question and does it contain marketing strategy suggestions?
- ✓ Does all claims and information have a reference?
- ✓ Are terms and concepts used correctly?
- ✓ Is an analytical ability displayed?
- ✓ Are the formalities correct (e.g., references, number of pages, etc.)?
- ✓ Recommendation to further improve the work?

Oral feedback – Points from the written feedback will be orally presented during the workshop.

4. Final report

After receiving feedback for the draft, the final report will be developed. In addition to the other parts, one appendix where it is stated how feedback has been used to enhance the report must be included in the final version. Note that it is an authors' prerogative to choose if what suggestion/s they consider (and not) essential to develop the report. However, the author's choices have to be explained and argued, and will be part of the assessment of the report. Final reports are expected to have between 1500 and 2000 words excluding first page, reference list and appendices).

NOTE
- All reports are expected to use the Times New Roman/Calibri, size 12, normal 1.5 line spacing.
- The reports are expected to follow the Harvard Referencing System or APA referencing System for in-text referencing and the list of references at the end of the report. See the KTH reference guide for further instructions.
- Late submissions will result to (letter) grade deduction, so submit in good time.

PRO2 – Group project (related to ILO 1-5)
A case study report of a self-selected ICT innovation (draft of the report, presentation, feedback, and final report)

This is a group project that involves a *case study* of a real company. This assignment allows students to study real ICT innovations and the related entrepreneurship, and to evaluate the effects of a new ICT innovation in a market and an industry setting. You will learn how to use a systematic analytic approach to identify challenges which precedes a technological

innovation or can occur for existing technological innovations, as well as how to overcome the challenges or work around them. The report will be presented as a written and professional report, as well as through a professional pitch during a seminar.

1. Group Formation
Students are responsible to build their own teams through Canvas. Each group need to have 5 -6 members. See instruction in Canvas under *Assignment > Group formation*.

2. Chose the case
Your team is expected to find a company where you can study one of their ICT innovations and write about it in a report. The company must be willing to have at least one interview with the team. The role of your team is to be consultants that assists the company in analyzing, evaluating, and suggesting relevant developments of the particular technology. This will be presented in the form of a report that your team can give to the company in the end of the course.

3. The report
It is important that the report is reader friendly, but also contain the important aspects of the phenomenon. It should be easy and appealing for both course participants and the company to read the report. It should also be a good base for future decisions regarding the company's ICT development. One third of the report should include introduction, methods, and a theoretical framework. The introduction should introduce the company, the industry, the technology, as well as the type of innovation area that the technology belongs to. You should also include an aim and a research question in the introduction that you answer in the end of the report. The methodological section and a theoretical frame can be part of the introduction or presented in their own sections. The main part, about 3/5 of the report, is where the data is presented and analysed. You will strengthen your analysis and arguments in the report by referring to the scientific articles and other relevant sources that you presented in the theoretical frame. The guide to your analysis is the introduction and research question. Some data can also be placed in an appendix to which you can refer to in your text, which for example is good if the data that takes up a lot of words or space. Approximately 1/5 of the report is allocated to the conclusions. For more guidance of how to write, check the resource library under *Modules > Links and other important information > Literature and other resources.*

Method
In this assignment, you will study an ICT innovation within a specific company using the case study method. A case study is used to investigate a specific phenomenon, often focusing on an incident, a practice, a company, or an institution. Write a brief description of the case study method and the data you have used. For clarity, consider presenting your data in a table that includes the sources used. Your data can encompass various types of information, such as observations, website content, social media posts, interviews, reports (e.g., annual reports), advertisements, and newspaper articles. Ensure that you collect your data systematically. Provide a short description of what you collected and how you collected it. For further guidance on writing the methodological section, refer to the resource library under Modules > Courset information > *Literature and other resources.*

Checklist when writing your report
- Should be 2000 – 3000 words, excluding cover sheets, table of content, references and appendices.
- Include a minimum of five scientific sources (e.g. course book and scientific articles).
- Make sure every statement or information has a reference or data for validation.
- The report should include following parts (but not necessarily these headings):

