Planning the Work – How to Create a Manageable Enterprise GIS Project Plan

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Topics

- Why do we plan
- How do we plan
- Planning for project completion
- How to use the plan
Why Do We Plan?

Because things change…

Examples…

<table>
<thead>
<tr>
<th>Scope</th>
<th>COTS</th>
<th>Customization</th>
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</thead>
<tbody>
<tr>
<td>Budget</td>
<td>$100,000</td>
<td>$90,000</td>
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<tr>
<td>Timeline</td>
<td>June 1, 2012</td>
<td>March 31, 2012</td>
</tr>
<tr>
<td>Software</td>
<td>ArcGIS 9</td>
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</tr>
<tr>
<td>Resource</td>
<td>Tech Lead = Joe</td>
<td>Tech Lead = Liz</td>
</tr>
</tbody>
</table>
Why Do We Plan?

Because our **expectations** of the project may be different…

What you think ≠ What the client thinks
Planning Depends on Communication

Timely, clear, complete
Think of Planning as a 3-Step Process

- **Business Case**
  - Project Justification
  - High Level Plan of Action
  - RFP or Proposal

- **Initiation**
  - Kick-off
  - Goals
  - Boundaries
  - Expectations

- **Planning**
  - Scope
  - Deliverables
  - Schedule
  - Resources
Vision Setting
Develop a Business Case
Think of how ArcGIS will Support your Enterprise

Knowledge Workers

Executive Access

Public Engagement

Work Anywhere

Enterprise Integration

Professional GIS

ArcGIS

Making Mapping and GIS Available Across Your Organization

Transforming the Role of GIS
WHO are the USERS…

….and what are their business needs

Its all about business objectives

Providing value through GIS technology
Focus on the Business Workflow

Pick top 5 critical workflows

- Replacing Existing System
- Creating New Opportunity
- What are the priorities
- Who are the Users
- What Value are you adding
Identify Solutions with GIS Patterns in Mind

- **Asset Management**: Collect organize and exchange data
- **Planning & Analysis**: Turn data into information products
- **Operational Awareness**: Provides a common operating picture
- **Field Mobility**: Get information into and out of the field
- **Stakeholder Engagement**: Get feedback and make informed decisions
- **Location Analytics**: Add a spatial component to the decision making process

ArcGIS
Develop a Charter

- High-Level Plan
  - Projects
  - Schedule
  - Cost
  - Governance
- Implementation Priorities
  - Practical
  - Meet broadest needs
  - Yield early results
  - Responsive to executive priorities

Draft Project Plan

- Program Overview
- Purpose, Business Need
- Objectives, Approach
- Success Criteria
- Scope Overview, Deliverables, Milestones
- Budget
- Assumptions, Constraints, Risks
- Resources/Roles
- Project Team
- Approvals
Define an Implementation Strategy

• Who is going to do the work
  - Internal staff
  - Contractors

• Get a scope and RFP on the streets
  - Timeframe
  - Administration
  - How to communicate requirements
  - Contractual
  - Evaluation

• Project Approved – ready for next steps…..
Initiation
You’ve Got Project Approval – What’s Next…

• Use Initiation to set the *Real* project baseline

• Consider effects of contract negotiations
  - Lag times between strategy and project approval
  - Scope may have changed
  - Technology solution may be out of date
  - Assumptions may no longer hold

• Regroup with key stakeholders
  - Review the key drivers
  - Have some of the players changed?
Initiating the Project the Right Way

- Re-affirm commitments, project understanding
- Continue to build relationships
- Document objectives, success criteria
- Set expectations and boundaries
  - Acceptance, change management, organization, responsibilities
- Set the stage for *detailed* project planning
Which of these help to initiate the project the right way?

- Avoids setting expectations and boundaries
- Re-affirming commitments and project understanding
- Document objectives, success criteria
- Keep distance between everyone involved in project
- Set the stage for detailed project planning
Project Planning
Why Develop a Detailed Plan?

• Defines the Project Execution Roadmap
  - Deliverables
  - Timing, sequence of events
  - Resources
  - Communications

• Defines when you are done
  - Quality expectations
  - Acceptance Criteria
Build the Right Plan for the Project

• Adapt management style to the project
  - What phasing strategy?
  - What project lifecycle?
  - How to organize your team?
  - Are partners involved?

• Decide on relevant communications
  - Progress, customer engagement, acceptance, change

• Organize your plan around a detailed schedule
Project Life Cycle Options

Consider project size, organizational capacity, the application(s).

