



STRATEGIC TECHNOLOGY MANAGEMENT

Course Outline

PROFESSOR DR. FRANK PILLER
PROFESSOR TORSTEN-OLIVER SALGE, PH.D

School of Business and Economics

TIME Research Area | www.time.rwth-aachen.de | Kackertstraße 7, Aachen

Contact: Ekaterina Korneeva | korneeva@time.rwth-aachen.de

WINTER TERM 2019/2020

COURSE OVERVIEW

Course Name:	Strategic Technology Management (ID: 81.03604)
Degree Programmes:	<ul style="list-style-type: none"> (1) Master BWL (Innovation, Entrepreneurship and Marketing – core course) (2) Master Wirtschaftsingenieurwesen (Management des Innovationsprozesses) (3) Master Wirtschaftswissenschaften (Wahl B)
Lecturer:	Prof. Dr. Frank Piller Prof. Torsten-Oliver Salge, Ph.D.
Contact:	Ekaterina Korneeva (korneeva@time.rwth-aachen.de , +49 241 80 99182)
Location and Time:	Kackertstraße 15, Room 3024 003.1 (Se 1) Fridays, 09:00am to 14:30pm, (18 October, 29 November, 13 December 2019, 17 January, 24 January, 31 January 2020)
Content Description:	This course provides an introduction to strategic technology management (STM) based on the analysis of cases studies from practice and results from academic research. The class will revisit some of the foundational concepts and debates in strategic management to examine key strategic decisions at the heart of technology and innovation management. These pertain for instance to the selection of technology fields, the composition of innovation portfolios, the timing of technology development initiatives, the setting of industry standards, the implementation of modular designs, the protection of intellectual property, or the adaptation to rapid technological change.
Qualification Objectives:	<p>After participating in this course students should be in a position to:</p> <ul style="list-style-type: none"> (1) understand and critically reflect upon key concepts and theories in STM, (2) understand and critically discuss conceptual and empirical research papers on STM, (3) analyse and develop adequate solutions to some of the practical challenges of STM, and (4) apply important tools in STM intelligently based on a thorough understanding of their respective strengths and weaknesses.
Literature:	See below in the session descriptions. All papers will be made available on Moodle ahead of the session.
Course Examination:	<p>The final grade can be composed as follows:</p> <p>Option A: Colloquium & student presentation (weight: 50%) and student paper (weight: 50%) Option B: Colloquium & student presentation (weight: 50%) and written exam (60 minutes, weight: 50%) Option C: Written exam (60 minutes, weight: 100%)</p> <p>A maximum of 60 points can be obtained for each of the two elements (option A and B). The final points and grade is the weighted average of the elements (and you need 50 percent of all points to pass).</p>

Participation Requirements:	Solid command of English and willingness to prepare each class session in advance (in average, each class session demands 3-4 hours of preparation to read one or two case studies and academic papers).
Group Size:	45 participants (max)
Workload:	30 hours of lecturing 120 hours of individual and group preparation
Type of Teaching Event:	Classroom sessions are likely to comprise a mixture of interactive lectures, case/paper discussions and student presentations.
Language:	English
Credits:	5

1 COURSE ORGANISATION

The course comprises six four-hour sessions, which will be subdivided into three parts consisting of (1) an interactive lecture, (2) case study discussion and (3) two student presentations of journal articles. The order and duration of these elements might vary between sessions. The table below depicts the preliminary schedule.

Preliminary Schedule for Strategic Technology Management

#	Date	Time & Place	Teacher	Session Title
SESSIONS IN CLASS				
1	18 Oct 2019	9.00-14.30 3024 003.1	Prof. Salge	Introduction & Technological Change
2	29 Nov 2019	9.00-14.30 3024 003.1	Prof. Salge	Scoping the Playing Field
3	13 Dec 2019	9.00-14.30 3024 003.1	Prof. Salge	Orchestrating the Ecosystem
4	17 Jan 2020	9.00-14.30 3024 003.1	Prof. Piller	Developing Modular Designs
5	24 Jan 2020	9.00-14.30 3024 003.1	Prof. Piller	Managing Intellectual Property
6	31 Jan 2020	9.00-14.30 3024 003.1	Prof. Piller	Setting Industry Standards

This course will be managed via the e-learning platform Moodle. All lecture slides, student presentation slides and readings will be deposited here. In addition, we will communicate all important pieces of information (e.g. pptx-Template, group allocation, room changes, course and exam preparation) only via Moodle. It is hence essential for you to sign up for our Moodle course by 20 October 2019 at the very latest. If you register after that date, we cannot guarantee that we will be able to assign you to a group.

