Creating a Global Information Commons for Public GSDI:
Legal and Economic Policy Aspects
Presentation for the Global Spatial Data and Information User
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Creating a Global Information Commons for Public GSDI

Key aspects of GSDI-based research and applications using global digital networks:

➤ **Data-driven science through collection and creation of ever-increasing amounts and types of raw data;**
➤ **Interpretation and transformation of the data into unlimited new configurations of information and applications;**
➤ **Collapsing the space and time in which data and information can be made available and used to advance science and applications; and**
➤ **Facilitating entirely new forms of distributed research collaboration and information production.**

Need a legal and policy regime that supports the open availability and unfettered use of public data, and places a premium on the broadest possible dissemination and use of GSDI produced by government and government-funded sources by:

- Expressly prohibiting or diminishing intellectual property protection of GSDI produced by government;
- Actively promoting and contractually reinforcing the cooperative, sharing norms of science through open data terms in government research grants and contracts;
- Carving out a large and robust public domain for non-copyrightable data, as well as other immunities and exceptions favoring science and education; and
- Dissemination of data free or at no more than marginal cost.

Compelling reasons for placing government-generated data and information in the public domain with open access:

- A government entity needs no legal incentives from exclusive property rights to create information. Both the activities that the government undertakes and the information produced by it in the course of those activities are a public good.
- The taxpayer has already paid for the production of the information.
- Transparency of governance is undermined by restricting citizens from access to and use of public data and information. Individual rights are compromised by restrictions on re-dissemination of public information, particularly of factual data.
- Numerous economic and non-economic positive externalities—especially through network effects—can be realized on an exponential basis through the open dissemination of public-domain data and information on the Internet.
- Many public GSDI resources are global public goods.

Countervailing polices and practices that limit the free and unrestricted access to and use of government information, including public GSDI:

- 1. Legitimate statutory exemptions to public-domain access and use, and to FOIA statutes (e.g., based on national security concerns, the need to protect privacy, and to respect confidential information, among others)
- 2. Government-generated data are not necessarily provided without cost, even if there are no restrictions on reuse.
- 3. Government agencies should not directly compete with the private sector in providing information products and services.
- 4. Government agencies should respect the proprietary rights in data and information originating from the private sector that are made available for government use or, more generally, for regulatory and other purposes, unless expressly exempted.
- 5. Despite mandates, government agencies may fail to actively disseminate data and information, or to preserve them for long-term availability.

For GSDI produced with government funding:

Government-funded databases and other forms of information in academia and private sector are presumptively protectible unless funding sources require sharing or open access.

Active measures need to be taken to promote preservation and public access—it won't happen "by accident" (Malcolm Smith)

Some approaches may be taken from the top down (e.g., by government funders/research institutes), while others from the bottom up (e.g., by scientific organizations/individuals)

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Pressures on the Public Domain Status and on Open Access to Publicly Funded GSDI

Economic
- **Privatization of government research and data collection activities**
- **Commercialization of academic research (and of government data outside U.S.)**

Legal—IP and other laws broader, deeper, longer
- **Digital copyright**
- **Restrictive licenses**
- **Statutory database protection (in EU and some other jurisdictions)**
- **Other restrictive laws, especially those based on national security**

Technological (digital rights management technologies)

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Broad implications of restrictions on public geospatial data:
1) **General diminution in the scope of geospatial data and databases in the public domain that can be openly accessed and used in downstream applications.**
2) **Sole-source problems exacerbated in geospatial database market.**
3) **Higher transaction costs.**
4) **Less data-intensive research and significant lost opportunity costs, including reduced social and economic benefits from public investments in geospatial data resources.**
5) **Less effective international, inter-institutional, and interdisciplinary cooperation using digital networks.**

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Proposals for government science agencies include:

1) Provide funding for public domain or open access data centers and active archives of foundational geospatial data sets derived from government data collection and from publicly funded research as an essential component of the research infrastructure.
2) Review and enforce government research contract and grant clauses regarding open data availability and use.
3) Develop guiding principles and contractual provisions for licensing data products and services from the private sector, or for privatizing such government activities, that protect research user interests.
4) Work with universities to establish broad inter-institutional agreements and specific contractual provisions for maintaining open access to and use of data in the academic sector (at least for not-for-profit purposes).
5) Work with other governments and their science agencies through multilateral and bilateral fora to promote public domain or open access to their public information resources on a reciprocal basis.

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Proposals for universities include:

1) Establish open-access archives for geospatial data and related research information.
2) Develop inter-institutional agreements and cooperative institutional approaches to ensure unimpeded access to and liberal uses of scientific data and information in a not-for-profit research commons, while allowing for commercial exploitation of those resources vis-à-vis the private sector.
3) Develop model contractual provisions for inter-university and scientist-to-scientist relationships, and for cooperative research with the private sector, that protect access to and unrestricted use of publicly funded research data by not-for-profit scientists.
4) Vigorously promote open archiving and non-exclusive licensing by authors of their scientific articles and any linked databases to scientific journals, rather than assigning exclusive copyrights.
5) Conduct empirical research of the underlying issues and initiate pilot projects for certain disciplines or categories of data to test the results.

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Some suggestions for further reading from the National Academies Press, freely available at www.nap.edu :

Bits of Power: Issues in Global Access to Scientific Data (1997)

A Question of Balance: Private Rights and the Public Interest in Scientific and Technical (S&T) Databases (1999)

The Role of S&T Data and Information in the Public Domain (2003)

Open Access and the Public Domain in Digital Data and Information for Science (2004)

See also: Reichman, J.H. and Paul F. Uhlir, "A Contractually Reconstructed Research Commons for Scientific Data in a Highly Protectionist Intellectual Property Environment, 66 Law & Contemporary Problems 315-462 (2003)