

UNIVERSITY OF TWENTE.

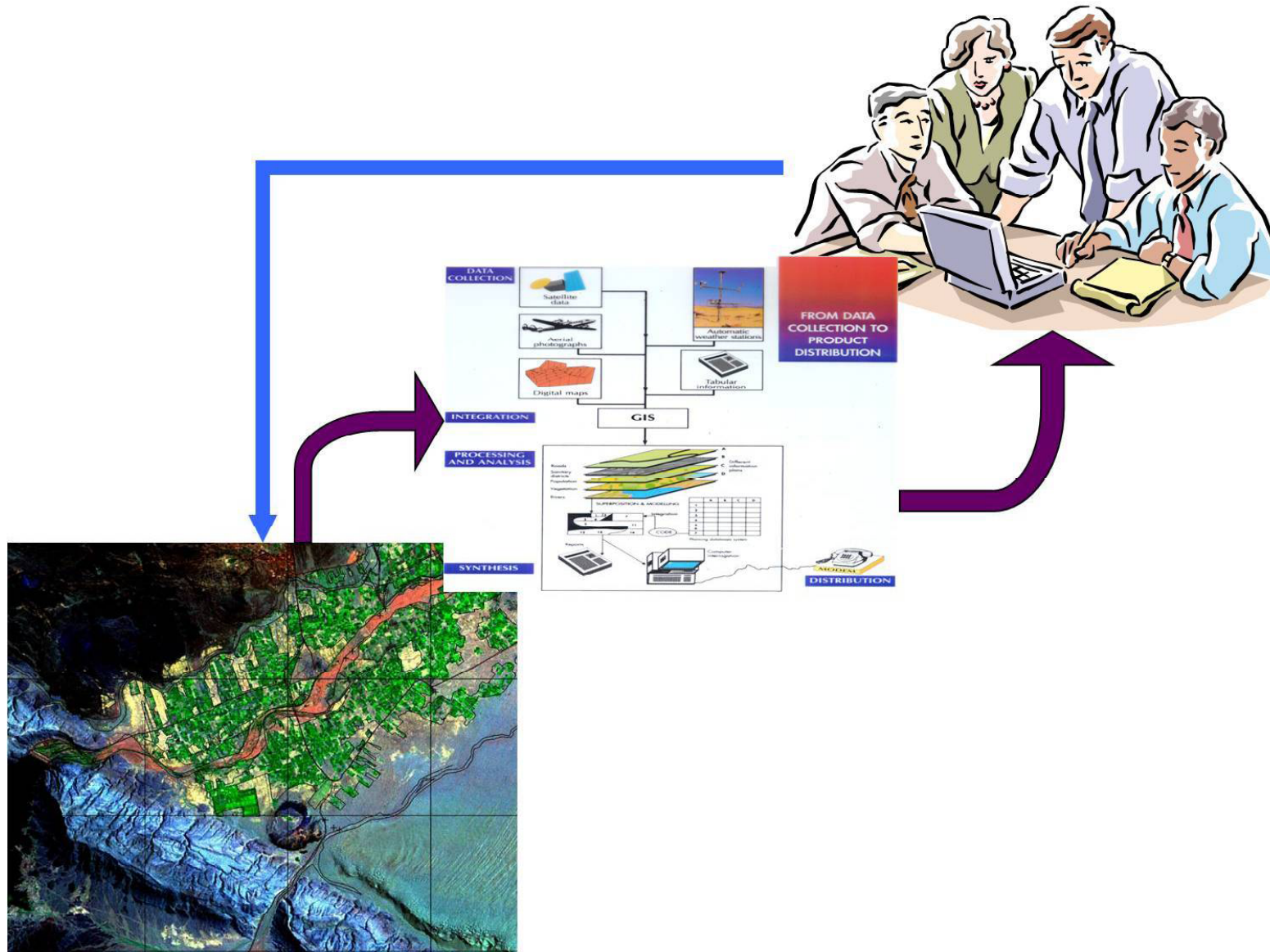
Geospatial Education requirements for the modern GI Sector

