

1264.3936.01– The Macro-environment of Technology

Summer Semester 2022

Section	Day	Hour	Exam date	Lecturer	Email	Telephone
01	*	17:15-20:45	No exam	Prof. Alfred Marcus	amarcus@umn.edu	612 224 4533

* The course will take place from Sunday July 3rd to Thursday July 7th incl.

Office Hours: please email me at amarcus@umn.edu

Course Units

1 course unit = 4 ECTS units

The ECTS (European Credit Transfer and Accumulation System) is a framework defined by the European Commission to allow for unified recognition of student academic achievements from different countries.

Course Description

The course is a workshop in which your team will develop pitches and plans for entrepreneurial startups based on its assessment of trends in the technological, social, energy, environmental, and energy environment. How do you find entrepreneurial opportunities in the technological, social, energy, environmental, and energy environment? How do you assess the uncertainties and risks of investing in the opportunities you find and capitalizing on them? The purpose is to give insights into the processes of identifying these entrepreneurial opportunities and exploiting them. Topics are strategies to capitalize on the opportunities and spotting obstacles that can lead to failure and actions to increase the chances of success. The course draws heavily on a book Professor Marcus has written, *The Future of Technology Management and the Business Environment: Lessons on Innovation, Disruption*.

Course Objectives

Upon completion of the course, you will be able to:

1. Identify technological, social, and energy and environmental opportunities for startup ventures.
2. Develop pitches that take advantage of such opportunities.
3. Understand obstacles that might come in the way of the commercializing the opportunities.
4. Create plans to overcome these obstacles.

Structure and Assignments

- This class, as indicated, is a workshop in developing ideas for entrepreneurial action. You will work in groups on the development of the ideas.
- In the classes
 - First 75 minutes, in a lecture Professor Marcus will introduce elements in the technological, social, energy, and environmental macro-environment, which create opportunities for entrepreneurial ventures. These lectures correspond to the readings you will do.
 - In the second 90 minutes, working with your group, you will develop an elevator pitch, each corresponding to one of these areas. Your group will prepare a set of 7-9 slides, describing:
 - The customer need the entrepreneurial product/service *uniquely* fulfills, including the value proposition and the typical customers.
 - The obstacles to commercializing the product/service
 - Steps your group would take to overcome these obstacles and improve the chances of successful commercialization.

Your group can add extra text below the line in the PowerPoint presentation to elaborate on its ideas. Generic slides for the PowerPoints your group prepares are provided.

In the last 45 minutes, your group will act as a potential funder. Your groups must evaluate one of the elevator pitches based on the following criteria:

	Pitch #	Comments: Explain your reasoning
On a scale of 1-3, to what extent does the idea meet a real customer need (1 meaning that the idea <i>hardly</i> meets a customer need and 3 meaning that the idea <i>really</i> meets such a need)?		
On a scale of 1-3 to what extent has the group considered obstacles to commercialization and how to overcome them (1 meaning that the group <i>hardly</i> has dealt with the obstacles and how to overcome them and 3 meaning that the group has dealt <i>extremely well</i> with the obstacles and how to overcome them)?		
<p>Would your group consider funding this idea (insert yes or no in box and explain your reasoning).</p> <p>Provide advice to the group on how it can improve its idea.</p>		

- Your final assignment is that *each group* will develop one of their ideas, the one it considers the most promising, into a full-scale business plan. The aim of the business plan is to convince potential funders that the idea is worthy and that funders should back it.

The business plan should consist of about 20 slides as follows:

1: Title <i>Slide 1</i>	2: Team <i>Slide 1</i>	3: Product or service overview <i>Slide 2</i>	4: Problem & Pain market definition & size <i>Slides 3-4</i>
5: Pain Killer the value proposition <ul style="list-style-type: none"> “so what” benefits ROI logic <i>Slides 5-6</i>	6: Technologies and Capabilities <ul style="list-style-type: none"> skills, competencies, intellectual assets, patents needed to commercialize <i>Slides 7-8</i>	7: Competition who else is doing this? <ul style="list-style-type: none"> how serious are they? don't forget incumbents <i>Slides 9-10</i>	8: Revenue Model how money can be made <i>Slides 11-12</i>
9: Going to the Market market plans <ul style="list-style-type: none"> channels leverage points <i>Slides 13-14</i>	10: Metrics & Money success metrics <ul style="list-style-type: none"> revenue/margin projections <i>(see below for an example)</i> <i>Slides 15-16</i>	11: Timelines & Status <ul style="list-style-type: none"> next “x” months what you will how you will use proceeds <i>Slides 17-18</i>	12: Why? Summary <ul style="list-style-type: none"> why invest & how much is needed? <i>Slides 19-20</i>

