Borders in Cyberspace: Conflicting Government Information Policies and Their Economic Impacts

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http://weather.gov/sp/Borders_report.pdf

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Overview

- Information Policy and the Economy
- Information Economics and Recent Research
- Practical Experiences and Emerging trends
- Information Access and Development
- Competition and the Role of Government in the Digital Age
- Conclusions and Recommendations

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U.S. Public Information Policy

"Open and Unrestricted Access to Public Information"

"…government information is a valuable national resource, and… the economic benefits to society are maximized when government information is available in a timely and equitable manner to all."

From OMB Circular No. A-130

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Sources of U.S. Information Policy

- Copyright Act (17 U.S.C. 105)
- Freedom of Information Act (5 U.S.C. 552)
- Paperwork Reduction Act (44 U.S.C. Chapter 35)
- Electronic FOIA Amendments of 1996.
- Office of Management and Budget Circular No. A-130, "Management of Federal Information Resources," (61 FR 6425, February 20, 1996)

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US Information Dissemination Principles (from OMB Circular No. A-130)

Federal agencies should:

- Actively disseminate all public information;
- Without restrictions or conditions;
- At no more than the cost of dissemination;
- While taking advantage of private, academic and other channels of dissemination;
- And using best available technologies, e.g. internet, WWW, satellite downcast, etc.

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Government Information and the Economy

- Taxpayer-funded government information – from corporate data from the Securities and Exchange Commission to patent data from the Patent and Trademark office - is contributing to the spectacular growth in the information retrieval and database industries:
  - *From a $4 billion industry in 1994 to an expected $10 billion industry in 2002.*
  - *From 900 database vendors in 1991 to 2400 vendors in 1999.*

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Weather and the Economy

- Economic Decisions are based on NWS data and products
- Significant Economic Benefits to the Nation from Open and Unrestricted Data Policy
  - *"Weather impacts $3.8 Trillion [per year] or approximately 1/3 of the U.S. economy" – Dean John Dutton, Penn State University (2002)*
  - *Commercial meteorology industry - $500M per year*
  - *Growing weather risk management industry over $14 Billion in contracts over the period 1998-2002. – Weather Risk Management Association*

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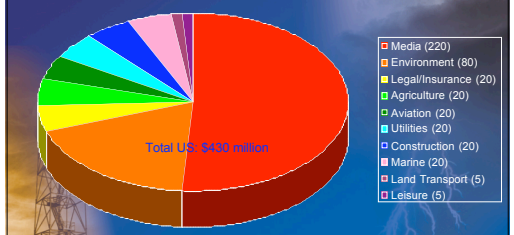
U.S. Market for Private Weather Services



Source: 1999 private survey

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The U.S. Public/Private Partnership

- Academic/Research
  - *Creates the research and models to advance the science*
- Government
  - *Freely available data including satellite & radar*
  - *General forecasts and warnings for all*
- Private Companies
  - *Commercial Meteorology*
  - *Weather Risk Management*
- Media

Source: "Fair Weather: Effective Partnerships in Weather and Climate Services," National Academy Press (2003). http://books.nap.edu/books/0309087465/html/index.html

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Different funding models for Public Sector Information

- In Europe: Funding Structure: Treasuries and legislation force agencies to go "off the budget" and find their own ways in funding their agencies. Generally not successful or efficient.

- In the US: General revenue funds Federal information activities, creation of wealth and jobs returns taxes to the Treasury. Feedback loop.

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Definitions

- "Government Commercialization": The trend towards government agencies charging the public for information services which previously were considered "public good" and financed by general tax revenue, e.g. geographic and meteorological information. Also known as "cost recovery".
- Not to be confused with "Privatization": The trend towards transferring functions which are NOT inherently governmental to the private sector (e.g. utilities, telephone services)

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Economics of Information

- Information is not a normal good in the economic sense, and basic economic laws of supply and demand work differently in the information world:
  - *Dependence on a medium*
  - *High fixed costs, low reproduction costs (easy and cheap to copy)*
  - *Non-rival and non-excludable = "public good"*
  - *High price elasticity of demand*
  - *Time dependent*
  - *Barriers to entry*
- This results in failed attempts at government commercialisation.

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Economic Benefits of Open Access Policies - Recent Studies

- PIRA International (for the EC, on the potential of European public sector information)
- Netherlands Economics Institute (for the Dutch Ministry of the Interior, on the prosperity effects of open access policy)
- National Research Council (Conflicts arising from the privatization of environmental data)
- Dutch Federal Geographic Data Committee (on the economic benefits of open access policy for geographic information)
- Lopez
- Maurer (Impact of database protection legislation)
- Zillman and Freebairn (Economics of meteorological information)
- WRMA/PricewaterhouseCoopers (Weather risk management market)

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The Potential of European Public Sector Information

by PIRA International

	EU	US
Investment Value in PSI	9.5 billion Euro/year	19 billion Euro/year
Economic Value	68 billion Euro/year	750 billion Euro/year

This gap between the USA and the European Union offers opportunities and challenges for European companies and for their governments.

