



Research Group Cartography

# Modern Cartography

## Towards a body of knowledge

**Georg Gartner**

Vilnius, April 2011



# Agenda

- **Technology „Push“**
- **Implications**
- **Strategies**

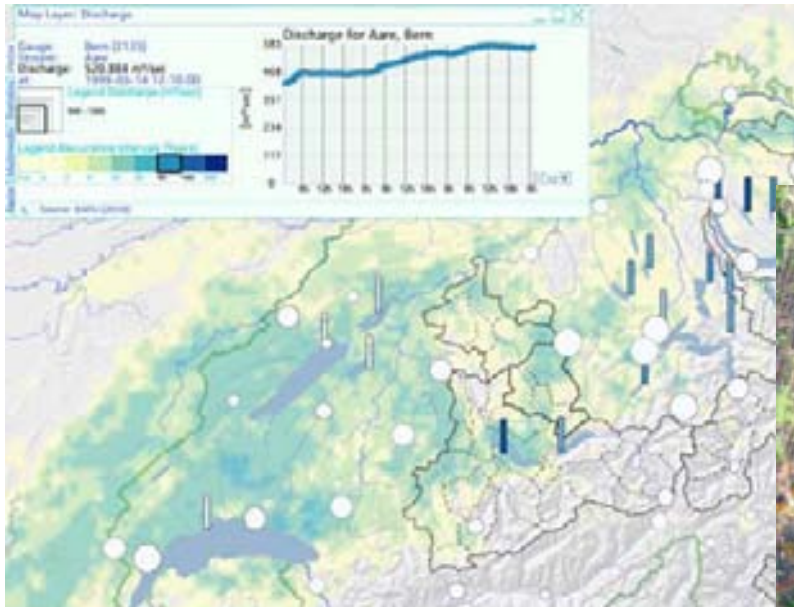


## Technology „Push“

- Data acquisition and sensors
- WebMapping and Social Networks
- LBS and Ubiquitous Computing
- 3D, AR and Cross Media
- Geo data infrastructure

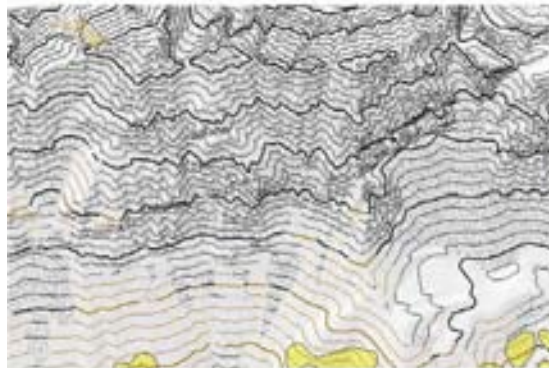
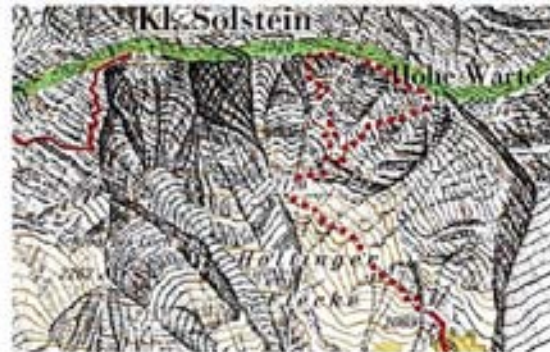
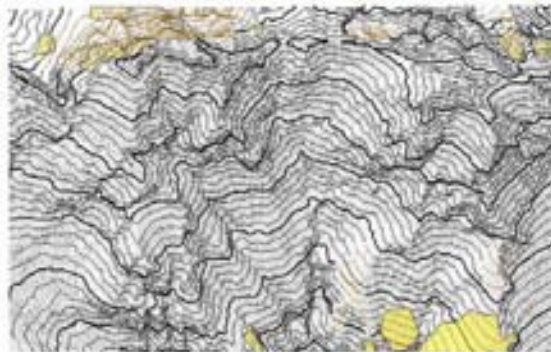
# Data acquisition and Sensors

