



15.965 Technology & Strategy

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Projects – teams, domains and businesses
Kristina Richardson and Leigh Gautreau



Agenda for today

- ~13:00 • Teams, domains and businesses
- ~13:15 • Presentations





First *individual* assignment

- Demonstrate your ability to assess a technology
- Pick one that you find interesting
- It can be related to the *domain* on which you are focusing as a project team, but it does not have to be



First individual assignment

- Why is this technology and domain interesting and important, what makes it significant and worthy of focus?
- What are the key *parameters* that characterize it, what are the key *trade-offs* and the performance *envelope*?
- How have the key parameters evolved over time, what has been the *innovation trajectory* for this technology?
- What are the key *alternative technologies* with which it competes for potential *applications*, and what are their advantages and disadvantages?
- How do you anticipate the key technologies in this domain are likely to evolve, and are they likely to be subject to “natural technological limits”?



The first individual assignment is due on Monday 23rd February by 08:59:59 EST

- Must **not** be longer than a maximum of 2,000 words
 - about four (4) pages long
 - excluding tables or figures (which are encouraged)
 - 1.5 line spacing, 10 to 12 point (10-12pt) font
 - 1 inch or greater (≥ 1 ") margins all round
- Submit by e-mail as an **Adobe Acrobat file** (pdf)
- Filename **must** have the following format: '15.965-
firstname-lastname-paper 1'
- If you don't know how, figure it out now





Technology

noun

1. electronic or digital products and systems considered as a group¹
 2. a technological process, invention, method or the like²
 3. the practical application of science to commerce or industry³
 4. the branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society and the environment²
 5. the sum of the ways in which social groups provide themselves with the material objects of their civilization
- WiMAX
 - ‘cloud computing’
 - fuel cells
 - memristors
 - unmanned aerial vehicles
 - biologics for medical devices
 - micro-needles for transdermal drug delivery
 - novel NP algorithms
 - composite materials for aerospace
 - novel coatings for solar panels
 - using avatars for psychotherapy

1: American Heritage® Dictionary, © 2000 Houghton Mifflin

2: Random House Unabridged Dictionary, © Random House Inc. 2006

3: WordNet®, © 2005 Princeton University





Projects

- Pick a *domain*, and within that *domain* a *business*, and recommend what the business *strategy* should now be
- Move from individual assignments which are descriptive, to demonstrating the ability to synthesize your understanding and be *prescriptive*, outline what a specific management team should be
- You should be thinking about this from the perspective of the management team of the business that you have chosen, imagine yourselves as that group
- It may be helpful to assign specific roles, focused on technology and innovation, on the demand opportunity, on the business ecosystem and on capturing value



Domain

noun

1. **a sphere of activity, concern or function; a field**³
 2. **a knowledge domain that you are interested in or communicating about**¹
 3. a field of action, thought or influence²
 4. a realm or range of personal knowledge, responsibility and so on²
- mobile ‘phones
 - smart ‘phones
 - medical devices
 - personal computers
 - netbooks and Mobile Internet Devices (MIDs)
 - unmanned aerial vehicles
 - imaging for remote surgery
 - enterprise software
 - military aircraft radar systems
 - hybrid vehicles
 - ‘smart’ grid
 - simulation software
 - computer servers

1: WordNet®, © 2005 Princeton University

2: Random House Unabridged Dictionary, © Random House Inc. 2006

3: American Heritage® Dictionary, © 2000 Houghton Mifflin



Business

noun

1. **a person, partnership, or corporation engaged in commerce, manufacturing, or a service; profit-seeking enterprise or concern**¹
 2. **a commercial enterprise or establishment**²
 3. a commercial or industrial enterprise and the people who constitute it³
- Nokia
 - Apple
 - Medtronic
 - Stryker
 - HP
 - Asus
 - Northrop Grumman
 - Ford
 - A123 Systems
 - ACCESS
 - Tesla

1: American Heritage® Dictionary, © 2000 Houghton Mifflin

2: Random House Unabridged Dictionary, © Random House Inc. 2006

3: WordNet®, © 2005 Princeton University





Strategy

noun

1. a plan, method or series of maneuvers or strategems for obtaining a specific goal or result¹
2. the science and art of **military** command as applied to the overall planning and conduct of large-scale **combat** operations²
3. the art or skill of using strategems in endeavors such as politics and business²

1: Random House Unabridged Dictionary, © Random House Inc. 2006

2: American Heritage® Dictionary, © 2000 Houghton Mifflin

What is business strategy?

- Pursuing choices amongst competing options
 - a **different** system of activities that creates unique value and captures it
 - not operational effectiveness or improvement
- Planned and intended, pursued and realized
 - deliberate
 - emergent
- Pattern recognition
 - building the prepared mind
 - capable of making sound decisions

Michael Porter, “What is Strategy”, Harvard Business Review, November-December 1996, pages 61-78

Henry Mintzberg, “Crafting Strategy”, July-August 1987, pages 66-74

Sarah Kaplan, “The Real Value of Strategic Planning”, MIT Sloan Management Review, Winter 2003, pages 71-76

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15.965 Technology Strategy for System Design and Management
Spring 2009

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