Esri Southeast User Conference
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A GIS Survival Guide for the 21st Century
Adam Carnow
Goals

In this session about strategies for making your GIS more relevant/valuable/beneficial to your organization & ready for the twenty-first century, topics will include the following:

• How to get the most out of the technology you already own
• How to expand the influence of your GIS
• How to keep your GIS current & adapt it to the latest trends
• How to make your GIS an enabling technology
• How to communicate the value of GIS to your organization
Agenda

• Why do we need a GIS Survival Guide?
  - Challenges/Threats
  - Use Case
  - Trends

• Survival Techniques
  - Make Your GIS a Mission-Critical Enterprise IT System
  - Implement Five Pattern Solutions
  - Sell GIS to Your Organization

• Summary
  - A GIS Self-Examination
Why do we Need a GIS Survival Guide?

Current Challenges (Threats?!?):
- Resource Limitations
- Maintaining Legacy Applications
- Delivering Products that Meet Market Expectations
- Supporting a Broad Spectrum of Users (Customers)
- Changing IT Trends

BE PREPARED!!!
GIS Survival Techniques for the 21st Century

- COTS over Custom
- Configurable Applications
- Platform Standardization
- Support Current Devices
- Flexible Deployment Options
GIS Survival Techniques for the 21st Century

- Reduce Lifecycle Costs
- Mitigate Risk
- Improve Flexibility
- Relevant & Practical Applications
- Easy-to-use Applications
Let’s Play Pretend…

• I have a new job & need to relocate to a major city in another state.
• I am NOT a GIS professional.
• I need to quickly & easily find key information about my new hometown & I want to share this information with my family & friends…
Let’s Play Pretend…

<table>
<thead>
<tr>
<th></th>
<th>Internet Explorer</th>
<th>Firefox</th>
<th>Chrome</th>
<th>Safari</th>
<th>Opera</th>
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The application's digital signature has an error. Do you want to run the application?

- Always trust content from this publisher.

Run | Cancel

The digital signature was generated with a trusted certificate but has expired.
Your browser isn't supported

We apologize for the inconvenience. Support for the following browsers:

- Internet Explorer 5.5 or higher (Windows)
- Firefox 9.0 or higher (Windows, Mac and Linux)
- Mozilla 1.4 or higher (Windows, Mac and Linux)
- Safari 1.2.4 or higher (Mac)
- Netscape 7.8 or higher (Windows and Mac)
- Opera 7.5 or higher (Windows and Mac)
Please Have Patience

This application may take as long as 1 to 2 minutes to load when being accessed through a 56k dial-up modem.

This application is best viewed with Internet Explorer 5.0 or better. Persons using Netscape browser versions and/or using an Apple or Mac PC may experience unsatisfactory results.

---LOADING APPLICATION---
“Nothing endures but change.” – Heraclitus of Ephesus (c.535 BC - 475 BC) Greek philosopher
Jack Welch on Change

• Chairman & CEO of GE 1981-2001
• GE Market Value = $12 billion to $280 billion
• Named “Manager of the Century” by Fortune in 1999
• “When the rate of change outside exceeds the rate of change inside, the end is in sight.”
• “Change before you have to.”
• “Willingness to change is a strength, even if it means plunging part of the company into total confusion for a while.”
New Rules for Enterprise Applications

1. Make it appealing.
   - Irresistible
   - User-friendly
   - Works on all current browsers & mobile devices

2. Make it transparent.
   - Answer questions, don’t overload with data
   - Provide analysis, not just data
   - Deploy multiple, focused apps, not one do-it-all app

3. Update it often.
   - Keep it fresh, not stale (apps & content)

from Computerworld magazine
It is a Self-Service World
It is a Self-Service World
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It is a Self-Service World
Make your GIS a Mission-Critical Enterprise IT System
Follow Best Practices

- IT Best Practices
- GIS Best Practices
- Esri Best Practices
IT Best Practices

- Development/Staging/Production/Publication Environments
- Service Level Agreements
- Business Continuity/Risk Mitigation
- System Architecture Design
- Environment Isolation
- Living Strategic Plan
GIS Best Practices

- Establish a Geospatial Program
- Develop & Maintain Data as an Asset
- Take an Enterprise Systems Approach
- Share with the Public

March 2011
National Geospatial Advisory Committee (NGAC)
http://www.fgdc.gov/ngac
Esri Best Practices

- Follow Recommendations
  - System Requirements
  - System Architecture Design Strategies
  - Training Pathways
- ArcGIS for Local Government
- ArcGIS Online
- Community Maps Program
- Technical Support
- Professional Services
- Educational Services
- Partners
- Implement Five Pattern Solutions
Implement Five Pattern Solutions
Five Patterns of Business

1. Data Management
   Collect, manage & exchange data

2. Planning & Analysis
   Transform data into actionable information

3. Field Mobility
   Get information into & out of the field

4. Operational Awareness
   Disseminate knowledge where & when it's needed

5. Constituent Engagement
   Get feedback & make more informed decisions

ArcGIS – A Complete Integrated System
Five Patterns Mapped to the ArcGIS Platform

- **Data Management**: Collect, manage & exchange data
- **Planning & Analysis**: Transform data into actionable information
- **Field Mobility**: Get information into & out of the field
- **Operational Awareness**: Disseminate knowledge where & when it's needed
- ** Constituent Engagement**: Get feedback & make more informed decisions

ArcGIS – A Complete Integrated System

- **Geodatabase**
- **Geoprocessing**
- **Mobile**
- **Web APIs**
- **Mobile/Web APIs**
Why Implement GIS?