## Rapid Mapping, Real-Time Cartography



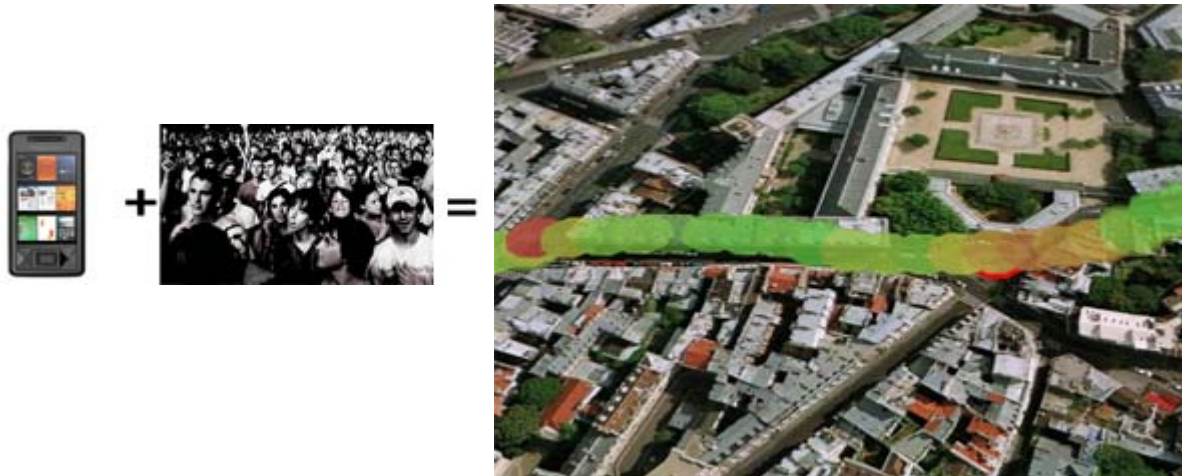
# Data acquisition and Sensors

automated map derivation



# Data acquisition and Sensors

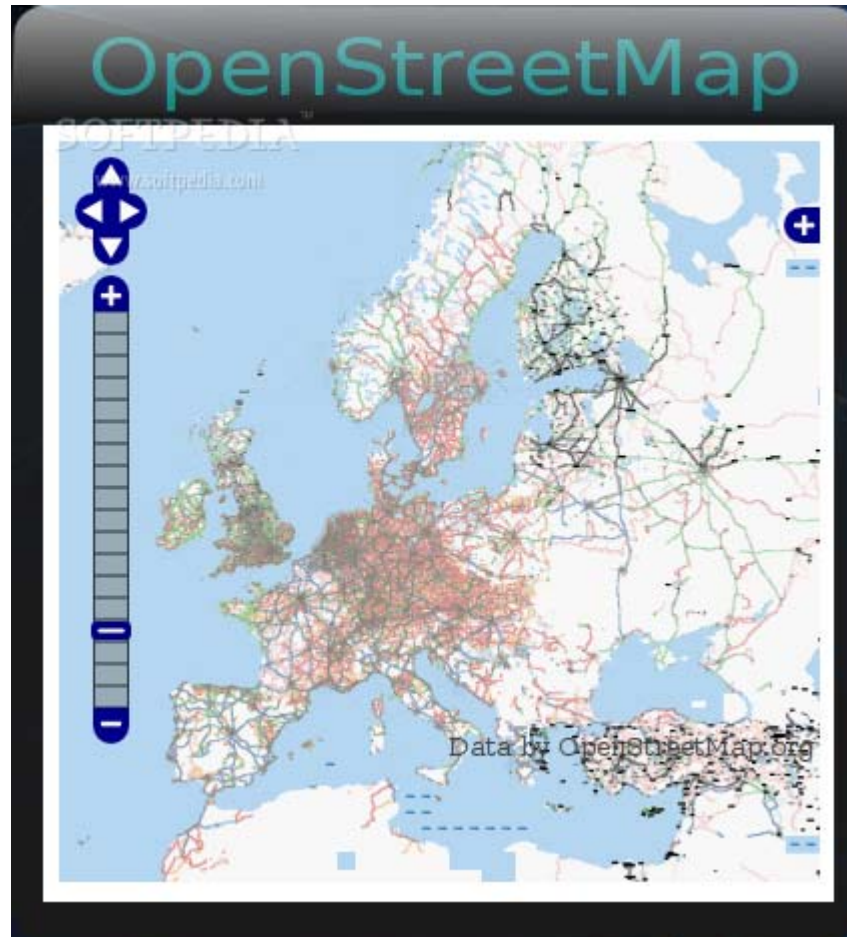
## Crowd Sourcing





# Data acquisition and Sensors

Crowd Sourcing



# Data handling

Pipes



Clouds



Real-Time Streaming

<http://gisnub.com/blog/2012-03-27-mime-commit-notes>  
about 21 hours ago via web

RT @mm: MICHIGAN STATE  
about 23 hours ago via Seesmic

Brisket and cod tacos on the  
