CRN multi-disciplinary project Participation in Internet Mediated Interactions (Computer Science, Public Policy, Economics)

The Structure of E-government

Ingemar Cox (UCL Computer Science)
Helen Margetts (UCL School of Public Policy,
Oxford Internet Institute)
Vaclav Petricek (UCL Computer Science)





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 (egovernment) as far as possible
- What experience will they have of interacting with government?

E-Gov is huge and growing

| | | Google | Yahoo! |
|----|---------|--------|--------|
| AU | .gov.au | 7M | 8M |
| CA | .gc.ca | 12M | 9M |
| UK | .gov.uk | 9M | 14M |
| US | .gov | 361M | 79M |

- 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 (selfreferential) – 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

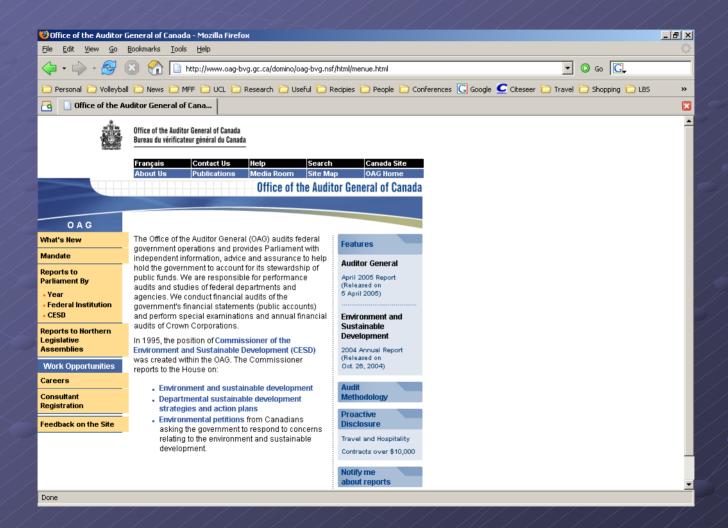
Audit offices as test case for methodology

- 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

Audit Office - Australia



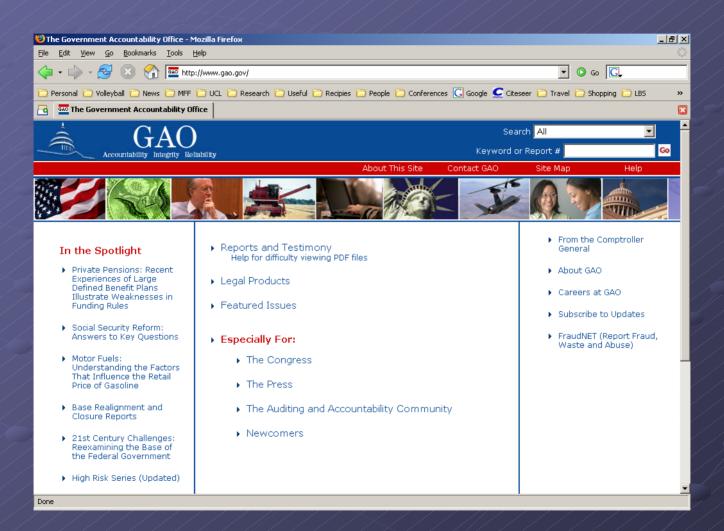
Audit Office - Canada



Audit Office – United Kingdom



Audit Office – United States



Estimating sizes of portals (including 'dark matter') of audit offices using capture-recapture technique

| | Minimum | | Crawlable | | |
|------------------|-------------|---------------|-----------|-----------|--|
| | portal size | al size pages | | es | |
| | | | | | |
| Canada (OAG) | 12K | | | K (96%) | |
| UK (NAO) | 4K | | | K (82%) | |
| US (GAO) | 43K | 1 | 4 | K (31%) | |
| Australia (ANAO) | 5K | | 0.3 | K (6%) | |

Link analysis of audit offices (visibility)

| | In-links | % commercial |
|------------------|---------------|--------------|
| | (from outside | |
| | domain) | |
| UK (NAO) | 1029 | 20% |
| Canada (OAG) | 753 | 19% |
| US (GAO) | 597 | 32% |
| Australia (ANAO) | 211 | 19% |

Link analysis of audit offices (outreach)

No of outlinks

| US (GAO) | 43 |
|------------------|----|
| Canada (OAG) | 23 |
| UK (NAO) | 10 |
| Australia (ANAO) | 4 |

- 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?