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

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U.S. National Weather Service

Overview

- Information Policy and the U.S. Economy
- Information Economics and Recent Research
- Cost Recovery Experiments not Successfull
- Competition and the Role of Government
- What is happening in Europe?
- Conclusions and Recommendations

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

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)
- Office of Management and Budget Circular No. A-130, “Management of Federal Information Resources,” (61 FR 6425, February 20, 1996)
- Electronic FOIA Amendments of 1996.

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.

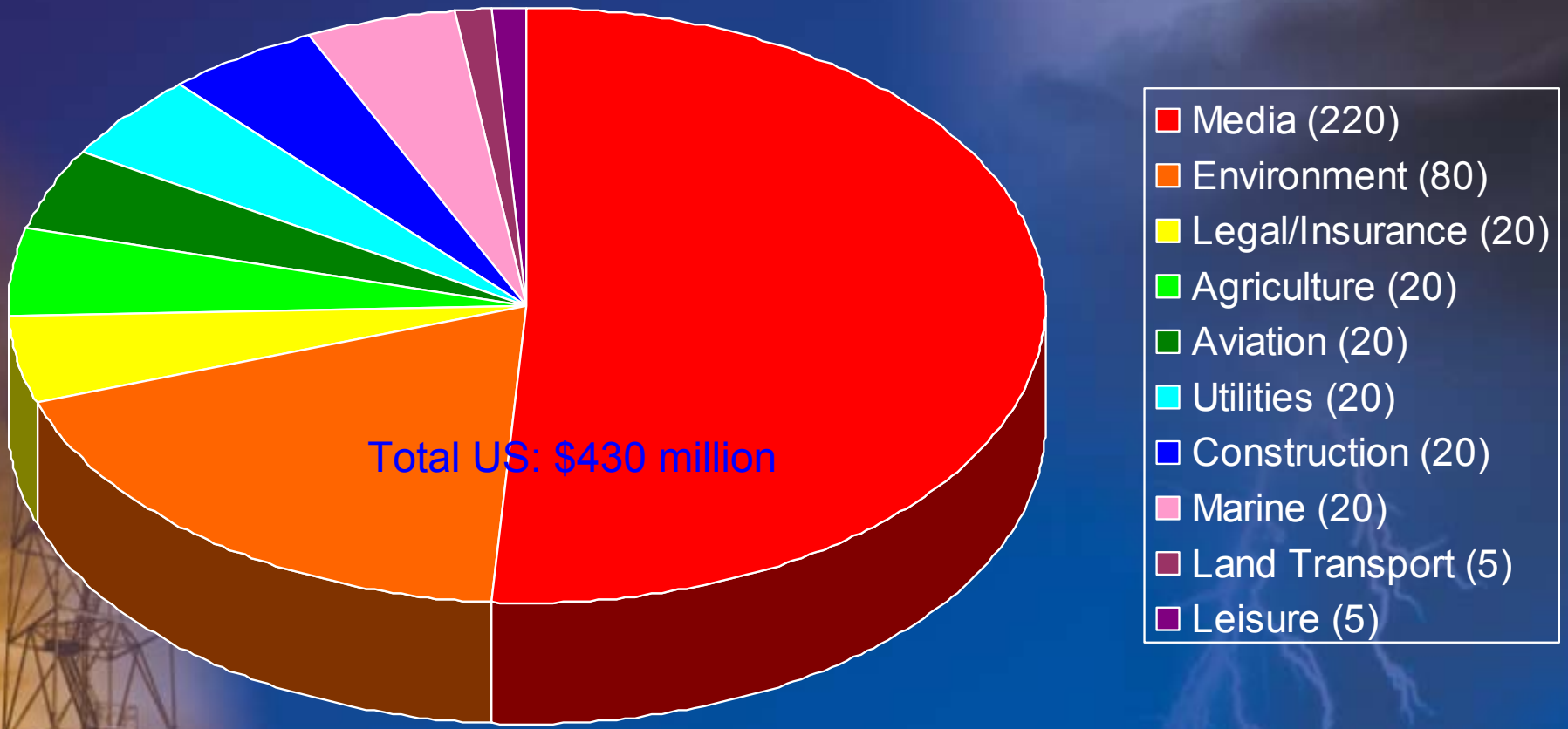
Government Information and the Economy

- 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.*

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 $2.7 Trillion [per year] of our economy" – Dean John Dutton, Penn State University*
  - *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*

