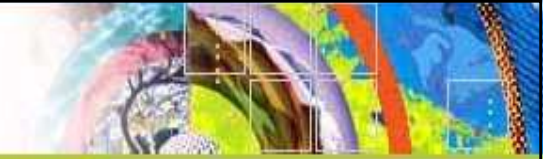


# Re-engineering SDI Design to Support Spatially Enabled Society

**Abbas Rajabifard**

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

INSPIRE Conference  
Maribor, Slovenija  
23 June 2008



# 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



**GSDI 11 Conference**  
2009, NL

**GSDI  
Association**

**SEG Working  
Group**

**Asia-Pacific  
PCGIAP**

Convergence  
theme

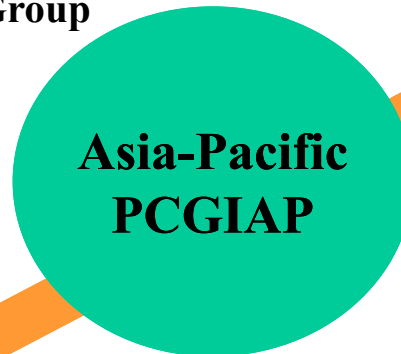
Victorian Spatial  
Strategy 2008-2010

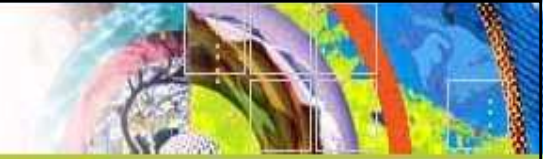
**Victorian State**

UN Resolution  
2006

**Victorian Spatial Council**

**Centre for  
SDIs and LA**

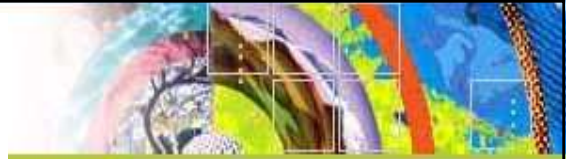




**Spatial information** is an enabling technology/infrastructure for modern society.

SI describes the **location** of objects in the real world and the **relationships** between objects.

# Services and Delivery Tools



- 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:





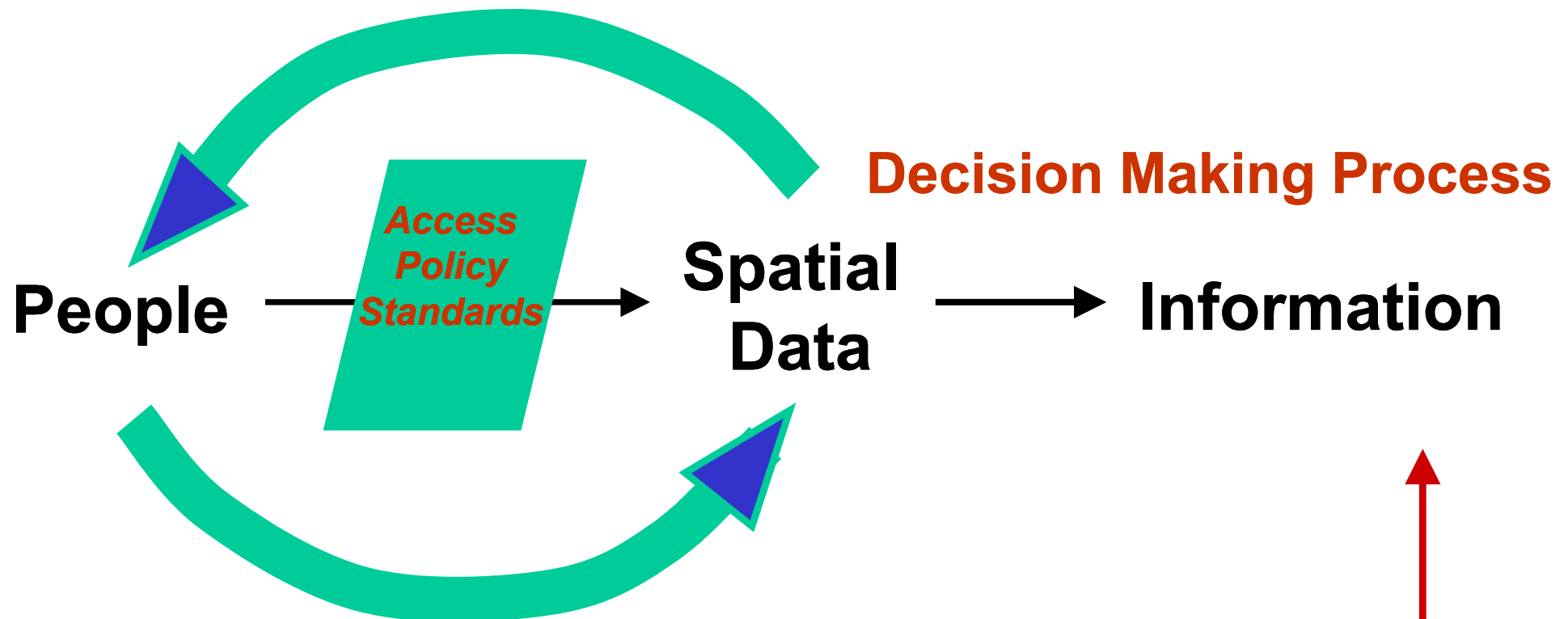
Ready and timely access to **spatial information** – knowing where people and assets are – is essential for the creation of wealth in any jurisdiction.

It is a critical tool for making **informed decisions** on key economic, environmental and social issues.

# The Significance of Data?

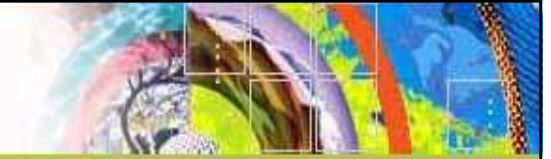


Spatial Data is further shaped by the decision-making process to which it is subject



Management / Administration underpinned by access to spatial information.

# So Why the Problem?



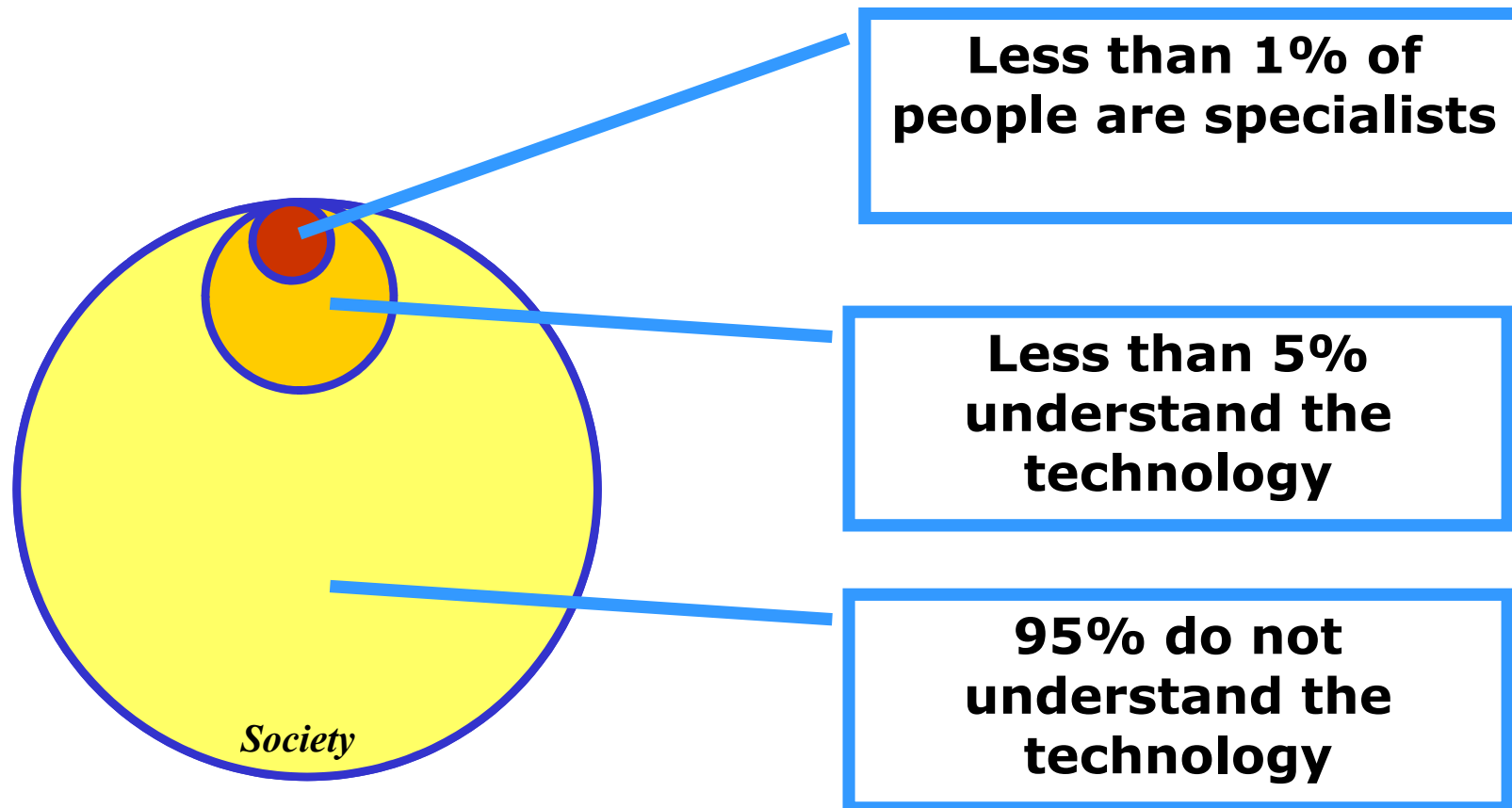
- Immature institutional arrangements
- Immature user/provider relationships
- Poor knowledge of data availability
- Difficulties in assessing data quality
- Inconsistent policies on data access and use
- Lack of best practice in the use of technologies

