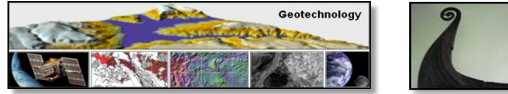


Geotechnology in Transition:

Evolution, Current Practice, Trends and Future Directions that are Moving GIS Beyond Mapping



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Presentation by **Joseph K. Berry**

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In just four decades, GIS technology has dramatically changed our perspective of what constitutes a map and the information it contains. Historically, manually drafted maps emphasized the accurate location of physical features. However the journey from the map room to the conference room and a car's dashboard has extended maps from static wall hangings to interactive mapped data. This new perspective marks a turning point in the use of maps— from one emphasizing physical descriptions of geographic space, to one of interacting with maps and successfully visualizing/communicating influences of spatially-based factors. This presentation investigates the context, conditions and forces driving the transition from maps to mapped data, to map analysis, to multimedia mapping and beyond. It addresses five important topics—

- **What GIS Is ...and Isn't** — establishes a conceptual framework for “Geotechnology” through a quick look at its evolution from its many expressions from *Mapping* (70s) to *Management* (80s) to *Modeling* (90s) to *Multimedia* (00s), with an emphasis on the map analysis component.
- **Nature of Grid-based Mapped Data** — investigates the nature of a continuous map *Surface* as a natural extension to the traditional map features of discrete *Points*, *Lines* and *Polygons*.
- **Grid-based Map Analysis and Modeling** — describes two modeling applications that illustrate the distinction between *Spatial Analysis* oriented solutions (variable-width buffers in Natural Resource planning) and *Spatial Statistics* oriented solutions (on-the-fly fertilization application in Agriculture production).
- **Multimedia Mapping** — discusses full integration of GIS, Internet and visualization technologies involving *Map Delivery/Devices*, *Map Display*, *Geospatial Multimedia* and *Virtual Reality*.
- **Where GIS is Headed** —the Mapping→ Management→ Modeling → Multimedia evolution is really an extension of our rich paper map legacy from *Where is What* (mapping and geo-query) to *Why*, *So What* and *What If* (analysis and modeling). This section describes three major forces that will shape the future— 1) changes in our 400 year old geographic referencing system, 2) use of the new referencing system as a spatial “universal key”; and 3) continued movement of GIS from a “boutique” discipline to mainstream use and subsequent redefinition of What GIS IS ...and Isn't.

About the Presenter: Dr. Berry is a leading consultant and educator in the application of GIS technology. He is the principal of Berry and Associates // Spatial Information Systems (*BASIS*), consultants and software developers in geotechnology and the author of the "Beyond Mapping" column for *GeoWorld* magazine since 1989, several books and over 200 papers on GIS theory and applications. He conducted basic research and taught courses in GIS for twelve years at Yale University's Graduate School of Forestry and Environmental Studies, and is currently the W. M. Keck Visiting Scholar in Geosciences at the University of Denver and an Adjunct Faculty member in Natural Resources at Colorado State University.



Additional Information:

[A Brief History and Probable Future of Geotechnology](#), a white paper that distills several keynotes, presentations and papers, *BASIS*, Fort Collins, Colorado, July, 2006. J.K. Berry.
www.innovativegis.com/basis/Papers/Other/Geotechnology/Geotechnology_history_future.htm

[An Analytical Framework for GIS Modeling](#), a white paper describing a conceptual framework for Map Analysis and Modeling, *BASIS*, Fort Collins, Colorado, October, 2009. J.K. Berry.
www.innovativegis.com/basis/Papers/Other/GISmodelingFramework/

[Beyond Mapping III](#), an online book containing Introduction, 28 Chapters and Epilog as a compilation of the popular *Beyond Mapping* columns published in *GeoWorld* magazine from 1996 through present, *BASIS*, Fort Collins, Colorado, 2010. J.K. Berry.
www.innovativegis.com/basis/MapAnalysis/

([PowerPoint and materials](#) posted at www.innovativegis.com/basis/Present/Oslo_2010/Oslo_2010_materials.htm)