The Role of Partnerships in Building a Canadian Geospatial Data Infrastructure

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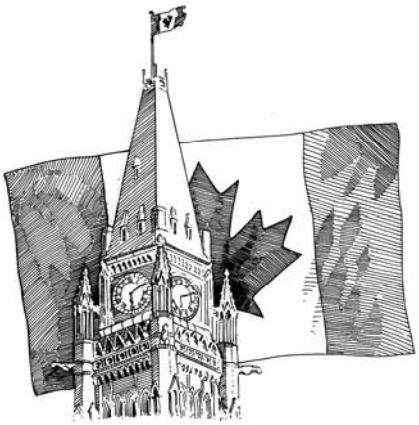
Outline

1. The Canadian Context
2. Federal and Provincial Programs
3. The Canadian Geospatial Data Infrastructure
4. The GeoConnections example - Partnerships and Capacity Building
5. Lessons Learned, Challenges & Accomplishments



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Federal Mapping in Canada

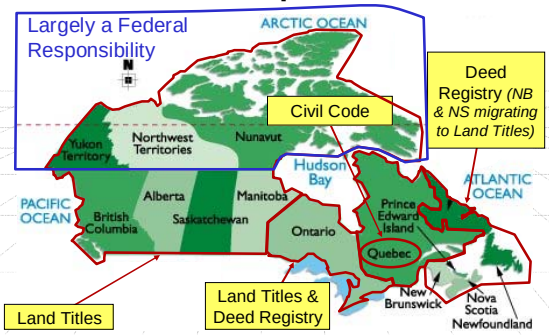
Geomatics Canada
(Topographic Mapping)

Canadian Hydrographic Service
(Nautical Charts)

Statistics Canada
(Address-Matched Road Networks)

Plus ***many*** others do project-specific mapping

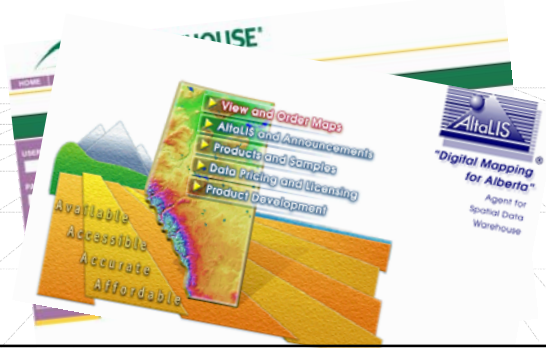
Land Registration & Property Mapping: Shared Responsibilities



Most provinces have well-developed Web-based mapping systems

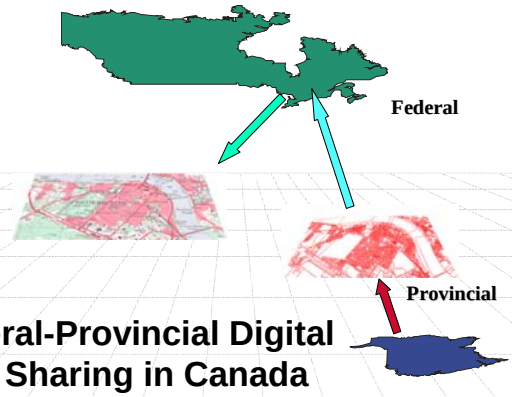
Public Private Partnerships

Early Examples in Ontario and Alberta…



Integration of Mapping, Registry and Property Valuation

- Found in 3 of Canada's 4 Atlantic Provinces -- Begun in late 1980's



Federal-Provincial Digital Data Sharing in Canada

Traditional Constraints Inhibiting Cooperation

- Conflicting map coverage priorities;
- Conflicting user requirements and/or technical specifications;
- Production schedules and funding cycles out-of-phase with one another;
- Data pricing and licensing policies inhibiting: a) economic sharing, b) regular updating of datasets, c) third party usage;
- Government cost recovery and revenue distribution;
- Existing partnerships with other government of industry;
- Unrelated political/economic policies.