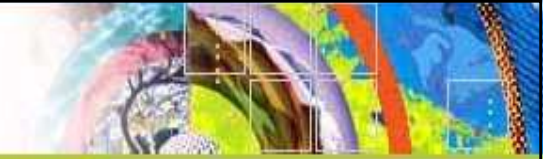


# Who understands place?



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

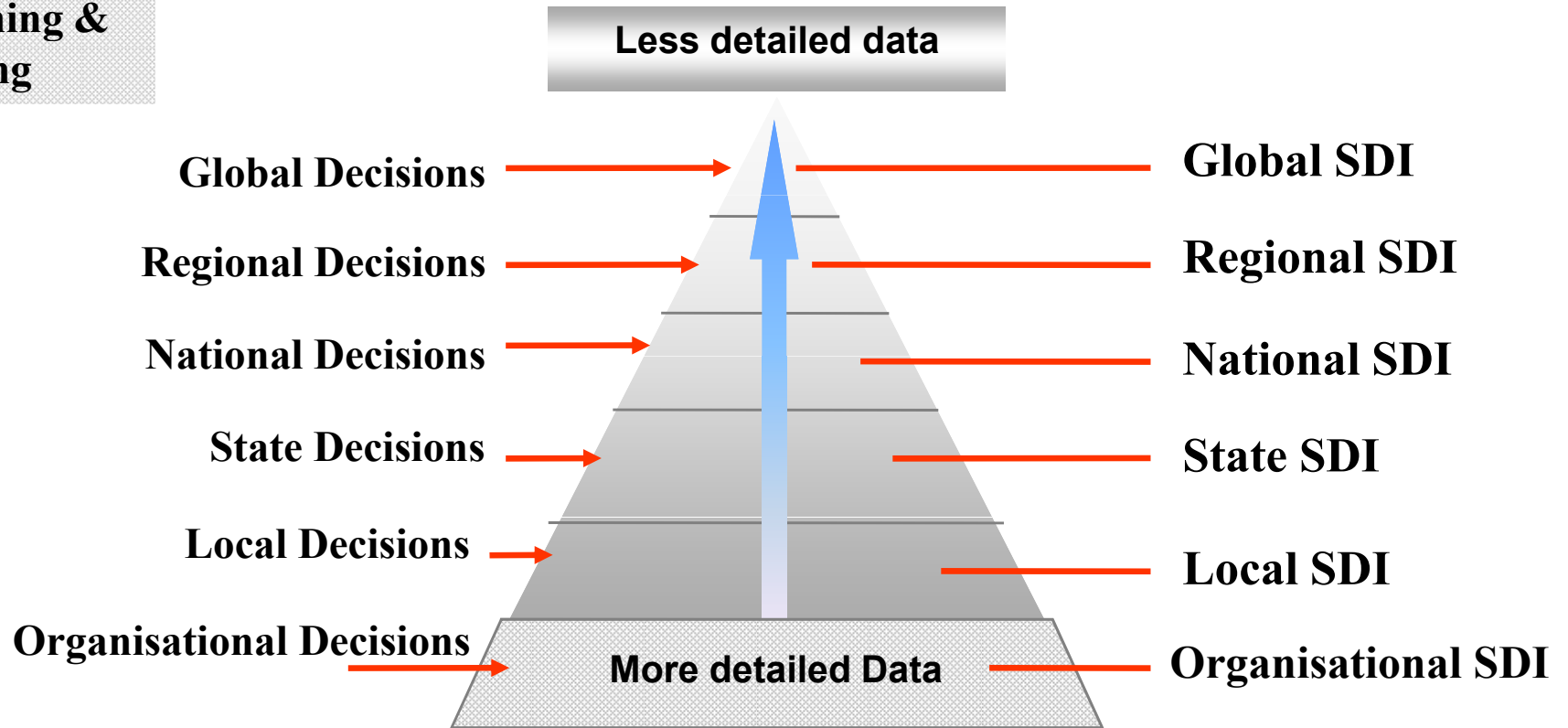
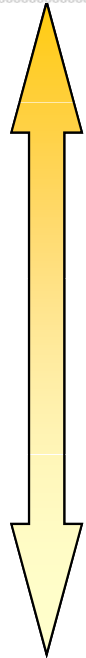




- **SDI** is all about facilitation and coordination of the exchange and **sharing** of spatial data, services and related resources;
- **SDIs** constitute a set of relationships and partnerships that **enable** data sharing, update and integration (start where you are ready to start).
- **Components**-collection of people, policies, networked datasets and enabling technologies and services.