U.S. Market for Private Weather Services



Source: 1999 private survey

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
  - *65% Television*
  - *17% Radio*
  - *8% NOAA Weather Radio*

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)

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.

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)

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.

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.

Research on the size of the Weather Risk Management Industry

by WRMA and PricewaterhouseCoopers

- Weather Risk Management industry is booming in North America: $ 3.6 **billion** in contract value in the last year (April 2001 – March 2002).
- The European market is very small: $ 601 **million** in the last year.
- A significant contributor to this disparity is the difference in information policies between Europe and the United States/Canada.

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.

Impact on Weather Risk Management

- 15 Gigabites of all U.S. historical observations since 1948 on CD-Rom for $ 4290 from NCDC

vs.

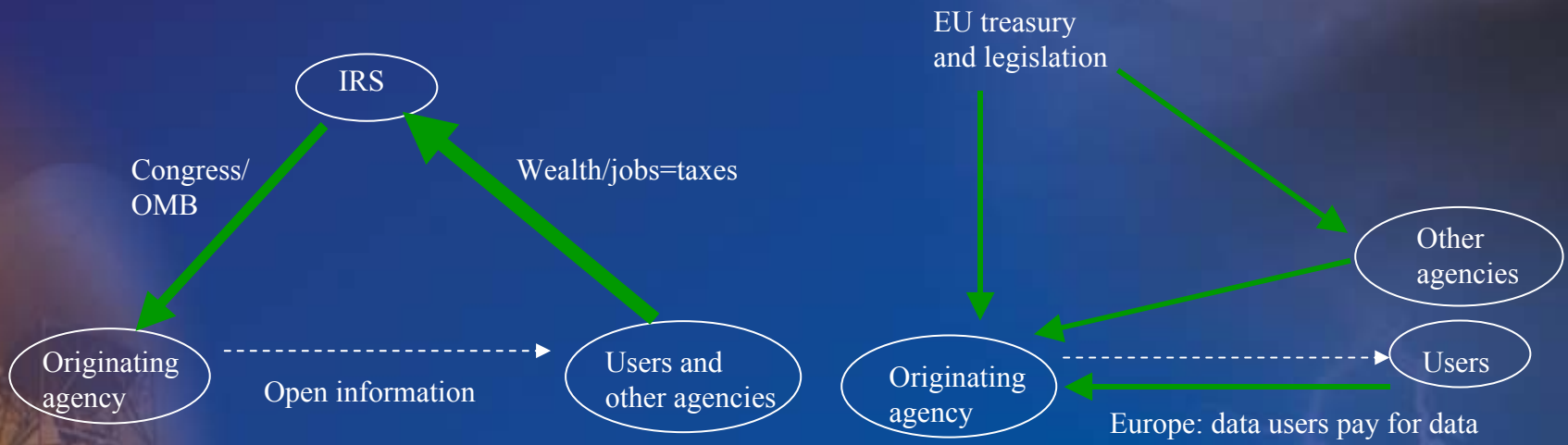
- Price quote of over $1.5 million for historical data from one European country
- DWD price quote of DM 4000 for historical record of one station

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.

Why this difference between the US and the EU?

- 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.

