How is e-Government Research Different from Traditional IS Research?

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Theses

- Disciplinary research on complex phenomena & wicked problems creates a dilemma
- Traditional IS research is in crisis
- E-Government needs an interdisciplinary research approach, which is highly relevant to practice
The Dilemma of Disciplinary Research on Complex Phenomena & Wicked Problems

- Any one discipline has developed and is using its focus areas and methods leading to effective and accepted research in that discipline.
- It is relatively easy to determine what is inside and what is outside the focus area (errors of inclusion and exclusion).
- The narrower the definition the more rigid (and “rigorous”) is the research tradition.
- However, some phenomena (typically complex and wicked problems as typically found in social sciences) defy a satisfactory explanation from a single perspective.
- Even comparing the results accumulated by separate disciplines regarding a complex “phenomenon” proves inconclusive.
- However, treating wicked and complex problems with insufficient understanding is suboptimal at best and dangerous at worst.
Traditional IS Research is in a Deep Crisis

- Two 1st-tier journals in the US (ISR, MISQ) averaging less than 40 research articles per year
- Ambiguous research agenda (information systems/technology and business problems)
- Deep assumption: \( o = f(t) \), with \( o \) as the organizational outcome and \( t \) as the technology input
- Unclear boundaries ("Errors of inclusion, errors of exclusion," Benbasat, 2005)
- Relevance versus rigor (see the 1997 debate, see also Benbasat & Zmud, 1999, but also Orlikowski, Robey, Newman & and others)
- Rapidly diminishing influence and funding (the already smallest and most beleaguered department in business schools)
- Unclear practical benefit
An Interdisciplinary Approach
Business Processes

- Main target of private-sector re-engineering efforts in the 1990s
- No commonly accepted definition (Darton, 1997)
  
  “A business process consists of a sequence of steps which transform material/information from an initial state (input) to a final state (output). A key characteristic of a process is that it can be broken down into less complicated processes” (Adapted from Born, 1994)

- High-level processes, which comprise hundreds, if not thousands, of workflows
- Frequently fragmented (evolved over time)
- Potential for streamlining and redesign
- Examples: Purchasing, contracting, and revenues
Business Process Change

- Frequently also referred to as Reengineering
- Seeks the (radical) streamlining of business processes
- Seeks significant improvements in service quality and process speed
- Relies on information and communication technologies (ICT) as enablers and backbone

- Large literature base
  - Hammer, Champy, Stanton, Johansson, Davenport, Short, Stoddard, Jarvenpaa, Gunasekaran & Nath, Kallio et al., O'Neill & Sohal, Hurst, Mallalieu, Kettinger et al., Tillquist, Giaglis, Darnton,…etc.

- Lots of practical experiences (downsizing, dumb-sizing…) in the private sector
- High failure rate in the private sector: 70 percent (Hammer)
The Layne & Lee Framework of E-Government

Layne & Lee, 2001

Study Focus
A Traditional Diffusion Model


<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>Stage 4</th>
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<tbody>
<tr>
<td>Cost-reduction</td>
<td>Proliferation of applications</td>
<td>Moratorium on new applications, emphasis on</td>
<td>Data-base applications</td>
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<tr>
<td>accounting applications</td>
<td>in all functional areas</td>
<td>control</td>
<td></td>
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<tr>
<td>Payroll</td>
<td>Cash flow</td>
<td>Purchasing control</td>
<td>Simulation models</td>
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<tr>
<td>Accounts receivable</td>
<td>General ledger</td>
<td>Scheduling</td>
<td>Financial planning models</td>
</tr>
<tr>
<td>Accounts payable</td>
<td>Budgeting</td>
<td></td>
<td>On-line personnel query system</td>
</tr>
<tr>
<td>Billing</td>
<td>Capital budgeting</td>
<td></td>
<td>On-line customer query system</td>
</tr>
<tr>
<td></td>
<td>Forecasting</td>
<td></td>
<td>On-line source data entry (e.g., cost</td>
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<td></td>
<td>Personnel inventory</td>
<td></td>
<td>collection, order entry)</td>
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<tr>
<td></td>
<td>Order processing</td>
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<td></td>
<td>Sales</td>
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<tr>
<td></td>
<td>Inventory control</td>
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Turning Point
## Dimensions of Business Process Change in E-Government

<table>
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<tbody>
<tr>
<td><strong>Stage I</strong> - Cataloguing</td>
<td><strong>Stage II</strong> - Transaction</td>
</tr>
<tr>
<td><strong>Stage III</strong> - Vertical Integration</td>
<td><strong>Stage IV</strong> - Horizontal Integration</td>
</tr>
<tr>
<td><strong>Motives/Needs</strong></td>
<td><strong>Strategic Objectives</strong></td>
</tr>
<tr>
<td>Provide basic information services over the Web; Provide information quickly and conveniently</td>
<td>Extend services to online transaction; Reduce costs; Simplify service</td>
</tr>
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<td>Create a public image on the Web; Set up the evolutionary path for later stages</td>
<td>Make online transactions attractive; Link e-Gov systems and legacy systems; Establish standards for security and authentication</td>
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<tr>
<td>Integrate appropriate vertical and horizontal functions within meaningful constraints; Integrate and align business cultures; Merge e-Government and ICT systems;</td>
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<tr>
<td><strong>Focal Areas</strong></td>
<td><strong>Stakes and Stakeholders</strong></td>
</tr>
<tr>
<td>Webified print content; Forms downloading; Fringe areas; Identification of potential future e-Gov areas</td>
<td>Identifying salient stakeholders and their needs</td>
</tr>
<tr>
<td>Legacy transaction systems in select areas; Other transactional services in fringe areas</td>
<td>Identifying and managing salient stakeholders and their needs</td>
</tr>
<tr>
<td>Redesign business core processes (in an evolutionary approach); Link sources of information; Newly design or redesign intra- &amp; inter-agency, intra- &amp; inter-level, and intra- &amp; inter-branch functions as appropriate</td>
<td>Identifying, managing, and involving salient stakeholders and their needs</td>
</tr>
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Summary

- e-Government stands for more than the diffusion of some technology in the public sector
- Rather, e-Government along with the process and backend changes may facilitate one of the most sweeping changes in government since the introduction of the Internet
- Research has to cope with a mesh of complex technical and non-technical problems in the context of e-Government applications
- A multi- and interdisciplinary research agenda is necessary for coping with the complex nature of the phenomenon
- Initial elements of a research framework have been developed
Thank You!

Any Questions?

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