<http://4sq.com/6Nhw3>  
10:33 PM Mar 27th via foursquare from Cow Hollow

I'm at The Mauna Loa Club (3  
San Francisco). <http://4sq.com/5YuaLUp>  
9:53 PM Mar 27th via foursquare from Cow Hollow





# Earth Viewer



# Web Mapping 2.0

## Crowd Sourcing



# WebMapping 2.0

## Mashups



# WebMapping 2.0

## Mashups

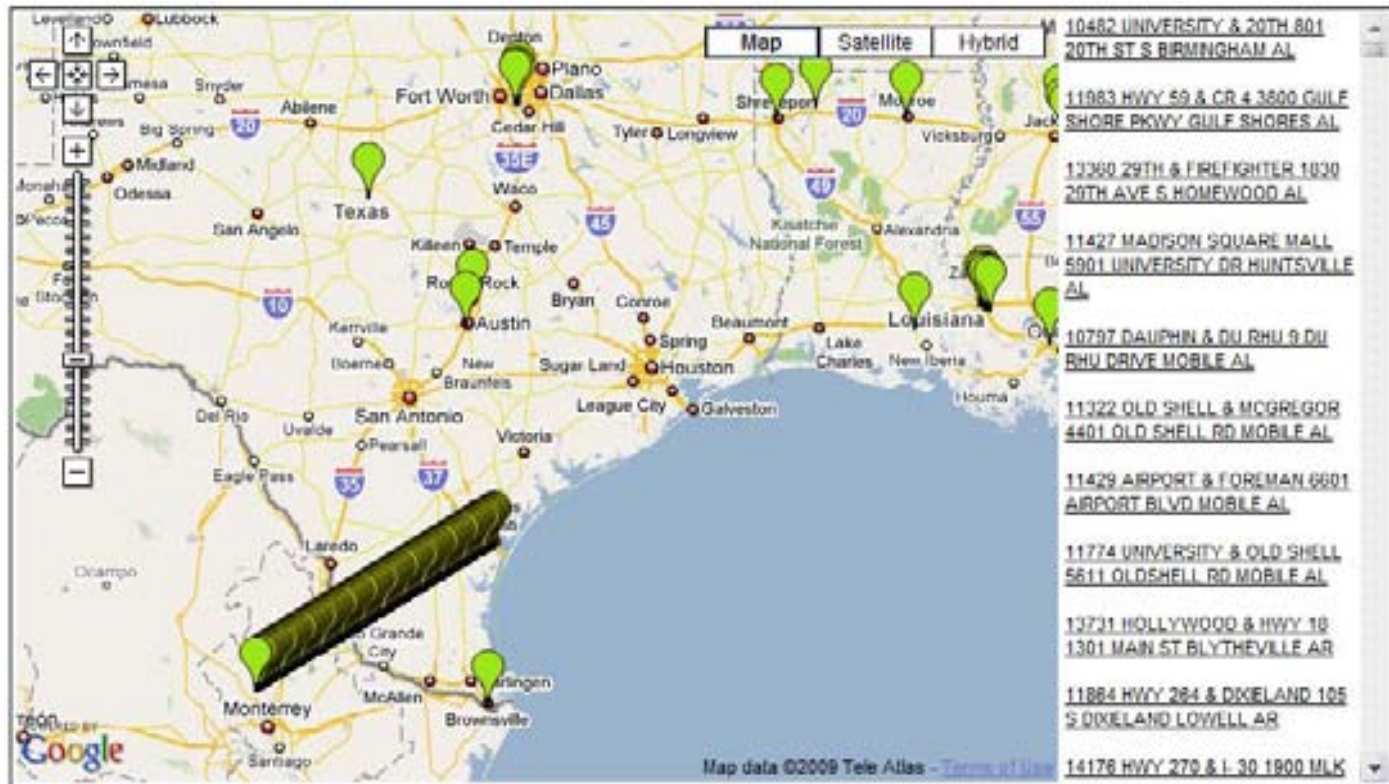
API	Popularity
Google Maps	47%
Flickr	11%
YouTube	9%
Amazon	7%
VirtualEarth	4%
Ebay	4%
411Sync	3%
YahooMaps	3%
Del.icio.us	3%
Yahoo	3%

