Making money flow sideways: cross-agency geospatial investment coordination

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Narrative

- My entry point…. (and biases)
  - SDI, a coordination dilemma
  - scope: public sector / central government

- Argument: Budgeting process is a tool for coordination
  - all agencies (staffing/activities) linked to the budget
  - central budget agency, a sort of regulator (network administrator)

- Evidence from Canada and the US
  - incentives, coercion, investment portfolio, performance measurement…

- Research challenges

SDI status quo: poor coordination

Graphic source: adapted from Doug Nebert
SDI utopia: cross-agency coordination

- Design and monitor poverty reduction programs
- Manage of natural resources
- Deliver public service delivery to citizens
- Strengthen national security

![Diagram showing Ministry of Health, Ministry of Education, Ministry of Water, Ministry of Agriculture, and Ministry of Transportation connected through shared data and services.]

Graphic source: adapted from Doug Nebert

Departmentalism (1)

- Disincentives for cross-agency coordination
  - government budgets - the result of a powerful and often contested decision-making process
  - programs face stiff competition for limited funds
  - managers must invest time to negotiate with other units about proposals (time they don’t have)
Departmentalism (2)

- Government, by design, is constructed around boundaries.
  - Boundaries between programs fuel political debate.
  - Boundaries between administrative agencies shape clarity of purpose.
  - Boundaries within agencies, through hierarchy and authority, promote efficiency.
- These boundaries are essential for defining administrative responsibility and, ultimately, democratic accountability (Kettl, 2001)

How to get to horizontal coordination (in a vertical environment)?
Argument: central budget agency is key

Influence exerted through:
- planning and budgeting,
- incentive arrangements,
- allocation of responsibility and accountability,
- management information systems, and
- performance evaluation practices

Argument: principle – agent relationship

Figure source: 2004 World Development Report
Coordination: incentives

Pooled resource (or fund)

Encouraging partnership with 'carrots'

Coordination: coercion

Budget control

Enforcing desired behavior with 'sticks'

Photo source: The Economist
US example

2004 Congressional hearing: “Geospatial Information: Are we really headed in the right direction or are we lost?”

- “A complete and up-to-date strategic plan to coordinate geospatial investments is missing.” GAO (2004)
- “We need to get to the issue of accountability and managing information strategically.” (OMB Administrator for E-Government and IT)

US example: OMB learning curve

- OMB is getting smarter at this… “like peeling layers off an onion”
  - annual IT budget review process (Exhibit 300)
  - Dol geospatial blueprint
  - Geospatial Line of Business (LoB)

“I don’t think things are going to change unless someone is forcing change.”
Coercion: Geospatial One-Stop

<table>
<thead>
<tr>
<th>Agency</th>
<th>FY03 Estimated In-kind FTEs</th>
<th>FY03 Estimated Cash</th>
<th>FY03 Estimated Total $</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAA</td>
<td>3.25</td>
<td>$200</td>
<td>$200</td>
</tr>
<tr>
<td>Census</td>
<td>3.45</td>
<td>$100</td>
<td>$100</td>
</tr>
<tr>
<td>DOT</td>
<td>5</td>
<td>$690</td>
<td>$690</td>
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<tr>
<td>USACE</td>
<td>3.2</td>
<td>$100</td>
<td>$100</td>
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<tr>
<td>NIMA</td>
<td>1.85</td>
<td>$325</td>
<td>$325</td>
</tr>
<tr>
<td>FEMA</td>
<td>3.25</td>
<td>$100</td>
<td>$100</td>
</tr>
<tr>
<td>EPA</td>
<td>1.85</td>
<td>$320</td>
<td>$320</td>
</tr>
<tr>
<td>USDA</td>
<td>2.5</td>
<td>$90</td>
<td>$90</td>
</tr>
<tr>
<td>NASA</td>
<td>2.45</td>
<td>$200</td>
<td>$200</td>
</tr>
<tr>
<td>BLM</td>
<td>3.45</td>
<td>$1,500</td>
<td>$1,500</td>
</tr>
<tr>
<td>USGS</td>
<td>6.85</td>
<td>$2,375</td>
<td>$2,375</td>
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<tr>
<td>FGDC</td>
<td>2.5</td>
<td>$245</td>
<td>$245</td>
</tr>
<tr>
<td>Total</td>
<td>20.8</td>
<td>$1,665</td>
<td>$1,665</td>
</tr>
</tbody>
</table>

Definitions:
- FTE = Full-Time Employee or Equivalent
- Dollars represent thousands
- In-kind contributions are expressed in FTEs required to support Geospatial One-Stop activities
- Contributions are geographically dispersed to the agencies that can use the data.
- Total $ = FY03 Estimated Total

