

Technology and Policy Analysis

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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)

Historical context of S&T policy

Learning to articulate:

Writing (policy memos, policy research studies) Dialogue (recitations, class discussions) Presentation (term project, group homeworks)

"Real world" experiences of policy practitioners



Is there a difference? The technology question

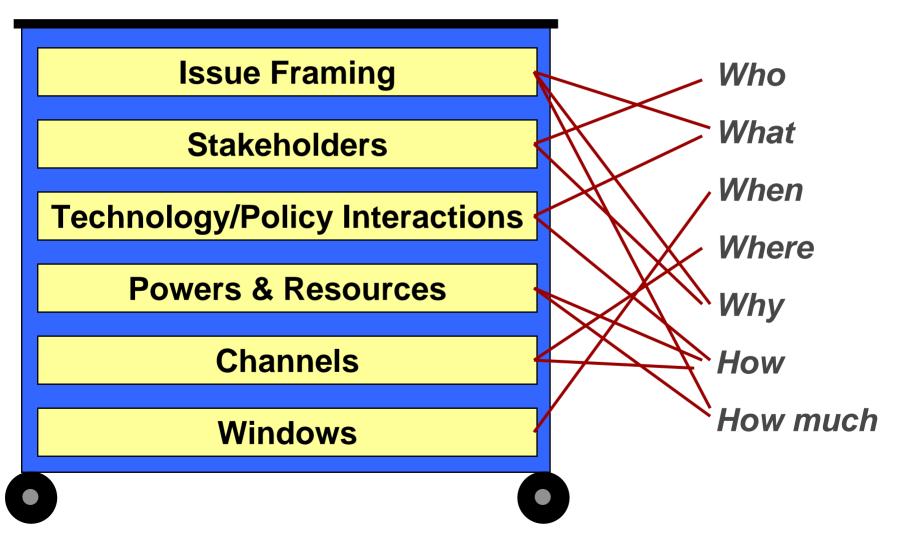
- Let's begin with an important and fundamental question:
 - Do you think there is a difference between policy involving technology-related areas and non-technology-related areas?
- My answer:

- 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



- 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

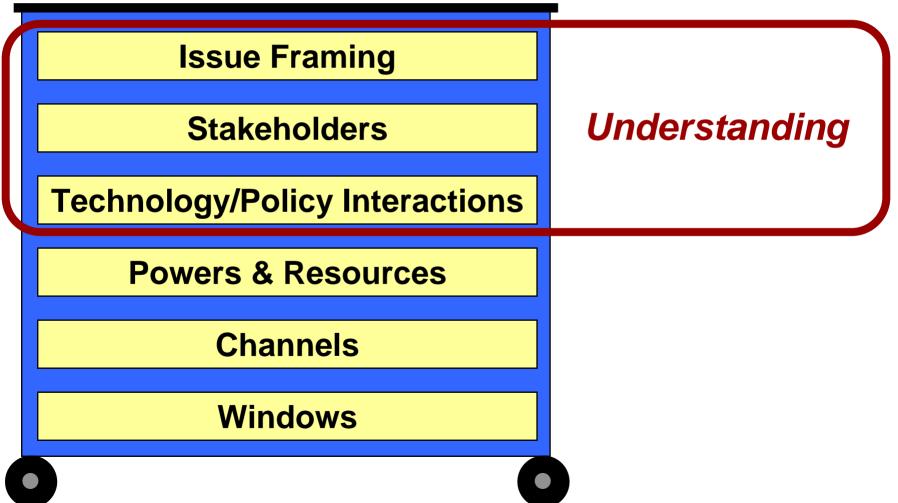




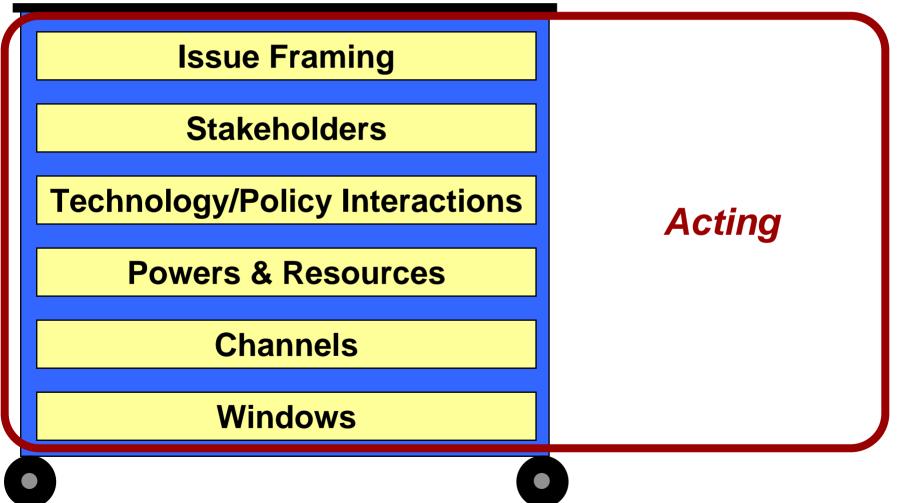


	Issue Framing
	Stakeholders
Тес	hnology/Policy Interactions
	Powers & Resources
	Channels
	Windows

