Web 2.0 Summit

- November 15-17, 2010, San Francisco, CA
- The Web 2.0 Summit is the only place, once a year, where leaders of the Internet Economy gather
- The Internet seizes location
  - How Crowdsourcing Changed Disaster Relief Forever
    Schuyler Erle (SimpleGeo)
  - Location Based Services
    Brady Forrest (O'Reilly Media, Inc.), Jeremy Stoppelman (Yelp), Matt Galligan (SimpleGeo)
  - Narrative Landscapes
    Krissy Clark (KQED Public Radio)
Purpose and Outline

- Purpose of presentation
  - Role of users in Spatial Data Infrastructures (SDI)
  - Use of geospatial data outside of INSPIRE and consequences on INSPIRE

- Outline
  - Formal Spatial Data Infrastructures
  - User generated geospatial data
    - Examples
    - Alternative SDIs
  - Challenges and consequences on INSPIRE
Formal Spatial Data Infrastructures

- Providing access to geospatial data
- Data by official data providers (public sector)
- Formal arrangement and agreement between players
- Distributed environments
- Increasing number of SDIs
Formal SDIs: Issues

**Statements from SDI Researchers**

- Initiated by data providers such as NMCAs
- Limited to official data and providers
- Formal process of development and operation: top down
- Participants are specialists
- Users are passive recipients of information
  - “fit to use”?
- Use of formal SDIs is not encouraging
Geospatial Data Use today

- Geospatial data > Maps
- Mostly accessed via the Internet
  - Geoportals
  - Google / Bing maps etc.
  - Location is important
- Maps for mobile
- New terms: Cybercartography, Neocartography, VGI
  - Open Street Map
- Games, 2\textsuperscript{nd} Life
Examples of user created SDIs

- **World**
  - SDI development in Brazil, Cuba
  - Common Census (US)
  - Community development in Chicago
  - Emergency response

- **South-East Europe**
  - Spasigorata (BG)
  - Environmental GIS database for Lake Ohrid (MK)
  - Slovenia farm registry (SI)
  - Geopedia (SI)
SDI development in Brazil

- Collaboration and networking between research and private sector
- GIS built in Brazil
  - Open source software
  - Base for wide data availability
  - Best practice cases
- Communication and conferences
  - Collective expertise
# SDI development in Brazil

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**Chronological summary of the main events in the establishment of the Brazilian SDI**
US: Local Government Practices

- NGOs use spatial planning for community development
- Participatory GIS project in Chicago
  - Chicago Region Clearinghouse Cooperative (1998)
- NGOs: not professionally trained people
- Integrate local knowledge with formal data sources
  - Collaboration difficult
when you’re at the table with the Department of Housing, or when you’re at the table with the Department of Planning, sometimes you’re like, ‘Oh, okay, you have that. Well, these are our maps and this is the reality that we saw’. (2005)

- Integration of data from grassroot groups and official data providers
- Problem: Data constitute a source of influence
- Necessary: Potential symbiosis between local groups and official data providers
Common Census Map project

The CommonCensus New York City Region Map

Shows divisions between local areas in the region around New York City; based on 10133 votes from www.commoncensus.org

Local areas labeled and colored; county boundaries overlaid in white; numbers in parentheses indicate number of votes
Common Census Map project

- "On the level of North America as a whole, what major city do you feel has the most cultural and economic influence on your area overall?"
- More than 56,000 votes
- web site has been created by an individual who has no education in geography or statistics, and who did not have any support from government or NGOs.
Emergency response: User participation

- Volunteers gather after a disaster to help using social networks
- “Crowdsourcing changed disaster management”

- People Finder Project 2005
- South-East Asia Earthquake & Tsunami Blog 2004
- Haiti relief efforts used free maps
  - Google maps, OpenStreetMap, Digital Globe, GeoEye
  - A loosely coordinated group of volunteers map the country in the midst of the humanitarian crises
Bulgaria: spasigorata.net

- 2008
- Illegal logging of forests
- Google maps mash-up
- Everybody can publish observations
Slovenia: Geopedia.si

- Web based application for searching, viewing, and editing of geographical data
- Users can define and publish new layers
- Users can add multimedia content
- Collaborative on-line GIS
What do we learn?

- Users become data providers
  - Create their own data and infrastructures
  - Start from their needs and develop new solutions
  - Are not GI specialists
  - Not initiated by formal bodies (NMCAs)

- Collaboration important and decisive
  - Informal, casual

- Open Source Software
  - Easy to adapt

- Internet and mobile technology

- New business models
User Centric / Alternative SDI

- An alternative SDI combines different sources of geospatial data and makes these data available using certain procedures for access to data.
- Users provide content to some or even to a large extent, combine it with other sources of data.
- Major actors are the users who start from their needs to build the SDI in a bottom up way, without observing formal procedures.
- Users are often laymen users of geospatial information.
- These SDIs operate in a certain area and often contain data useful for certain purposes only.
User Centric / Alternative SDI

Standards (OGC, ...) → Open Source Software → Requirements → Application User-centric SDI

User
- User Created Data
- Other Data
- Location Referenced Data
- Geodata Maps

Data Providers
- Google Maps,
- .....
Risks and Challenges

- Island solutions, stand alone applications
- Standardisation
- Duplication of data
- Lack of data
- Education and training of users
- Quality assurance
- Legal aspects
Standardisation

- Open Source Software implements standards
- Open Geospatial Consortium
  - Introduces new standards, mass market
    - KML, Location Service (OpenLS), GeoRSS, Geo SMS
  - Regional Forums
  - Global Advisory Council
    - Network of standardisation professionals
    - Outreach and requirements collection
Quality of Service

- Different Quality procedures
- Comparative study of OpenStreetMap and Ordnance Survey datasets, UCL, 2010
  - OSM quality is beyond good enough
- Common argument: the crowd corrects mistakes
- OSM is edited only by registered users
- OSM: Few users contribute a significant amount of the information
- Firms like TeleAtlas, Navteq, TomTom use customer input to locate and quality mapping errors and feature updates
- Users know their context and provide current data
What does it mean for INSPIRE?

- INSPIRE: complex formal process
- Opening up INSPIRE
  - Interfaces to user created data
- Policy area of INSPIRE
  - Address easy data distribution to users
  - Allow geospatial data to become a commodity
- Communication and collaboration
- Piloting
  - Interfaces ? Standards ?
AGISEE
Association for Geospatial Information in South-East Europe

http://www.agisee.org

- Vision
  - enable sharing of geospatial data for the benefit of the economic development of the region

- Goals and Actions
  - Promote SDIs in South-East Europe
  - Support the GI community and interested parties to develop their own initiatives for data access and data sharing
  - Collaborate and cooperate with local, national and international organisations
    - Open Geospatial Consortium & its Global Advisory Council
    - EUROGI
  - Provide relevant information to members.
Thank you for your attention!