

San Diego State University GEOG 104 Class

New Research Directions of Internet GIS and Disaster Management and Lessons Learned from the San Diego 2007 Wildfires.

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Internet-based Mapping is Map 2.0

 Internet-based Mapping is a new form (medium) of "maps" in cartography and for geographic research.

- Paper maps are "map 1.0" (static, fixed scale, limited interaction, but mobile)
- GIS maps (created by GISystems) are "map v1.5". Many cartographic principles and theories are still based on paper maps (interactive, dynamic scale, but not mobile in Desktop GIS)
- Internet-based maps/wireless mobile GIS are "map 2.0" because they are service-oriented rather than systemoriented (both interactive and mobile).







The uniqueness of Map 3.0 (Virtual Globes)



- Virtual representation of our real world (the earth is 3D with temporal changes).
- More realistic than other maps (from users' perspectives).
- Solve the confusion of map projections and coordinate systems (from users' perspectives).
- Omniscience (space view ? From many users' perspectives)
- Developed by "mainstream" software companies.
- Heavy weighted interfaces
- Both collective intelligence & market intelligence.

















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Lessons learned

- Maps and GIS can save people's lives. 1.
- PDF maps are a good format (for printing and on-line viewing 2. but not very interactive.
- 3. ArcIMS can not handle very large users. (Simple pictures --JPEG, GIF, or animated GIF are good formats)
- Google Maps are excellent to add fire perimeters and handle very large 4.
- users. But here are still some technological limitations. Google Earths are too slow to launch (10 seconds), but very powerful. 5.
- 6. We need to develop a new type of Internet mapping technology for interactive
 - Effectively handle large users (over 10,000 users at the same time)
 - Easy to update and customize map contents Interactive and user friendly, No need to install new software.
- Data Integration is very challenging and difficult during emergency events. Wiki methods need to be more organized and quality checking 7. 8.
 - 9 Need more satellites with high frequency of shooting pictures or combine more satellites for wildfire monitoring.











Some thoughts...



Many interesting GIScience Research issues are embedded inside GIService Applications.

Geographic Information Services will make Geography more important and more useful in the 21st Century – *the Golden Age of Geography.*

GIServices can provide a linkage between Cyberspace (the Internet) and the real world (the Earth). The linkage is the key to advance Science and Technology in the next ten year.