**Waterfall**
- Short duration
- Clear requirements
- Single application
- Limited customer resources
- Customer expects single deployment

**Iterative**
- Long duration, multi-phase
- Discrete functions or applications
- Workflows and GUI tuning
- Customer expects prototypes
- Customer can support multiple releases

**Agile/Scrum**
- Short or long duration
- Experienced, disciplined team
- Customer expects to collaborate
- Revisions to requirements are acceptable
- Application can be organized into short duration sprints
Multiple Phases is Best on Large Projects

- Breaks the projects into workable pieces
- Use “scope boxes” or “time boxes”
  - Define requirements and workflows in each
  - Complete workflows in each spiral
  - Show “Tangible” Progress
- Communicate overall plan
  - Use tools like MS project
Project Team Roles

**Development**
- Developers
- Data Analysts
- UI Specialist

**QA/Testing**
- Testers
- Build Specialist
- System Support
- Configuration Manager
- Technical Writer

**Analysis & Design**
- Business Analyst
- System Architect
- Data Architect
- Usability Expert

**Project Leadership**
- Tech Lead
- Release Manager
- Project Manager

**Project Oversight**
- Customer
- Steering Committee

**Release Environment**

Larger projects need more dedicated roles.
Teaming Partners Involve More Logistics

- How do incorporate them in the “business rhythm”
- Synchronizing schedules
- Review of deliverables
How to Plan for Effective Communications

• Plan for customer involvement at ALL stages
  - Business Rhythm
  - Remain in SELL mode
  - Consider sponsor, stakeholders

• Plan review milestones
  - Visibility, tangible progress

• Match style, content to audience
How Do We Plan...Use a Work Breakdown Structure (WBS)

How to Build a Bicycle

Subtasks

Tasks
A Good WBS….

Needs to find a balance.
Which is the best example of a balanced WBS?

<table>
<thead>
<tr>
<th>Level</th>
<th>WBS</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>A0100</td>
<td>Design</td>
</tr>
<tr>
<td>2</td>
<td>A0110</td>
<td>Kickoff Meeting</td>
</tr>
<tr>
<td>3</td>
<td>A0111</td>
<td>Kickoff Meeting Notes</td>
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<tr>
<td>2</td>
<td>A0120</td>
<td>Design Document</td>
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<tr>
<td>3</td>
<td>A0121</td>
<td>Design Document Draft</td>
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<tr>
<td>3</td>
<td>A0122</td>
<td>Design Document Review</td>
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<tr>
<td>3</td>
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<td>Design Document Final</td>
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<tr>
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<td>Develop</td>
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<tr>
<td>2</td>
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<td>Prototype</td>
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<tr>
<td>3</td>
<td>A0211</td>
<td>Prototype Design</td>
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<tr>
<td>3</td>
<td>A0212</td>
<td>Prototype Development</td>
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<tr>
<td>3</td>
<td>A0213</td>
<td>Prototype Review</td>
</tr>
<tr>
<td>2</td>
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<td>Custom Development</td>
</tr>
<tr>
<td>3</td>
<td>A0221</td>
<td>Develop User Interface</td>
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<tr>
<td>3</td>
<td>A0222</td>
<td>Develop Application</td>
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<tr>
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<td>1</td>
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<td>Test</td>
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<tr>
<td>2</td>
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<td>Internal Acceptance Test</td>
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<tr>
<td>3</td>
<td>A0311</td>
<td>Develop Test Scripts</td>
</tr>
<tr>
<td>3</td>
<td>A0312</td>
<td>Review Test Scripts</td>
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<tr>
<td>3</td>
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<td>Internal Acceptance Test</td>
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<td>User Acceptance Test</td>
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<td>2</td>
<td>A0410</td>
<td>Install</td>
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<td>3</td>
<td>A0411</td>
<td>Travel to Client Site</td>
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<tr>
<td>3</td>
<td>A0412</td>
<td>Review Client Environment</td>
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<tr>
<td>3</td>
<td>A0413</td>
<td>Install</td>
</tr>
<tr>
<td>2</td>
<td>A0420</td>
<td>Warranty</td>
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</table>
Which is the best example of a balanced WBS?

- It depends…
  - Size of project (hours)
  - Length of project (time)
  - Contract requirements
What are the steps you go through

Start with a WBS...
Estimating Work
Validate estimates by considering relative level of effort
How Do We Plan?

**Finalizing the Schedule**

- Will it work?
- Team commitment & understanding
- Establish baseline

- Update frequently!
How Do you Know You Have A Good Schedule?

