Re-engineering SDI Design to Support Spatially Enabled Society

Abbas Rajabifard
Centre for SDIs and Land Administration
Department of Geomatics, The University of Melbourne

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OBJECTIVE OF PRESENTATION

Introduce a new Vision "Spatially Enabled Society" - A Scenario for the Future (explain SDI design, issues and trends to support this vision).
Spatial Enablement – Experiences & Activities

Centre for SDIs and Land Administration

Department of Geomatics

Spatial Enablement

–

Experiences & Activities

GSDI 11 Conference
2009, NL

Centre for SDIs and LA

Centre for SDIs and LA

GSDI Association

SEG Working Group

Victorian Spatial Strategy 2008-2010

Victorian State

Asia-Pacific PCGIAP

UN Resolution
2006

Victorian Spatial Council

Convergence theme
Spatial information is an enabling technology/infrastructure for modern society.

SI describes the location of objects in the real world and the relationships between objects.
Emerging the Web with Location

• 2006 75% of users looking for location/map and direction
• 2006 63% search for local-location of hotel, park, etc.
• 2006 25% people looking for location/information with mobile

• Web 2.0 & Location (the emerging of location)
  – www: what, where and when
  – L-Commerce is appreciated (Yahoo spend 5 billion on the platform for advertising)

(V. Tao, 2007)
2006 ~$582 Billion

– 370 from paper Ads.
– 151 from TV Ads.
– 34 from Radio Ads.
– 27 from Online Ads.

(Microsoft Windows Software ~$15 Billion)

(V. Tao, 2007)
• Spatial Information can be a unifying medium – linking solutions to location.

• User demand has shifted to seeking improved services and delivery tools. This will be achieved by creating an environment so that we can:

  - **Locate**
    - people, places, services, businesses and points of interest

  - **Connect**
    - systems, services, businesses, partnerships and link with other industries

  - **Deliver**
    - quality services, standards, frameworks and what users want.
Ready and timely access to *spatial information* – knowing where people and assets are – is essential for the creation of wealth in any jurisdiction.

It is a critical tool for making *informed decisions* on key economic, environmental and social issues.
Spatial Data is further shaped by the decision-making process to which it is subject.

Management / Administration underpinned by access to spatial information.

(Adopted from Feeney 2003)
So Why the Problem?

- Immature institutional arrangements
- Immature user/provider relationships
- Poor knowledge of data availability
- Difficulties in assessing data quality
- Inconsistent policies on data access and use
- Lack of best practice in the use of technologies
Who understands place?

The vast majority of users do not know they are “spatially enabled” – and don’t care!

- Less than 1% of people are specialists
- Less than 5% understand the technology
- 95% do not understand the technology

Society

DSE-SII 2006
• **SDI** is all about facilitation and coordination of the exchange and **sharing** of spatial data, services and related resources;

• **SDIs** constitute a set of relationships and partnerships that **enable** data sharing, update and integration (start where you are ready to start).

• **Components**-collection of people, policies, networked datasets and enabling technologies and services.
• Many groups working on same problem at different levels on the hierarchy.
• Success depends on intra- and inter-jurisdictional cooperation between individuals and agencies.
Continuum of SDI Development

1st Generation
- Developed Countries
- Emerging Economies
- Developing Countries

Product-Based SDI development model
- National/Federal Government Influence – Data Focus

2nd Generation
- Developed, Emerging and Developing Countries

Process Based SDI development model
- National, Sub-national Govt. and Private Sector Influence – Process Focus

Towards the Next Generation
- Delivery of a Virtual Environment in support of spatial enablement of society as part of an e-government strategy

Sub-national Govt. and Private Sector Influence – Strategic National focus

Future

Implementation – Drivers

• Increase effectiveness
  – Better access (reduce barriers)
  – New services
  – Exploit data better
  – Get data on time
  – Avoid duplication of data

• Increase efficiency
  – Avoid duplication of effort
  – Avoid duplication of infrastructure
  – Commodity access arrangements
Connecting Drivers with Enablers

Business Drivers

Enabling Mechanism

SDI Framework

SDI Distribution Network

Data, Information & Technologies

Projects

(Busby 2003)
What does the Enabling Mechanism Do?
Who understands place?

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DSE-SII 2006
What is Spatially Enabled Government-SEG?

• Location or place is used
  – initially to organise government information,
  – then to **re-engineer** government processes to deliver better policy outcomes,
  – Spatially enabled will ensure better productivity and efficiency,

• Place is used in a transparent manner.