Martien Molenaar
ITC
University of Twente

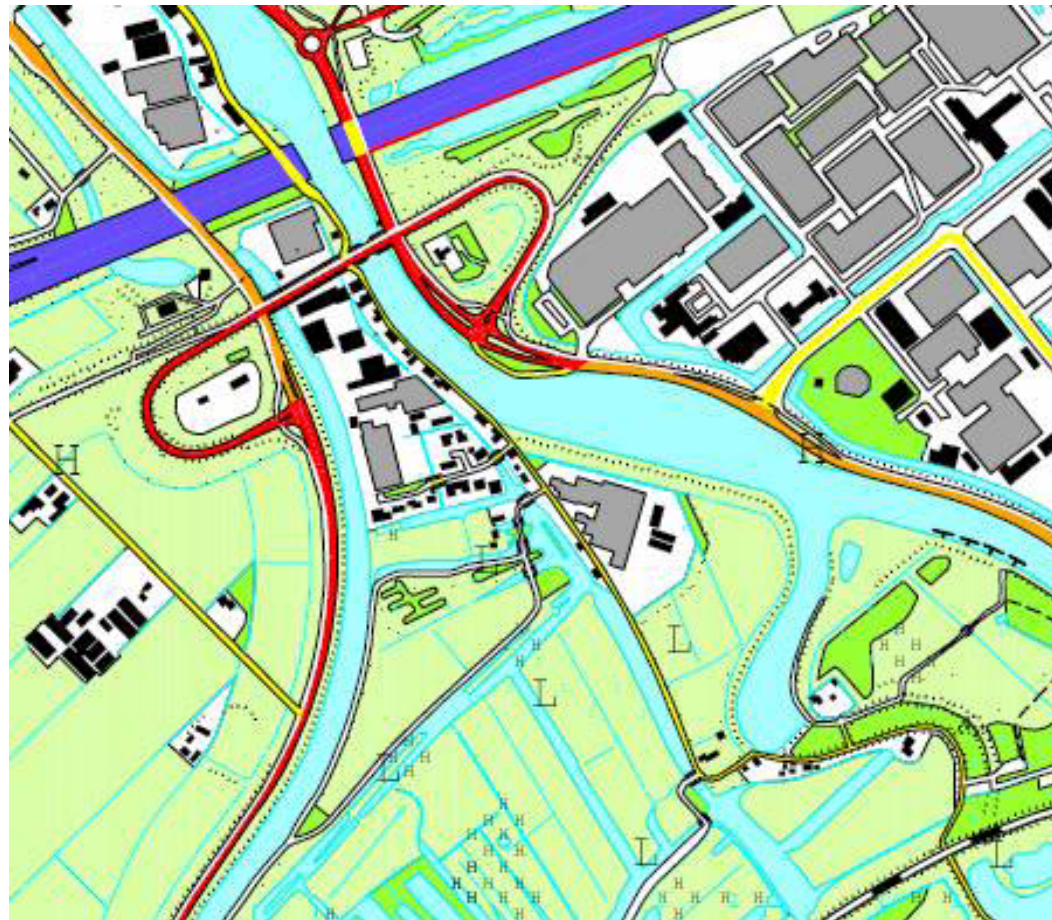


FACULTY OF GEO-INFORMATION SCIENCE AND EARTH OBSERVATION

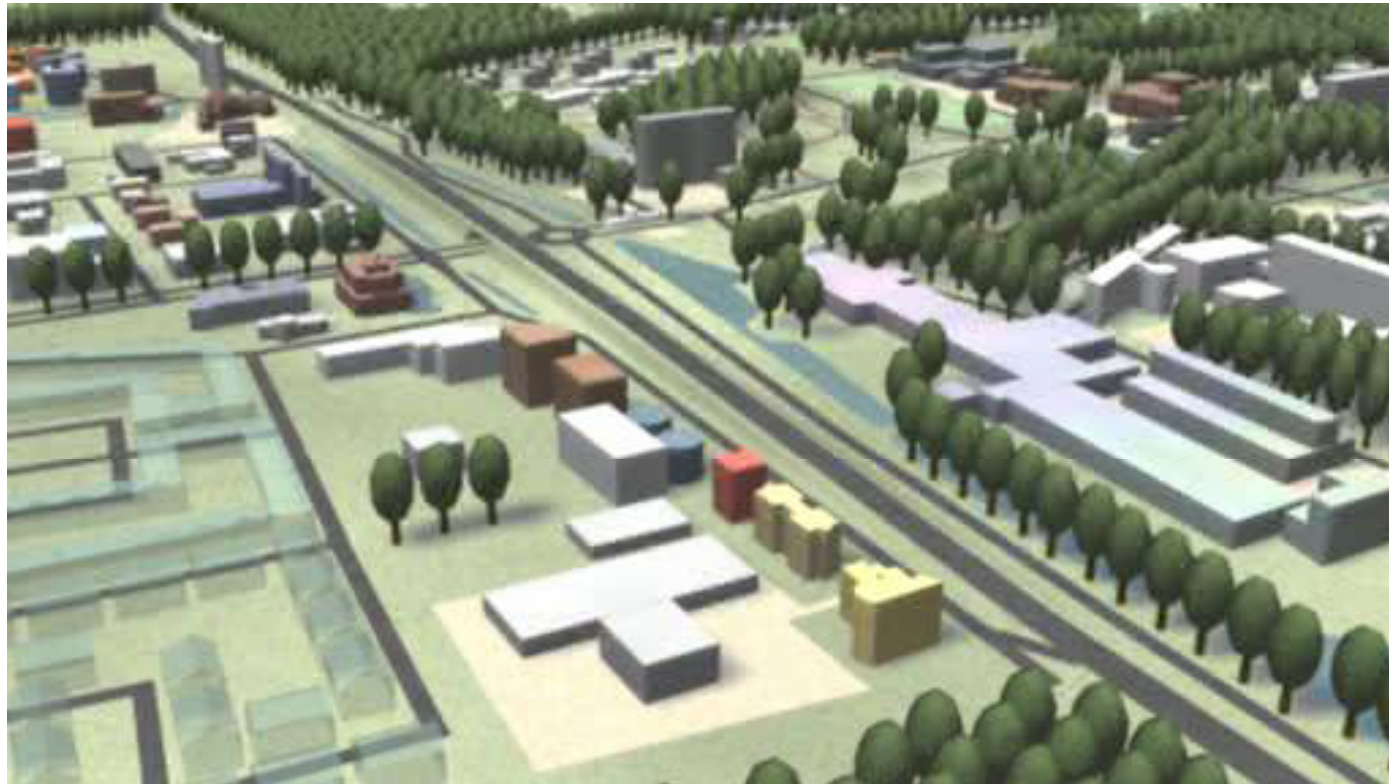
Geo-information for managing space



GI provision from “what is where....”

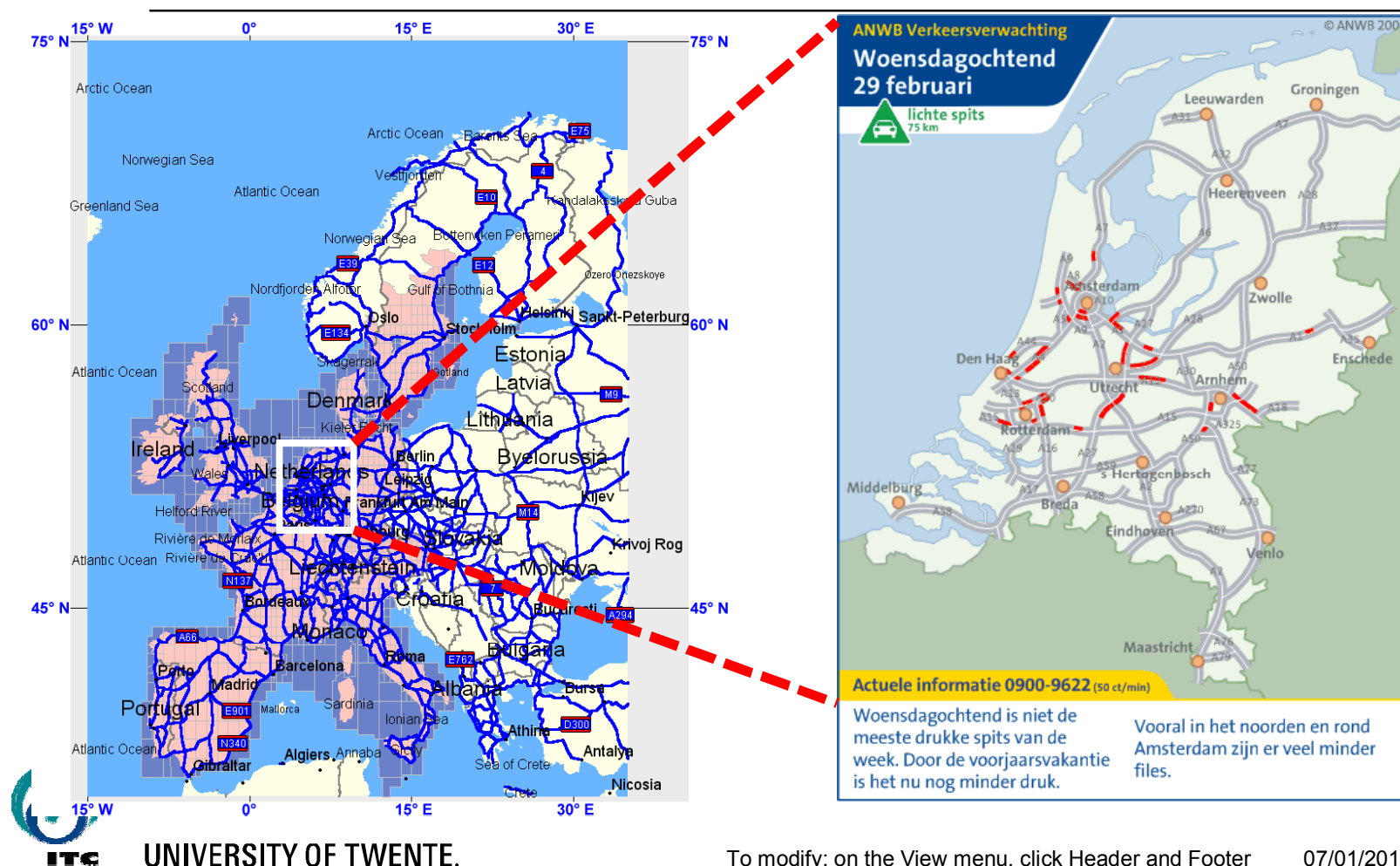


....to “what happens where”



