What you Need to Know about Managing an Enterprise GIS Project

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Glenn Berger
Enterprise GIS
Supporting a Complete System for Geographic Information

• Online
• Desktop
• Server
• Mobile
• Developer
• Solutions
Managing a Successful Enterprise GIS Project

1. It is all about business objectives
2. Always be in SELL mode
3. Implementation is a continuous process
4. Manage change
5. Break it into small workable pieces
6. Do not get enamored with technology
7. Involve IT team early
8. Use COTS as much as possible
9. Requirements, requirements, requirements
10. Fit the management of the project to the scope/scale
Its All about Business Objectives
Providing value through GIS technology

- National security
- Government efficiency
- Disaster response
- Selecting optimum locations
- Connecting business with markets
- Environment and human health
- Optimizing logistics

Delivering capabilities to support the enterprise
Always be in SELL Mode

- Communicate with key stakeholders
- Style of communications needs to vary
  - Formal reports
  - Informal reports
- Plan key dates into the schedule
  - Promote success
  - Visibility
- Clearly demonstrate benefits

Communicate…upward, downward and across teams
Implementation is a Continuous Process

- Business process insertion
- Job/mission specific training
- Operations and support
  - Helpdesk
  - Software release schedules
  - Integration issues
- Measure benefits
  - Is value being realized
  - Are users leveraging the system
- Identify new opportunities

Assess what is critical and focus on it
Manage Change

- Changes happen in every project
  - Schedule, requirements, priorities, budget, resources, etc.
- Be clear about the consequences
- Earlier they are identified the better
  - Key elements of change communication
- Simple, Direct, Constant & Consistent
- Consider Agile/Iterative approach
Break It into Small Workable Pieces

- Use a phased approach
- Use 4, 8, 12 week increments
  - Deploy COTS early (establish baseline)
  - Clearly define requirements and workflows that will be in each increment
  - Try and complete a workflow in each spiral
- Communicate overall plan
  - MS Project
Do Not Get Enamored with Technology

- Remember what you are trying to deliver
  - Be careful of the “shiny” object
  - Does it address the business and mission need
  - Will this technology meet the goals of the business case
  - Don’t build/deliver a sports car if you need a truck

Focus on key business functions
Involve IT Team Early

- Key stakeholder
- GIS is a key element of any IT Enterprise
  - What other systems does it interact with?
- Understand policy and standards
- Identify hardware and network impacts
- Consider security model and impacts
- Identify who will support system
- Plan to educate and train staff (including IT staff)

And keep them involved
Use COTS as Much as Possible

- Maximizing commercial off the shelf (COTS) software in a GIS system
- System meets business goals by leveraging COTS
  - Configures and extends COTS
  - Avoids developing software
- Immediate capability…continually improving via COTS release cycles
- Users engaged early and often to iteratively improve system
Requirements, Requirements, Requirements

- Leverage COTS as a baseline
- Describe WHAT not HOW
- Be "testable"
- Provide traceability throughout the project
- Support design and application development activities
- Model business process and user interaction