# WebMapping 2.0





# WebMapping 2.0



# Location Based Services / Mobile Apps



# Ubiquitous Computing

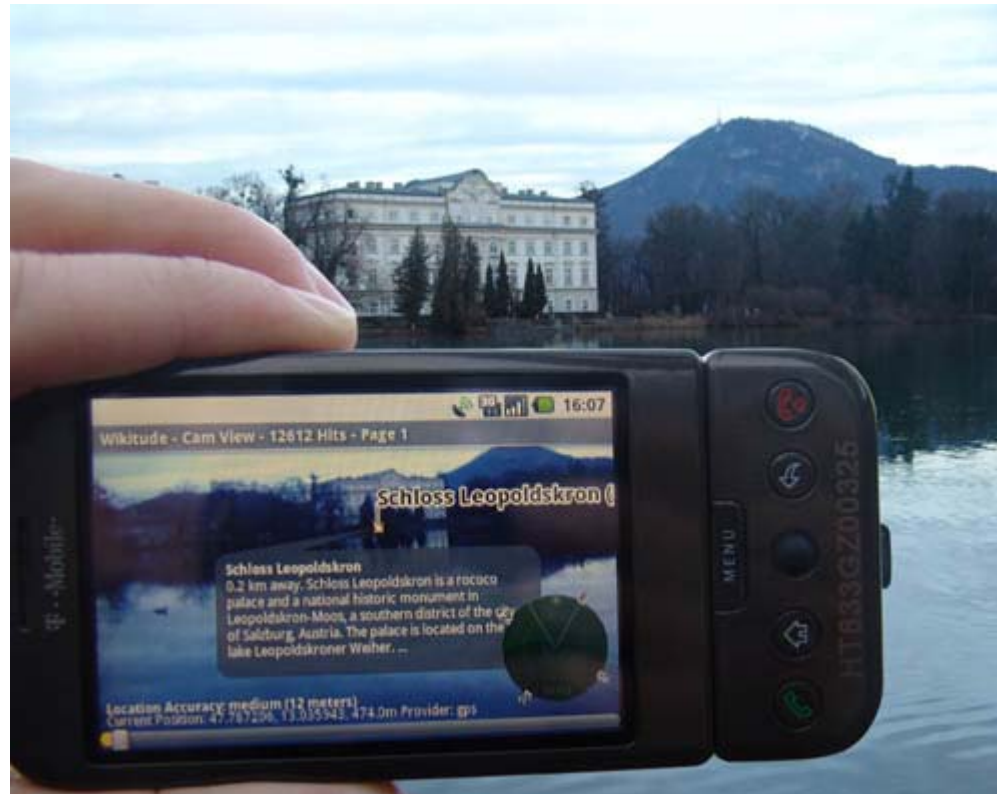


# 3D Modelling





# Augmented Reality

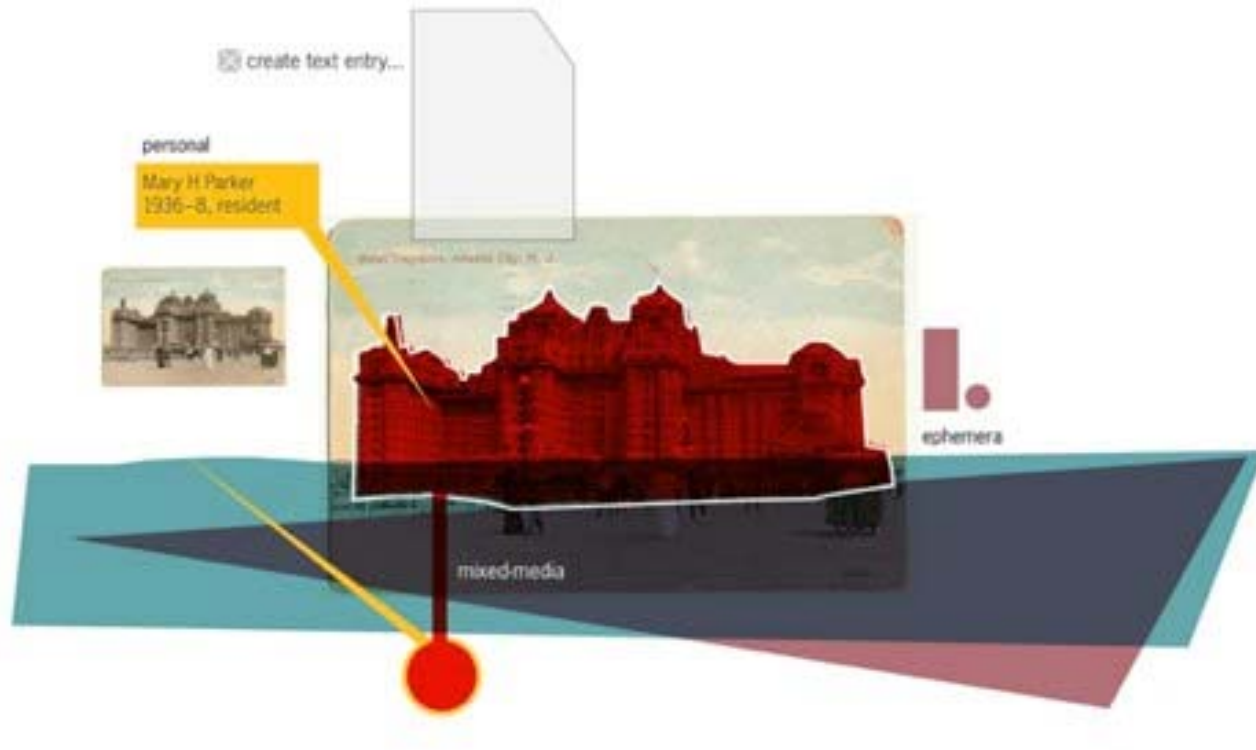




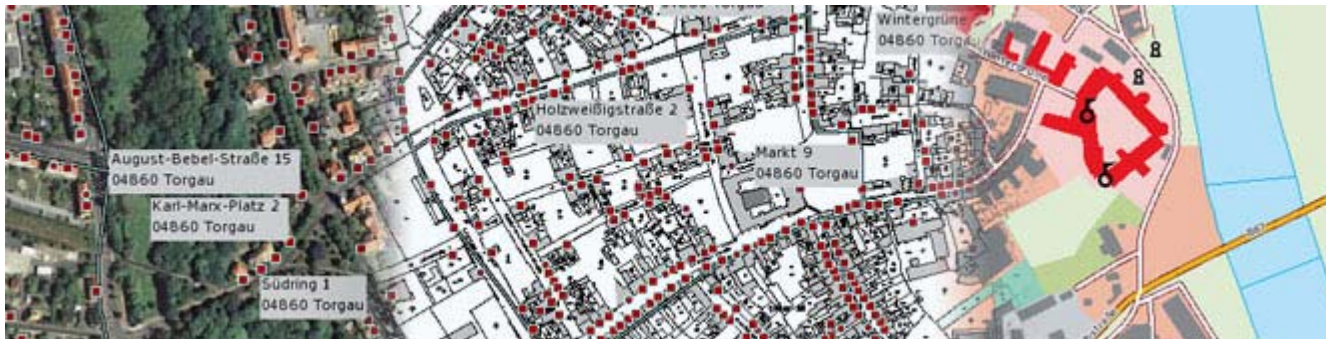
