



Carnegie Mellon University

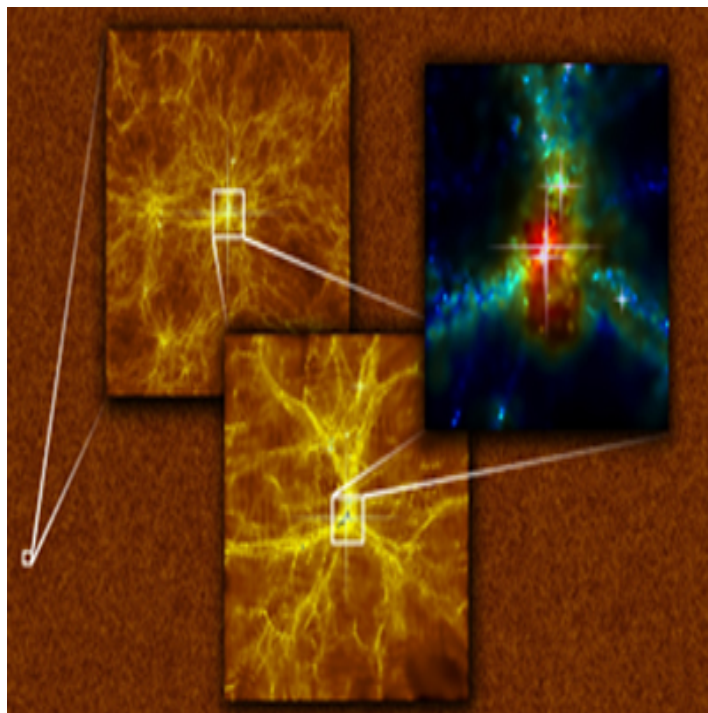
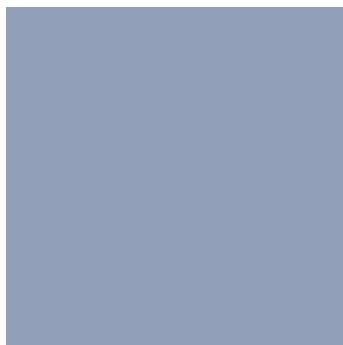


Carnegie Institute of Technology
Engineering and Public Policy Department
Engineering Technology Innovation Management Program

New Technology Commercialization: Non-Market Public Policy Strategies for Entrepreneurs and Innovators

Spring 2014

Project Course Sponsorship



+ Have you ever wondered how the market for your emerging technology might be affected by public policies?

Or, perhaps this question might arise with potential investors in your emerging technology as they evaluate its market potential.

National, state, and local governments may also be interested in the potential of your project for social good or harm.

Do you know the answers? Would a public policy strategy that identifies opportunities and ways to overcome challenge of your invention help you reach the next step?

If so, Carnegie Mellon University is offering you an opportunity to host a project with graduate students to help answer these questions.



How might your new technology be influenced by public policies?

Entrepreneurs and innovators interested in commercializing technology in the biomedical, energy, transportation, information technology, robotics, aerospace, food, healthcare, and other industries require more than knowing whether a technology works and the potential market.

Non-market factors such as regulations, standards, and grants influence product, price, location, research, development, and testing, and other decisions. As a result, public policies provide both opportunities and challenges for the commercialization of an invention. Only by recognizing these opportunities or overcoming these challenges can an invention become a commercialized innovation.

Examples of opportunities include relating

- relating your innovation to a new product or process needed as a result of a government-encouraged social goal (such as energy efficiency in

buildings) or technology-forcing regulation (such as environmental goals) or government responsibility (such as national defense), and

- identifying the potential for Federal, state, or local governments to provide needed startup funds or as a possible early market for a new innovation.

Challenges include the need to

- address product-related issues such as environmental, health, and safety concerns; field testing; and manufacturing;
- obtain approval of a product before it can enter the marketplace;
- take into account issues such as standards, patents, trademarks, copyright, open standard, open source, and reimbursement policies.

Throughout this process, innovators may need to interface with policymakers to obtain the optimal benefit.

In sum, moving a new technology from invention from discovery to launch requires an innovation public policy strategy.



Case Studies

Examples of Innovations Influenced by Public Policies



Uber is an innovative app that offers customers the ability to “request, ride, and pay via your mobile phone” for a “black car” service.

