TECHNOLOGY STRATEGY
B8570
Mondays and Wednesdays, Warren 207
Section 001: 2:15 - 3:45 PM
Section 002: 4:00 - 5:30 PM

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Office Hours:
Fridays (2 - 3:30 PM), Thursdays (10 - 11:30 AM), and by appointment

Teaching Assistants:
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Natalie Carlson – NCarlson19@gsb.columbia.edu (Section 002)

COURSE OBJECTIVES AND DESCRIPTION
This course provides an introduction to the strategic management of technology. Technology Strategy has three goals, which relate to the three modules of the course. The purpose of the first module, “Technology-based Competitive Advantage”, is to understand how technology affects firms’ profitability and growth. In the second module, “Technology Platforms and Network Dynamics”, we will examine how firms utilize technology to harness network effects, especially in the form of multi-sided platforms, to gain competitive advantage and capture value. In our final module, “Technology Strategy and Society”, we will interact with guest speakers to discuss how technology enables firms to create new markets, which although can solve some social problems, also have the potential to also create ethical dilemmas.

Specific topics and questions include but are not limited to the following:

• How can firms commercialize and protect new innovations or scientific discoveries?
• How should an incumbent firm respond to “disruptive” innovations?
• How do firms leverage network effects to build sustainable competitive advantage?
• What are the optimal strategies for building multi-sided platforms?
• How do new technologies change the way we interact in society, and how should businesses respond?

PREREQUISITES AND CONNECTION TO THE CORE
Prior to taking Technology Strategy, students must have completed Strategy Formulation (B6502). We will utilize and extend concepts covered in Strategy Formulation, including tools for evaluating competitive advantage, competitive dynamics, and corporate scope. The class will specifically build on concepts such as value propositions (as in the Brooklyn Brewery, Walmart, and Zara cases), diversification (as in the Disney case), network effects (as in the Apple case), the player analysis framework (Airbus vs. Boeing, Maersk), and two-sided platforms (as in the Alibaba and Uber
(A) cases). The class will also integrate material from Marketing, Managerial Economics, Business Analytics, and Operations Management.

REQUIRED COURSE MATERIALS AND READINGS
All cases, required readings, and video links will be made available via links in the Calendar section of the course Canvas page. There are three optional books that are relevant to two of our guest speaker sessions that you might find helpful as well in preparation for those sessions. Because they are optional, I do not require that you purchase them, but in case you are interested, I have placed their physical copies on reserve in Watson and Butler libraries.

Optional Readings

COURSE ADMINISTRATION AND GRADING
Grading will be based on 1) class participation, 2) two case write-ups, and 3) an optional final project. These components are weighted in the following way to calculate the course grade:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>1. Class Participation</td>
<td>40%</td>
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<tr>
<td>2. Two Class Write-ups</td>
<td>20% (10% each)</td>
</tr>
<tr>
<td>3. Optional Final Project</td>
<td>40%</td>
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All the foregoing components of the grade are individual of type C vis-à-vis the honor code.

A student who only participates actively in class and does a good job on the two case write-ups can receive a maximum grade of HP. Students who wish to receive an H must also submit an individual final project as described below in addition to actively participating in class and doing well on the two case write-ups. There is no reason to do a final project unless you are going to put forth a serious effort on all three components of the grade.

1. Class Participation
An important course requirement is active involvement in class discussion. Your participation is essential for both your own learning and that of other students. Because Technology Strategy is a case-based course, most of the learning will take place in our class discussion of these very cases. I expect that every student will arrive having done the required readings and able to answer the day’s assignment questions. Students should also expect to be cold called in class. 40% of your overall course grade will be your participation grade, which is further decomposed into three components: 1) Poll question completion (10%), 2) Frequency of class participation (10%), and 3) Quality of class participation (20%).

Poll question: There is one poll question for each case and guest speaker in class (starting with session 2, and with the exception of session 4). Poll questions will be posted as assignments in your Canvas Calendar. They require you to read the relevant case or article and give a short response to 1-2 questions. *You must submit your answer to the poll question through Canvas by 12 PM on the day the relevant case or guest speaker is scheduled for class.*
Frequency and Quality of class participation: Both the frequency and quality of your class participation will be affected by non-attendance. Obviously, not coming to a class means that you will not have a chance to take part in class discussion, which is a critical component of your overall grade. As part of your participation, please bring your clicker to class.

In terms of the quality of participation, the best class comments:

- Articulate a clear stance or argument
- Raise issues from past classes, current events, or other anecdotes that are relevant to the discussion
- Show curiosity and a willingness to experiment
- Use data, examples, or your own personal and professional experience to support arguments
- Be respectful when disagreeing by summarizing the contravening opinion before delivering your own

Help others feel safe about participating by inviting further discussion or referring to points that have already been made by your classmates. Students are also expected to be present, prepared, and participate per the Columbia Core Culture. For excused absences, please submit the OSA administered survey on Canvas before the session you have to miss to make sure that your participation grade does not suffer. Use of electronic devices in class is not allowed.