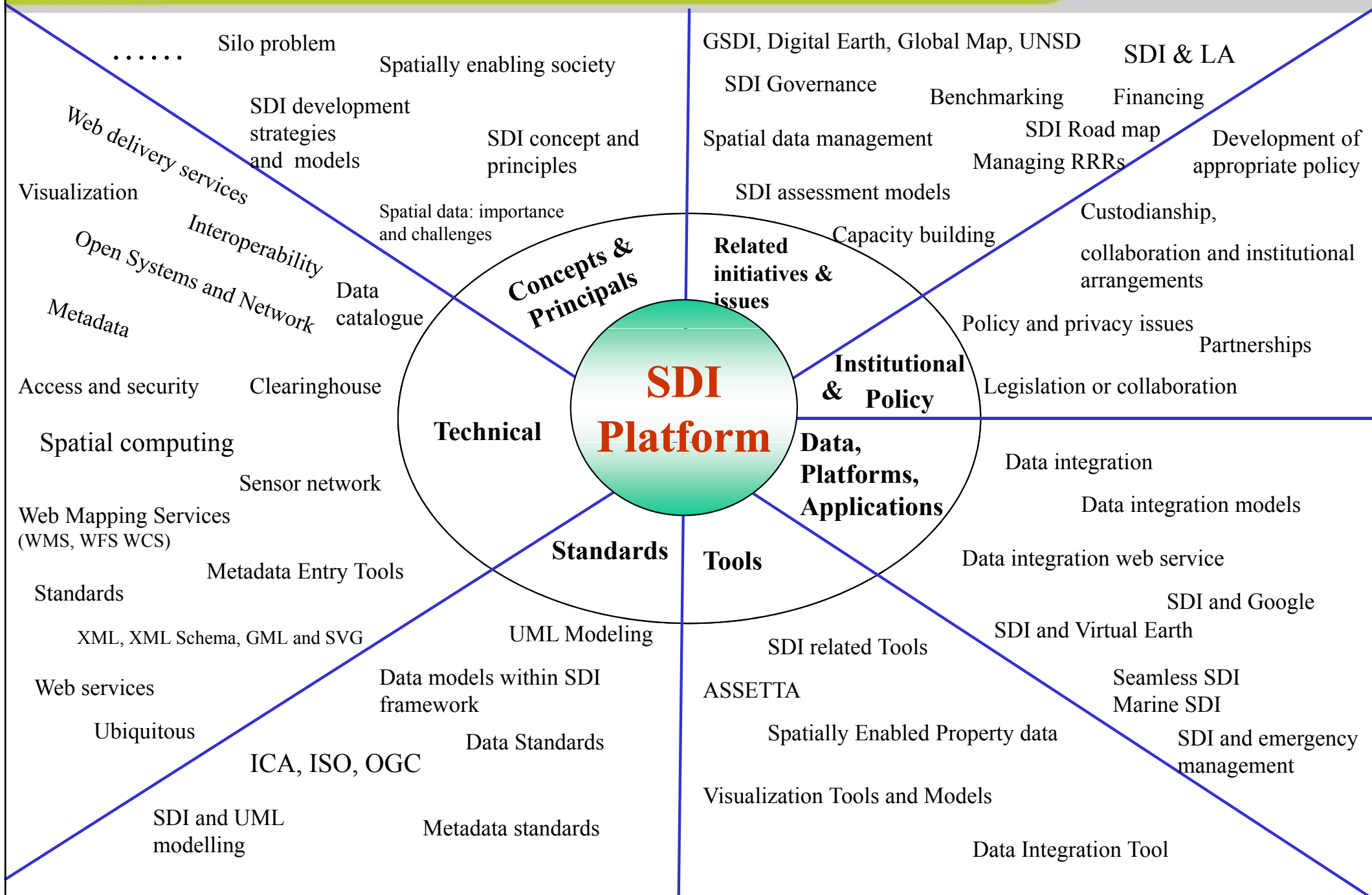


Strategic Planning &  
Decision Making

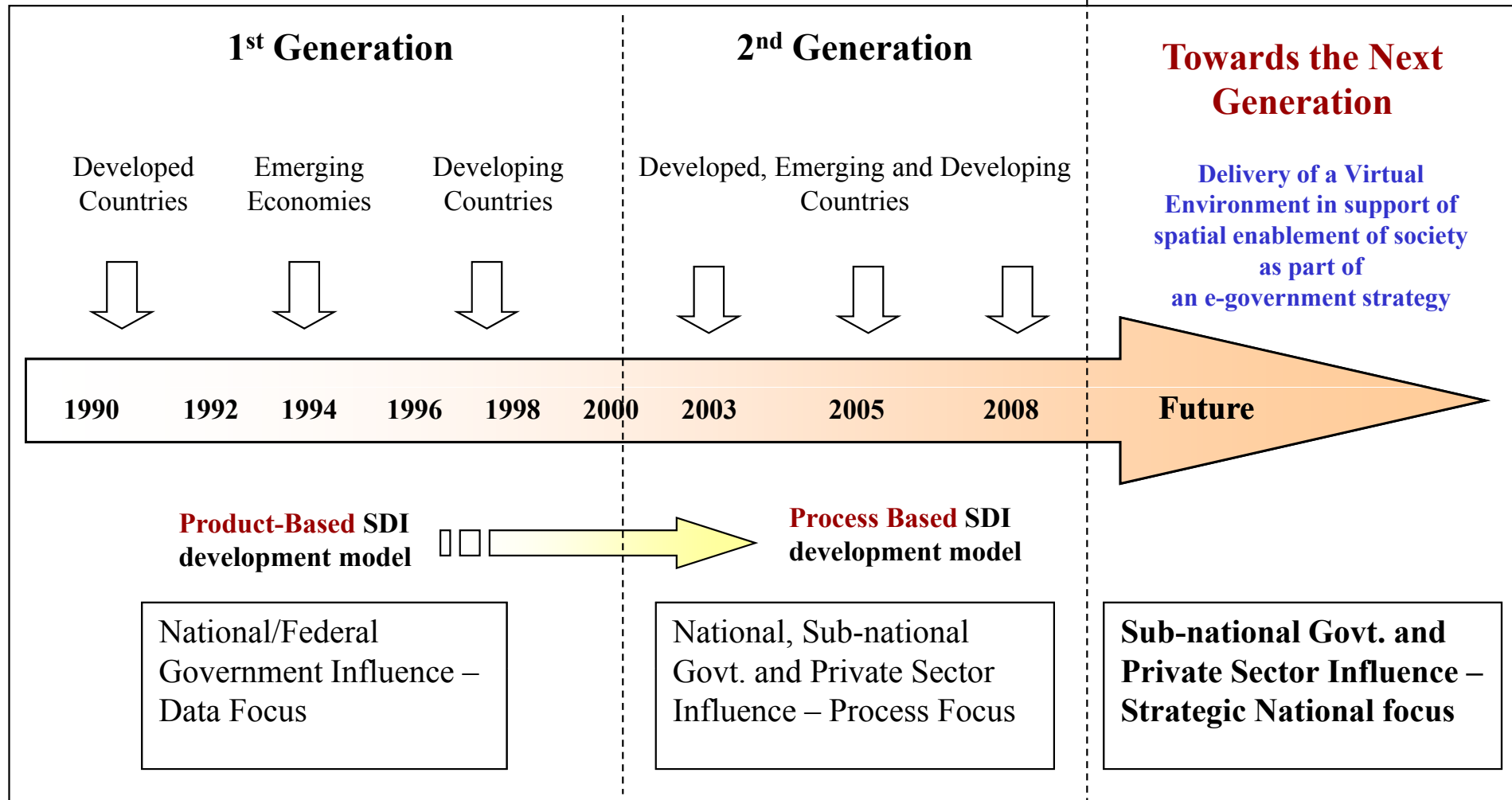
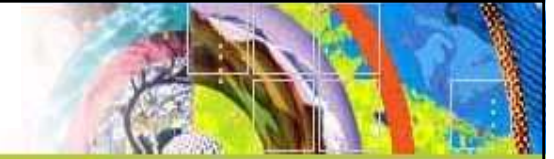


- Many groups working on **same problem** at different levels on the hierarchy.
- Success depends on intra- and inter- jurisdictional cooperation between individuals and agencies.

