

Simplified Asset Management Using Modern Web-based GIS Technology

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Agenda

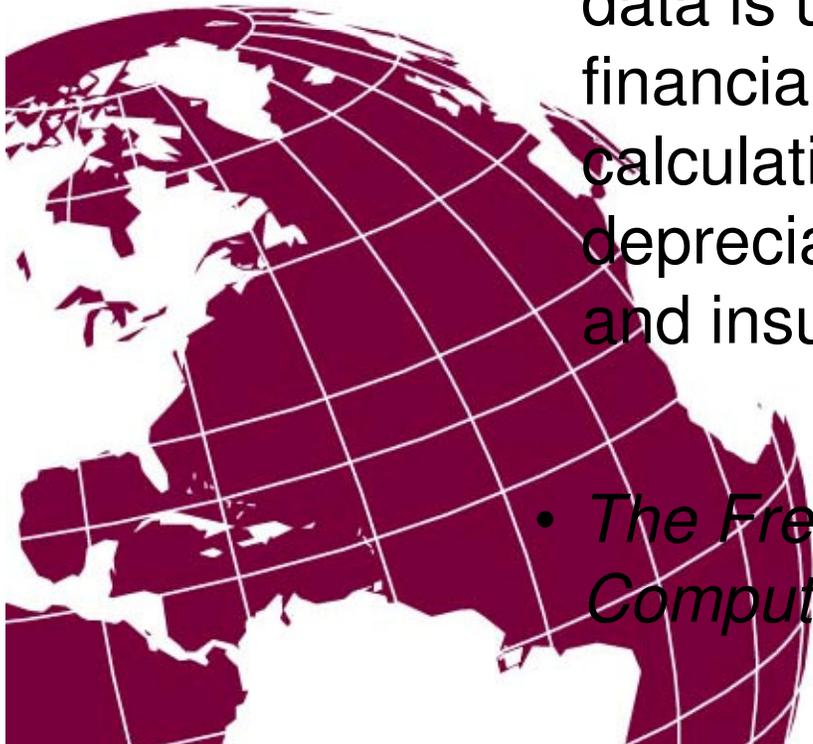
- Definition of Asset Management
- Technology Options
- Advantages/Disadvantages
- Why Web-Based?
- What is it?
- How Does It Work?
- Examples
- Conclusions



Definition of Asset Management

- The process whereby a large organization collects and maintains a comprehensive list of the items it owns such as hardware and software. This data is used in connection with the financial aspects of ownership such as calculating the total cost of ownership, depreciation, licensing, maintenance, and insurance.

• *The Free On-line Dictionary of Computing, © 1993-2007 Denis Howe*



But What Are We REALLY Trying To Accomplish?

- Track our infrastructure
- Maintain information about that infrastructure that allows us to make solid business decisions
- Accommodate specific project needs
- Develop data in a reusable and organizationally pertinent manner
- Do so in a manner that is practical
- Provide for succession planning



Technology Options

- Commercial Off The Shelf Software Solutions
- Custom GIS Solutions
- “Home Grown” Applications
- Web Based Applications



Commercial Off The Shelf Software

- Developed to address a wide cross section of industry requirements
- Generally has some flexibility for minor customization
- Software costs can be high
- Data conversion may be complicated
- Learning curve may be steep



Custom GIS and other Home Grown Solutions

- Developed to meet specific organizational needs
- Development and maintenance investments may be costly or time consuming



Why web applications?

- It is INTERNET!
 - Centralized data management
 - More productive
 - Fits better into your existing IT architecture
 - A platform for quickly building specialized applications



What is modern web-base GIS?

- Google Maps /Google Earth alike Applications
- Impacts on the public



How does it work

- AJAX
- Map Tiles
- Real-time 3D Technology (Google Earth)



Traditional vs. Modern

- **Find : 101 N SANDUSKY ST 43015**
 - **Delaware County Map vs. Google Maps**
- **Compare**
 - **How the page refreshes after each request?**
 - **How the map is rendered?**
 - **How the “back” button work?**
- **A better development framework(SOA)**
 - **Client-side API**
 - **Web Services using Open Standards**



Demonstration

- “Google Maps” type of Application
 - Alum Creek Relief Tunnel Online Design Report
 - Technology:
 - MapFish Ajax Javascript Framework
 - Tile Mapping Services
 - EXT Ajax Javascript Framework
 - Zoomify
 - Flashpaper
- “Google Earth” Plug-in Application
 - MS4 outfall inventory online database
 - Technology
 - Google Earth Plug-in



Conclusion

- Modern web-based GIS technology enabled the features traditionally only available to desktop applications.
- Let's build better, faster and innovative GIS applications with those new tools.



