CITS Seminar

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October 2005
Agenda

- Technology management
- Environmental policy change
- My research
Trade-offs in Engineering

“Pick Two”
Technology Lifecycle

**Bleeding Edge**
- Podcasting

**Leading Edge**
- iPod
- CrowdSurfer
- BlackBerry

**State of the Art**
- CD
- Mobile

**Dated**
- Cassette

**Obsolete**
- 8-track
- CB
- Telegraph
Technology Adoption

Moore, 1991. Crossing the Chasm
Technology Diffusion


Theory: S-curve

wikipedia.org
Moore’s Law
The Fifth Paradigm

Logarithmic Plot

Calculations per Second per $1,000

Year


Electromechanical Relay Vacuum Tube Transistor Integrated Circuit
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# Environmentalism

<table>
<thead>
<tr>
<th>Scope</th>
<th>Preservation</th>
<th>Conservation</th>
<th>Ecosystem</th>
<th>Post Modern</th>
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</thead>
<tbody>
<tr>
<td>1920 - 1960</td>
<td>Use, Pollution</td>
<td>NEPA, Air</td>
<td></td>
<td>Superfund</td>
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<td>1960 - 1980</td>
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<td>1980 - 2000</td>
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<tr>
<th>Power</th>
<th>Technical Negotiations</th>
<th>Corporate Pressure</th>
<th>Middle-class politics</th>
<th>Participatory democracy</th>
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Lester 1995
## Public policy

<table>
<thead>
<tr>
<th>Actors</th>
<th>Institutions</th>
<th>Environmental</th>
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</thead>
<tbody>
<tr>
<td>Public</td>
<td>Local</td>
<td>SBCC</td>
</tr>
<tr>
<td>Interest Groups</td>
<td>State</td>
<td>CEQA</td>
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<tr>
<td>Elite</td>
<td>Federal</td>
<td>Clean Air Act</td>
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<td>Policymakers</td>
<td>International</td>
<td>Kyoto</td>
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<td>Courts</td>
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Public policy change

- Cyclical thesis
  - fairly predictable pattern: private vs. public remedies

- Backlash
  - major changes based on reaction to prior policies

- Advocacy Coalition Framework
  - conflicting, informed groups responding to events

Lester 1995
Focusing events

What?
- Rare, harmful, & sudden
- Known simultaneously by public & policymakers

Kinds?
- Natural Disasters (earthquakes, hurricanes, floods)
- Unnatural Disasters
  - Three Mile Island (1979); Chernobyl (1986);
  - Exxon Valdez (1989); Kuwati Oil Wells (1991)
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Wireless Sensors

Sensor types:
- movement, light, force, temperature, audio, proximity, humidity

Examples:
- DigiClip, eSeal, μParts

(Beigl 2004)
Implications of Wireless

Sensor networks

- Massively instrumented environments for monitoring, forecasting, and research

Ubiquitous computing

- Reduce barriers to civic participation
- Facilitate mobilization & information flow
Environmental policy domain is largely removed from public advocacy.

Advocacy coalitions require evermore resources & expertise.

Large-scale access enables wide participation: “Think locally, act globally”

Networked multimedia content improves outreach potential.
Hypothesis

Increase in participatory democracy would affect environmental policy change positively.

Distributed collaboration technology can improve quality of participation.
Example

1. Major environmental disaster occurs
2. Citizen participation → flood of new media content – blogs, images, video, speeches, events, etc.
3. Collaboration network refines into “influential” assets
4. Advocacy coalitions leverage assets in policymaking
Research Questions

- Effectiveness of distributed collaboration framework to facilitate policy change? Better outcomes?
- Collaborative content production yield higher-valued assets?
- Useful types of data to affect environmental policy change? Limiting factors?