# Content and Elements

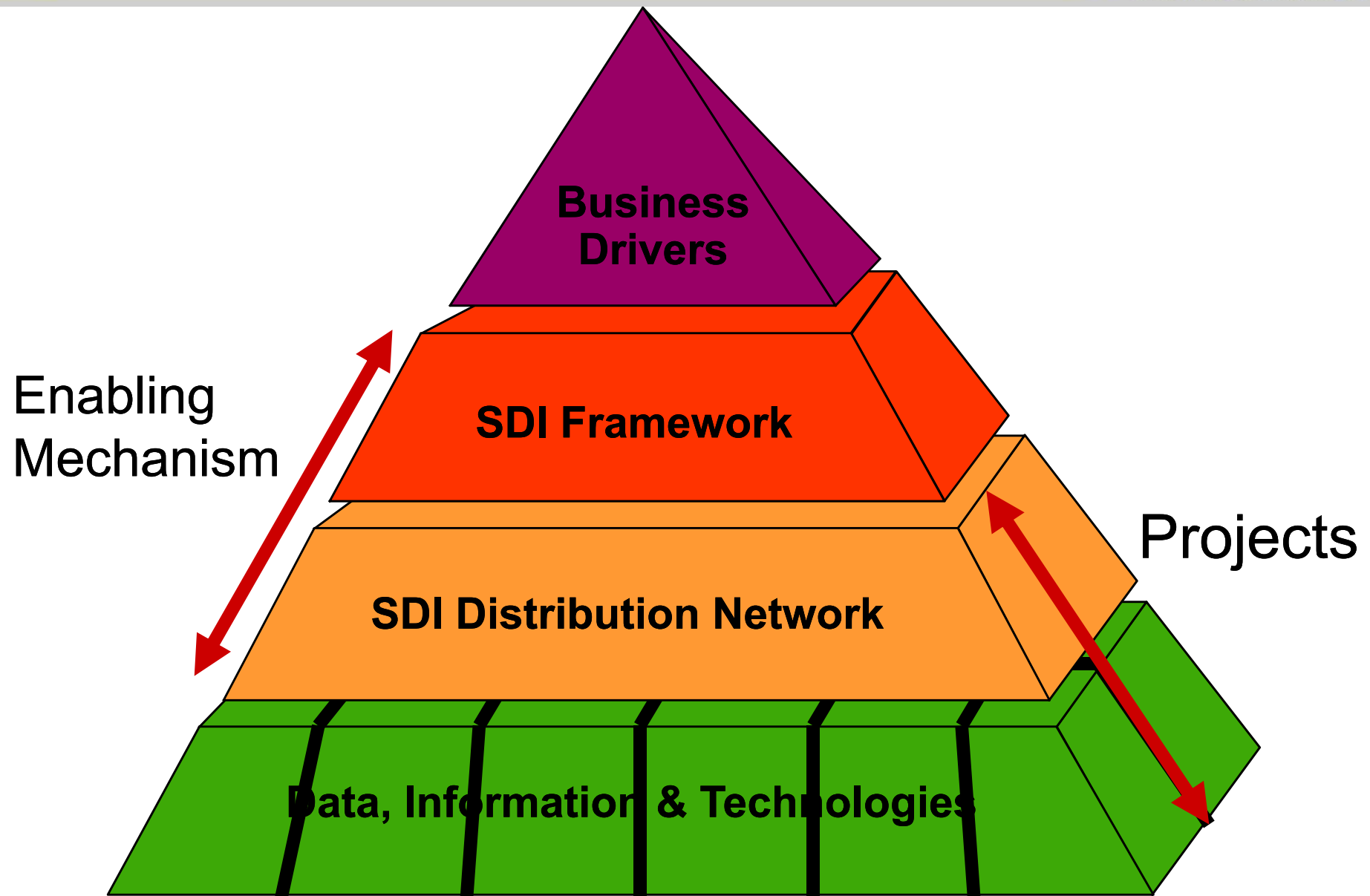


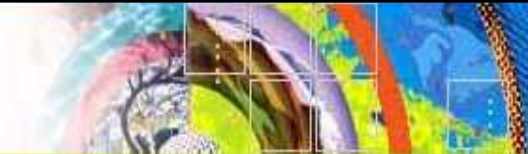
# Continuum of SDI Development



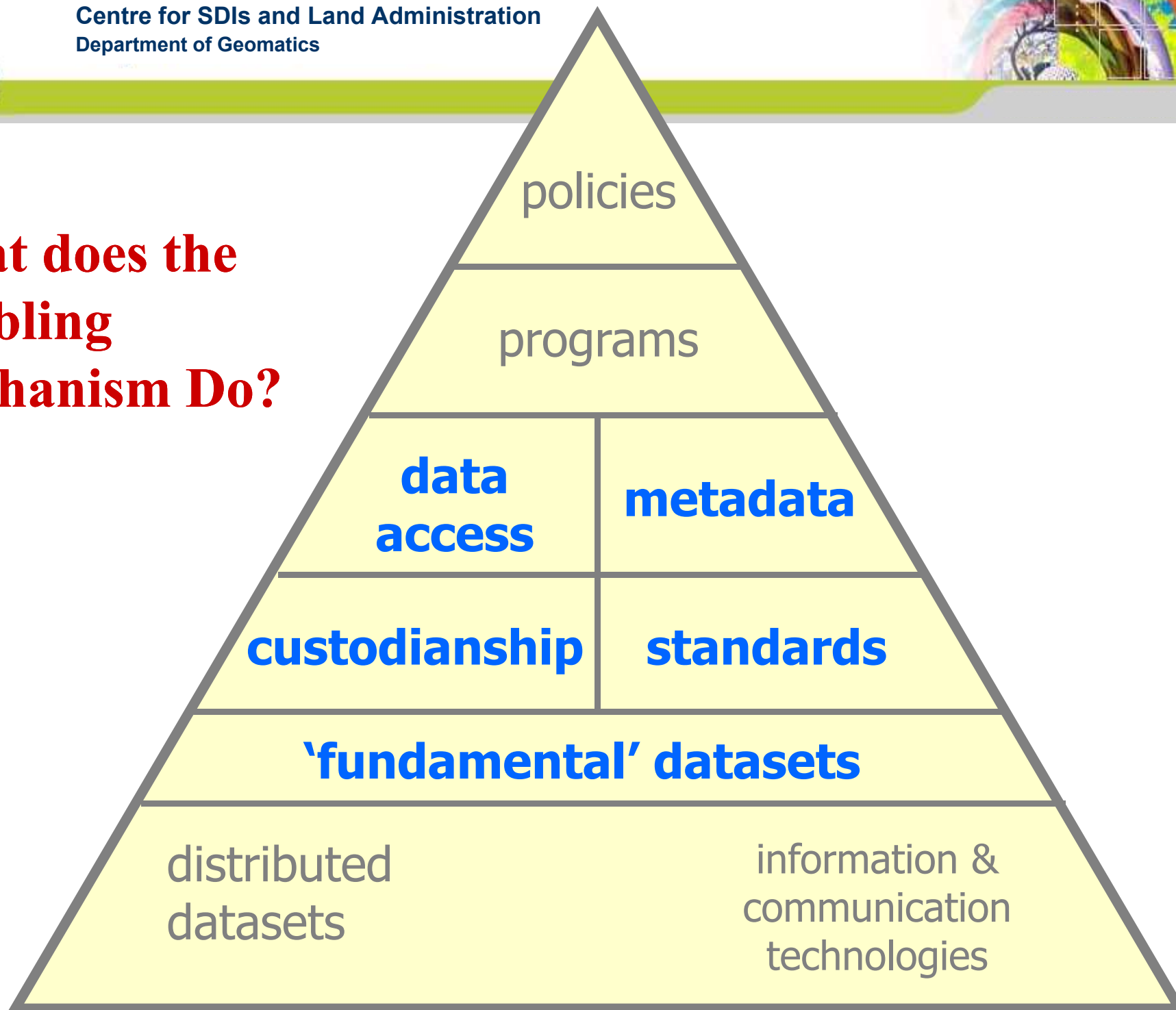


- Increase effectiveness
  - Better access (reduce barriers)
  - New services
  - Exploit data better
  - Get data on time
  - Avoid duplication of data
- Increase efficiency
  - Avoid duplication of effort
  - Avoid duplication of infrastructure
  - Commodity access arrangements