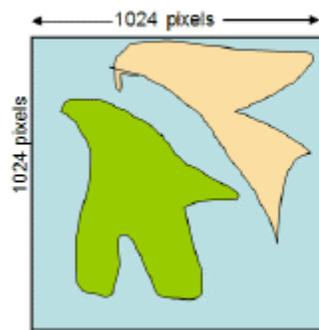
Reference

- OpenLayers.org
- MapFish.org
- Google Earth Plug-in
- EXTJS.com
- Zoomify.com
- TMS
 - http://wiki.osgeo.org/wiki/Tile_Map_Service_Specification
- Flashpaper
 - <http://www.adobe.com/products/flashpaper/>

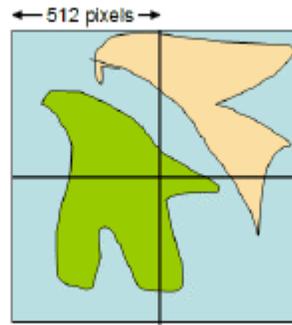


Map Tiles

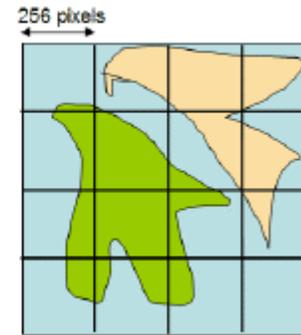
STEP 1: *Subdivide into tiles*



Original Image

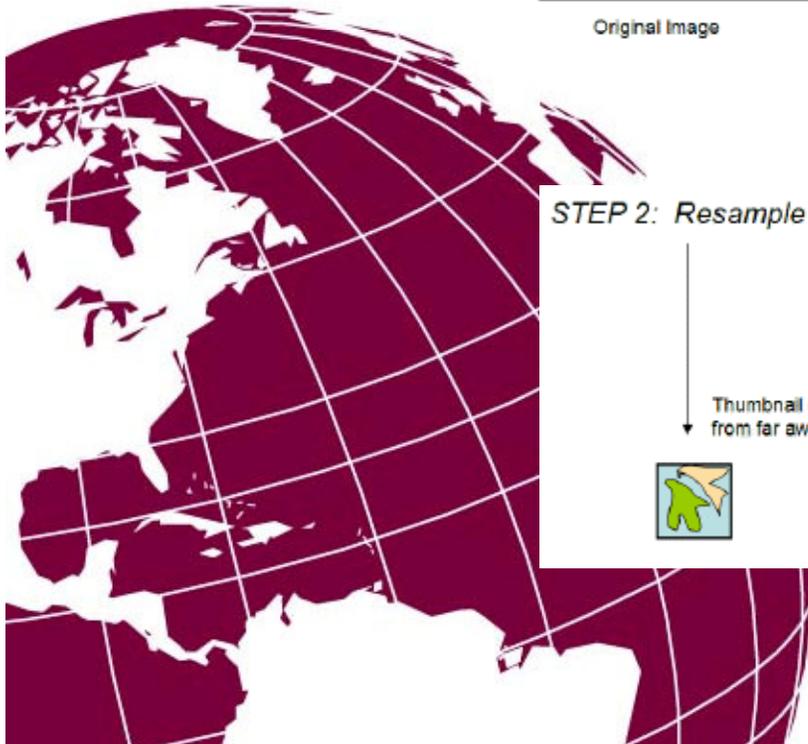
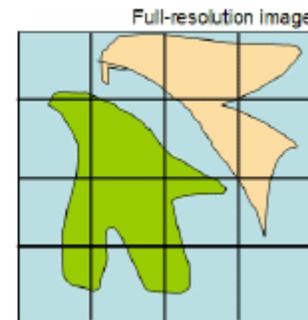
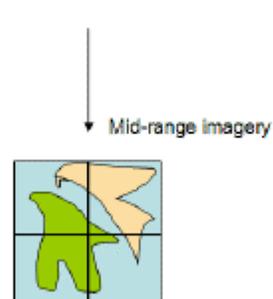
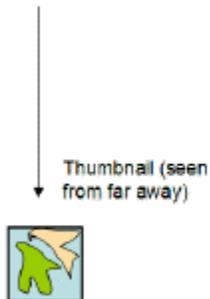


Subdivide each tile from the original image into 4 tiles



Subdivide each tile from previous "level" into 4 more tiles

STEP 2: *Resample each tile to 256-by-256 so that we have different levels of detail*



AJAX

- Asynchronous JavaScript and XML
- Build “desktop application” for web browser