Cost Recovery Experiments in the U.S. not Successful

- State of California
  - *Cost recovery resulted in degradation of overall State geographic information system*
- Automated Tariff Filing and Information System
  - *Over three years, only $ 438,800 (0.05%) of the $ 810 million in expected revenue recovered*
- United States Geological Survey
  - *Cost recovery in 1980's resulted in significant decrease in data sales. Dissemination only cost recovery successful in 1990's.*
- State of Wisconsin
  - *Counties with open access policies foster a broad user base and maximum public interest use of geographic data. Counties on a "cost recovery" system see dramatic fall in usage and users.*

Cost Recovery Experiments in Europe not Successful

- UK Meteorological Office
  - *50% of total revenue comes from Ministry of Defence, 30% from other government agencies.*
  - *Revenue from data sales not significant, causing some categories of observational data to be made open and unrestricted.*
- British Ordnance Survey
  - *10% of total revenues comes from HM Treasury*
  - *Only 32% of total revenues comes from sales to the private sector. The other 68% comes from mandatory use of data by utilities and sale to government entities.*
- Deutscher Wetterdienst
  - *Only 1% of operating costs covered by data sales*

What is happening in Europe?

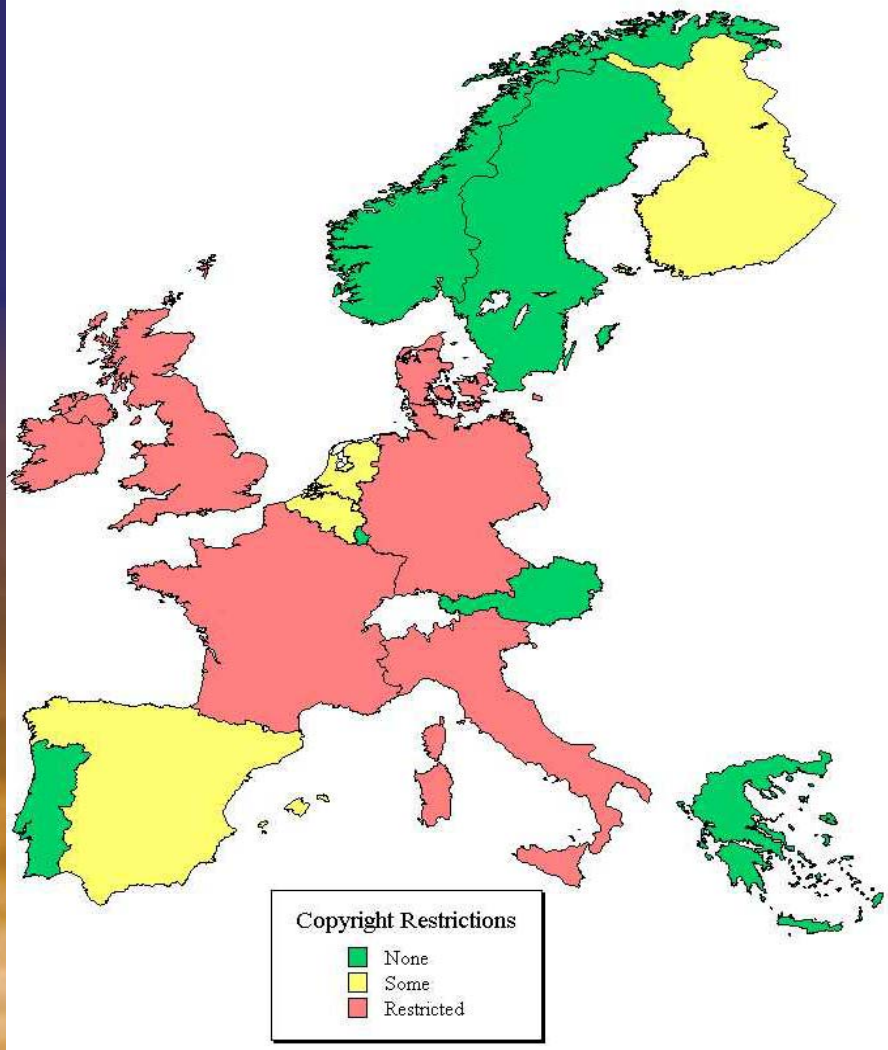
"Publaw III," Final Report, EC DGXIII (November 1995)