METRICS & MONEY EXAMPLE (in \$K)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Net sales product	\$0	\$14	\$162	\$1,458	\$2,916	\$5,832
Net sales service	\$0	\$0	\$7	\$21	\$42	\$84
Cost of products sold	\$0	\$5	\$54	\$486	\$972	\$1,944
Gross Profit	\$0	\$9	\$115	\$993	\$1,986	\$3,972
Selling, dist. & admin. expenses	(\$100)	(\$250)	(\$500)	(\$1,200)	(\$1,400)	(\$1,600)
R&D expenses	(\$900)	(\$600)	(\$400)	(\$200)	(\$200)	(\$200)
Operating Income	(\$400)	(\$500)	(\$800)	(\$800)	(\$800)	(\$1,000)
Other income (e.g. licensing agreements)	\$0	\$300	\$800	\$1,400	\$1,500	\$2,000
EBTID	(\$1,400)	(\$1041)	(\$785)	\$193	\$1,086	\$3,172

Evaluation

Percentage	Assignment	Due (in Moodle drop box)
24	4 Group elevator pitches (7-9 PowerPoint slides)	At end of classes Sun.-Wed.
20	4 Group funders' evaluation of elevator pitches	At end of classes Sun.-Wed.
50	1 group business plan (19-20 PowerPoint slides)	14 days after last class
6	Peer evaluation: participation in group assignments	15 days after last class

Grading Policy

In the 2008/9 academic year, the Faculty instituted a grading policy for all graduate level courses that aim to maintain a certain level of the final course grade. Accordingly, this policy will be applied to this course's final grades. Additional information regarding this policy can be found on the Faculty website.

[Score Retention Policy](#)

Course Site (Moodle)

The course site is the primary tool to communicate messages and material to students. You should check the course site regularly for information. Course material is available on the course site. You will find the link to Zoom there

Course Outline

The readings from the course are from *The Future of Technology Management and the Business Environment: Lessons on Innovation, Disruption, and Strategy Execution* (referred to below as FOT). You can find the readings on Moodle.

Session	Topic(s)
1	<p><u>TECHNOLOGICAL DISRUPTIONS</u></p> <p>1. With your team, develop an idea that takes advantage of technological disruptions. Consider the obstacles that might stand in the way of the commercialization of the idea. How would you overcome these obstacles? Rate the elevator pitches of one of the other teams.</p> <p><u>Reading</u> FOT, chapters 1-2 Technological Disruptions and Commercialization's Obstacles</p>
2	<p><u>SOCIETAL DISRUPTIONS: OLD AND YOUNG</u></p> <p>2. With your team, develop an idea that takes advantage of the global divide between aging and youthful societies. Rate the elevator pitches of one of the other teams. Consider the obstacles that might stand in the way of the commercialization of the idea. How would you overcome these obstacles?</p> <p><u>Reading</u> FOT, chapter 6 Old, Young, and Global Security</p>

3	<p><u>SOCIETAL DISRUPTIONS: RICH AND POOR</u></p> <p>3. With your team, develop an idea that takes advantage of the global gap between the rich and the poor.</p> <p>Consider the obstacles that might stand in the way of the commercialization of the idea. How would you overcome these obstacles? Rate the elevator pitches of one of the other teams.</p> <p><u>Reading</u> FOT, chapter 7 Rich, Poor, and Global Inequality</p>
4	<p><u>CLEANER ENERGY</u></p> <p>4. With your team, develop an idea that takes advantage of the world’s ongoing need for cleaner energy</p> <p>Consider the obstacles that might stand in the way of the commercialization of the idea. How would you overcome these obstacles? Rate the elevator pitches of one of the other teams.</p> <p><u>Reading</u> FOT, chapter 8 Abundance, Scarcity, and Global Sustainability</p>
	<p><u>GETTING YOUR BUSINESS PLAN FUNDED</u></p> <p>This time will be devoted to developing your teams’ business plans. They are due two weeks after the final class. Professor Marcus and the TA will visit with your groups in breakout rooms on Zoom to help you develop your business plans.</p>

Evaluation of the Course by Student

Following completion of the course students will participate in a teaching survey to evaluate the instructor and the course, to provide feedback for the benefit of the students, the teachers and the university.