**THE most important part of a project**

<table>
<thead>
<tr>
<th>Func Regmt</th>
<th>Description</th>
<th>Data Layers</th>
<th>Display Specifics</th>
<th>Report Specifics</th>
<th>List/Table Specifics</th>
<th>Freq of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Layer on/off, Zoom in/out, Pan</td>
<td>All</td>
<td>box zoom or fixed</td>
<td>NA</td>
<td>default attrs to</td>
<td>High</td>
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<tr>
<td>2</td>
<td>Search by Property ID, acreage, owner w/ selected set</td>
<td>Parcels</td>
<td>highlight results standard template - include scale, user-spec title block, legend</td>
<td>default attrs to Word or Excel format</td>
<td>default atttrs</td>
<td>High</td>
</tr>
<tr>
<td>3</td>
<td>Print hardcopy map with selected layers and labels - standard sizes (letter)</td>
<td>User selected layers</td>
<td></td>
<td>printable report and/or copy to Excel</td>
<td>Establish field(s) at configuration</td>
<td>Med</td>
</tr>
<tr>
<td>4</td>
<td>Identify features</td>
<td>Active layer</td>
<td>Maptips? Call-outs? default label field; scale sensitive; Maptips for mult fields?</td>
<td>Establish fields at configuration</td>
<td>High</td>
<td></td>
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<tr>
<td>5</td>
<td>Label</td>
<td>Active layer</td>
<td></td>
<td></td>
<td></td>
<td>High</td>
</tr>
<tr>
<td>6</td>
<td>Import spreadsheet data</td>
<td>Active layer</td>
<td>any Excel file - link to existing features (any layer)</td>
<td></td>
<td></td>
<td>Med</td>
</tr>
<tr>
<td>7</td>
<td>Location &amp; select</td>
<td>Select features from active layer</td>
<td>One ring only</td>
<td></td>
<td></td>
<td>Med</td>
</tr>
<tr>
<td>8</td>
<td>Export attrs (selected or all)</td>
<td>Active layer</td>
<td>default attrs to Word or Excel format</td>
<td></td>
<td></td>
<td>High</td>
</tr>
</tbody>
</table>
### Requirements, requirements, requirements

#### Customer requirements

<table>
<thead>
<tr>
<th>ID</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>User must be able to search for images using a point buffer</td>
</tr>
</tbody>
</table>

#### Revised requirements

<table>
<thead>
<tr>
<th>ID</th>
<th>Type</th>
<th>Functional Area</th>
<th>Requirement</th>
<th>Original Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>F</td>
<td>Desktop Client \ Discovery \ Search Filter</td>
<td>User must be able to specify an area of interest by selecting a point feature on the map and inputting a radius (square buffer)</td>
<td>User must be able to search for images using a point buffer</td>
</tr>
<tr>
<td>102</td>
<td>F</td>
<td>Desktop Client \ Discovery \ Search Filter</td>
<td>User must be able to specify an area of interest by drawing a point on the map and inputting a radius (square buffer)</td>
<td>User must be able to search for images using a point buffer</td>
</tr>
<tr>
<td>104</td>
<td>F</td>
<td>Desktop Client \ Discovery \ Search Filter</td>
<td>All coordinate entry should support both decimal degree (DD) and degrees/minutes/seconds (DMS) input</td>
<td>User must be able to search for images using a point buffer</td>
</tr>
</tbody>
</table>

#### Business processes

#### Use cases

#### Domain model

Bringing it all together
Fit the Management of the Project to its Scale/Scope

- One management style does not work for all projects
- Decide what level of communication is important
- Recognize what is important for your project
  - Every project needs a plan
- Manage to the triple constraints:
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Additional Resources

- **ESRI project methodology**
  - [esri.com/services/professional-services/methodology.html](esri.com/services/professional-services/methodology.html)

- **Business case resources**
  - *The Business Benefits of GIS: an ROI Approach*—Outlines case studies and general methodology for doing cost-benefit analysis
  - *Thinking About GIS*—Roger Tomlinson
  - [esri.com/getting-started/executives/](esri.com/getting-started/executives/)

- **Project Management Body of Knowledge (PMBOK)**
  - [pmi.org](pmi.org)
Additional Resources: Books

• *Software Requirements (2nd Edition)* by Karl Wiegers, Microsoft Press, 2003
• *Agile and Iterative Development: A Managers Guide* by Craig Larman, 2004
• *The One-Page Project Manager: Communicate and Manage Any Project With a Single Sheet of Paper* by Clark A Campbell, 2006
• *Applying UML and Patterns (2nd Edition)* by Craig Larman, Prentice-Hall, 2001
• *Use Case Driven Object Modeling with UML* by Doug Rosenberg and Matt Stephens, Apress, 2008
• *Agile Development with ICONIX Process* by Doug Rosenberg, Matt Stephens, and Mark Collins, Apress, 2005
  - [iconixsw.com](http://iconixsw.com)
• *Software Project Survival Guide* by Steve McConnell, Microsoft Press, 1997
• *Writing Effective Use Cases* by Alistair Cockburn, Addison-Wesley, 2001
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