## What does the Enabling Mechanism Do?

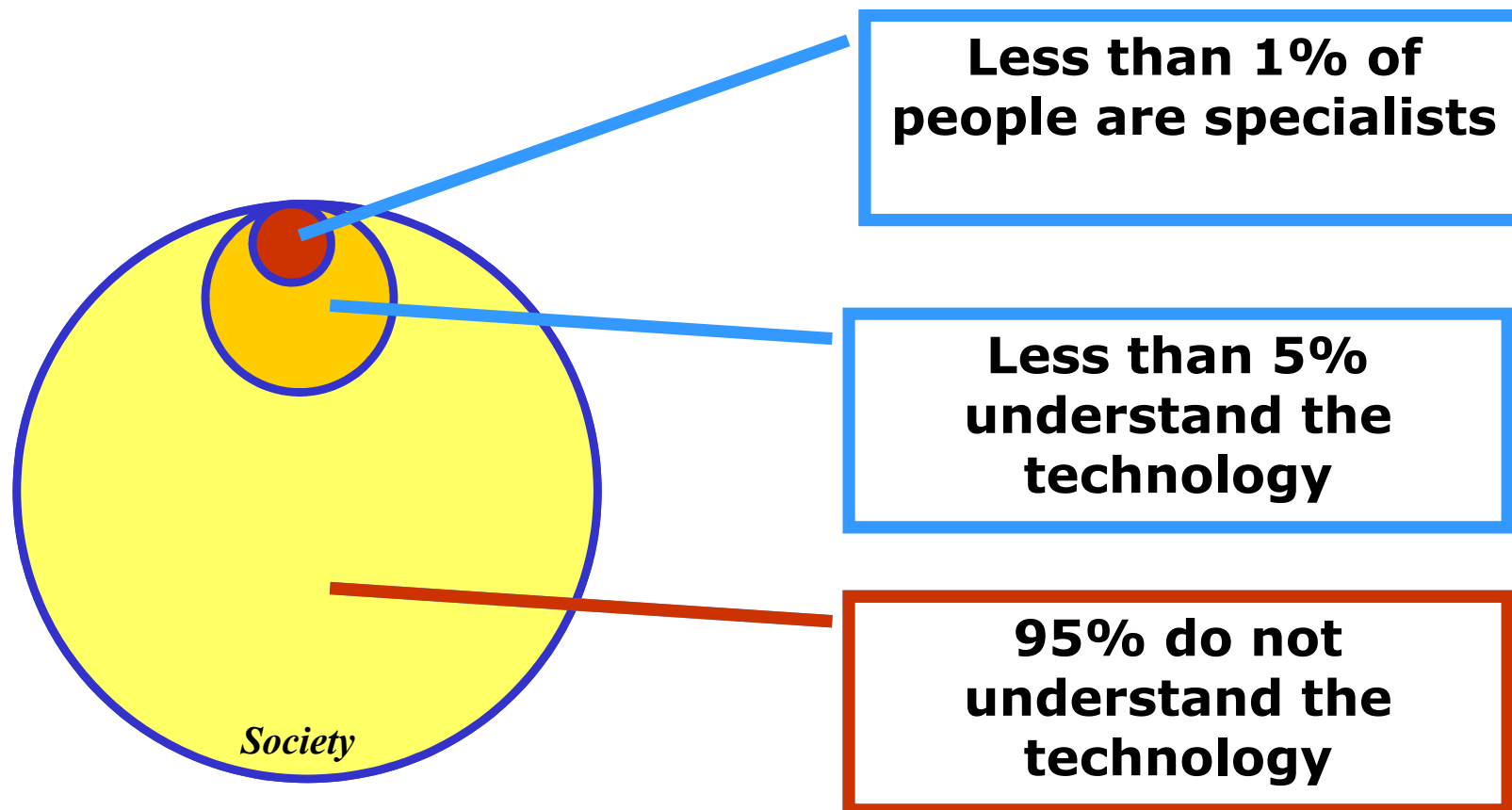




# Who understands place?



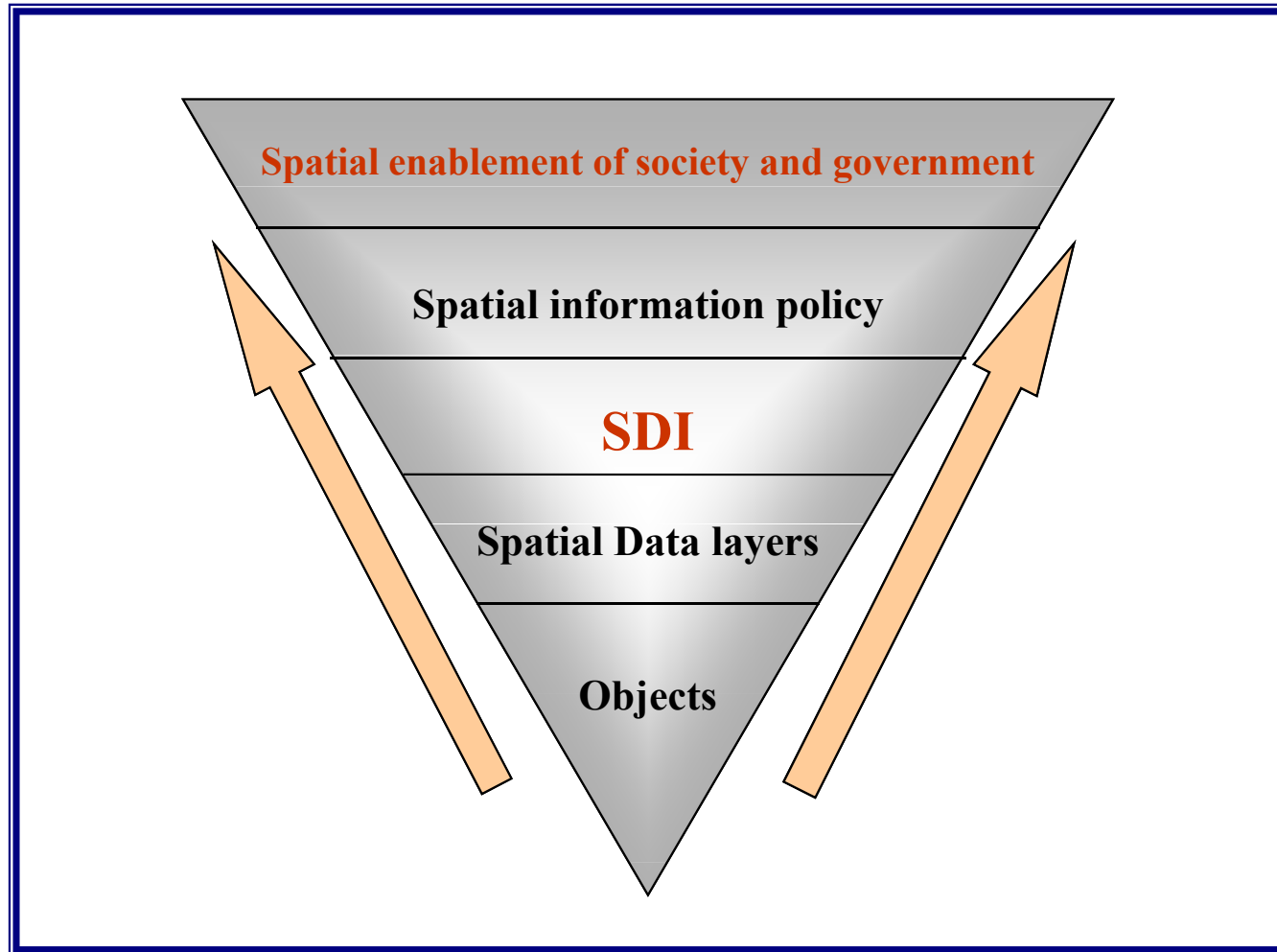
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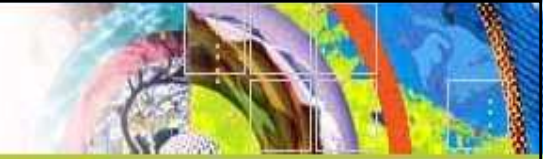


# What is Spatially Enabled Government- SEG?



- 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.





# Spatially Enabled Society – A Scenario for the Future

The ‘**spatial enablement**’ can reshape  
our lives.

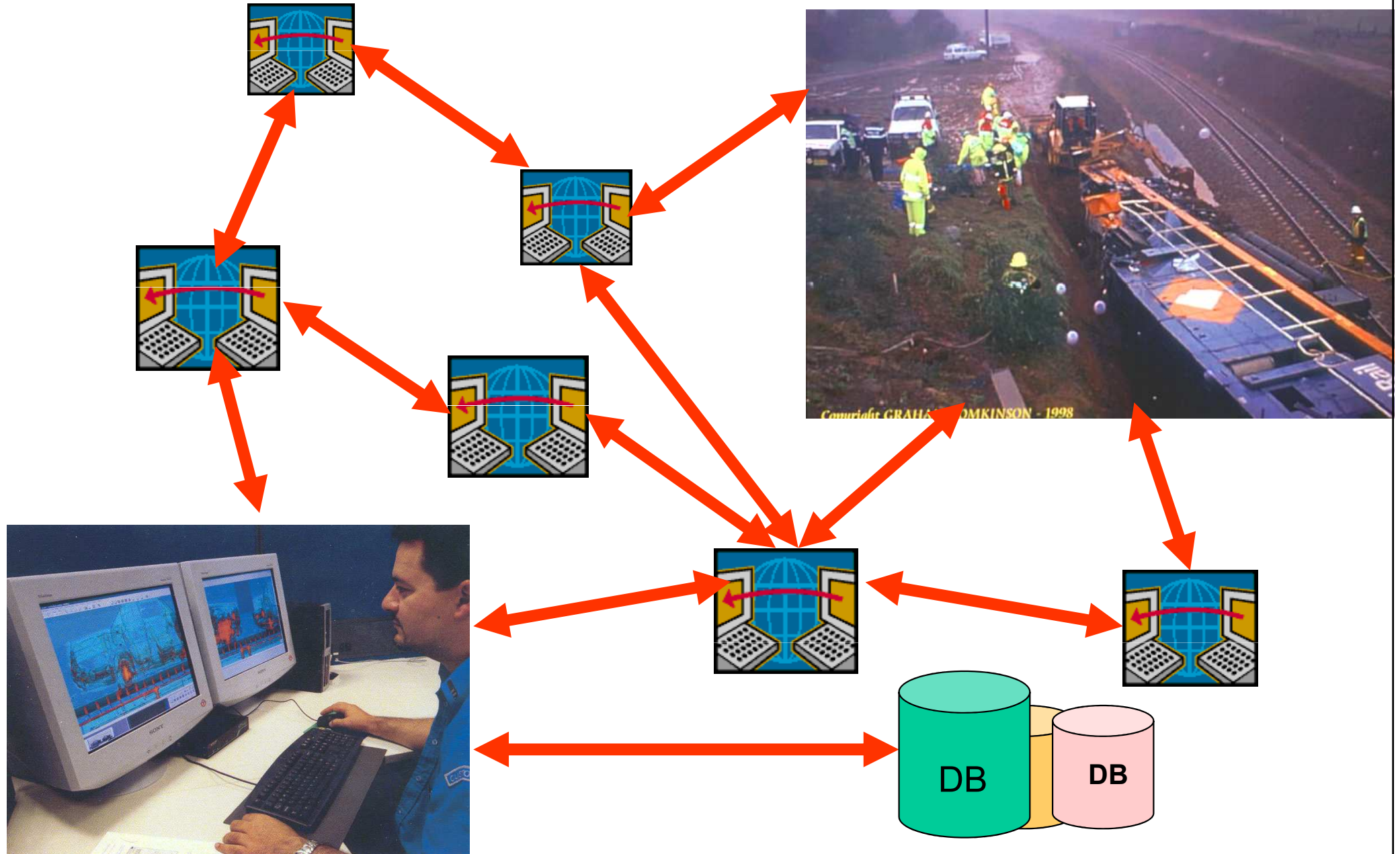
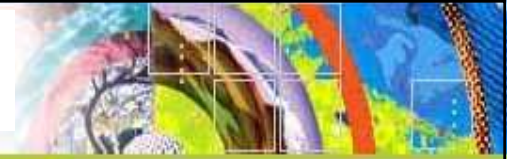
# Possibilities provided by Spatial Enablement