Promoting Greater Cooperation

- **Inter-Agency Committee on Geomatics (IACG)** - Federal departments)
- **Canadian Council on Geomatics (CCOG)** - Federal and provincial organizations
- **Geomatics Industry Association of Canada (GIAC)** - Private Sector firms
- **GEOIDE Network of Centres of Excellence** - Major collaborative R&D program involving universities, industry and government.

The Canadian Geospatial Data Infrastructure (CGDI)

- **Begun in mid-1990's**
- **Championed by CCOG**
- **Vision:**

'to enable the timely access to geospatial data holdings and services in support of policy, decision making and economic development through a co-operative interconnected infrastructure of government, private sector and academia participants'.

What is the CGDI?

(Slide courtesy GeoConnections Secretariat, Natural Resources Canada)

- Enables users to access geospatial data and tools through the Internet
- An inter-connected network of:
  - Data
  - Services
  - Applications/technology
  - Policies

Five Key Thrusts of the CGDI

- Easy on-line access to government information which is built on...
- a common national framework data...
- using international standards...
- collected through partnerships between federal and provincial organizations; and
- distributed within a supportive policy environment.

CGDI Principles of Data Sharing

- Data should be collected -- once; closest to source -- in an efficient way -- with a view towards increasing vertical integration of data.
- Geospatial data should be as seamless as possible with maximum coordination across boundaries and jurisdictions.
- Data collection, processing and maintenance should follow international standards.
- Partners should carry equal costs in the collection and maintenance of data, resulting in rights to the new information.

Principles of Data Sharing (cont'd.)

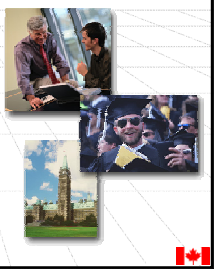
- Attempt to harmonize terms and conditions for use.
- Case-by-case bilateral of multilateral agreement negotiations.
- Partnerships should be simple and supportive of CSDI principles.
- Provincial and federal groups and agencies promoting and coordinating development of a geospatial data infrastructure, within and between jurisdictions.
- A national scope providing for a wide range of users.
- Coordinated and interrelated policies, practices and possibilities building on CGDI vision.

Why a CGDI?
Developing the "Value Proposition"

- **Informed decision making**: easy access to current information, knowledge and expertise;
- **Efficiency:** reducing duplication of effort on data collection, common policy and national standards, leverage of web services that support partnerships;
- **Usability:** governments, private sector, and individuals need a reliable "infrastructure" to make use of resources;
- **Relevance:** incredible potential for the use of geomatics and geographic information;
- **Global leadership:** commercial opportunities as geo knowledge becomes common place.

Canada's GeoConnections Program

- A $60-million national partnership initiative launched by the federal government to implement the CGDI.
- Delivered in partnership with:
  - private sector
  - academic community
  - community-based organizations
  - Governments
    - Federal
    - Provincial/Territorial



GeoConnections Objectives

(Slide courtesy GeoConnections Secretariat, Natural Resources Canada)

1. **Increase the amount of geospatial data, information and services available on-line**
2. **Ease data integration issues and data standardization**
3. **Expand the use and application of geo-info by working with user communities of practise**
4. **Promote the development of innovative technology**
5. **Simplify the conditions for geo-info use and resale**

GeoConnections - Access

(Slide courtesy GeoConnections Secretariat, Natural Resources Canada)

There are 7 GeoConnections programs:

- Access
- Framework Data
- GeoPartners
- GeoSkills
- Sustainable Communities
- The Atlas of Canada
- GeoInnovations

Supports efforts to create an interconnected, national network to make geospatial data and services accessible. Focuses on supporting projects that connect geo-spatial content, databases and peer infrastructures/ portals to the CGDI

GeoConnections Discovery Portal

(Slide courtesy GeoConnections Secretariat, Natural Resources Canada)

GeoConnections - Framework data

(Slide courtesy GeoConnections Secretariat, Natural Resources Canada)