Multi level context

Local vs continental traffic



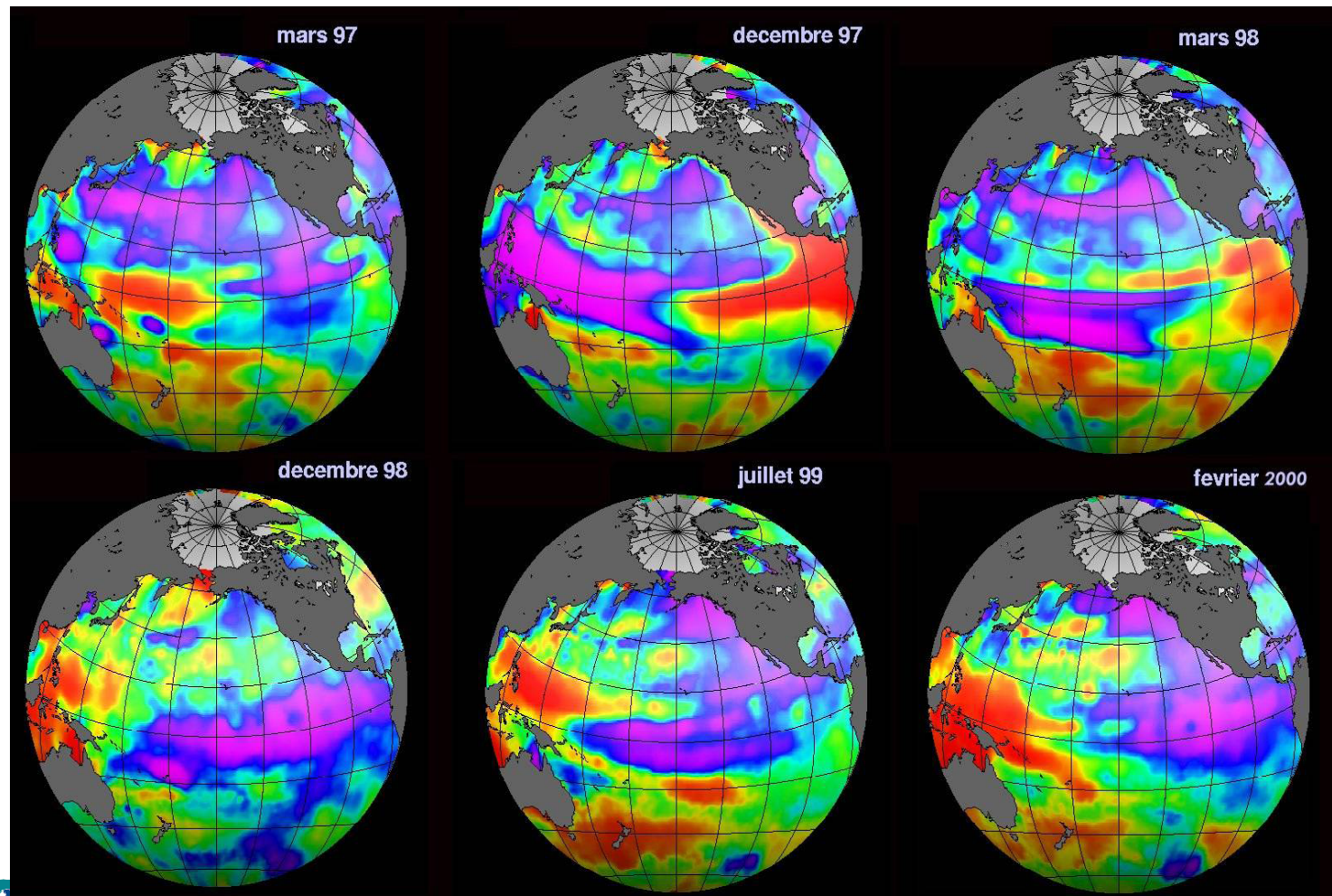
To modify: on the View menu, click Header and Footer