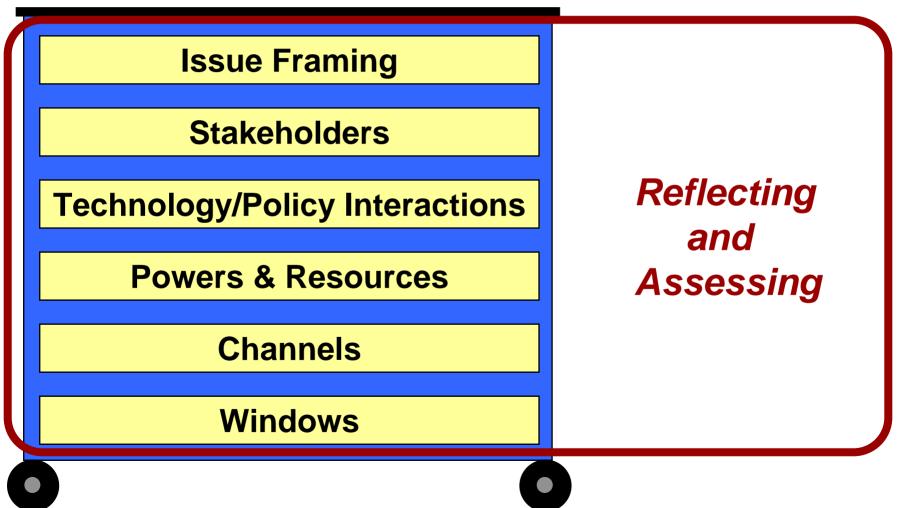






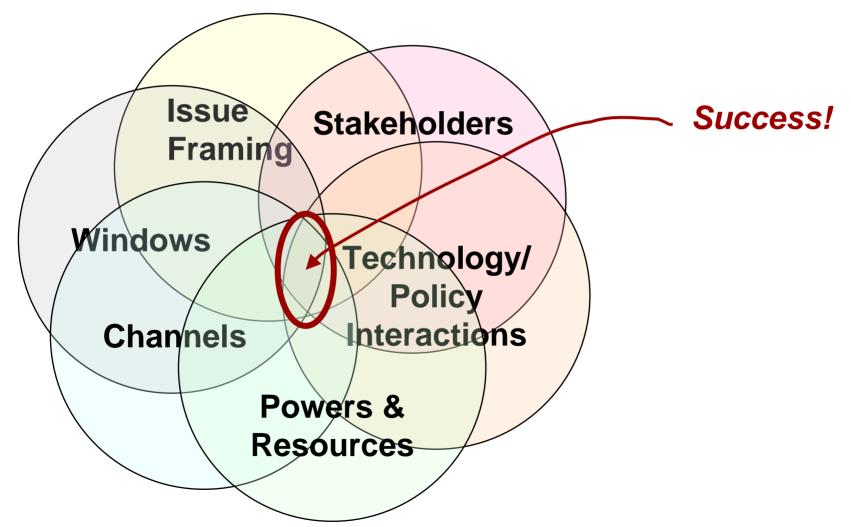






PliT

Achieving success in implementing policy involving technology







- 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

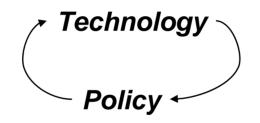
- Who cares about the issue? What are their motivations?
- What are their core beliefs and values?
- How are stakeholders arrayed on the issue?
- What coalitions exist?

- 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



Windows

- 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



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

Implementation Variables & Stages

What are your impressions of implementation?

Stages (Dependent Variables) in the Implementation Process

Policy outputs _____ Compliance _____ Actual ____ Perceived ____ Major of implementing agencies of policy outputs by outputs of policy outputs of policy outputs of policy outputs



The policy lifecycle view

- 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?



• What makes for effective policy implementation?



Effective implementation (1/2)

- **1.** Policy mandates clear and consistent objectives
- Policy based on sound theory of causal linkages, gives officials sufficient jurisdiction and points of leverage to attain goals
- 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.