



Research Area  
Technology,  
Innovation, Marketing,  
Entrepreneurship

**RWTH**AACHEN  
UNIVERSITY



A video introduction into this class is at  
<http://www.time.rwth-aachen.de/go/id/elrm/file/TIM4/>

# PRINCIPLES OF TECHNOLOGY & INNOVATION MANAGEMENT (PTIM): PEOPLE, CULTURE, AND COMMUNICATION

PROF. FRANK PILLER | PROF. VERA BLAZEVIC

## COURSE OUTLINE AND READING LIST

RWTH Aachen University | School of Business and Economics  
**TIME** Research Area | Institute for Technology & Innovation Management (TIM)  
time.rwth-aachen.de | Kackertstraße 7, Aachen

Teaching assistant: Anja Leckel | leckel@time.rwth-aachen.de

**WINTER TERM 2018/19**

This class in a nutshell: You will learn about the people and culture aspects of managing technology and innovation in large companies, using (Harvard) case studies and corresponding academic papers. Interactive class format demanding 8-10 hours per week (class and preparation), homework (paper) instead of an exam.

# 1 COURSE OVERVIEW

Course Name:	<b>Principles of Technology and Innovation Management</b>
Degree programmes:	<ol style="list-style-type: none"><li>1. Master BWL*</li><li>2. Master Wi.Ing. alle Fachrichtungen</li><li>3. Master Wirtschaftswissenschaften</li><li>4. Erasmus / exchange students on the M.Sc. level</li></ol> <p>* Note for Master BWL Students: In case you already took the core module "Management of Technology, Information and Innovation (Technologie-, Informations- und Innovationsmanagement)" in or before 2012, you cannot register for this class!</p>
Lecturers:	Prof. Frank Piller, Prof. Vera Blazevic
Teaching assistant:	Anja Leckel   leckel@time.rwth-aachen.de
Location and time:	<b>C.A.R.L. Room 1385 207 - S07</b> <b>Fridays, 10:30 - 15:30</b> (blocked into the <b>second half</b> of the semester, classes on <b>Dec. 07, 14, 21, Jan. 11, 18, 25 and Feb. 01.</b>
Content description:	<p>Creating and managing new technological knowledge is a key success factor of most firms. The idea of the class is to provide an a deeper perspective into selected topics from both the perspective of a manager who has to make decisions about her firm's technology and innovation management processes and from the perspective of an academic researcher studying these decisions. We will discuss some selected questions of managing innovation in a corporate context. <b>Our focus will be the people and culture perspective: How does the behavior of people and the incentives set in a firm to drive specific behaviors, plus its organizational structure, influence the performance of a firm's innovation system.</b></p> <p>The class is case-study based, but will also integrate short lecture modules, in-class exercises, and group work. In addition, each session will introduce important academic papers on the topics of the session.</p> <p><b>Note:</b> While this class belongs to the "core classes" in our curriculum, you profit more from this class if you already have some basic understanding of innovation management. <i><b>It builds directly on the class "Managing the Innovation Process" in the summer term.</b></i></p>
Qualification objectives:	<p><b>Upon completion of this course, you will be able to:</b></p> <ul style="list-style-type: none"><li>• Differentiate various understandings of innovation and technology</li><li>• Acquire competences to analyze decisions in TIM from an organizational and culture perspective</li><li>• Know about tools and methods of innovation management</li><li>• Argue about future trends in innovation management</li><li>• Evaluate the challenge of making innovation happen within large companies</li></ul>

Literature:	Reading material is given for each individual session. There is no dedicated textbook for this class.
Course Examination:	<b>55% of the grade</b> is based on <b>your class participation</b> (individual contributions and presentation of one paper in a group), <b>45%</b> of the grade is determined <b>by an individual post-class paper assignment</b> .
Participation Requirements:	Solid command of English and willingness to prepare each class session in advance ( <i>in average, <b>each class session demands 4-5 hours of preparation</b> to read one case studies and 2-3 academic papers</i> ). You also have to prepare one presentation in a group of 3-4 students.
Group Size:	45 participants (max)
Workload:	28 hours of lecturing 120 hours of individual and group preparation
Type of Teaching:	Classroom sessions are likely to comprise a mixture of interactive lectures, case/paper discussions and student presentations.
Language:	Lectures, discussions, student presentations will be in <b>English</b> language.
Credits:	5

This course will be managed via the e-learning platform L2P. All lecture slides, student presentations, and readings will be deposited here.

