



SDI and the Key Elements

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What and Why SDI?

- **Why is information infrastructure important?**
- **What is an SDI? (agreeing terminology is vital).**
- **Removing confusion over SDI ‘components’ versus information infrastructure.**
- **Key drivers for developing an SDI.**
- **Information policy and e-government links – access, charging, IPR, exploitation.**
- **Key players and SDI “champions”.**
- **Impact of different forms of SDI governance on success.**

Why is information infrastructure important?

- **Effective management of the coastal zone and allied marine resources requires the ability to discover and use multiple datasets, created by different departments and disciplines, for different purposes, in different formats, to different quality specifications, and with different access and use/re-use policies.**
- **Resolving these differences is one of the main drivers for creating spatial data infrastructure (SDI) at organisational, national, regional (trans-national) and global levels.**

Why is information infrastructure important?

- Numerous cost-benefit studies on the value of an SDI, from 1992 onwards, all report positive benefit-cost ratios, strongly positive ROI figures, even when not all benefits can be financially determined.
- Today, we live and operate in a digital information environment – it is conceivable – and already witnessed in the case of location-based services – that maps are rapidly disappearing, replaced by ever more interconnected digital information systems and services that integrate information from a wide range of sources.

What is an SDI?

- A typical (and frustrating!) Q&A exchange on national SDI:

Q. “Has your organisation/country/region implemented its spatial data infrastructure yet?”

A. “Yes, we have an SDI. Just visit our web geoportal and you will see it.”

- **NO you won't! An SDI comprises far more components than just the visible geoportals by which you publish, find and access geospatial data and services.**

SDI Definitions

GSDI Association SDI Cookbook definition

“... the relevant base collection of technologies, policies and institutional arrangements that facilitate the **availability** of - and **access** to - spatial data. The SDI provides a basis for spatial data discovery, evaluation, and application for users and providers within all levels of government, the commercial sector, the non-profit sector, academia, and by citizens in general.”

GSDI Association, 2004

SDI Definitions

- “a framework of policies, institutional arrangements, technologies, data and people that makes it possible to *share* and *use* effectively geographic information.”
- “common denominator...
 - framework data
 - metadata
 - policy framework
 - coordination”

Craglia & Johnston, AGILE Conference, 2004

SDI Definitions

EU pan-European SDI definition

Article 3 (1). ‘infrastructure for spatial information’ means metadata, spatial data sets and spatial data services; network services and technologies; agreements on sharing, access and use; and coordination and monitoring mechanisms, processes and procedures, established, operated or made available in accordance with this Directive.

INSPIRE Directive, European Commission, 2007

SDI Definitions – why the variance?

- **Information infrastructures are created in order to serve a purpose, achieve outcomes and impacts, often at great expense and over long periods of time.**
- **Don't forget that the rationale for a national or regional SDI may not be the same as for an organisation's own (internal) SDI or an institutional/thematic SDI.**
- **The question: Is a coastal/marine SDI simply a component of a national SDI, a regional (trans-national) SDI, a global SDI - or something quite different altogether – something that has not been created before?**
- **Does your (internal) organisational SDI need to be – or be able to – fully mesh with a state or regional SDI?**
- **Why does this matter?**

SDI components versus infrastructure

- data – the heart of the system – ‘any data that has a location tag’;
- metadata (so you can find data and use it more effectively);
- services (data and network services) and technologies to deliver those services;
- policies (acquisition, ownership, pricing, access, sharing, dissemination, custodianship, preservation, governance, ...);
- agreements (relating to policies and technologies, including standards);
- institutional arrangements, including leadership, coordination, enforcing agreements, etc.;
- financial implications, i.e. resource requirements, cost-benefit;
- monitoring and reporting – how? to whom? why?

What constitutes SDI 'Best Practice'?

To be designated as an ***SDI Best Practice Implementation*** by the Global Spatial Data Infrastructure Association, an SDI implementation should:

1. meet minimum interoperability requirements by implementing and adhering to a set of core standards in a ***Recommended Minimum Software Standards Suite for Spatial Data Infrastructure***, and
2. meet minimum accessibility requirements by implementing and adhering to the ***Spatial Data Infrastructure Minimum Accessibility Requirements***.

Key drivers in SDI development

- **Is there a 'key driver' that requires development of a national SDI and/or of coastal and marine components within that NSDI?**
- **climate change – monitoring, planning for mitigation, remedial action**
- **environmental policy – planning, monitoring, implementation**
- **disaster (natural and man-made) planning and management**
- **national economic performance**
- **homeland security?**

Information policy and e-Government links

- Are you familiar with your national or regional governments' stated information policies?
- Are any e-Government initiatives in place or planned for your local, regional, national government's activities?
- If so, how far advanced are they...and do they take the needs of geospatial data and services into account?
- What constitutes "e-Government" in any initiatives that may exist at local, regional or national government in your country?
- **Observations and Lessons Learned from Europe: There is virtually NO linkage between e-Government and SDI initiatives, programmes, implementation in Europe – with a very few exceptions.**

SDI Governance Models

- One of the keys to success of creating an infrastructure – regardless of what type of infrastructure that is – information, health, education, transport, etc. – is the governance model.
- What constitutes a governance model?
- Who is in charge – who ‘owns’ the initiative? Topographic community? Location-based commercial community? Scientific/research community?
- What is their place in the hierarchy of government - the ‘pecking order’ – i.e. do they have authority?
- How will construction and maintenance of the infrastructure be financed – public, private, public-private combined?
- For how long must governance remain a factor in securing the success of the infrastructure – long-term sustainability issues?
- Is the infrastructure legally mandated (required) or voluntary – or a mix?

SDI Champions and Key Actors

- Does your NSDI have a ‘Champion’? If so, at what level of government? And why is this important? (think budgetary control !) 😊
- Who are the key players in developing the SDI in your country or region? Is the marine/coastal community considered to be a ‘key player’?
- How well represented are the various marine/coastal communities in SDI initiatives - from vision to strategy development, then definition and implementation stages? Do they work together? Can they speak with one voice when the time comes to press issues important to them?
- Why are ‘Champions’ needed? Can you succeed without one?
 - governments are busy places and budgets are restricted!
- Lessons from elsewhere – USA (Presidential decree, 1994 - has not led to the expected success for NSDI!), EU (EU Commissioners’ MoU, 2002 – led to INSPIRE!), UK (cabinet level backing – eventually reached), Ireland (little backing!)

Factors for success in SDI implementation

- Raising awareness of the benefits arising from implementing an SDI across widely varying sectors of society compared to the costs – business, government, citizens' lives.
- Securing buy-in from multiple sectors of society – government, businesses, location-based service providers, traditional GI producers and users, etc.
- Linking the SDI to other national or regional objectives or mandated reporting requirements – e.g. environmental planning & monitoring, climate change, disaster mitigation and remediation, support for economic infrastructure, etc.
- Managing expectations – infrastructure development takes time!
- Finding that 'Champion' – and aiding & supporting your Champion in delivering resources to create the SDI.



Thank you for your attention!

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