CRN multi-disciplinary project

Participation in Internet Mediated Interactions
(Computer Science, Public Policy, Economics)

The Structure of E-government

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Part of the Cambridge-MIT Institute,
Cambridge Computer Lab,
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Changing government-citizen interactions

- Around 60% of population in UK are Internet users (OXIS)
- 52% of users go to Internet first to ‘find name of MP if don’t know it’, 38% to ‘find information on your taxes’, 70% to ‘plan a journey/book holiday’
- Significant chunk of population (25% and growing) will interact with government on-line (e-government) as far as possible
- What experience will they have of interacting with government?
E-Gov is huge and growing

<table>
<thead>
<tr>
<th>Country</th>
<th>Domain</th>
<th>Google</th>
<th>Yahoo!</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU</td>
<td>.gov.au</td>
<td>7M</td>
<td>8M</td>
</tr>
<tr>
<td>CA</td>
<td>.gc.ca</td>
<td>12M</td>
<td>9M</td>
</tr>
<tr>
<td>UK</td>
<td>.gov.uk</td>
<td>9M</td>
<td>14M</td>
</tr>
<tr>
<td>US</td>
<td>.gov</td>
<td>361M</td>
<td>79M</td>
</tr>
</tbody>
</table>

- Very hard to construct a usable taxonomy for these sizes
- Dependence on search engines
Developing a methodology for researching e-government

How interconnected is the government domain – how ‘small world’ - how introverted (self-referential) – how extroverted – how ‘healthy’?

How does UK government compare to other government domains?

What do webmetrics tell us about relationships between states, public, private, voluntary sectors, citizens?

How can we evaluate ‘e-government’ – all current evaluations are methodologically suspect
Hypothesis: shifting nodality of e-government

Key tool of government policy is **nodality** – ‘the property of being in the middle of information or social networks’

‘Unhealthy’ e-government will lose nodality in internet world - if other organisations are more sophisticated at increasing visibility, structuring domains, reducing dark matter....

government can lose a competition it didn’t know it entered and hands over control of its own nodality to eg. Google

Eg. UK, approx 9 million pages in .gov.uk domain, government tries to ‘control’ interactions via portal (directgov.gov.uk) – from which web crawler on 9 iterations reaches only 10%
What is a ‘healthy’ government domain?

- Not too much ‘dark matter’ (%age of crawlable, searchable content)
- High visibility (high number of ‘in-links’)
- Small diameter (number of clicks from one side to other) – dependent on size, structure etc.

With a ‘healthy’ domain, government gains ‘nodality’ in the on-line world
Audit offices as test case for methodology

- Government domains introduce size problems for testing methodological ideas (several million pages)
- Inconsistency in what is included in government domain
- Parliamentary/congressional audit offices have roughly comparable roles across countries
- Australia/UK/Canada/US offer range of political environments
Welcome
The Australian National Audit Office (ANAO) is a specialist public sector practice providing a full range of audit services to the Parliament and Commonwealth public sector agencies and statutory bodies. Our audit clients include some 300 government bodies. These include Budget dependent agencies involved in the delivery of core services and commercially oriented entities.
Audit Office - Canada

The Office of the Auditor General (OAG) audits federal government operations and provides Parliament with independent information, advice and assurance to help hold the government to account for its stewardship of public funds. We are responsible for performance audits and studies of federal departments and agencies. We conduct financial audits of the government’s financial statements (public accounts) and perform special examinations and annual financial audits of Crown Corporations.

In 1986, the position of Commissioner of the Environment and Sustainable Development (CESD) was created within the OAG. The Commissioner reports to the House of Commons.

- Environment and sustainable development
- Departmental sustainable development strategies and action plans
- Environmental petitions from Canadians asking the government to respond to concerns relating to the environment and sustainable development.
Welcome to the UK National Audit Office Website

Helping the nation spend wisely

The National Audit Office scrutinises public spending on behalf of Parliament. We are totally independent of Government. The NAO is headed by the Controller and Auditor General, Sir John Bourn.

We audit the accounts of all central government departments and agencies, as well as a wide range of other public bodies, and report to Parliament on the economy, efficiency and effectiveness with which they have used public money. Our work saves the taxpayer millions of pounds every year.

For more information about our role see About Us. For an overview of the material on the website, see About this site and our Freedom of Information Publication Scheme.

Other UK Public Audit Bodies

Information relating to audits carried out in Scotland and Wales since devolution can be found on the Audit Scotland and Welsh Audit Office websites. In Northern Ireland, audits are carried out by the Northern Ireland Audit Office. Audits on local authorities are carried out by the Audit Commissioners.

http://www.nao.org.uk/hom.htm
Estimating sizes of portals (including ‘dark matter’) of audit offices using capture-recapture technique

<table>
<thead>
<tr>
<th>Country</th>
<th>Minimum portal size</th>
<th>Crawlable pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada (OAG)</td>
<td>12K</td>
<td>11 K (96%)</td>
</tr>
<tr>
<td>UK (NAO)</td>
<td>4K</td>
<td>3 K (82%)</td>
</tr>
<tr>
<td>US (GAO)</td>
<td>43K</td>
<td>14 K (31%)</td>
</tr>
<tr>
<td>Australia (ANAO)</td>
<td>5K</td>
<td>0.3K (6%)</td>
</tr>
</tbody>
</table>
## Link analysis of audit offices (visibility)

<table>
<thead>
<tr>
<th>Country</th>
<th>In-links</th>
<th>% Commercial</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK (NAO)</td>
<td>1029</td>
<td>20%</td>
</tr>
<tr>
<td>Canada (OAG)</td>
<td>753</td>
<td>19%</td>
</tr>
<tr>
<td>US (GAO)</td>
<td>597</td>
<td>32%</td>
</tr>
<tr>
<td>Australia (ANAO)</td>
<td>211</td>
<td>19%</td>
</tr>
</tbody>
</table>
Link analysis of audit offices (outreach)

No of outlinks

<table>
<thead>
<tr>
<th>Country</th>
<th>No of Outlinks</th>
</tr>
</thead>
<tbody>
<tr>
<td>US (GAO)</td>
<td>43</td>
</tr>
<tr>
<td>Canada (OAG)</td>
<td>23</td>
</tr>
<tr>
<td>UK (NAO)</td>
<td>10</td>
</tr>
<tr>
<td>Australia (ANAO)</td>
<td>4</td>
</tr>
</tbody>
</table>

Few external outlinks

- Government averse to endorsing content out of their control
  (aiming at authority)
- Portal isolated “Corner of the web”
Open questions
- and how we want to answer them

- How do citizens rank these portals? (e.g. in terms of usefulness)
  - Lab-based experiments
  - Street-based experiments
  - Mystery shopping exercises

- What are the metrics that correlate with human ratings?

- Are there significant differences between country portals?
  - eg linkages to non-gov sites (NGOs, firms)

- What is the content (‘dark matter’) that can’t be crawled from homepages?