Data Management: Collect, manage & exchange data
Planning & Analysis: Transform data into actionable information
Field Mobility: Get information into & out of the field
Operational Awareness: Disseminate knowledge where & when it’s needed
Constituent Engagement: Get feedback & make more informed decisions

ArcGIS – A Complete Integrated System

Increase Efficiencies
Support Better Decisions
Improve Customer Service
Accountability/Transparency
Gov 2.0 - Citizens as Sensors
GIS Vision/Roadmap for a Water Utility

ArcGIS – A Complete Integrated System for a Water Utility

- Asset Management: Store, manage & maintain accurate asset records
- Planning & Analysis: Transform data into actionable information
- Field Mobility: Get information into & out of the field
- Operational Awareness: Disseminate knowledge where & when it’s needed
- Constituent Engagement: Share information with stakeholders

Best Practice Maps & Applications from the ArcGIS Local Government Resource Center Gallery

- Infrastructure Editing
- Capital Improvement Planning
- Mobile Map
- Water Utilities Operations Dashboard
- Citizen Service Request

Other Templates: Local Government Information Model, Data Reviewer for Infrastructure
Sell GIS to Your Organization
How do I communicate the value of GIS?
Jack’s Message

• GIS saves money, delivers value – usually 3 to 5 times
• Logistics can be a big value proposition
• **SELL** the **POWER** & the **VALUE** of GIS to management
• Get buy-in from management by aligning solutions to meet their **PAIN** &/or **VISION**
• Be effective in communicating to management
• Be passionate
• Deliver on-time & in-budget
• Keep management engaged
Are You Meeting the Needs of Your Customers?

• Who are your customers?
• Do they know about the **POWER & VALUE** you can bring?
• Have you asked them what their **PAIN & VISION** are?
• Create focused, complete solutions that meet their needs
How Do You Meet the Needs of Your Customers?

- Prioritize Solutions
- COTS, not Custom
- Sustainable Solutions
- Reliable Solutions
- Create a Solution Map

Taking a COTS-Based Approach to Implementing Enterprise GIS
An Esri White Paper
<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution Map Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Problem Statement</strong></td>
<td>Jan. 22, 2008 FHWA Mandate – Public agencies must establish &amp; implement a method to maintain traffic sign retroreflectivity</td>
</tr>
<tr>
<td><strong>Cause of Problem</strong></td>
<td>Nighttime crash rate is three times the daytime crash rate – improving sign visibility helps everyone</td>
</tr>
<tr>
<td><strong>Negative Business Impact</strong></td>
<td>Failure to adhere to federal mandate &amp; standards, reduced sign visibility, increase in crashes, increased liability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Solution</th>
<th>How We Solve The Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How We Solve The Problem</strong></td>
<td>Implement a GIS-based Sign Inventory &amp; Management System using Best Practices &amp; all five of the business patterns</td>
</tr>
<tr>
<td><strong>Positive Business Outcome</strong></td>
<td>Full compliance with FHWA mandate, improve sign visibility, reduce crashes, limit liability, increased efficiencies, support better decisions, etc…</td>
</tr>
</tbody>
</table>
Sign Management/Retroreflectivity Solution
What is the Killer GIS App?

• One that turns management into daily GIS users
• Executive Dashboard
• Up-to-date Analytics
• Use daily to run their department/city/county/state/country
• Must be easy-to-use
• Must be reliable
• Make it a necessity for them to do their job
Executive Dashboard Example
Executive Dashboard Example
Executive Dashboard Example
Executive Dashboard Example
Summary
A GIS Self-Examination

- Is there a bottleneck for access to GIS?
- Are you proud of your GIS?
- How do you measure success?
- What are your plans for your GIS?
A GIS Self-Examination

• Are you on version 10? If not, when?

• Do you have any IMS or Web ADF applications in production? If so, when will they be replaced?

• Are you using ArcReader in production?

• Are you using shapefiles?

• Are you participating in our beta programs?
A GIS Self-Examination

• Does your annual GIS budget include funding for:
  - Software?
  - Hardware?
  - Training?
  - Services?
  - Data?

• Can you justify your GIS budget?
A GIS Self-Examination

• Do you have management support?

• Are you prepared for change?

• Are you proactive vs. reactive?

• Are you innovative?
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“Good business leaders create a vision, articulate the vision, passionately own the vision, & relentlessly drive it to completion.”

– Jack Welch
Thanks for your time…

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