There are 7 GeoConnections programs:

- Access
- Framework Data
- GeoPartners
- GeoSkills
- Sustainable Communities
- The Atlas of Canada
- GeoInnovations

Supports the establishment of a consistent foundation to simplify data integration. Focuses on supporting projects that provide national and regional CGDI framework data through the CGDI

GeoConnections - GeoPartners

(Slide courtesy GeoConnections Secretariat, Natural Resources Canada)

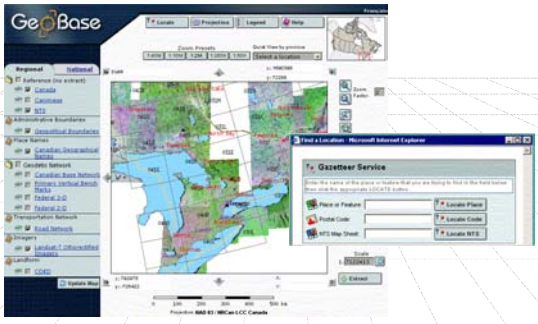
There are 7 GeoConnections programs:

- Access
- Framework Data
- GeoPartners
- GeoSkills
- Sustainable Communities
- The Atlas of Canada
- GeoInnovations

A federal-provincial and territorial partnership designed to streamline information flows and facilitate data sharing. Focuses on policy development, communications and program management for GeoConnections

The GeoBase Portal:

Federal-Provincial Cooperation at Work



GeoConnections - GeoInnovations

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An industry collaboration program that brings together expertise and technology to spur the development of new infrastructure technologies (services, tools, and applications) for the CGDI

Capacity-Building in Industry

Just a few of the successful examples

galdos · CubeWerx · caris powered · CGI · MACDONALD DETTWILER · COMPUSULT LIMITED · DM Solutions Group *Opening the World to Mapping Innovation* · LBGI · TERANET · GeoArctic

Other Examples of Capacity Building

- **In R&D -** ***The GEOIDE Network*** successful through Phases I and II, and now on its third round of strategic funding. GEOIDE is now composed of researchers from more than 45 universities, private companies and government departments at all levels.
- **Among End-Users -** ***The Sustainable Communities Initiative*** within GeoConnections reached its goal of supporting 100 Canadian rural, coastal, northern, and Aboriginal communities in using modern mapping technologies to better plan and manage their futures.

Lessons Learned 1

- **Partnerships are tough to build and sustain --** Conflicting budgets, inadequate incentives, different institutional cultures, political realities and personal differences all get in the way.
- **Achieving critical mass takes time --** Agreement on definition & implementation of standards-based products and services took longer than anticipated.
- **Need to deal with the problem of "legacy institutions" --** Establishing something new may mean changes in leadership and moving beyond existing organizations and relationships.

Lessons Learned 2

- **The Changing Nature of Leadership**
  - *In the beginning:* necessary to garner political and financial support by defining, communicating and "selling" the vision and.
  - *Post-implementation:* Focus on building and managing diverse partnerships.
- **Forging True Partnerships --** Relationships must be more than just a series of contracts or projects. Partners must have a willingness *and the opportunity* to share risks and rewards.
- **Delivering the Benefits --** Still working on better ways to define the tangible benefits of CGDI to politicians and end-users.

Continuing Challenges

Some Examples…

- **Financially --** Federal-provincial negotiations often long & protracted, and still on a project-specific vs. long-term program basis.
- **Operationally --** Still not really achieved a "distributed management" vision of gov't. spatial data yet.
- **In Industry --** Difficult transition from more labour-intensive surveying & digital mapping services to more IT-intensive product-development projects.

Accomplishments

- New Partnerships
- Research Leadership
- Genuine Progress in Data Sharing
- New Technologies Developed
- Capacity Building on several levels -- experts, research, companies, institutions, and end users.
- Deeper understanding of what does (and does not) make sense about SDI from operational, commercial, institutional, political, and social perspectives.