07/01/2013

5

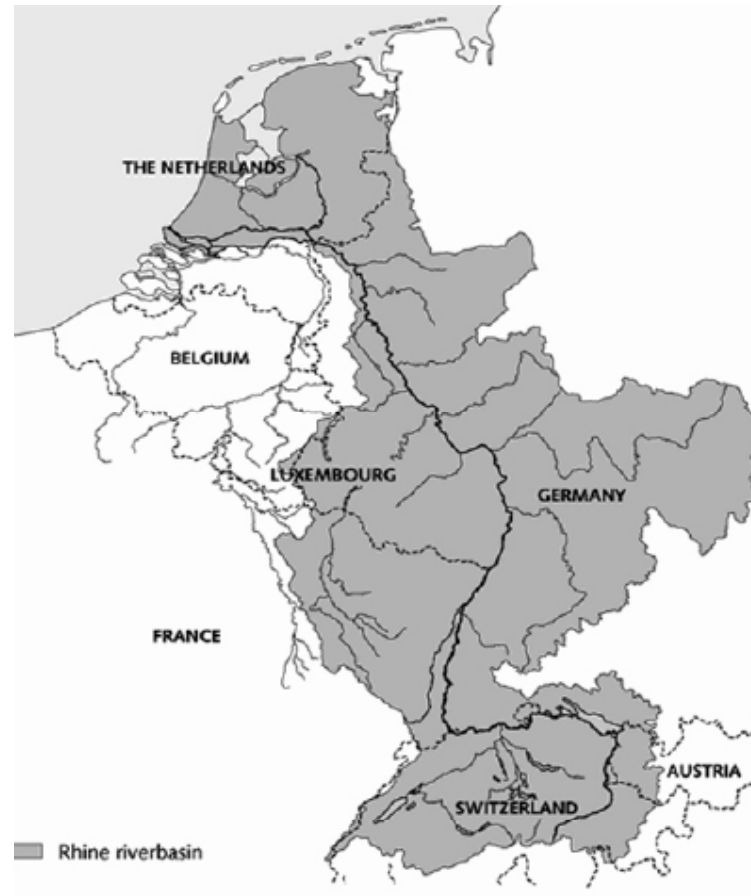
Multi level context

Global phenomena



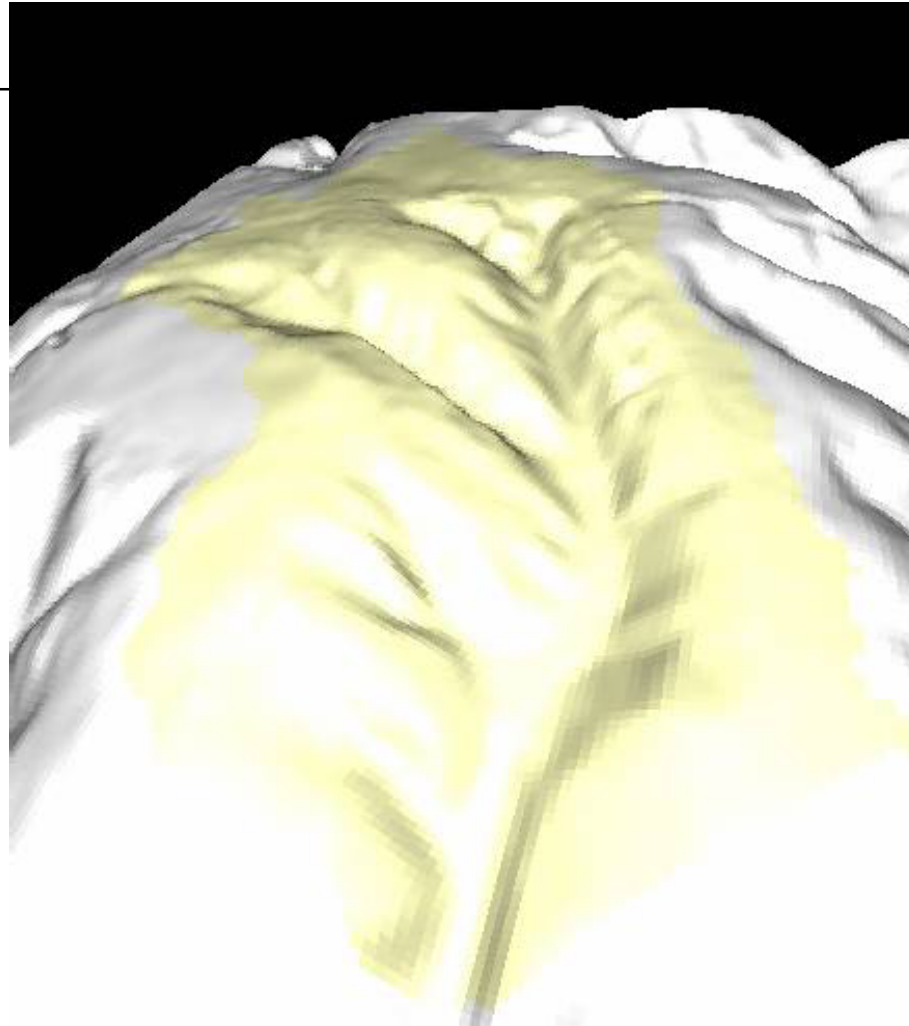
Multi level context

Watermanagement in river basins



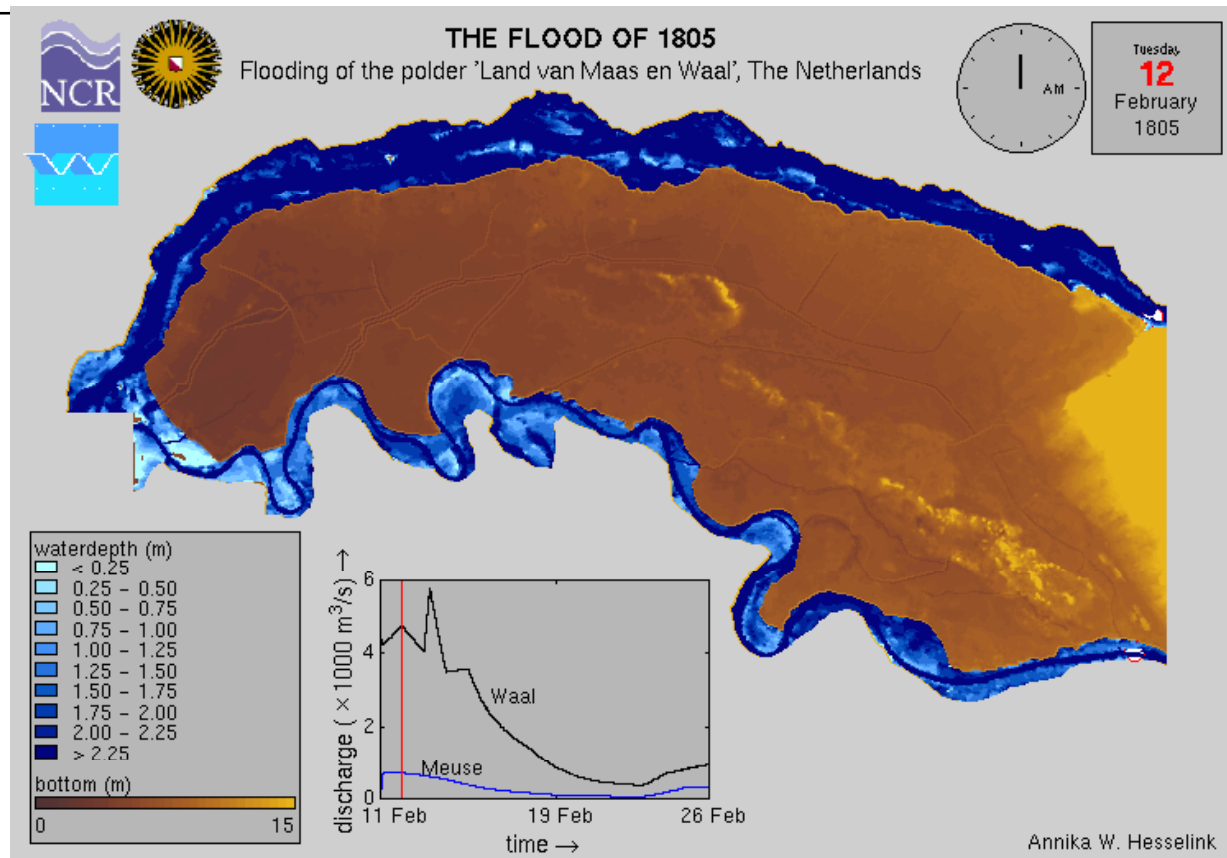
Multi level context

