Creating a Culture of Innovation: A Syllabus

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My Background and Biases

- B.S., geology, Caltech
- Ph.D., geophysics, MIT
- 1988 -- Congressional Science Fellow
- 4 years as Senator Gore's science advisor
- 4 years as IT policy wonk at White House
- 1998-1999 -- Technologist at FCC
- 9+ years at IBM
- Joined Georgetown faculty, Jan. 2008
- Technology Policy Group, Microsoft
- Technology Policy Analyst, Bloomberg Government
- Public Policy, CloudFlare since January, 2015
My Goals Today

• Define Innovation
• Diagnose the Problem and the Potential
• Describe some “medicine”
• Recommend different treatments
• Stimulate discussions
What is Innovation?

So many definitions, so much confusion

• Innovation is NOT invention
  • It’s about turning an idea into something useful

• It’s not just about hardware and software

• It’s HIGHLY non-linear!
  • Don’t talk about pipelines and roadmaps
How to Foster Innovation?

CCTP 732 - “Creating a Culture of Innovation”

• Individual
• Team
• Company
• Ecosystem
• Nation
What really matters

• Risk taking
• Interdisciplinary and “trans-disciplinary” thinking
• Effective teams
• Efficient access to GOOD and CLEAR information
• Connection to the “market” plus feedback
Barriers to Innovation on Campus

CULTURE

• Fixed-pie thinking (due to grant processes, etc.)
• Consensus building rewards the non-disruptive
• Lack of revolving door and the “caste system”
• Veneration of theory over practice and product
Barriers to Innovation on Campus

INCENTIVE STRUCTURES

• Rewards for individual accomplishments
• Quantity over Quality (Papers, Patents, Roles)
• Disciplinary silos (tenure committees)
• Lawyers and Government Regulations!
# Different Cultures of Innovation

<table>
<thead>
<tr>
<th>Principle</th>
<th>Europe</th>
<th>East Coast</th>
<th>West Coast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation</td>
<td>Rights and Jobs</td>
<td>Money and Power</td>
<td>Fun</td>
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<tr>
<td>Heroes</td>
<td>Philosophers</td>
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<tr>
<td></td>
<td>Kant, Descartes</td>
<td>Winklevoss twins</td>
<td>Zuckerberg, Jobs</td>
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<tr>
<td>Verb</td>
<td>Investigate</td>
<td>Litigate</td>
<td>Innovate</td>
</tr>
<tr>
<td>Motto</td>
<td>What is possible must be delayed</td>
<td>What is possible is threatening</td>
<td>What is possible is inevitable</td>
</tr>
</tbody>
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“Six Myths of Innovation Policy,” European Institute,
The Good News

Colleges and Universities have:

• Brilliant, curious, diverse people
• Impatient students demanding change
• Transparency (especially at public schools)
• More powerful information tools than ever before
• Private sector interest (from CEOs on down)
The New Tools

- The Internet of Things + The Cloud >>> The Cloud of Things

PLUS:

- Wireless Broadband
- Big Data
- Machine Learning
- Easy Interfaces and Collaboration Tools
Recommended Reading

About Innovative Individuals

Order the Book
Recommended Reading

About Innovation and the Future

Nowadays, it's too hard to predict the future.

So, I settle for predicting the present.

- noted futurist, John Perry Barlow
Recommended Reading

About Innovation and the Future

- The Inevitable
  Kevin Kelly

- Abundance
  Peter D. Kramer, Steven Johnson

- Future Perfect
  Steven Johnson

- New Evidence for Abundance
Recommended Reading

About Innovation and the Future of Work

Recommended Reading

About Innovation and Teams

Bill Joy’s Law:
No matter who you are, most of the smartest people work for someone else.
Recommended Reading

About Innovation, Teams, and Trust

“Never attribute to maliciousness what can be explained by overwork or thoughtlessness.”
Recommended Reading

About Innovation, Teams, and Trust

John Hagel

The Power of Pull by John Hagel III, John Seely Brown, and Lang Davison

5 Dysfunctions of a Team

The Five Dysfunctions of a Team by Patrick Lencioni
Recommended Reading

About Innovation, Teams, and Communications

microstyle.org

Frank Luntz

TED TALKS

The Official TED Guide to Public Speaking

CHRIS ANDERSON
Heidelberg TED
Recommended Reading

About Innovation, Ecosystems, and Networks

Howard Rheingold’s mini-courses
Recommended Reading

• Innovation, Organizations, and Nations
Assignments

• Team projects

• Titles matter ("convenors" and "facilitators" not "chairs")

• Analyze failures

• Book groups and TED talks

• REQUIRE use of social media (Twitter or LinkedIn or blogs)

• Examine institutional barriers
Grading

- Rewards should be for teamwork (IBM’s “Win, Execute, Team”)
- Quality not Quantity (unless it’s a thesis, limit papers to 5 pages)
  - Muskie memos
  - Richard Brautigan and Hemingway
- Measure the amount of sharing
Models

- The open source community
- CloudFlare
- Arizona State University
- Caltech
Conclusions

• Innovation can be infectious!!

• Go forth and innovate!!