Use tools AND common sense to evaluate...

- Schedule structure is sound
- All activities and deliverables are accounted for
- Slack is built into the schedule
- Relative effort and duration of tasks makes sense
- Using a Standard WBS
- Technical team provided estimates
- Team workload is balanced
- Deliverable review periods make sense
What is the Right Amount of Management?

It depends on the size and complexity of the project.

Planning
- Basic project plan (scope, schedule, budget)
- Kickoff meeting

Analysis & Design
- Requirements
- Workflows
- User interface
- Traceability matrix
- Peer-reviewed documents

Implement
- Source control
- Build system
- Defect tracking
- Work item tracking
- Test plan
- Acceptance tests

Deploy
- Checklist
- User guide serves as training materials

Any Project
- Expanded project plan (e.g., add communications, risk, roles)
- Managed requirements, design artifacts (repository)
- More design models
- Formal review gates

Large Project
- Detailed plan
- Separate user guide and training materials
Plan for Project Completion

- Clearly define what it means to be done!
- Reach agreement *Early* on
  - Quality goals
  - Acceptance criteria
  - How change will be controlled
Quality Goals

• Place them in the context
  - Requirements
  - Priorities
• Reach agreement with the business owner
• Plan quality checkpoints throughout the project
  - Peer reviews for documents
  - Interim reviews
  - Controlled tests
Acceptance Criteria

- Place them in context
  - Quality goals
  - Requirements
- Define them for all deliverables
- Reach agreement with the customer
- Use them to define tests

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Reviews</th>
<th>Acceptance Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Map Viewer Module</td>
<td>• Internal tests</td>
<td>• Module functionally complete</td>
</tr>
<tr>
<td></td>
<td>• User acceptance test(s)</td>
<td>• No Severity 1 errors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No Severity 2 errors</td>
</tr>
<tr>
<td>Requirements specification</td>
<td>• (XX) Internal peer review(s)</td>
<td>• Review draft delivered</td>
</tr>
<tr>
<td></td>
<td>• (XX) Customer review(s)</td>
<td>• Mutually agreed to comments incorporated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Final delivered</td>
</tr>
</tbody>
</table>
Manage Change

It will happen
What is the impact on scope, schedule and Budget

- New Team Lead
- Need a Mobile App as well
- Green vs Red
- Different icons
- Move to new OS
- New DB design
- Add these fields
- Update the data daily rather than monthly
- 3D Viewer
- Add these Widgets
- Change the custom search criteria
- New Release date
- New Release date
- Add these Widgets
Managing GIS Projects in the Enterprise

Key Challenges

Vision
- Business case
- Alignment
- Leadership
- Stakeholders

Planning
- What to build
- Priorities
- Alignment
- Allocating work
- Tempo

Results
- On track
- Quality
- Change
What Tools do You Need

Planning
- MS Office
- SharePoint
- Primavera
- Mindjet

Requirements Validation
- Enterprise Architect
- JIRA
- MS Office
- Team Foundation Server (TFS)

Implementation
- Enterprise Architect
- JIRA
- TFS
- OnTime
- Bugzilla

Deployment
- Ant
- Maven
- Remedy
- Lighthouse
Which of these are critical for Project Success?

- Running part of the project using waterfall principles, and some using AGILE
- Creating a schedule by yourself
- Getting everyone on the same page early
- Save time by eliminating testing and QA
- Change how you communicate based on phase of project
Strategy and Planning—Review

- Focus on business requirements
- Understand who are the key stakeholders and what is important to them
- Reaffirm objectives, commitments at the beginning of the project
- Add increasing amounts of details at each stage of the project
- Plan for change
“By failing to prepare, you are preparing to fail”

Benjamin Franklin  
Author, scientist, politician

“Plans are nothing; planning is everything”

Dwight D. Eisenhower  
34th President of the US

“Every hour of planning saves about a day of wasted time”

Steve McConnell  
Author of Software Engineering Textbooks
Questions?
Additional Resources

• **Esri project methodology**
  - [www.esri.com/services/professional-services/methodology.html](http://www.esri.com/services/professional-services/methodology.html)

• **Business case resources**

• **Project Management**

• **Project Initiation and Planning**
  - Project Management Body of Knowledge (PMBOK)
  - Project Management Institute ([www.pmi.org](http://www.pmi.org))

• **Quality Management**
Thank you...

• Please fill out the session survey:

First Offering ID: 1419

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