Local runoff upstream



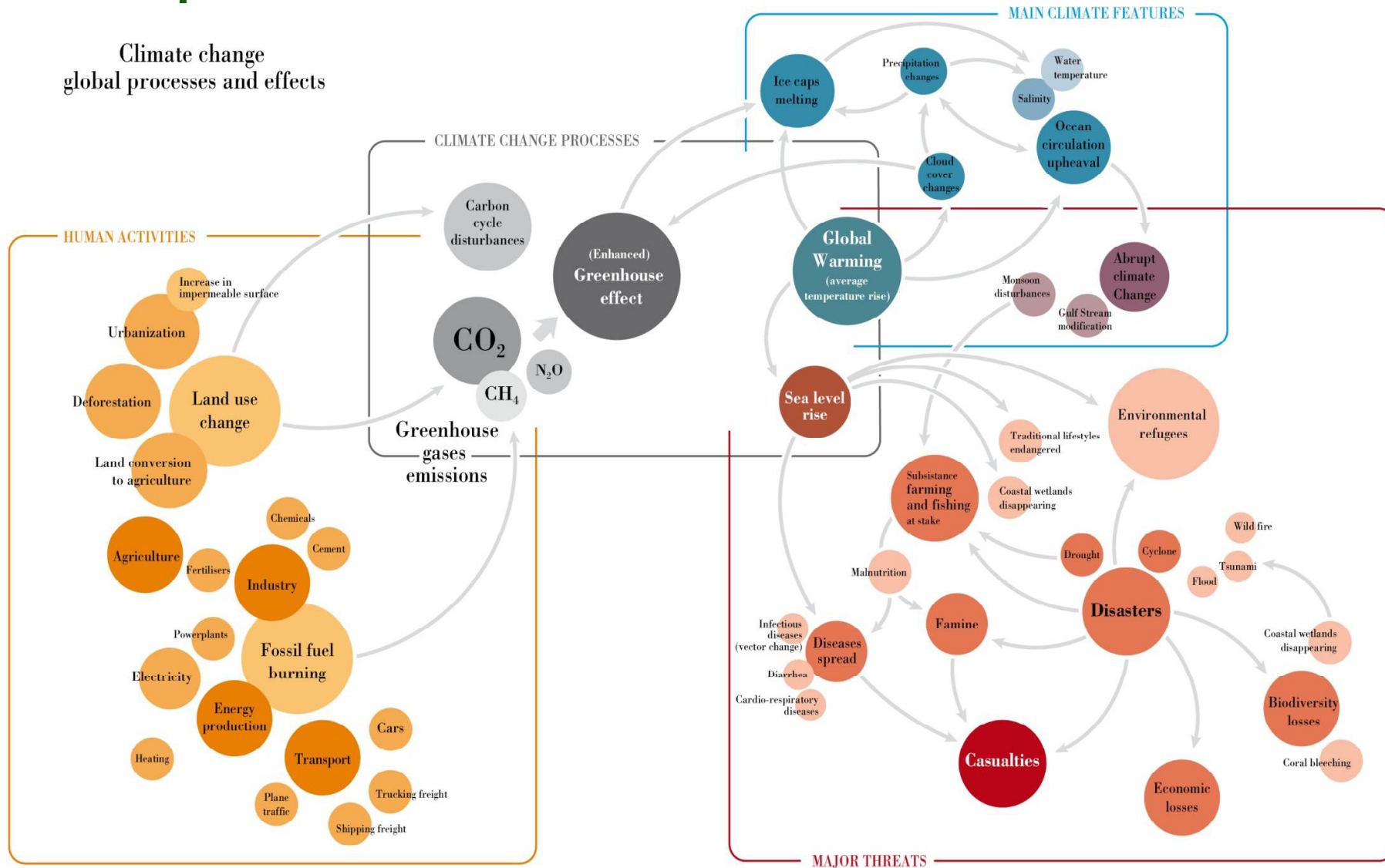
Multi level context

River floods downstream

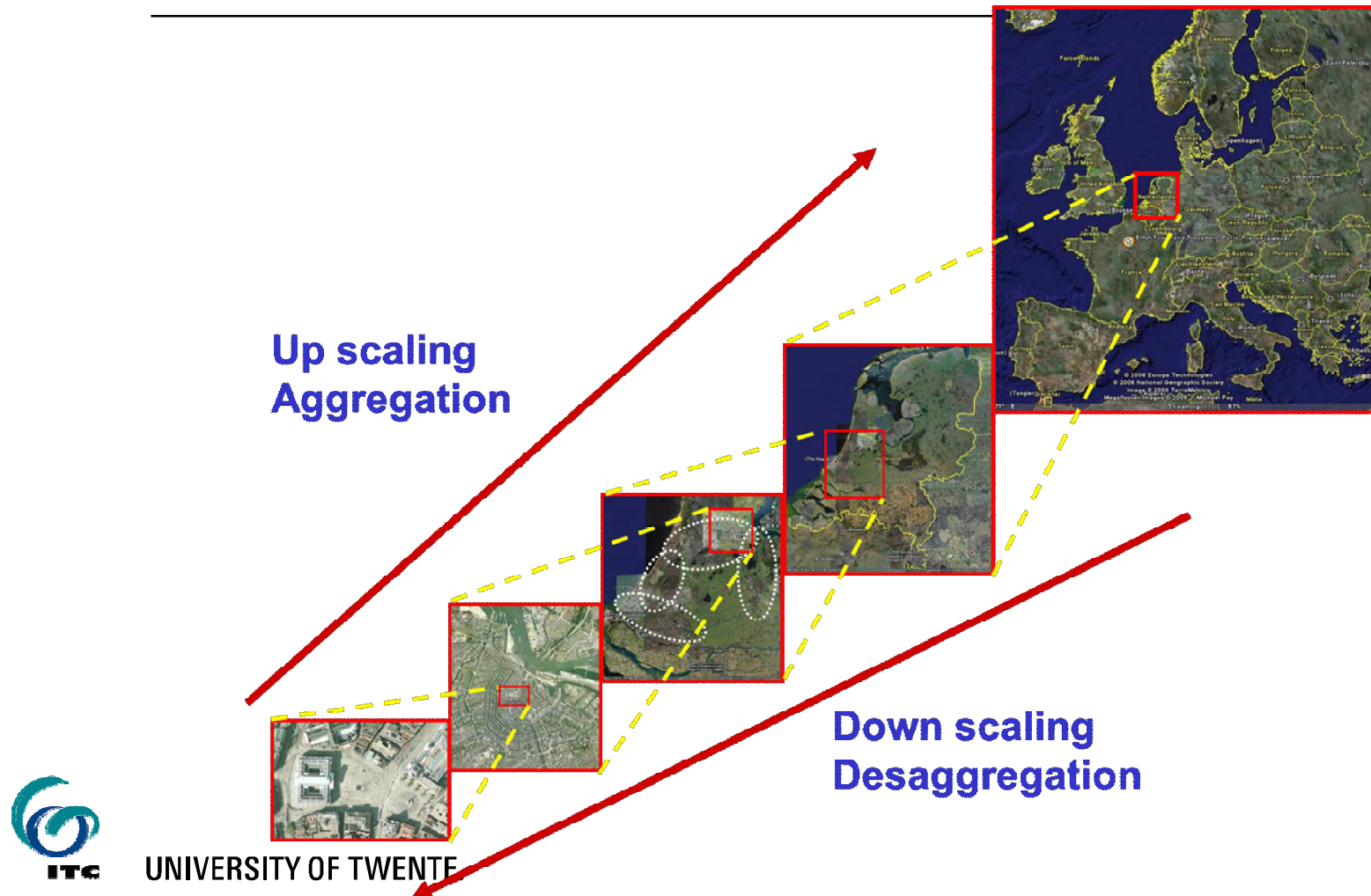


Global processes

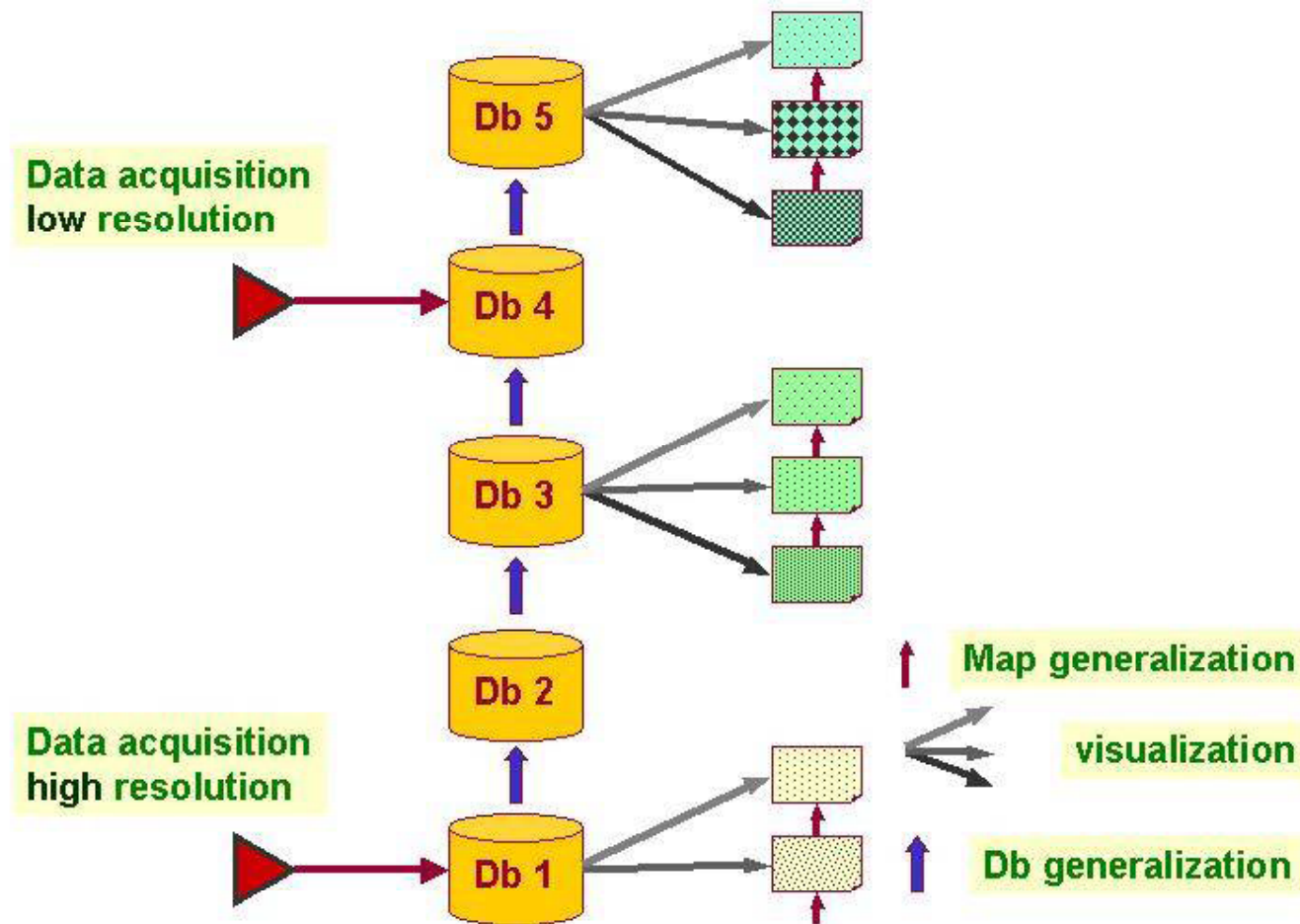
Climate change
global processes and effects