# Augmented Reality



# Augmented Reality



# Geo data infrastructure



# Cartography in the inf & comm area

function of maps: **Artefact** → **decreasing**





# Cartography in the inf & comm area

function of maps: **Interface** → **increasing**



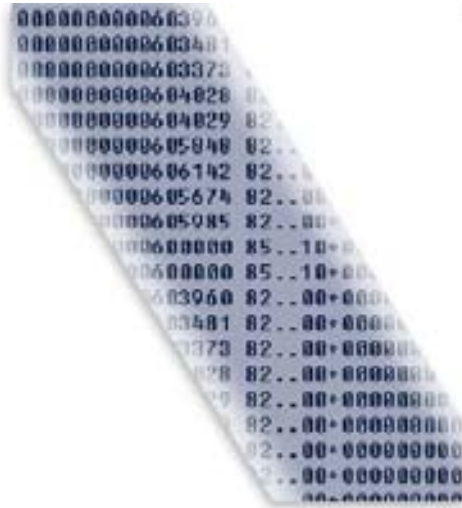


# Cartography in the inf & comm area

function of maps: **Metapher**



# Implication **Visualisation**



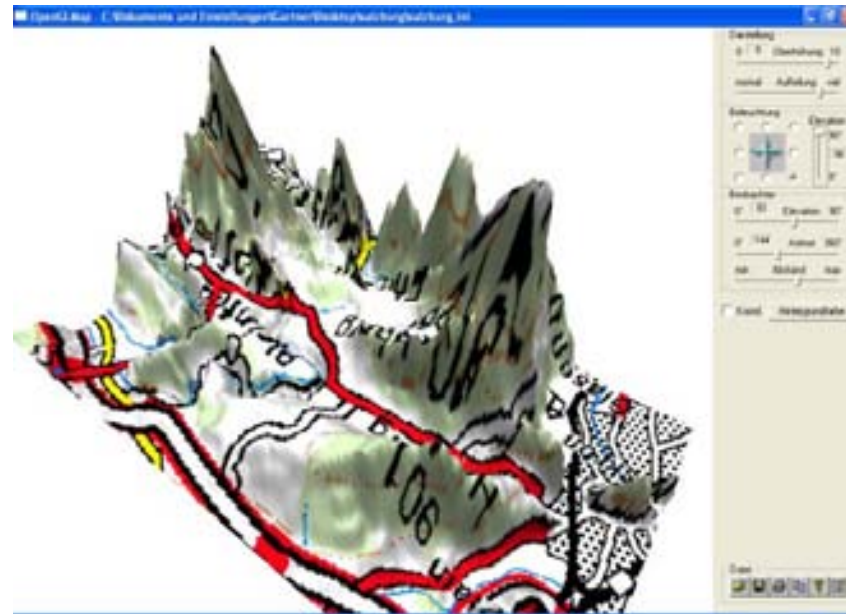
Efficient way of communication

# Implikation **User centered**



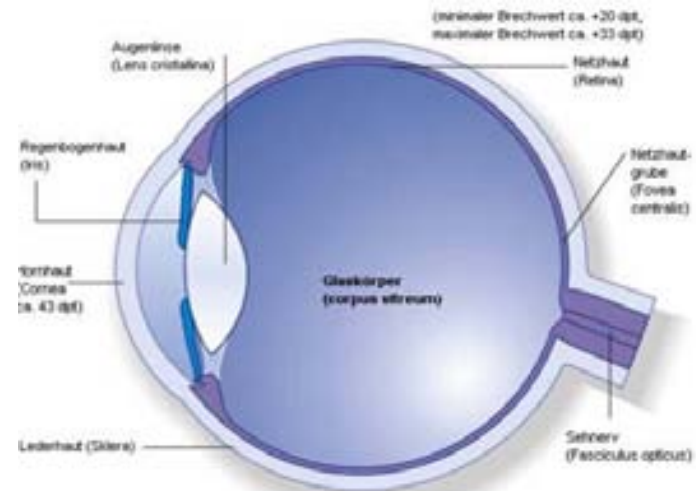
User dependent content and design  
→ Personalisation, Adaptivity