Initial Parameters of Comparison:

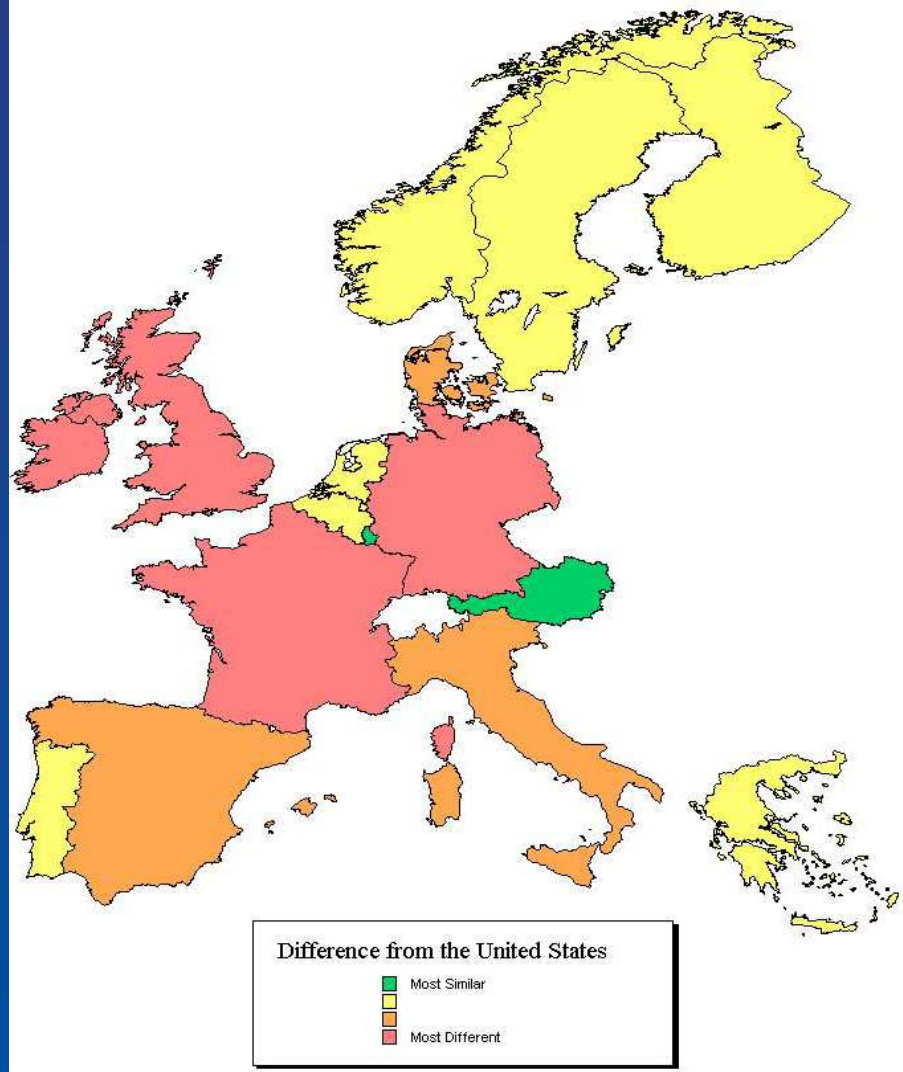
- Right of Public Access: Is there a Freedom of Information Law or similar policy?
- Government Copyright: Do governments assert copyright over taxpayer-funded data?
- Price Structure: Do governments seek to recoup costs of dissemination only, or do they attempt to raise significant revenues as in "full cost recovery"?
- Government Competition: Do governments encourage a robust private data industry, or do they compete as through "Government Commercialization"?

Just an analytical starting point.