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



# Possibilities provided by Spatial Enablement



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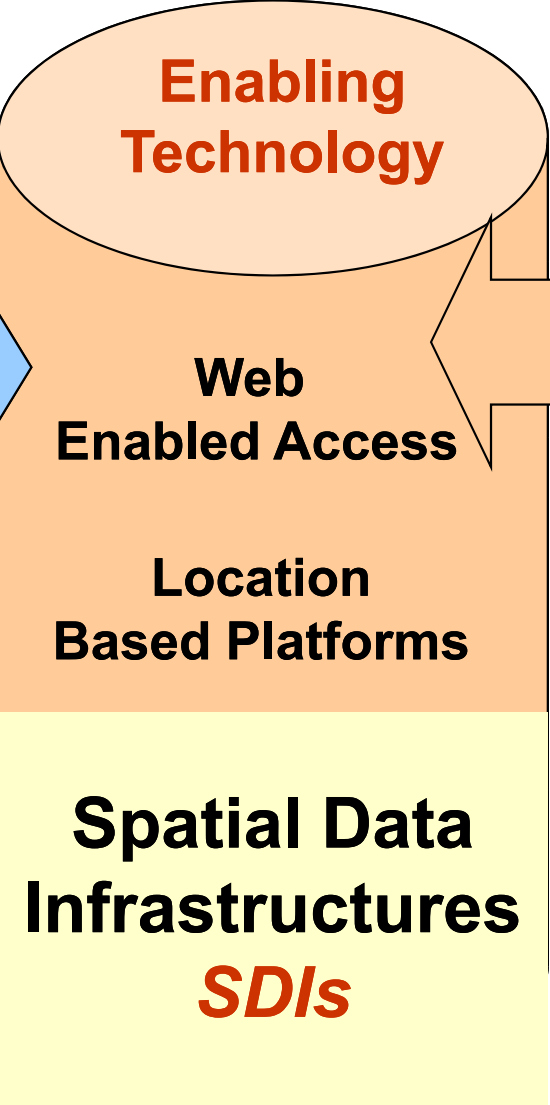
Drainage  
Mortgages  
Hydrology  
Heritage  
Parcel  
Geology  
Topographic  
Landform  
Adm  
Resou  
Cr  
Hab  
Estate  
Owners'  
Residents and  
Image data  
Geographic Names

Encoded property addresses  
Owners' contact address  
Utilities  
Water license  
Restricted sites  
Furglary risks  
Business licenses  
Soil Transport  
Use, condition and zoning  
Topographic  
Landform  
Adm  
Resou  
Cr  
Hab  
Estate  
Owners'  
Residents and  
Image data  
Geographic Names

Boundaries  
Aerial photos  
Photogrammetric control archive  
Topographic map archive  
Access  
Aerial photos

**Supported Functions**  
for Key Government and Business Activities

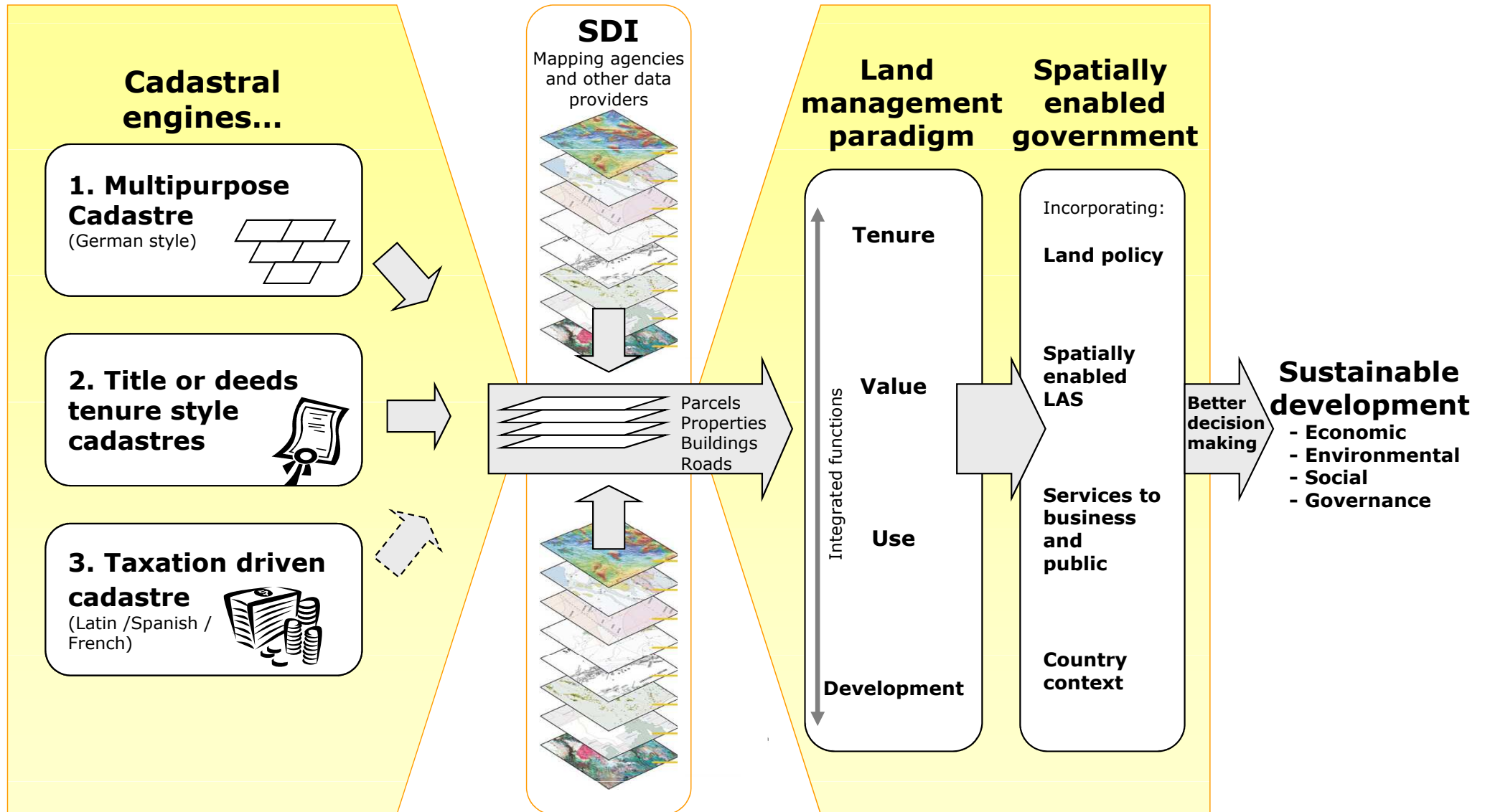
**Spatial & Non-Spatial Data**



- Policy making
- Land development & planning
- Transactions management
- Activity management
- Emergency management
- Land valuation & taxation
- Provision of utilities & services
- Transport and access
- Farming & resource management
- Disclosure of restrictions



# Significance of the cadastre





Achievement

Time

**Vision**

ICT advancements  
GIS  
Remotely-sensed data  
Internet  
Effective databases  
Integrated data management