# Implication **Media adequate**



Media adequate design

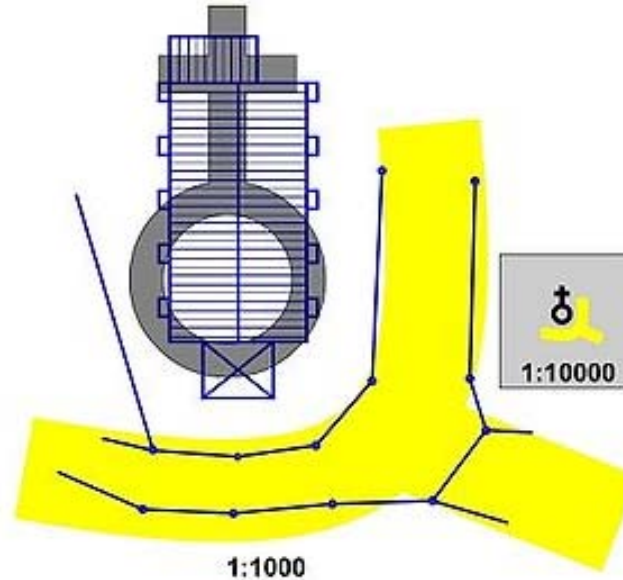
# Implication Cartographic Dogma



Balance of scale and perceptivity

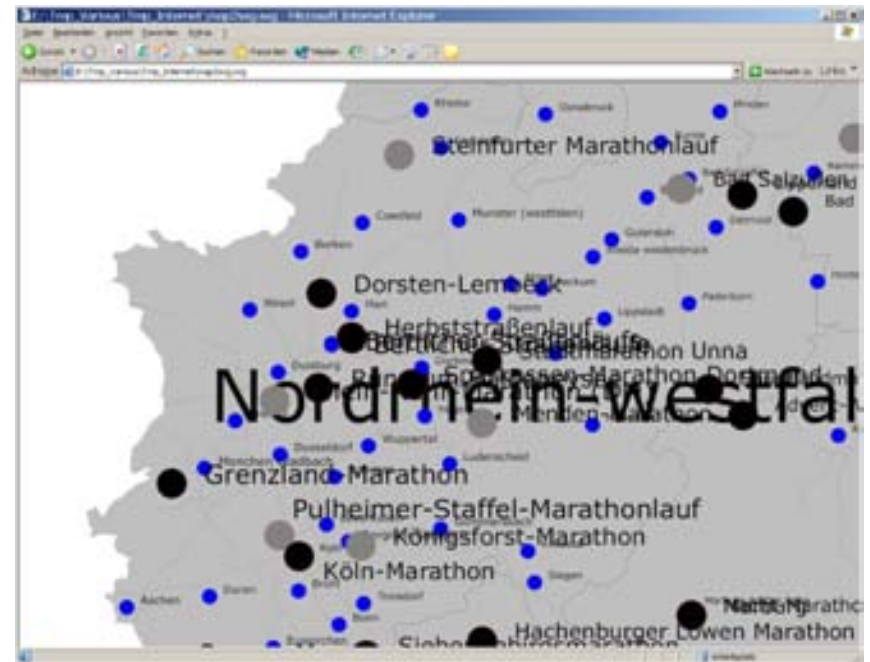
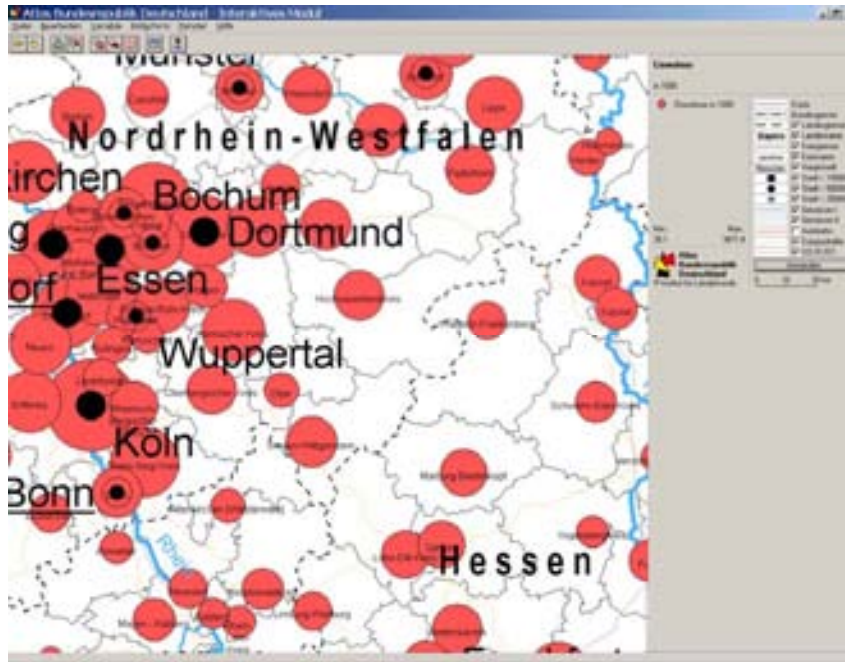


# Implication Cartographic Modelling



Cartographic Modelling by applying the constraints

# Implication Cartographic Modelling



Optimisation/Formalisation of syntax of 2D Graphics

# Implication **Cartographic Modelling**



Optimisation/Formalisation of the semantic dimension





## Strategies

- Education
- Professionalism
- Cooperations
- Body of Knowledge





Research Group Cartography  
**6th Vilnius Seminar on Cartosemiotics**

**International Cartographic Association**  
Association Cartographique Internationale





# International Cartographic Association Research Agenda

Geographic Information  
Metadata and SDI  
Geospatial Analysis and Modelling  
Usability  
Geovisualisation  
Map Production  
Cartographic Theory  
History of Cartography and GI Science  
Education  
Society



Research Group Cartography  
6th Vilnius Seminar on Cartosemiotics

# International Cartographic Association Conferences





Research Group Cartography  
6th Vilnius Seminar on Cartosemiotics

# Strategien Education

International **Master „Cartography“**  
TU Munich, TU Vienna, TU Dresden  
Start: WS 2011