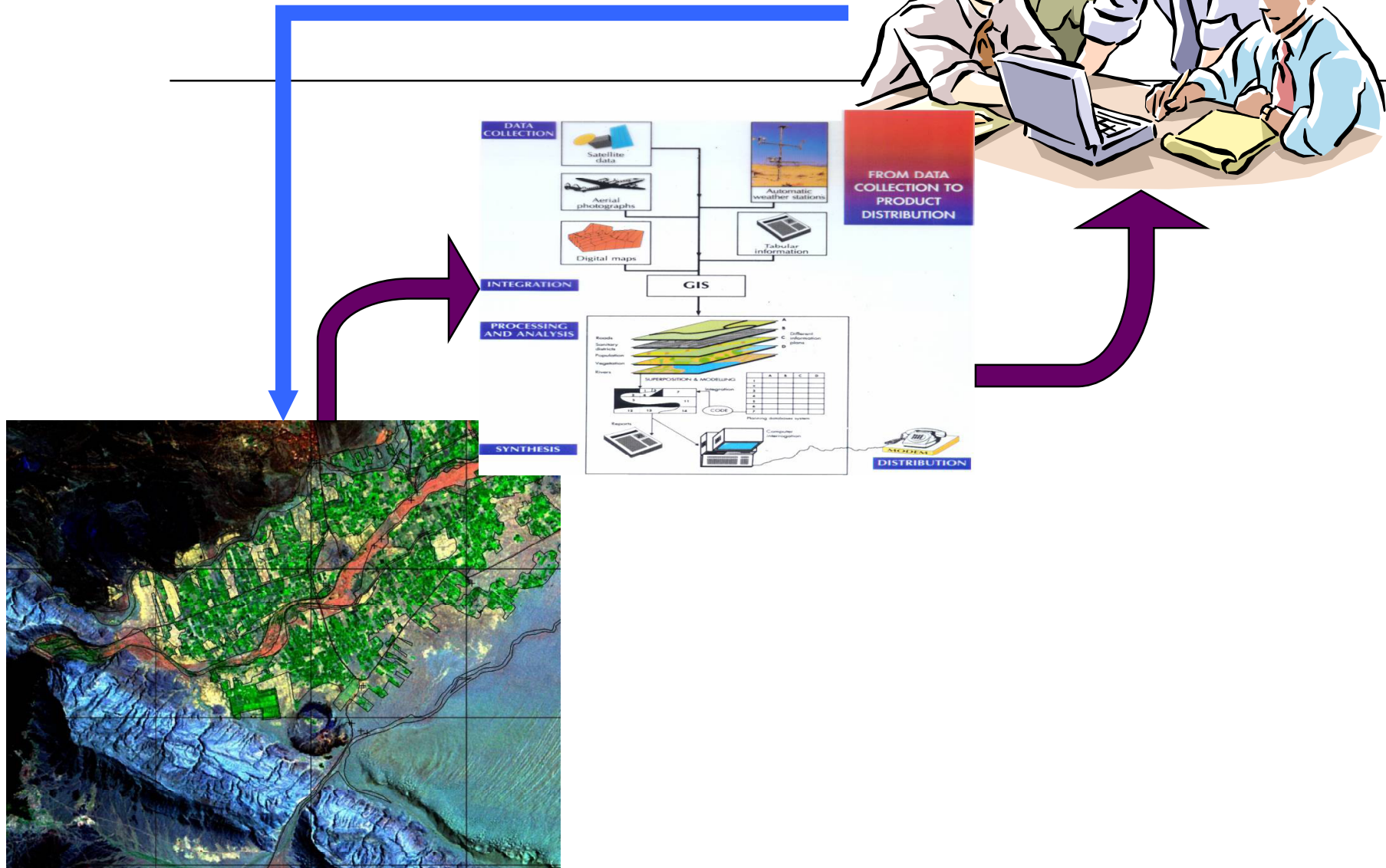
Multi level decision making.....