**Please send a recent photo of you to [leckel@time.rwth-aachen.de](mailto:leckel@time.rwth-aachen.de) until December 03.**  
*Please save the picture as a jpg and name the **filename** according to this pattern:*  
*yourlastname\_yourfirstname.jpg*

Purpose: The list of students including their photos helps evaluating oral participation after class. Without the picture, it is hard for us to evaluate your class participation!

## 2 COURSE ORGANISATION

The course comprises of an introductory video-lecture “bootcamp”, seven five-hour sessions. Sessions are organized in three parts: (1) an interactive lecture, (2) case study discussion and (3) discussion of academic studies. The order and duration of these elements might vary between sessions.

**Preliminary Schedule: Principles of Technology and Innovation Management (PTIM)**  
The sessions (content, instructor) might take place in a different order.

#	Date	Time & Place	Instructor	Session Title
0	Before 07 Dec 2018	Study at home	Prof. Piller	<b>Online Video TIM Bootcamp*</b>
1	07 Dec 2018	10:30-15:30 <a href="#">C.A.R.L. (S07)</a>	Prof. Piller	<b>Elements of a successful system for innovation</b> <i>Case: Medtronic</i>
2	14 Dec 2018	10:30-15:30 <a href="#">C.A.R.L. (S07)</a>	Prof. Piller	<b>Creating a culture for innovation</b> <i>Case: General Mills Canada, Paper: Group 1</i>
3	21 Dec 2018	10:30-15:30 <a href="#">C.A.R.L. (S07)</a>	Prof. Piller	<b>Restructuring the enterprise to become more innovative</b> <i>Case: General Electric, Paper: Group 2 and 3</i>
4	11 Jan 2019	10:30-15:30 <a href="#">C.A.R.L. (S07)</a>	Prof. Blazevic	<b>Balancing innovation: Ambidexterity and the exploitation-exploration dilemma</b> <i>Case: Pitney Bowes, Paper: Group 6 and 7</i>
5	18 Jan 2019	10:30-15:30 <a href="#">C.A.R.L. (S07)</a>	Prof. Piller	<b>Ethical questions of managing intellectual property</b> <i>Case: BAYER in India, Paper: Group 8</i>
6	25 Jan 2019	10:30-15:30 <a href="#">C.A.R.L. (S07)</a>	Prof. Blazevic	<b>Designing intra-organizational interfaces and cooperation</b> <i>Case: Electrolux, Paper: Group 9 and 10</i>
7	01 Feb 2019	10:30-15:30 <a href="#">C.A.R.L. (S07)</a>	Prof. Blazevic	<b>Communicating for innovation</b> <i>Game: Knowledge Maze, Paper: Group 11</i>
8	30 March 2019	16:00	Email submission	Deadline to hand-in your paper assignment (“letzte Prüfungsleistung”)
8	02.04.2019	18:00, TIM Office	Print submission	Deadline to hand-in your paper assignment printed and signed

\* Note: If not done before, please watch our Mini-MOOC: [The TIM Bootcamp](http://frankpiller.com/inno-class-videos). This series of short videos will introduce you into the topic and explains important definitions and concepts. We expect that you know the content of this video series before the first session! <http://frankpiller.com/inno-class-videos>

### 3 GROUP ASSIGNMENTS

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.

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. Papers can be conceptual or empirical have been published in leading peer-reviewed journals such as the *Strategic Management Journal*, *Management Science*, *Research Policy* or the *Journal of Product Innovation Management*.

In class, 5 minutes will be allocated per member of a group, *so if your group consists of 4 persons, you will have 20 mins. for your presentation.*

You should support your presentation with a **sufficient (not too many!) number of PowerPoint slides**. When preparing your slides, please use the **PowerPoint template** that is available for download on L2P. The language for the presentation and the discussion with the audience is English.

In addition, please **summarize the content of your paper on ONE A4 page using the template** provided in the L2P, highlighting the core points, content, and conclusions from the paper. This one paper will be distributed to all students during the class.

Your slides and the summary page need to be sent to [piller@time.rwth.aachen.de](mailto:piller@time.rwth.aachen.de) by **9am on the day of the lecture** 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 one printout of your slides.

We would like to stress that **your presentation 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 the paper. **Tell us what we learn from the paper!**

A sample structure of your presentation might look like this:

- (1) **Introduction:** *Tell us the motivation of the ideas presented in the paper and why this is an important (and open) question. Introduce us to the authors and the journal.*
- (2) **Paper Description:** *Share with us the story of the paper. You don't need to follow 1:1 the structure of the paper, but try to provide us an introduction into the theory selection and conceptual development, and also in the research design and methods: Why are those adequate in researching the open questions?*
- (3) **Paper Discussion**
  - What are the contributions to research and practice?
  - What are the strengths and weaknesses of the paper; possible refinements and extensions?
- (4) **Conclusion and Discussion Questions**

Also **include questions for the other students**, think about how you can facilitate a discussion about the content of your paper.

