Technology and Policy Analysis

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October 23, 2006
ESD.10 Meta-Learning Objective: Appreciate the political, social, and institutional context of technological systems

Current issues in technology and policy

Learning to see:
- Goals (equity, efficiency, security, liberty)
- Problem framing (symbols, numbers, causes, interests)
- Policy solutions (inducements, rules, facts, rights, powers)

Learning to analyze:
- Policy analysis toolkit (positions, powers, resources, channels, windows, technology constraints and enablers)
- Economics (cost-benefit analysis, pareto optimality, utility)
- Term Project (conceive, design, execute a policy research project)

Learning to articulate:
- Writing (policy memos, policy research studies)
- Dialogue (recitations, class discussions)
- Presentation (term project, group homeworks)

“Real world” experiences of policy practitioners
Let’s begin with an important and fundamental question:

- Do you think there is a difference between policy involving technology-related areas and non-technology-related areas?

My answer:

- Not a really big difference, but…
- Technology is usually subject to relatively immutable physical laws of the universe, creating constraints
- Non-technological things are usually more subject to social constructs, which history has shown can change given time
What is technology and policy analysis?

- Counter examples can be very useful
  - <show video clip of Dead Poets’ Society movie>
- No singular universal quantitative prescription
- Think of technology and policy analysis as:
  - A toolbox (indeed a whole chest!) of principles, methods, techniques, tools, analogs, experiences, etc. that help you understand, take action on, and assess T&P issues
- How you structure your tools for analysis depends on your objective:
  - Understanding
  - Acting
  - Reflecting and Assessing
“Drawers” in your tool chest for technology and policy analysis

- Issue Framing
- Stakeholders
- Technology/Policy Interactions
- Powers & Resources
- Channels
- Windows

- Who
- What
- When
- Where
- Why
- How
- How much
“Drawers” in your tool chest for technology and policy analysis

- Issue Framing
- Stakeholders
- Technology/Policy Interactions
- Powers & Resources
- Channels
- Windows
“Drawers” in your tool chest for technology and policy analysis

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Understanding
“Drawers” in your tool chest for technology and policy analysis

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- Stakeholders
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- Powers & Resources
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- Windows

Acting
“Drawers” in your tool chest for technology and policy analysis

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- Stakeholders
- Technology/Policy Interactions
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- Channels
- Windows

Reflecting and Assessing
Achieving success in implementing policy involving technology
Agenda

- Review technology and policy analysis tools
- Examine technology and policy implementation
- Discuss technology and policy assessment
Tools in the Technology and Policy Analysis Tool Chest
Issue framing

- What fundamental goals are in play?
- What are the bounds of the issue?
- How is the issue cast?
  - Economic (cost-benefit), safety (risk-benefit), interests (sides), control, conspiracy, victimization, causes

For discussion: Strengths? Cautions? Your reflection from the readings? Apply to your term project?

Advice
  - Make use of Stone framework to gain new perspectives
Stakeholders

- Who cares about the issue? What are their motivations?
- What are their core beliefs and values?
- How are stakeholders arrayed on the issue?
- What coalitions exist?

- For discussion: Strengths? Cautions? Your reflection from the readings? Apply to your term project?
- Advice
  - Go out a few layers to gain perspective on vital, important, peripheral stakeholders
Technology and policy interactions

- How does the technology constrain or enable policy?
- How does the policy constrain or enable technology?

For discussion: Strengths? Cautions? Your reflection from the readings? Apply to your term project?

Advice
  - Deep understanding of the technology
  - Separate function / process from form / object
What channels exist for taking action on the issue?
- Electoral, legislative, legal, administrative, media, grassroots...

What are the costs and benefits of using various channels, now and in the future?

For discussion: Strengths? Cautions? Your reflection from the readings? Apply to your term project?

Advice
- Consider the political capital required for different channels
Powers and resources

- Who has formal and informal power to take action?
- Who has resources to put to the issue?
- Who can influence those that take action / have resources?
- How can people with power/resources/influence be mobilized?

For discussion: Strengths? Cautions? Your reflection from the readings? Apply to your term project?

Advice
- Powers, resources and channels are very often intertwined
• Which focusing events could be imagined that would put the issue on the agenda?
• Are there institutional routines for moving the issue?

• For discussion: Strengths? Cautions? Your reflection from the readings? Apply to your term project?
• Advice
  – Understand the seasonal and life cyclicality of stakeholders and organizations
Implementing Technology and Policy
**Implementation Variables & Stages**

- **Tractability of the Problem**
  1. Technical difficulties
  2. Diversity of target group behavior
  3. Target group as a percentage of the population
  4. Extent of behavioral change required

- **Ability of Statute to Structure Implementation**
  1. Clear and consistent objectives
  2. Incorporation of adequate causal theory
  3. Initial allocation of financial resources
  4. Hierarchical integration within and among implementing institutions
  5. Decision rules of implementing agencies
  6. Recruitment of implementing officials
  7. Formal access by outsiders

- **Nonstatutory Variables Affecting Implementation**
  1. Socioeconomic conditions and technology
  2. Public support
  3. Attitudes and resources of constituency groups
  4. Support from sovereigns
  5. Commitment and leadership skill of implementing officials

- **Stages (Dependent Variables) in the Implementation Process**
  - Policy outputs of implementing agencies
  - Compliance with policy outputs by target groups
  - Actual impacts of policy outputs
  - Perceived impacts of policy outputs
  - Major revision in statute

- **What are your impressions of implementation?**

Figure by MIT OCW.
Consider creating policy in a lifecycle context, like designing a product
- Remember “Design for manufacturability, producibility, operability”?
- Conceive, Design, Implement, Operate, and incorporate learning into the next iteration
- Enter each phase of the policy lifecycle with a view towards upstream and downstream influences
- What is the equivalent of “disposal” or “retirement” in the policy lifecycle?
Characteristics of effective policy implementation

- What makes for effective policy implementation?
Effective implementation (1/2)

1. Policy mandates clear and consistent objectives

2. Policy based on sound theory of causal linkages, gives officials sufficient jurisdiction and points of leverage to attain goals

3. Policy structures implementation process effectively; right agencies, integration, decision rules, dollars, support
Effective implementation (2/2)

4. Leaders of implementing agencies possess managerial and political skill and are committed to policy’s goals

5. Policy is actively supported by constituency groups and leaders

6. Policy objective not undermined over time by changing conditions
Assessing Technology and Policy
Policy assessment

- What questions should you ask yourself in assessing a policy in retrospect?
Assessment and Reflection

- How well did the policy achieve its goal?
- What were unintended consequences?
- What went well or poorly in the conception, design, implementation?
- What were unanticipated complications?
- “What if…” we used a different framing, considered different stakeholders, called on different powers, mobilized other constituencies, found different windows of opportunity, etc.