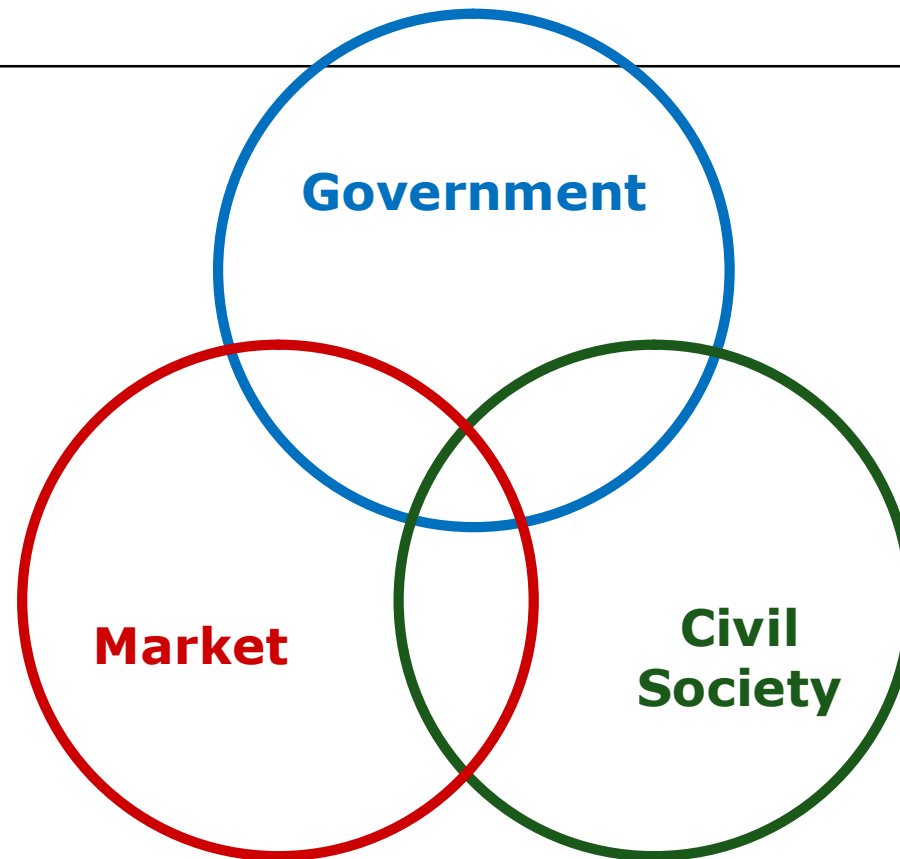
.... requires multi level datamanagment



Geo-information for governance



Governance spheres



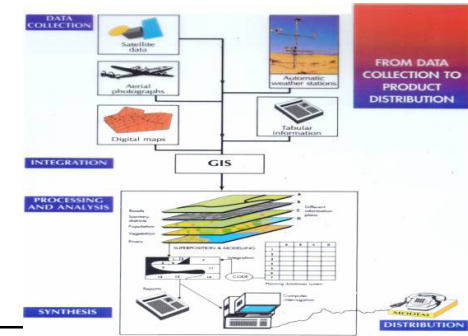
Aspects of governance



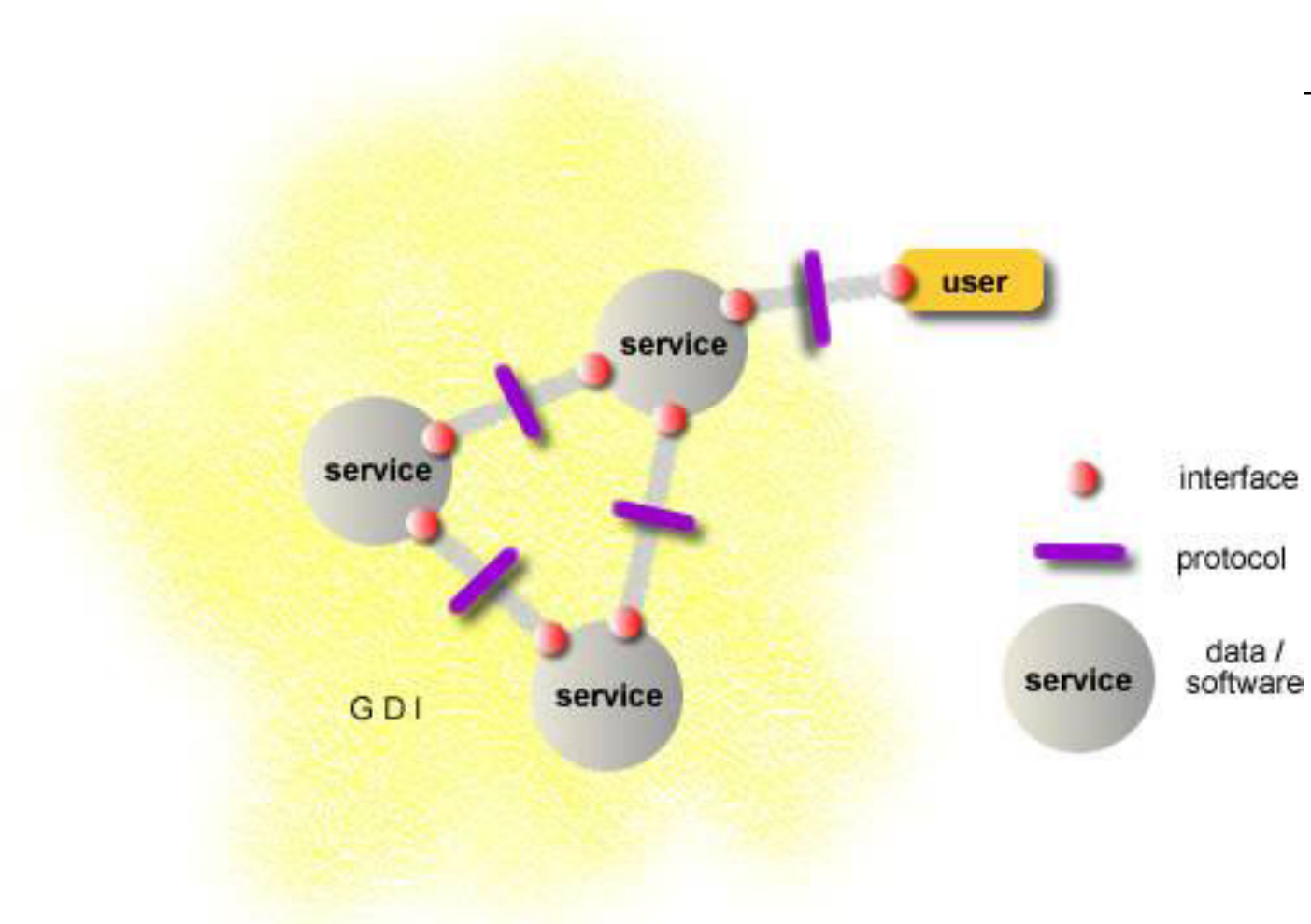
- **Multi level policy implementation**
- **Multi actor policy implementation**
- **Multi faceted character of problems and objectives**
- **Multi instrumental character of policy strategies**
- **Multi resource base for policy implementation**

Requirements for geo-info

- **GI should:**
 - support (policy/decision making) in all phases
 - be available for all actors involved
 - support interaction between these actors
- **GI provision should be:**
 - Easy to access and use
 - Multi scale, 3D and temporal
 - Integrate indoor and outdoor information
 - Supporting process understanding and management
 - Flexible and able to deal with ad hoc questions
 - Real time (in case of emergency)
 - Robust in case of emergency, or be restored fast



gdi based services....



Changing role of Government

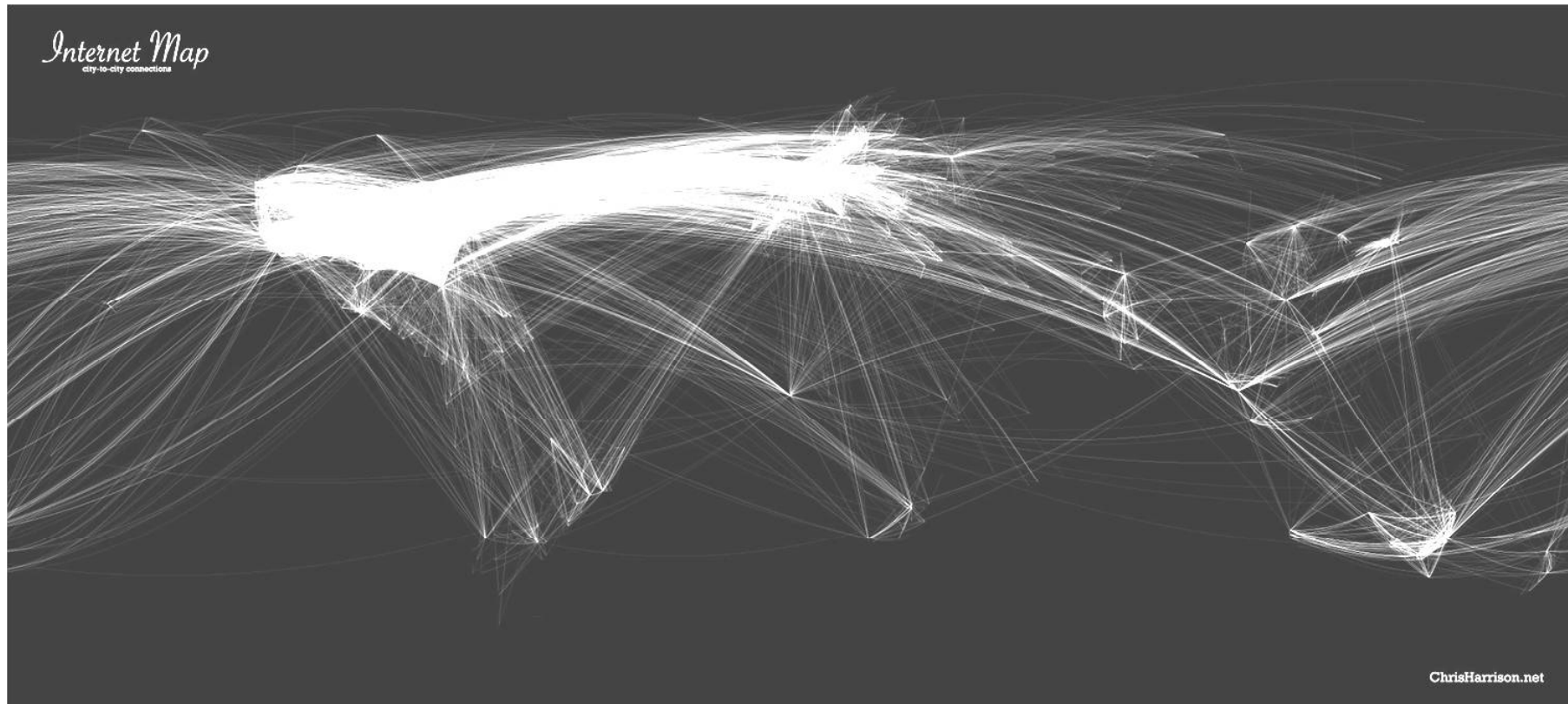
Governments:

- Have a regulatory role with respect to information provision.
- Should facilitate the development of SDI.
- Are not necessarily providers, or producers
- Are important users

GDIs will develop through public-private interactions. Therefore a strong private sector is a prerequisite for sustainable GDIs.



Density of global internet traffic city-to-city



UNIVERSITY OF TWENTE.