## 4 INDIVIDUAL SESSIONS

A key component of this course is the **case discussions** in class. Together with the presentation and discussion of the **research papers**, they will count for **55 percent of your final grade**.

It is essential for all course participants **to carefully study the case and the corresponding assignment questions** at home in order to be ready to discuss the questions listed in each session description below.

In addition, we will reflect the content of the case studies by a number of **academic papers**. 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*.

Also these **papers need to be read before the session**, and often reading the paper is also helpful in better understanding the case. **Core papers are being presented by student groups. Paper presentations** (20 min presentation + 10 min discussion) are part of the participating grade.

So: Please make sure to complete the pre-assignment (case study) before coming to every class. In addition, you have to read the research papers for this class.

## 5 Review Paper (Post-Class Assignment)

As indicated at the beginning of the class, 45% of the grade is a review paper. Please follow the instructions below.

The deadline to digitally hand-in your paper assignment is **March 30, 2019, 16:00h**.

### Instructions

(1) **Select one of the two alternative papers** for your review – you only have to write a review about one of these papers.

#1 TBD

#2 TBD

(2) **Read the paper carefully** and try to find relations to other papers in our class.

(3) Start writing your review paper, **using the structure indicated below**. The **word limit** for your review is **4500 words** (you can write less --- this is the maximum). References are **not** included in the word limit.

**Add a title page** with your name, program/field of study ("Studienfach") and the title of the paper you selected.

Write your paper in regular academic style, using citations and references etc. For the formatting and citation style, **follow Sections 4&5 of the TIME guidelines** for student papers and theses, <http://tinyurl.com/kv96gum> (also in the L2P).

***This is an individual assignment, no group work is allowed.***

(4) Hand-in your paper at or before **the deadline stated above**,

(a) via e-mail (PDF or Word file) to Anja Leckel (leckel@time.rwth-aachen.de)

**AND**

(b) in printed form (1 copy), including the signed standard affirmation (see Section 7 of the TIME Guidelines for term papers).

(5) If you want to **withdraw your registration to this class and the exam**, you have to do so **until seven working days** before the date listed above. Please read the material on L2P regarding exam registration and withdrawal. We strongly recommend that you do this as early as possible, but only if you want to cancel your registration to the class and exam.

## Structure of your paper

You may structure your paper according to the following template. In all sections of your exam paper, **refer to any relevant discussion, cases, slides, and papers we covered in class. Remember:** These papers have been accepted to top journals already, so they are probably not bad. **However, your task is to discuss why they are good and whether they are original, counterintuitive, and helpful in relation to the topics covered in our class.**

(1) Introduction. Start with a short introduction: What is the paper's main idea, and how does the paper fit into a discussion/topic we had in our class? Summarize the main (academic) contributions of the paper: What is the overall value-add of the research documented in the paper? Why does it enhance our knowledge in innovation management?

### (2) Review and Critique

Now, comment more in depth on the contributions of the paper, contrasting it with issues we discussed in one or more of the case studies and papers in the reading list of this year's class (you can also refer to further literature, if you find this useful).

*The following points are some criteria that might help you structure your evaluation. Don't use the following points as a checklist, this are just ideas what to cover in your review! You can answer also other questions, and don't have to answer all of them!*

### **Theory**

- Why is the theoretical framework of the paper appropriate? Would there be any alternative framework?
- Are the core concepts of the paper clearly defined?
- Is the logic behind the hypotheses persuasive? Are those surprising or very intuitive? Why is it important to investigate these questions?
- Do the hypotheses or propositions logically flow from the theory?

### **Method and results**

- Why did the authors pick this method? What could have been an alternative approach to study this question?
- Does the study have internal and external validity?
- Are the results reported in an understandable way?
- Are there alternative explanations for the results, and if so, are these adequately controlled for in the analyses? What else could the authors have studied?

### **Discussion, conclusions and outlook**

- Why does the submission make a value-added contribution to existing research?
- Why would submission stimulate thought or debate?
- Do the authors discuss the implications of the work for the scientific community? What do you think about these conclusions? How do they enhance our knowledge in the field?
- Further research: What are the most interesting areas for further research? Are there any further areas not listed in the paper?

### (3) Managerial insights

Consider whether the paper has any practical value, and comment on its implications for the practice community: what do we learn for the management of innovation? **Would one of the managers in the case studies have made a different decision, given that she/he would have been aware of the research in the paper?**

**Remember:** The word limit for your review is **4500 words** (but you can write less --- this is the maximum). References are not included in the word limit.