We also kindly ask you to send a recent photo of you (filename: yourfirstname_yourlastname.jpeg) to korneeva@time.rwth-aachen.de by 10 October 2019.

Without your picture, you will have a disadvantage in the grading process of your class contributions.

All lectures, discussions and student presentations will be in English language.

2 GROUP ASSIGNMENT AND CASE DISCUSSION

A key component of this course is the group assignment and the case discussions in class. Jointly, they will count for 50 percent of your final grade. Hence attendance is highly recommended. As for the case discussions, it is essential for all course participants to carefully read the case at home being ready to discuss the questions listed in the session description below. Further we provide lecture videos, which help to understand the contents discussed in class.

As for the group assignment, each student will be assigned to a group typically consisting of three to five members. Each group will be asked to present and critically discuss one academic paper in class. Each paper addresses an important phenomenon in the sphere of strategic technology management. Papers can be conceptual or empirical have been published in leading peer-reviewed journals in the field of Strategic Technology Management such as the *Strategic Management Journal*, *Management Science*, *Research Policy* or the *Journal of Product Innovation Management*.

In class, 30 minutes will be allocated to each group, of which 20 should be used for the group presentation and 10 for a discussion with the audience. You should support your presentation with up to 20 PowerPoint slides. When preparing your slides, you need to use the PowerPoint template that is available for download on Moodle. The final slides and a one page summary (bullet-points) need to be sent to korneeva@time.rwth-aachen.de by 4pm the day BEFORE your presentation in both pptx and pdf format. You will also need to save both files on a memory stick and bring it with you to class along with a printout of your slides. The language for the presentation and the discussion with the audience is English.

Groups will be formed by the lecturer and **students will be informed about their group composition via Moodle by 30/10/2019 (10:00 pm), provided they have signed up for the Moodle course by 20/10/2019**. To offer some support during the preparation of your paper presentation, each group is entitled to an optional 30-minute coaching session with Ekaterina Korneeva, which will take place in the premises of the Technology and Innovation Management Institute (TIM).

We would like to stress that your paper discussion needs to go beyond simply summarizing the content of your assigned paper. Rather you are asked to engage with it critically by discussing its strengths and weaknesses as well as its contributions to our understanding of key aspects of strategic technology management.

A sample structure of your presentation might look like this – but you are open to find another structure to differentiate your presentation from the others! Be creative in your own!

- (1) Introduction
- (2) Paper Description
 - Research Question
 - Conceptual Framework
 - Research Design
 - Contributions to strategic technology management research and practice
- (3) Paper Discussion
 - Strengths
 - Weaknesses
 - Possible Refinements and Extensions
- (4) Conclusion

There will be (up to) two group presentations during each session. The precise schedule for the paper discussions will be announced by the beginning of the semester.

3

3 INDIVIDUAL SESSIONS

At the beginning of the semester, you will find a description of each session in the detailed syllabus. Please make sure to complete the pre-assignment (case study) before coming to class. In addition, we strongly recommend to read the suggested readings, or at least to skim these papers. This will help you to prepare the case studies for the class discussions.

4 COURSE EXAMINATION

The final grade can be composed as follows:

Option A: Colloquium & student presentation (weight: 50%) and student paper (weight: 50%)

Option B: Colloquium & student presentation (weight: 50%) and written exam (60 minutes, weight: 50%)

Option C: Written exam (60 minutes, weight: 100%)

A maximum of 60 points can be obtained for each of the two elements (option A and B). The final points and grade is the weighted average of the elements (and you need 50 percent of all points to pass).

Note for Master W-Ing students: In addition to the aspects above, according to ÜPO §10 (8) and the program-specific regulations (fachspezifische PO for M.Sc. W.Eng.) §9 (2) all industrial engineers have to pass each of the examination elements individually.

IMPORTANT: Please, also be aware of the special rules for examination registration and cancelation.

In case option B applies, the written exam is likely to be structured as follows (obviously, only the structure announced on the exam day will apply):

Part 1: STM RESEARCH

- Max. 30 points - probably two questions with up to three sub-questions each
- Explanation, illustration and/or application of key concepts, theories and tools in the field of STM.

Part 2: STM PRACTICE

- Max. 30 points – short case study with probably three sub-questions
- Application of theoretical knowledge to particular case scenario (Need to analyse scenario using the knowledge acquired during the course in an attempt to propose thoughtful recommendations for managerial action)

A maximum of 60 points can hence be obtained. The individual written exam will be in English language. The exam is currently scheduled to take 60 minutes.

We hope you will enjoy the course and look forward to working with you!