- Cover sheet with a title of your study, the course name, and your full names
- Short summary (abstract)
- Table of content
- Introduction to the phenomenon, aim and/or research question, theoretical framing, short method (case study and what data that has been used) description.
- Results (data) and analysis
- Conclusion (base it on your analysis and answer the research question from the introduction)
- References
- Appendix (if you need it)

4. Presentation

The teams will present their reports in the eight's session. During this session, the presenting team will adopt the role of a consultant team. A reviewing group will take the role of the company's executive group. Remaining students can also contribute with feedback or discussions. The presenters need to prepare a PowerPoint (max 5 slides) and discuss their reports' highlights for a maximum of 5-10 minutes. After each presentation, reviewers will orally give feedback (highlights from the written feedback) to the presenting students for a maximum of 5 minutes. There will also be an allotted 5 minutes for additional discussions where all participants can contribute.

5. Feedback

In addition to the teacher's feedback, peer assessments will be an important part of this assignment. Each team will be assigned by canvas to review other teams' submitted report drafts. The reviewers are expected to have analysed the drafts and prepared written and oral feedback before the seminar where the report is presented. It is important that participants keep to the deadlines so that reviewers have enough time to review the drafts. Giving feedback is a good way to contribute to other students' learning, but also a way to develop your own writing skills (learning by analysing others' writing).

Written feedback – Checklist
- ✓ Does the report follow the instructions (see *The report* section)?
- ✓ Does the title fit the content?
- ✓ Is there an interesting introduction? Does it make you curious? Do you understand the phenomena? Is there a problematisation and a research question?
- ✓ Are terms and concepts used correctly?
- ✓ Have relevant data been used?
- ✓ Is an analytical ability displayed and has a research question (or problematisation) been answered?
- ✓ Is the report logic and rational? Is it reader friendly? Do you like to read it? Is it understandable?
- ✓ Is the report self-supporting in that you can read the text without needing further information?
- ✓ Are the formalities correct (e.g., references, number of pages, etc.)?
- ✓ Is the language good?
- ✓ Do you as an executive group find the report useful when it comes to making a decision regarding the technology?
- ✓ Any further recommendation to improve the report?

6. Contribution diary

Additional to the team report, each team member shall write a contribution diary where the own contributions are described. Each diary needs to have between 250 and 500 words

stating what you have contributed with to the group work. This assignment is designed to comply with students' ethical obligations (see course syllabus), and to give participants the possibility of reflecting about the own strengths and weaknesses in projects and groups.

NOTE
- All reports are expected to use the Times New Roman/Calibri, size 12, normal 1.5 line spacing.
- The reports are expected to follow the Harvard Referencing System or APA referencing System for in-text referencing and the list of references at the end of the report. See the KTH reference guide for further instructions.
- Late submissions will result to (letter) grade deduction, so submit in good time.

Grading criteria
The grading of the course will be based on two types of examination activity:

- INL2 - Assignment, 2,0 credits, grading scale: A, B, C, D, E, FX, F. This assignment is directly connected to learning outcome 1 and 4.
- PRO2 - Project, 4,0 credits, grading scale: A, B, C, D, E, FX, F. This assignment is directly connected to learning outcome 1-5.

NOTE: To complete the course, students must pass both of these two assignments.

INL2 - Individual Assignment

Grade FX (Fail):
- Minimal work required before credit can be awarded.
- The assignment is incomplete or significantly lacks understanding and application of course concepts.

Grade E (Pass):
- A technological innovation is identified, described, evaluated, and related to innovation and marketing areas.
- Relevant technological and marketing-oriented challenges are identified, described, and evaluated.
- A marketing analysis is carried out, and recommendations regarding the commercial possibilities are designed.
- The report synthesizes the studied field, technology, analysis, and recommendations per the assignment instructions but lacks some basic knowledge or features.
- The analysis is partial, with suggestions for improvement included, but important aspects are not adequately treated.
- The report and/or problematization are partially autonomous.
- References and data are used to validate information and claims, but there are gaps or inconsistencies.