• **SEG** means far better delivery of government services and sustainability better decisions by government.
Spatial Information in Society

- Spatial enablement of society and government
- Spatial information policy
- SDI
- Spatial Data layers
- Objects
Spatially Enabled Society – A Scenario for the Future

The ‘spatial enablement’ can reshape our lives.
Possibilities provided by Spatial Enablement

Spatial enablement can contribute to dealing with the challenges we face as a society. At the same time, however, it brings its own challenges.

- Expanding government services — ‘consultation & participation’
- Policy & Administration
- Public Safety
- Utilities
- Health
- Sustainability and our environmental footprint
- Land Administration
- The economics of production
- Consumption and choice
Governance and Partnership Building
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Significance of the cadastre

1. Multipurpose Cadastre (German style)
2. Title or deeds tenure style cadastres
3. Taxation driven cadastre (Latin / Spanish / French)

SDI
Mapping agencies and other data providers
Parcels, Properties, Buildings, Roads

Land management paradigm
Tenure
Value
Use
Development

Spatially enabled government
Incorporating:
- Land policy
- Spatially enabled LAS
- Services to business and public
- Country context

Better decision making
Sustainable development
- Economic
- Environmental
- Social
- Governance

Cadastral engines...
Future Vision

Achievement

Past

Paper Maps
Centralized archives
Isolated Computing stations
No standardization
Lack of others

ICT advancements
Remotely-sensed data
Digital data
Computer networks
Web-based applications
Multi-disciplinary applications

Effective databases
Integrated data management
Distributed services

Present

Future

Achievement

Evolving

Time
Every country has its own journey.
The setting, application and enforcement of rules that determine how a group works together to achieve common goals.

The role is to glue together the technology, organizations and information that comprise an SDI.
**Governance contexts**

**Societal governance**
- **Purpose:** to ensure improved outcomes in public goods and service delivery
- **Scope:** society
- **Exercised by:** state, increasing inclusive of on behalf of - society

**Corporate governance**
- **IT governance**
  - **Purpose:** to enable inclusive effective decision-making about an organization’s IT resources
  - **Scope:** organization
  - **Exercised by:** designated IT stakeholders on behalf of - organization owners/stakeholders

**SOA governance**
- **Purpose:** to support decision-making about design and operation of shared infrastructure
- **Exercised by:** designated stakeholders of an infrastructure
  - **Scope:** within an organization
  - **Scope:** increasingly across organizational and jurisdictional boundaries
- **On behalf of:** stakeholders (operators, users)

**SDI governance**
- **Purpose:** (Box 2008)
Spatial Enablement – Experiences & Activities

Victorian State – Australia

Victorian Spatial Council
Victorian Spatial Strategy 2008-2010

Asia-Pacific – PCGIAP

SEG Working Group
UN Resolution, 2006 for SEG and VSDI
SEG International Workshop, Korea 2007 (jointly with GSDI)

GSDI Association

GSDI 11 Conference, 2009, NL
Convergence theme
Elements:
- governance
- custodianship
- framework information
- business information
- data quality
- metadata
- awareness
- access
- pricing and licensing
- privacy
- strategic development of technology and applications

4 scenarios of the effects of different levels of private and public sector engagement:

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Resolution:
SDI to support spatially enabled government

Recommendation Member Nations develop a better understanding and pursue the principles of designing SDIs to support spatially enabled government.
GSDI Perspective
GI Society: A Partner in Setting the Global Agenda

SDI regions

- Canada
- Americas
- Africa
- Europe
- Asia / Pacific

Global society

- World Bank
- UN
- Habitat
- UNICEF
- Water Forum
- WHO
- FAO
GSDI 11 Conference

The Netherlands June 15 - 19 2009

GSDI 11 World Conference

Spatial Data Infrastructure Convergence:
Building SDI Bridges to Address Global Challenges
GSDI 11 Conference

The Netherlands June 15 - 19 2009

[Map of the Netherlands]
Mapping Common Paths to achieve the Vision

To assist in collaborative mapping of possible **re-usable common paths** to a shared vision:

- Requires collective action
- Different groups working on different parts of the problem
- Together pieces provide potential paths to realising vision
- Knowledge managements is required
- Treated as integral part of SDI

Enables the **past** to be leveraged to achieve a **future vision**.
Thank you