Copyright Restrictions on Public Information



Difference From the United States



At the European Level

- In Europe, recognition is slowly 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 “entrepreneurial” civil servants in charge of “government commercialization” initiatives, who engage in anti-competitive practices to thwart the growth of perceived private sector competitors.

- A Directive on PSI in 2002? Will not deal sufficiently with issues of access (look at escape clauses in recent Communication) and will allow Agencies to continue cost recovery practices

An Emerging European Reform Trend?

- European Commission:
  - *Green paper and PIRA report*
- 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)*

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.*

Government Competition with the Private Sector

What are the respective roles of the government and the Private Sector in the Digital Age?

- Stiglitz et al, “Role of Government in the Digital Age”
- Swedish Statskontoret, “Government as Commercial Actor”
- Dutch Ministry of Economic Affairs, “Market and Government”
- National Academy Studies

The Appropriate Role of Government
- Sweden

- Issues with government entities entering the commercial field against the private sector. The National Land Survey:
  - Had an unfair competitive advantage over emerging commercial firms;Was the dominant player in the geographic information market;
  - Is the “preferred” provider in the market due to its “official” status;
  - Has access to taxpayer-funded “strategic infrastructure”, including government owned information technology assets;
  - Has copyright and other rights over public sector data;Is partly funded by taxpayer Kronor and partially engaged in monopolistic practices;
  - Obscures the demarcation between government and private activities
- Result: the commercial arm will be completely privatised, subject to open public audit and oversight, and their data holdings put in the public domain for access by the general public and competing private sector entities.

The Appropriate Role of Government
- United Kingdom

- The UK government is actively encouraging government bodies to develop value-added services charged at market prices:

- Is a "level playing field" without…
  - *Unfair competition*
  - *Cross subsidization*
  - *Preferred franchisees*
  - *Abuse of dominant market power*
  - *Price dumping*

…possible in the case of commercialized government agencies?

Unfair Government Competition?

"Anyone engaging in the sale of meteorological [data] as well as providing sovereign activities, is acting as an independent party in the commercial process and, as a public undertaking, is subject to the provisions of the Antitrust Act…In the Swiss market, [the Swiss Meteorological Institute] has a market-dominating position. It must make available to interested third parties on a non-discriminatory manner all the data and products which it uses for its own services."

Swiss Competition Commission (16/11/98).

Unfair Government Competition?

"…the Finnish Meteorological Institute has abused its dominant market position on the Finnish market for meteorological data in a manner prohibited by the Act of Competitive Restrictions by reducing between June 1999 and December 1999 the quality of the radar images delivered for inclusion in the Scandinavian radar composites."

Finnish Competition Authority (2/6/2000)

Summary and Conclusions

- Emerging recognition in Europe that open access to government information is critical to the information society, environmental protection, and economic growth.
- Recent trend to more “liberal” policies faces opposition from “government commercialization” initiatives.
- “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.

Recommendations - 1

- Governments should support full, open and unrestricted international access to scientific data for public interest purposes -- particularly statistical, scientific, geographical, environmental, and meteorological information of great public benefit. Such efforts to improve the exploitation of public sector information contribute significantly to maximizing its commercial, scientific, research and environmental value.

- Governments should let the private sector lead in using public sector information to meet the diverse needs of citizens and users for such products and services. Meeting these needs demands entrepreneurial and publishing skills that are most evident in the private sector. Market needs are best served by open and unrestricted access to public sector information.

Recommendations - 2

- Governments should avoid the imposition of government copyrights, limit fees to recouping the cost of dissemination, and eliminate restrictions on reuse. This will allow diverse entities to make new and innovative uses of public sector information. However, attribution of data sources should be made, e.g. through the use of trademarks or source mentioning.

- Governments should avoid asserting a monopoly on public sector information. Governments and societies both lose when governments treat their information as a commodity to be sold.

- Governments should maintain a strong freedom of information law. This fosters greater transparency and public trust in government.