Grade C:
- All requirements for Grade E are met.
- Concepts, frameworks, and theoretical insights from the course content are applied in a complete analysis of the strategic problems associated with the phenomenon.
- The report and problematization are autonomous, containing sufficient knowledge, an adequate analysis, and relevant features for suggested improvements.
- The analysis demonstrates adequate depth and understanding of the subject matter.
- References and data are consistently used to validate information and claims, providing solid support for the analysis.

Grade A:
- All requirements for Grade C are met.
- Insights from different parts of the course are provided as sound managerial advice regarding complex innovation and marketing strategic challenges.
- The report offers a theoretically grounded argumentation based on relevant literature and combines several sources meaningfully.
- Demonstrates the ability to autonomously use theoretical concepts and ideas to develop knowledge on the subject by providing own interpretations and reflections systematically, detailed, and coherently, and by approaching the subject from different perspectives.
- The line of reasoning is clear and strengthens the argument of the report.
- The report creates new relevant insights and ideas related to challenges associated with the studied technology, innovation, and business setting.
- The report is well-structured and reader-friendly from both an academic and industry perspective.
- Extensive use of references and data to validate information and claims, with all sources accurately cited and integrated into the analysis.

Grade D and B:
- Grade D: The student meets the criteria for Grade E but only partially meets the criteria for Grade C.
- Grade B: The student meets the criteria for Grade C but only partially meets the criteria for Grade A.

PRO2 - Group Project

Grade FX (Fail):
- Minimal work required before credit can be awarded.
- The assignment is incomplete or significantly lacks understanding and application of course concepts.

Grade E (Pass):
- A real ICT innovation within a company is identified, described, and evaluated.
- Relevant technological and marketing-oriented challenges are identified, described, and evaluated.
- A marketing analysis is carried out, and recommendations regarding the commercial possibilities are designed.
- The report synthesizes the studied field, technology, analysis, and recommendations per the assignment instructions but lacks some basic knowledge or features.
- The analysis is partial, with suggestions for improvement included, but important aspects are not adequately treated.
- The report and/or problematization are partially autonomous.
- References and data are used to validate information and claims, but there are gaps or inconsistencies.

Grade C:
- All requirements for Grade E are met.
- Concepts, frameworks, and theoretical insights from the course content are applied in a complete analysis of the strategic problems associated with the phenomenon.
- The report and problematization are autonomous, containing sufficient knowledge, an adequate analysis, and relevant features for suggested improvements.
- The analysis demonstrates adequate depth and understanding of the subject matter.

- References and data are consistently used to validate information and claims, providing solid support for the analysis.

Grade A:
- All requirements for Grade C are met.
- Insights from different parts of the course are provided as sound managerial advice regarding complex innovation and marketing strategic challenges.
- The report offers a theoretically grounded argumentation based on relevant literature and combines several sources meaningfully.
- Demonstrates the ability to autonomously use theoretical concepts and ideas to develop knowledge on the subject by providing own interpretations and reflections systematically, detailed, and coherently, and by approaching the subject from different perspectives.
- The line of reasoning is clear and strengthens the argument of the report.
- The report creates new relevant insights and ideas related to challenges associated with the studied technology, innovation, and business setting.
- The report is well-structured and reader-friendly from both an academic and industry perspective.
- Extensive use of references and data to validate information and claims, with all sources accurately cited and integrated into the analysis.

Grade D and B:
- Grade D: The student meets the criteria for Grade E but only partially meets the criteria for Grade C.
- Grade B: The student meets the criteria for Grade C but only partially meets the criteria for

Additional Notes for Grading Process:
- Timeliness: Late submissions will result in a letter grade deduction.
- Formatting: Reports should use Times New Roman/Calibri, size 12, normal 1.5 line spacing, and follow the Harvard or APA referencing systems.
- Presentations: Should highlight the report and be engaging, as well as timely.
- Feedback: Should be constructive and relevant feedback, addresses all key aspects of the report, be clear and understandable feedback, as well as be delivered through professional and respectful communication.
- Feedback Incorporation: Students must incorporate, and document feedback received in their final reports, demonstrating how suggestions were used to enhance the report.
- Attendance in sessions is required: Failure to attend sessions without a valid reason will result in a grade deduction.