Global service supply networks

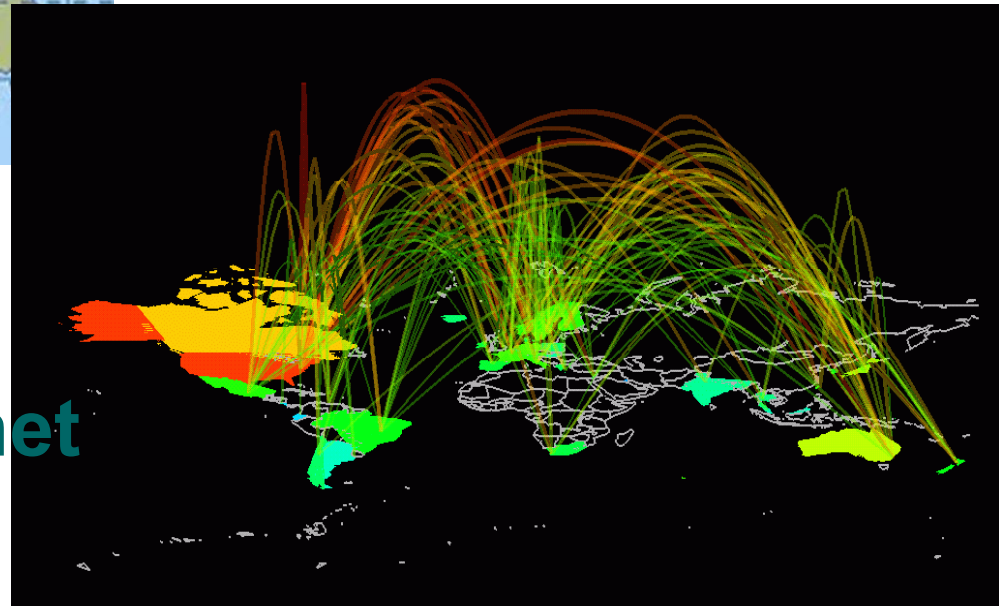


Information services...

...embedded
in the internet



UNIVERSITY OF TWENTE.



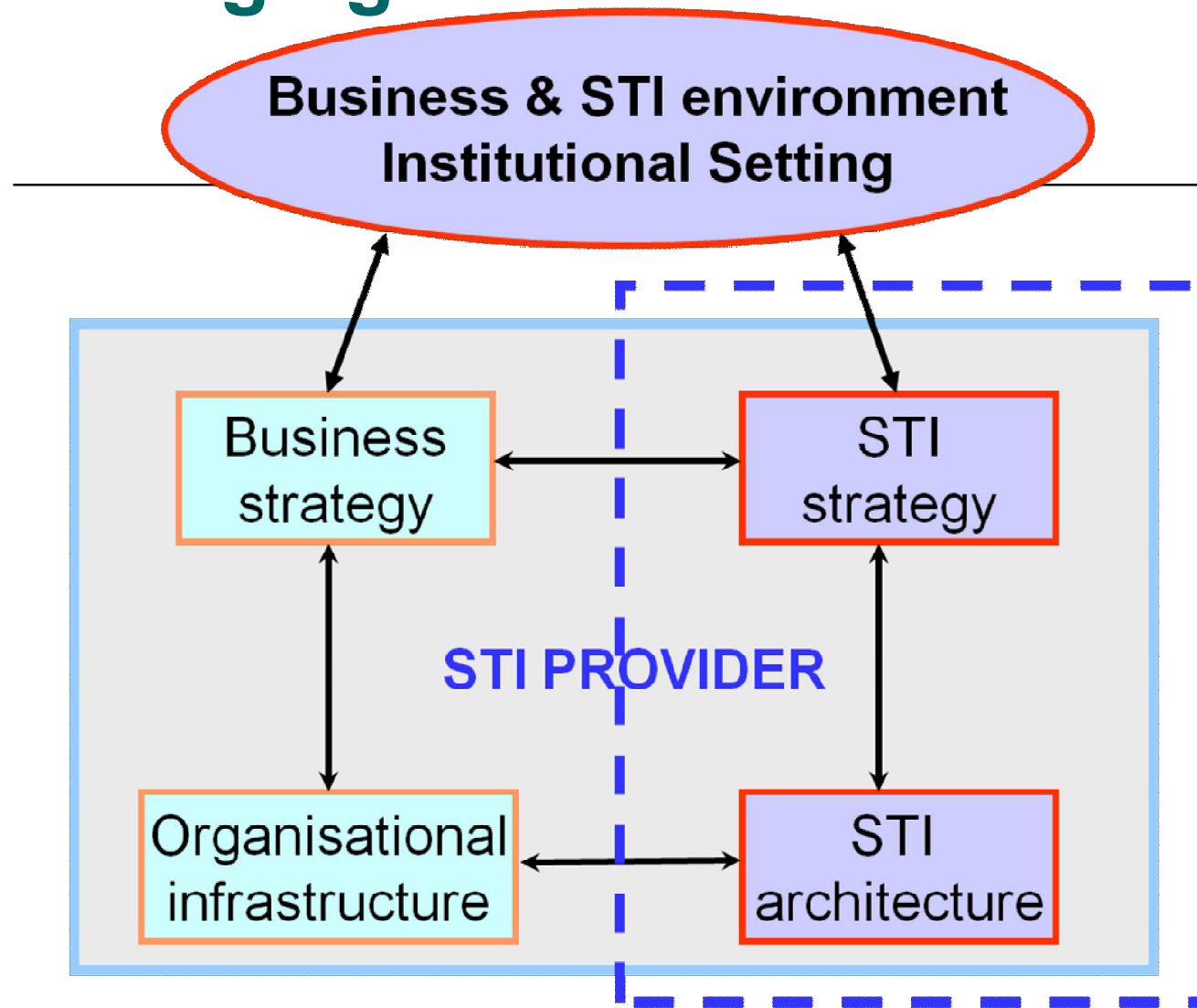
Global context for GI provision

The globalization of the economy

- the development of global delivery chains or networks for products and services
- requires a common understanding of the specifications and conditions for products and service delivery
- through a global involvement in research and technology and service development.



Fast changing business models



Fast changing business models

- Development of new products and services
- Reduced time horizons for investments
- Unstable, changing or disappearing professions and development of new professions
- Fast changing working procedures and corporate cultures
- Organizations have to adjust their mandates frequently
- Need for re-education and training, life-long learning
- **not only for individuals,**

but also for organizations



ITC

UNIVERSITY OF TWENTE.

Levels of capacity development

Capacity development

PURPOSE	FOCUS
HUMAN RESOURCES DEVELOPMENT	Supply of technical and professional personnel
ORGANISATIONAL STRENGTHENING	Strengthening the management capacity of organisations: embedding GITC (systems and processes) embedding strategic management principles
INSTITUTIONAL STRENGTHENING	Strengthening the capacity to develop and negotiate appropriate mandates and modus operandi as well as appropriate legal and regulatory frameworks

GI-professionals

- 1. Experts in the field of spatial information handling (or specialists in certain aspects of this field),**
- 2. Professional users of geo-information and**
- 3. Managers of GI-organizations**
- 4. Policy makers, aware of the importance of geo-information for Civil Society.**

Required educational capacity

GI-professionals per #inhabitants

- Rough ITC estimate: (3-5) per 10^4 inhabitants
 - Dutch survey: 6 per 10^4 inhabitants
- Turnover GI-Sector: 0.2 - 0.3 % GNP

Required educational capacity :

- Technical knowledge lasts 10 years 10 % year
 - Outflow 5% per year 5 % year
- total 15 %

40 % higher education

60 % vocational training

} 25% full time



UNIVERSITY OF TWENTE.

Every morning in Africa

Every morning in Africa, a gazelle wakes up

**It knows it must run faster than the fastest lion
or will be killed.**

Every morning a lion wakes up.

**It knows that it must outrun the slowest gazelle
or it will starve to death.**

**It doesn't matter whether you are a lion
or a gazelle.**

When the sun comes up, you better start running.