Although popular with customers, it has faced challenges as its service has been implemented in cities such as Washington, DC, Dallas, and Denver.

Among their challenges has been the need to modify state or local regulations related to how taxis are hailed, staffed, and priced. These regulations, often designed decades ago for public protection, take time to change as the government entity needs to negotiate changes with legacy companies.



Autonomous “self-driving” cars, such as the Google car pictures above, hold great potential. Imagine, for example, how independent it might make someone who is visually impaired. Or, how many accidents that could be prevented due to less human error.

However, beyond the technological challenges, there are regulatory challenges as well. Although laws permitting use of these cars has passed in some states, it has failed in others? Will there be challenges once cars start to cross state lines?

A longer term question might be -
- Who is liable in an accident?
The car manufacturer or the technology manufacturer or the “driver” of the driverless car?



Bitcoin, the virtual currency, didn’t face much scrutiny until it increased 10 fold in value. Now some are concerned about its potential use for money laundering to pay for terrorism and illicit goods activities. One company was shut down by the U.S. Department of Homeland Security.

In addition, because Bitcoin does not fit the definition of currency according to banking law, its regulatory status is uncertain.

Another issue is whether or not bitcoin is currency – when in the United States only the national government is allowed by law to produce “legal tender.”

+ Project Course Sponsorship: Your Project + Our Student Teams = Win-Win Results

What products or processes are appropriate for a project?

Appropriate products or processes are emerging technologies where the target market(s) has been identified, but where market adoption is uncertain. The product or technology should be of moderate complexity and scope, and not yet into high-volume production.

Likely candidates are in the following sectors: Clean Technology/Energy, Robotics, Transportation, Information Technology, Medical Devices/Biotech, and Materials Science/Nanotechnology. These are just suggestions, however, and there may well be candidates from other sectors. Some examples from related classes are dye-sensitized solar cells, robot manipulator arms, home appliance energy monitoring, electronic dosimeters for hospital workers, and nano-adhesive for athletic gloves.

Is there any cost for sponsoring a project?

Sponsors typically pay a fee for the analysis they receive during a Carnegie Mellon University project course. The fee for this course project is waived for first-time sponsors who sign up by January 10, 2014. We would expect, however, that your staff be responsive to student questions and willing to work with our students, and that they attend the final presentation either in person or virtually. In addition, we ask that students be reimbursed (via CMU) for expenses that might arise such as travel to your offices, photocopying, etc. This is a small expense relative to the hours of labor the students will provide.

What kind of students will participate on my project?

Most of the students who will work on your project are graduate students at the master's and PhD level in engineering. Additional graduate students from CMU's public policy and business schools as well as University of Pittsburgh Law students may also work on your project.

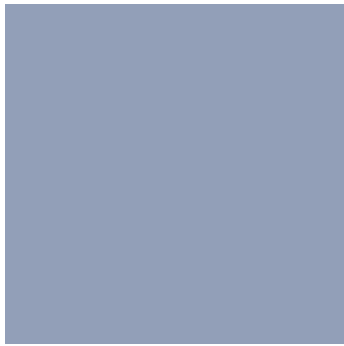
What products will you provide at the end of the class?

We will provide you with a written report and a power point presentation that includes a structured analysis responding to your unstructured question(s). The written report typically includes a technology overview, identification of the non-market challenges and opportunities, the policy content and issues, the likely outcomes, identification of the key allies and adversaries, and strategy to respond to the identified issues. Other benefits are your interactions with highly educated and innovative graduate students.

I'm interested, what are the next steps?

The final number of projects we will be able to conduct is based on the number of enrolled students. At this time, we expect to conduct at least four projects. We ask that you fill out a simple application form that provides basic background information and identifies any specific questions you would like to propose the students address. This will help us prioritize the projects.

Please contact Dr. Deborah Stine, Professor of the Practice, Engineering and Public Policy Department, CMU at dstine@andrew.cmu.edu to receive this simple application form or for any questions you might have.



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For More Information:

Deborah D. Stine
Professor of the Practice
Department of Engineering and Public Policy
Associate Director for Policy Outreach, Scott Institute for Energy Innovation
Carnegie Mellon University
dstine@andrew.cmu.edu
<http://www.epp.cmu.edu/people/bios/stine.html>