



**Growth and Development:
Enriching GIS Education,
Experience, and Enlightenment**

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**Growth and Development:
Transfixed on Technology or
Engrossed with Education?**

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Outline

- ▶ Reviewing the Past
- ▶ Recapping the Present
- ▶ Recognizing the Future
- ▶ Connecting the Dots



Reviewing the Past

- ▶ Classic commentaries (or discussions and debates) on the “Future State” of GIS
- ▶ Captured in terms improved capabilities:
 - ▶ Data management,
 - ▶ Modeling and simulation,
 - ▶ Multi-criteria decision support, and
 - ▶ Digital cartography



Recapping the Present

- ▶ “Current State” of GIS shows that most of these capabilities have either:
 - ▶ been achieved,
 - ▶ are nearing maturity, or
 - ▶ been superficially addressed
- ▶ Previous “Future State” has now caught up with “Current State”, observation of industry shows:
 - ▶ Successful Enterprise Data Management
 - ▶ Adoption of Spatial modeling and simulation
 - ▶ Decision Support Systems (somewhat lagging)
 - ▶ Digital cartography handled well



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Recognizing the Future

- ▶ System view of GIS is comprised of:
 - ▶ Software,
 - ▶ Hardware,
 - ▶ Data, and
 - ▶ Personnel
- ▶ Which component provides us with the greatest opportunity for growth and development into the future?



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Recognizing the Future

▶ Software

- ▶ Offers a rich suite of tools “out-of-the-box”
- ▶ Provides comprehensive development environment

▶ Hardware

- ▶ Was once a limitation to GIS evolution
- ▶ Now able to meet processing and storage requirements



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Recognizing the Future

▶ Data

- ▶ Improvements in acquisition techniques and technologies
- ▶ Resolution at which data may be obtained, retained, and used has escalated dramatically

▶ Personnel

- ▶ GIS professionals
- ▶ Spatial practitioners



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Recognizing the Future

- ▶ Does our industry need to continue growth and development of its technology?
- ▶ Where else could we focus our energies?
 - ▶ Application versus Application
 - ▶ Business: Driving Force for Technology
 - ▶ Ubiquitous Enabler



Application versus Application



Application versus Application

- ▶ In yesteryears this sparked debates on the pros and cons of vendor software
 - ▶ Software program/platform choice was and is a pertinent question in a GIS implementation
 - ▶ Debate really translated into marketing power
 - ▶ Geospatial industry has prepared itself well to handle the positives and negatives of various vendor [vapor]ware



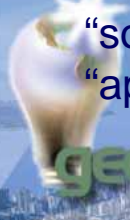
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Application versus Application

- ▶ But software is converging on open standards and common capabilities, is the choice becoming clearer or more blurred?
- ▶ For now, and the future, the debate of “Application versus Application” will remain
- ▶ However, the debate must transition from “software application” to software “application”



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Application versus Application

- ▶ In other words, the debate will become less about the GIS software and more about the applicability of GIS in a business context
- ▶ Perhaps business applicability will become our new benchmark/performance test?



Application versus Application

- ▶ How do we transform traditional views of GIS as a software-centric system into the visceral vision of an applied analytic environment?
- ▶ How do we uncover suitable situations for which GIS was designed but has yet to be applied?
- ▶ How do we prepare to handle the necessary infusion of GIS into the world of business?
- ▶ How do we promulgate its business benefits?





Business: Driving Force for Technology

- ▶ So how then do we prepare our professionals for success?
- ▶ GIS provides value to business through:
 - ▶ Risk Management and Assessment,
 - ▶ Business Process Improvement, and
 - ▶ Capabilities Creation



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Business: Driving Force for Technology

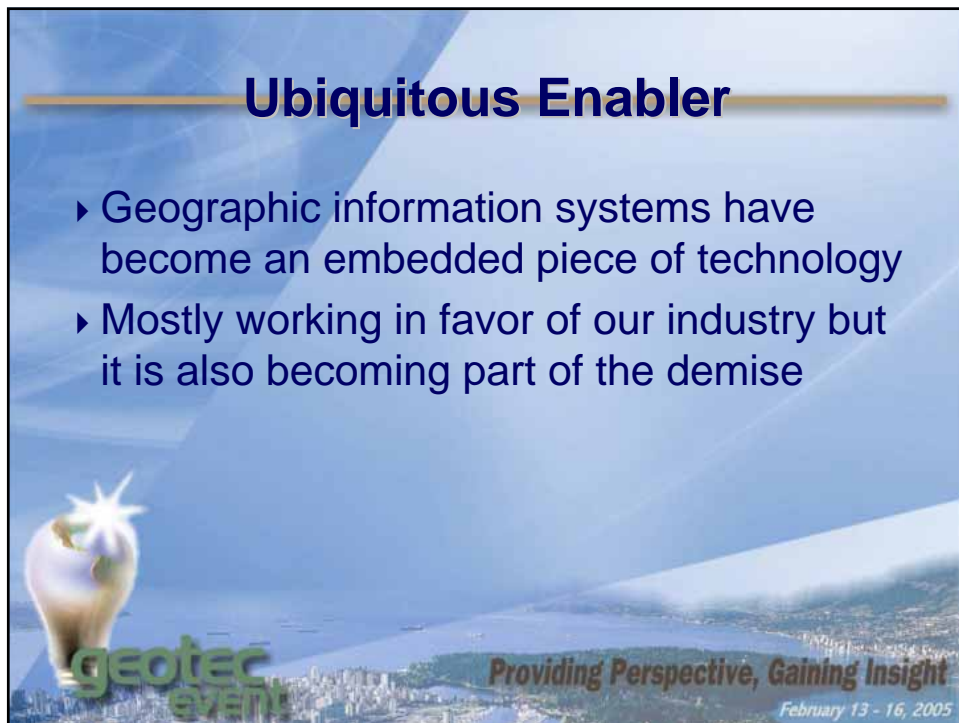
- ▶ So how then do we prepare our professionals for success?
 - ▶ MBAs or Deep Generalists
 - ▶ Virtual Merit Badge versus Tail Tale
 - ▶ Business “Vitamins” through Inclusion



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Ubiquitous Enabler

- ▶ Argument could be made that it does not matter that our technology is embedded as long as it is being used
 - ▶ Certainly valid, but how do you improve what is ignored?
 - ▶ Or, how do we increase the GIS awareness or the applicability of GIS to additional business issues if unwilling to publicly identify and celebrate the tiny successes along the way?



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Ubiquitous Enabler

- ▶ Who gets the spotlight? Container or enabler?
- ▶ Who or what is the enabler?



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Ubiquitous Enabler

- ▶ Shame on us for not better explaining our industry! But should it come as a surprise?
 - ▶ Our industry suffers from an identity crisis, a lack of a solid, all-encompassing definition for GIS that does not teeter on the edge of nebulous
 - ▶ GIS professionals must step out from the hesitancy of explaining their vocation



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Connecting the Dots: Final Thoughts



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Final Thoughts

- ▶ Although the goals of GIS capabilities from yesteryear were met, only a handful of people truly understand these capabilities
- ▶ Are we, as an industry, providing tools without training, programs without purpose, and enhancements without education?
- ▶ Without comprehension, the application of GIS to solve real-world business problems becomes limited



Final Thoughts

- ▶ We need to take the time here in the present and into the future to define and hone our craft and its applicability – tailoring our educational approach to include business
- ▶ Is it time for a technology hiatus and reprioritization of energies on personnel? Technology, after all, is a means to an end and not the end itself – the “enablers” (personnel) need their time in the spotlight too