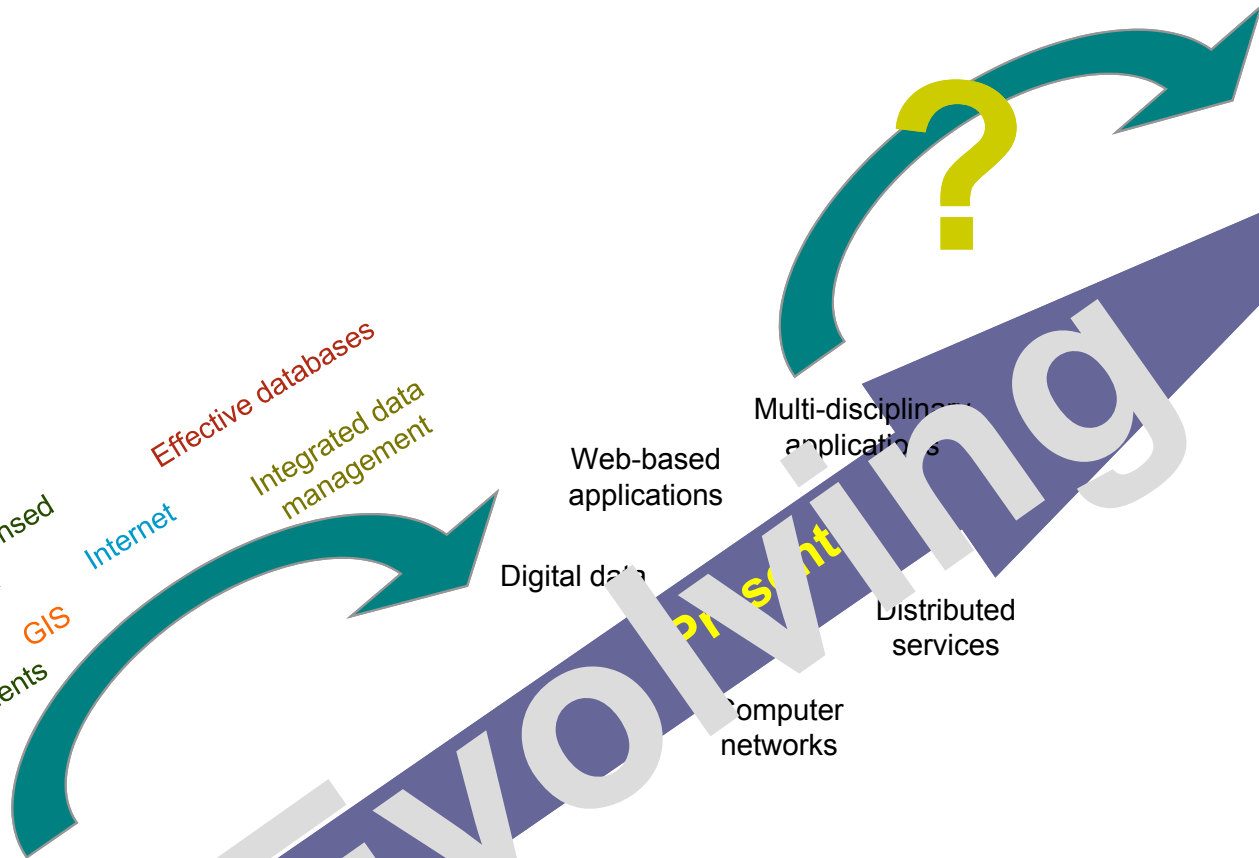
Digital data  
Web-based applications  
Multi-disciplinary applications  
Computer networks  
Distributed services