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The Potential of European Public Sector Information

by PIRA International

- The US public sector information market place is up to five times the size of the EU market.
- Charging for public sector information may be counter-productive, even from the short term perspective of raising direct revenue for government agencies.
- The fledgling EU market would not even have to double in size for governments to more than recoup in extra tax receipts what they would lose by ceasing to charge for public sector information.

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Research on the size of the Weather Risk Management Industry

by WRMA and PricewaterhouseCoopers

- Weather Risk Management industry is booming in North America: $ 9.6 **billion** in contract value in five years ending March 2002.
- The European market is small: $ 721 **million** in the same five years.
- A significant contributor to this disparity is the difference in information policies between Europe and the United States/Canada.

Source: WRMA, PriceWaterhouseCoopers (2002). http://wrma.org

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Commercial Meteorology in the US and Europe

	United States (1)	Europe (2)
Gross Receipts	$ 400-700 million	$ 30-50 million
Number of Firms	400	30
Number of Employees	4000	300

Sources: Commercial Weather Services Association (1) and Meteoconsult (2)

Since the size of the US and EU economies are approximately the same, there is no reason for the European market not to grow to US size with accompanying revenue generation and job growth. Restrictive government information policies stand in the way.

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Summary of Research Conclusions General Conclusions

- Cost recovery is not the best approach to maximizing the economic value of public sector information to society as a whole, not even from the viewpoint of government finances.
- Prosperity effects will be maximized when data is sold at marginal cost.
- Direct government funding and free provision to all are favoured with their contribution to national welfare maximized at the point where marginal benefits equal marginal costs.

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Changes at the European Level

- In Europe, recognition is emerging that open access to government information is critical to the information society, environmental protection, and economic growth. Current developments are encouraging and may have considerable impact on the European economies.
- Recent trends towards more "liberal" policies still face opposition from national treasuries and "entrepreneurial" civil servants in charge of "government commercialization" initiatives which can result in anti-competitive practices which can hinder the growth of private sector competitors.
- Directives on PSI and Environmental Information. Will they address:
  - *"Cost of dissemination" standard vs. "reasonable price".*
  - *Restrictions/licenses on downstream use.*

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Changes at the EU National Level

- Netherlands:
  - *"Towards Optimum Availability of Public Sector Information" Electronic Government Action Programme (1999)*
  - *Privatizes commercial arm of Met Service, liberalizes data access*
- Great Britain:
  - *"Review of the Knowledge Driven Economy" http://ww.dti.gov.uk (6 Sept. 2000), adopts marginal cost pricing policy.*
  - *New Freedom of Information Law.*
  - *Reforms do not apply to "trading funds" (e.g. Met Service)*

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An Emerging European Reform Trend?

- Sweden:
  - Privatized the commercial arm of the Land Office, and adopted an open data policy for Land Office data.
  - Considering possible separation of commercial arm of Met service, and liberalization of data policy for Meteorological data.
- Finland:
  - Commercial arm of Met Service to be privatized.
- Germany:
  - Pullback from commercial services to broadcast and print media.
  - Considering possible separation/privatization of commercial arm?

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Worldwide trends?

- Japan – Japan Meteorological and Business Development Authority and JAPANSAT
- China – China Academy of Sciences study
- New Zealand – "Corporatization" of Weather Services with recognition of open data needs.
- Australia – recognition of open data needs. *Zillman* research.

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Data Licensing Issues

- **Data policy:** How do we make decisions as to when it is appropriate to agree to restrictions? Where lies the public interest? See, NRC "Privatization" study.
- **Operational considerations:** How do we manage/assimilate data with restrictions? What are the practical challenges and costs of using data with restrictions in a technology environment designed to handle data without restrictions.
- **Political:** Some will complain that government has an obligation to share all data, and that entering into restrictive agreements undercuts this obligation.
- **Management:** Who (what level) should be authorized to enter into agreements which contain restrictions? Lack of guidance could result in ad hoc and inconsistent decisions.

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Data Policy Analysis

- Preferred policy under OMB Circular A-130 is to make data collected or acquired by Federal government agencies available to all without restrictions.
- On the other end of the spectrum, situations when agencies contract for commercially available information services, e.g. subscriptions to legal databases, under commercial terms which preclude use by anyone other than the licensee. Lightning data is prime NWS example. These data have an established commercial market
- Within the spectrum, where the level of public interest in the information suggests government negotiate minimally restrictive terms to balance commercial interest with the public interest. Example is where the private market for the data is short-lived, e.g. days or weeks, and needs of the government, academia and others are long-term. NASA's Sea-Viewing Wide Field-of-View Sensor ("SeaWiFS") an example?
- When should government acquire unrestricted rights? Where lies the public interest? Impact of Data Quality Act? Has any Federal agency ever made a documented analysis of these issues/options?

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Summary and Conclusions
• Emerging recognition in Europe that open access to government information is critical to the information society, environmental protection, and economic growth.
• "Government commercialization" cannot succeed in the face of economic realities and evenhanded application of competition policies.
• Open government information policies foster significant but not easily quantifiable economic benefits to society.
• "Data licensing" and "privatization" of data challenges basic policy assumptions. Public interest analysis often lacking in the face of private sector economic interests.
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