2. Two Write-Ups
You must complete two (2) write-ups, which can take one of two forms. 1) You can prepare a case write-up for sessions in which we discuss specific cases. These write-ups should address one of the “guiding questions” posted in your Canvas Calendar about the case. Case write-ups should analyze and persuade rather than recite facts. 2) You can prepare a guest speaker write-up for sessions in which we have guest speakers. These write-ups should summarize what you believe to be a key strategic problem that the guest speaker’s company or industry is facing, or a reflection about the readings provided in preparation for the guest speaker. Each write-up should not exceed 600 words, which is approximately equivalent to 2 pages at 12-pt Times New Roman font with 1-inch margins.

You may do two case write-ups, two guest speaker write-ups, or one of each. Please indicate the two sessions for which you plan to do write-ups via the survey link on Canvas by Monday January 29 (you are not obligated to stick to these choices). Write-ups should be uploaded to Canvas by 12 PM on the day the relevant case or guest speaker is scheduled.

3. Optional Final Project
The final project is for students hoping to receive an H in the course. However, doing a final project does not guarantee that a student will receive an H, and receiving an H also requires doing well in participation and the two write-ups.

In the final project, I ask that you analyze a company or industry concerning a particular strategic decision or issue, using the concepts from the course. There is a 2500 word limit, including all exhibits. While providing some details is necessary, you should emphasize analysis over description. Discussing your topic with me in advance is advised but not required. Do not use cases covered in this course or other courses at Columbia Business School. You are welcome to make use of industry contacts. I am also happy to provide a real-world ‘case’ if you have trouble deciding on your own. Students who wish to do a final project must sign up on Canvas by Wednesday, February 14 to confirm the topic of your project. The optional final project is due on Wednesday, March 7, at 11:59 PM.
<table>
<thead>
<tr>
<th>Session</th>
<th>Date</th>
<th>Module</th>
<th>Key Concepts</th>
<th>Cases and Readings*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wed., Jan-24</td>
<td>Introduction &amp; Overview</td>
<td>Tinder (Read Case)</td>
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<tr>
<td>2</td>
<td>Fri., Jan-26</td>
<td>Technology-based Competitive Advantage</td>
<td>Lego: Publish or Protect?</td>
<td>(Read Case, Watch Videos) [Optional: Lego (A) background case]</td>
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<tr>
<td>3</td>
<td>Mon., Jan-29</td>
<td>Disruptive Innovation</td>
<td>Netflix (Read Case)</td>
<td>[Class write-ups survey due today]</td>
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<tr>
<td>4</td>
<td>Wed., Jan-31</td>
<td>Managing Innovation</td>
<td>Breaking News</td>
<td>(In-Class Group Simulation Exercise)</td>
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<td>5</td>
<td>Mon., Feb-5</td>
<td>Cross-sided Network Effects</td>
<td>LinkedIn (Read Case)</td>
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<td>6</td>
<td>Wed., Feb-7</td>
<td>Technology Platforms and Network Dynamics</td>
<td>Uber: New Roads Ahead (Read Case)</td>
<td>[Optional Reading: Uber: Driving into Uncharted Territory background case]</td>
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<td>7</td>
<td>Mon., Feb-12</td>
<td>Content Platform Strategy</td>
<td>Guest Speaker: Jonathan Wegener, Founder and Former CEO, Timehop; Design Lead, Snapchat (Read Articles on Canvas)</td>
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<td>8</td>
<td>Wed., Feb-14</td>
<td>Multi-Sided Platforms</td>
<td>Google (Read Case)</td>
<td>[Optional Final Project proposal due today]</td>
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<td>9</td>
<td>Mon., Feb-19</td>
<td>New Markets from Established Firms</td>
<td>AmazonFresh (Read Case)</td>
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<td>10</td>
<td>Wed., Feb-21</td>
<td>Technology Strategy and Society</td>
<td>Guest Speaker: Brad Stone, Author of The Everything Store and The Upstarts (Read Excerpts on Canvas)</td>
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<tr>
<td>11</td>
<td>Mon., Feb-26</td>
<td>Finance and Technology</td>
<td>Guest Speaker: Rob Park, Co-Founder and CTO, IEX Trading (Read Case) [Optional Reading: Flash Boys by Michael Lewis]</td>
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<tr>
<td>12</td>
<td>Wed., Feb-28</td>
<td>Capstone</td>
<td>Facebook: The Ethics of Platform Testing (Read Case)</td>
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* Columbia cases highlighted in blue.