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

**Past**

**Present**

**EVOLVING**

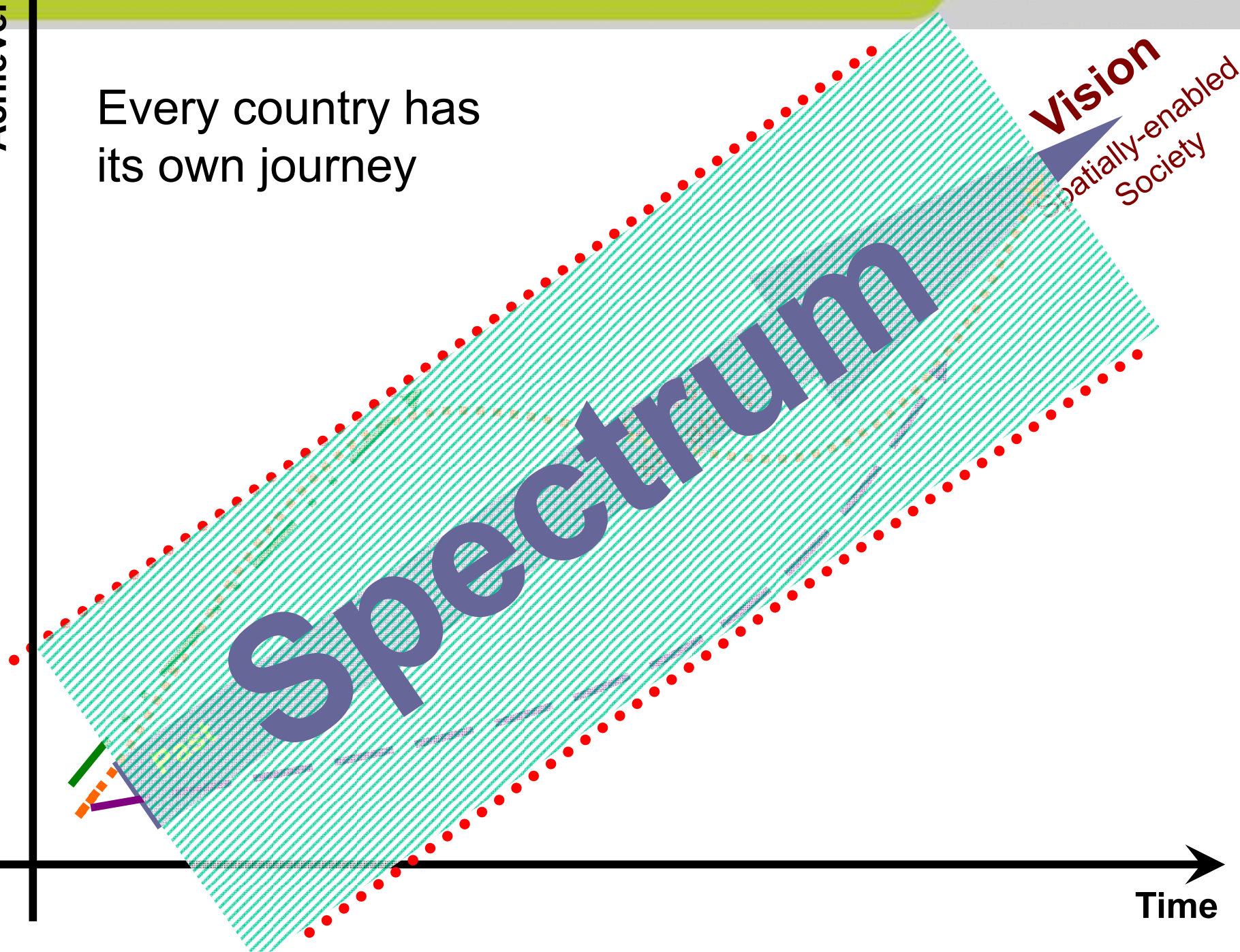


Achievement  $\uparrow$  Ce  
De $\downarrow$

# Spatially-enablement stages

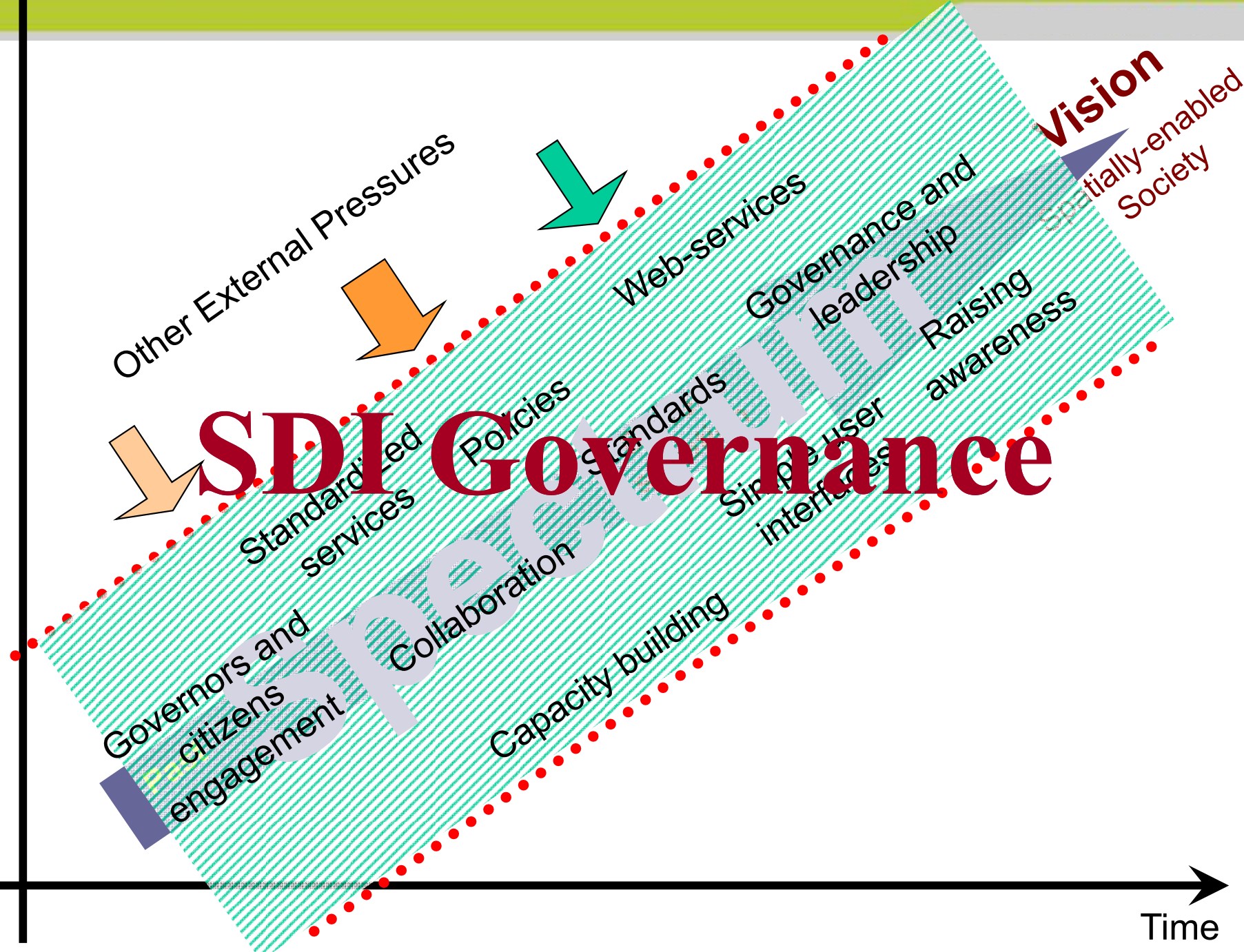


Every country has  
its own journey



Achievement

Time

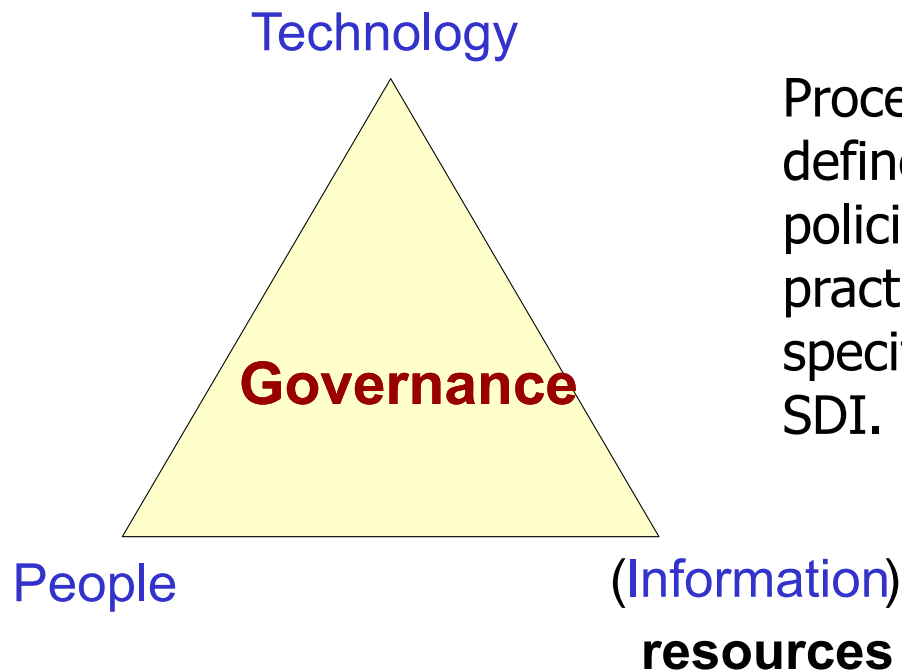


# Governance



**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



Processes and institutions to define and manage agreed policies, technologies, standards, practices, protocols & specifications and to monitor the SDI.



## Societal governance

### Corporate governance

#### IT governance

#### SOA governance

#### SDI governance

- purpose - to ensure improved outcomes in public goods and service delivery
- scope – society
- exercised by – state, increasing inclusive of on behalf of - society
- purpose - to direct, supervise, monitor operational management of corporation
- scope – organisation
- exercised by - board
- purpose - to enable inclusive effective decision-making about an organization's IT resources
- on behalf of - organization owners/stakeholders
- scope – organisation
- purpose - to support decision-making about design and operation of shared infrastructure
- exercised by - designated IT stakeholders
- on behalf of - organizations managers and shareholders
- exercised by - designated stakeholders of an infrastructure
- scope - within an organization
- scope - increasingly across organizational and jurisdictional boundaries
- on behalf of - stakeholders (operators, users)



**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

# Victorian Spatial Information Strategy 2008-2010

## *Spatially Enabled Victoria*

### 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:

Public	Private
High	Low
Low	High
Low	Low
<b>High</b>	<b>High</b>





## 17th United Nations RCC-AP, Bangkok, 18-22 September 2006



United Nations Statistics Division

### 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

**SDI  
Convergence**

*Global society*

World Bank  
UN  
Habitat  
UNISEF  
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



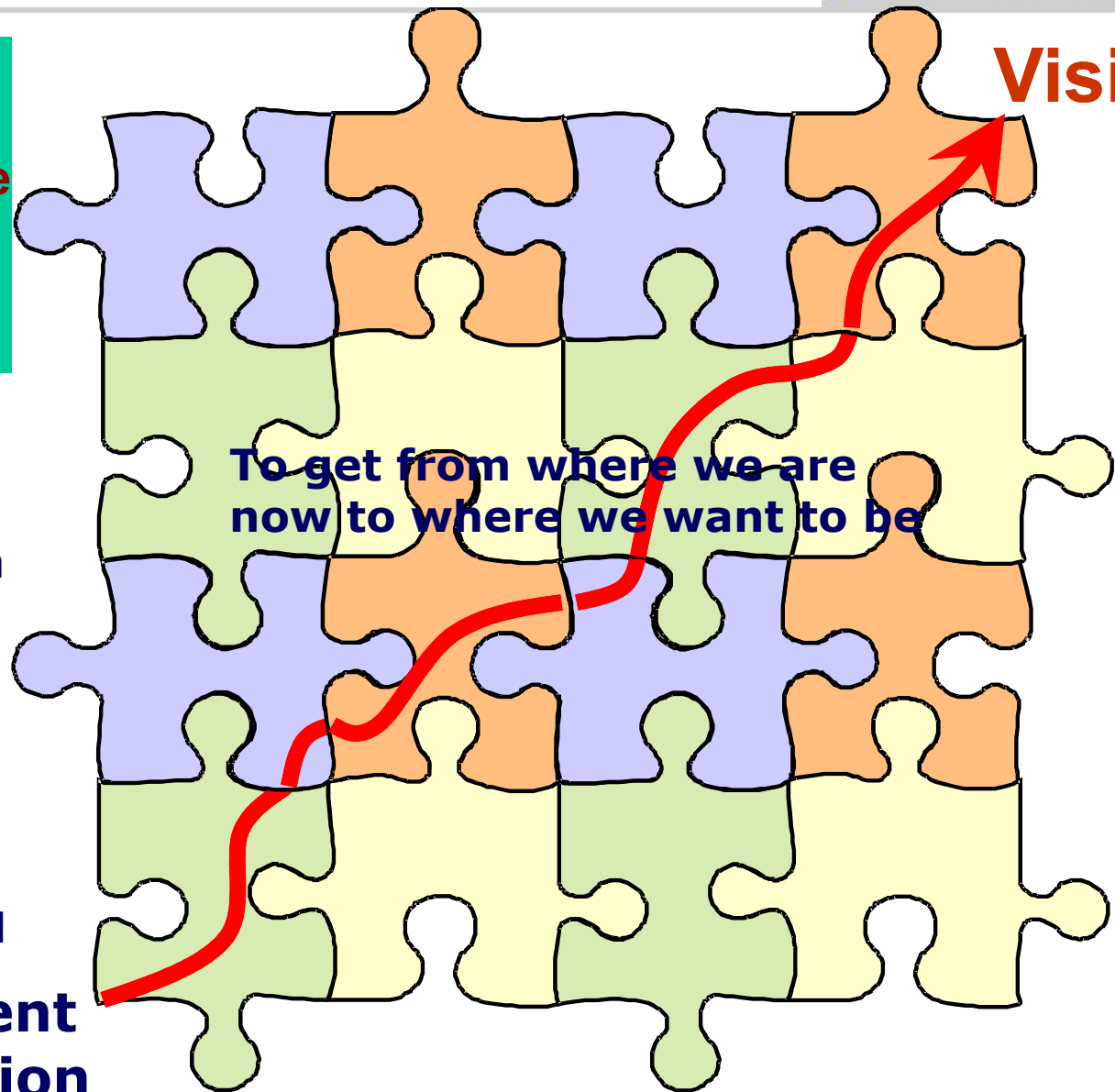
# Mapping Common Paths to achieve the Vision



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

**Current  
position**



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



# Thank you