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Canada example

- **Inter-Agency Committee on Geomatics (IACG) Steering Committee:** to provide advice on Treasury Board budget submissions with a geomatics component.
- **Geoconnections Value Management Office:** mapping spending to outcomes by recoding budget items (improving accounting to report both vertically and horizontally)
- **Geomatics Community Coordinators:** horizontal management of data sets through GCC), ... but with GCC vertical accountability.
- **Geoconnections, a sunset program:** discrete activities with focus on accountability for delivering what is proposed, with potential for closing out of program if performance is poor.
US & Canada: Investment portfolio

Administration
- central budget agency
- line agencies
- individual departments and programs

Planning
- horizontal policy outcomes
- SDI strategy
- vertical activities

Resources
- SDI investment portfolio
- agency budgets
- project and program budgets

US & Canada: SDI performance evaluation

Needs

Environment

Final outcomes

Intermediate outcomes

organization or program

Objectives

Inputs

Activities

Outputs

efficiency

effectiveness

ecomonomd problems

needs
Research challenges: SDI similarities? (1)

Research challenges: SDI ‘fiscal archeology’ (2)
SDI ‘fiscal archeology’ (example Egypt)

<table>
<thead>
<tr>
<th>Ministry / Agency</th>
<th>Project</th>
<th>Project Amount</th>
<th>Funding</th>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egyptian Environmental Affairs Agency (EEAA)</td>
<td>Egyptian Environmental Information System</td>
<td>government of Egypt and Canadian International Development Agency (CIDA)</td>
<td>$12,783,000 EEAA Contribution: $1,800,000 CDN in Egyptian L.E.</td>
<td>1997 to 2004</td>
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<tr>
<td>General Organization for Physical Planning (GOPP), part of the Ministry of Housing, Utilities and Urban Communities (MNUUC)</td>
<td>Support to GOPP in Planning and Geographic Information Systems</td>
<td>Swedish</td>
<td>$1,165.019 UNDP</td>
<td>Began in January 2005</td>
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<tr>
<td>General Organization for Physical Planning (GOPP)</td>
<td>Development of Regional Physical Planning Centres by the Establishment of a Network for a Geographical Information System</td>
<td>US $1,165.019</td>
<td>UNDP</td>
<td>1999-2004</td>
</tr>
<tr>
<td>Egyptian Survey Authority (ESA)</td>
<td>Mapping Programme to the Development of Managers and Supervisors for the National Cadastre</td>
<td>LE1,256,053, Egyptian Cadastre Information Project (ECIP)</td>
<td>Royal Netherlands Embassy</td>
<td>2001-2004</td>
</tr>
<tr>
<td>Egyptian Survey Authority (ESA)</td>
<td>Egyptian Cadastre Information Project (ECIP)</td>
<td>€7 million</td>
<td>Finnish government</td>
<td>2002 -</td>
</tr>
<tr>
<td>Ministry of Health and Population, National Population Council</td>
<td>Epidemiology and Health Survey</td>
<td>USAID</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research challenges: SDI ‘fiscal archeology’ obstacles

- Most geospatial investment tucked into program budgets
- Projects with geospatial component are not ‘flagged’ as geospatial.
- Lack of common definitions for the terms IT and GIT
  - broad understanding for each, but neither have specific descriptions and classifications for accounting/expenditure tracking purposes.
- The boundaries of geospatial investment are difficult to define.
  - e.g., water quality monitoring, georemediation, etc.
- Agencies treat geospatial investments differently in their accounting.
  - capital versus recurring budgets
- Lack of clarity of responsibility for tracking
  - IS managers, GIS manager, or accounting departments
Research challenges: aid agencies (2)

Research challenges: civil society (3)
Research challenges: summary

Benefits to stakeholders / civil society

- Aid agencies
- Central government
- Accounting

Performance

Costs

To end at the beginning...

- Title from González (2003) - administration of interdisciplinary programs at the University of California-Davis (UC-Davis).
- Interdisciplinary programs cut across college lines within the university, and thus budget lines, challenging the university’s old ‘vertical’ funding model.
- González pointed out, “Money naturally runs downhill, and it is hard to make it flow sideways.”
- predicament of university administrators similar to SDI administrators
- UC-Davis experimented with different approaches to overcome this funding law of gravity.
- In both approaches, a central office with budgetary discretion played a key role in ensuring ‘horizontal’ coordination.
Final thought: social vs formal control

- Not an “either / or” debate
- Such juxtaposition is unhelpful
- Rather, a balance or blend between formal control in certain high risk areas and social control (autonomy) in other areas
  - High risk areas are those where ‘voluntary coordination’ is problematic
- Control should be viewed as a continuum ranging from traditional “command and control” to codes of conduct
  - A spectrum of instruments (tools of governance)

Thank you

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