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

Mirjam Stadelmann
Topics

• Why planning is important
• What to include in your plan
• Planning for project completion
• How to use the plan
What are YOUR Planning Challenges?

**Project Managers**
- Unrealistic expectations
- Insufficient information
- Not enough time to plan
- Nobody adheres to the plan

**Everyone Else**
- Takes too much time, need to start NOW
- Too expensive
- Limits my creativity
- Limits program flexibility
Project Planning – Why do it?

- An Enterprise project is a complex, strategic effort
  - Need a plan to clearly communicate vision, goals, steps along the way
- Allows you to manage resources
- Allows you to understand dependencies
- Provides the foundation to monitor progress

Failure to plan is one the most common reasons projects fail
Project Planning Process

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

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

**Detailed Planning**
- Scope
- Deliverables
- Schedule
- Resources

High Level ➔ Detail
When Does Planning Start, When does Planning End

- Heaviest in the beginning
- Continues throughout entire project
High-Level Planning Considerations

- Focus on business workflows
- Keep GIS patterns in mind
- Examples of High-Level Plans
  - GIS Strategy Document
  - Business Plans
  - Proposals
Focus on the Business workflow

• What business workflows?
  - Replacing an existing system
  - Creating a new business opportunity
• What value are you adding?
• Who are the users of the system?
  - What are their real priorities
  - How do they view this effort
  - Who are the champions
• How do you measure success?
Scoping with GIS Patterns in Mind

Data Management
- Collect, organize and exchange data

Planning & Analysis
- Transform data into actionable information

Operational Awareness
- Disseminate information where and when its needed

Field Mobility
- Get information into and out of the field

Constituent Engagement
- Get feedback and make informed decisions

*Complete and integrated workflows and system...*
Start with a Strategy...And Write it Down!

- Develop a High-Level Plan
  - Projects
  - Schedule
  - Cost
  - Governance
  - When are you DONE

- Consider 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
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.....
Consider – Your High-Level Plan Will Set Expectations….

- Be clear about the technical solution
- Relate Tasks to the solution
- Use a standard WBS for traceability
- Use the right methods to estimate costs
- Develop a realistic schedule
Scope the Solution with the “Triple Constraint” in Mind

- Time-boxed design
- Scope-boxed design
- Priorities, phases
- Change management
Project 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 stake holders
  - Review the key drivers
  - Have some of the players changed?
Initiating the Project the Right Way

- Re-affirm commitments, project understanding
- Build relationships
- Document objectives, success criteria
- Set expectations and boundaries
  - Acceptance, change management, organization, responsibilities
- Set the stage for *detailed* project planning
Detailed 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

Phase 1
- Map Viewer
- Pilot Database

Phase 2
- Editor
- Editing Database

Phase 3
- Reports
- Publication Database

Phase 4
Integration, Test, Deploy
Large Projects Need more Dedicated Roles

- Business Analyst
- System Architect
- Data Architect
- Usability Expert
- Testers
- Build Specialist
- System Support
- Configuration Manager
- Technical Writer

Project Leadership
- Tech Lead
- Project Manager
- Release Manager

Analysis & Design
- Team of developers and data analysts

Development

QA/Testing

Release Environment

Project Oversight
- Team of developers and data analysts

Planning the Work - How to Create a Manageable Enterprise GIS Project Plan
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
Work Breakdown Structure (WBS)

- An organizing element
- Maintain traceability
  - Proposal, contract, project plan
- Foundation for the schedule

The High-Level Plan
- Deliverables
- Tasks

WBS Work Breakdown Structure

The Detailed Plan
- Work Activities
- Work Packages
- Work Items

Esri UC2013 - Technical Workshop - Planning the Work - How to Create a Manageable Enterprise GIS Project Plan
Scoping and Estimating Work

- Break work down into detailed tasks
  - 40–80-hour increments
- Reduce uncertainties
  - Develop a realistic schedule
  - Use a reliable basis of estimate
- Use tools (e.g., TFS, JIRA).

Objective

Components

- Application(s)
  - Data
  - Systems
  - Training

Tasks (WBS)

1. Requirements
2. Design
3. Develop
   - Editor
   - Map Viewer
   - Mobile
4. Test
5. Deploy

Work Packages

- Editor
- Redlining tool
- Map Viewer
- Identify tool
- Legend tool
Estimating Work
Validate estimates by considering relative level of effort
Defining Schedule, Milestone, Deliverables

- Build a schedule based on the WBS
- Add detailed activities
- Define dependencies between activities
- Assign durations and resources
- Identify milestones and deliverables

<table>
<thead>
<tr>
<th>Project Phase</th>
<th>Typical Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation/Planning</td>
<td>Project Plan</td>
</tr>
<tr>
<td>Requirements, Design</td>
<td>Requirements and Design Specifications, Data Models</td>
</tr>
<tr>
<td>Development</td>
<td>Code, Databases, Maps</td>
</tr>
<tr>
<td>Deployment</td>
<td>Installation, Staging, Testing, Training, Manuals</td>
</tr>
<tr>
<td>Operations, Maintenance</td>
<td>Ad Hoc Support</td>
</tr>
</tbody>
</table>
Choose the right amount of management given the size and complexity of the project.
Creating the Schedule

WHAT
- WBS
- Major Events
- Deliverables

HOW
- Order of Events
- Accomplishments
- Completion Criteria

WHEN
- Detail Activities
- Relationships
- Duration/Hours

WHO
- Labor Categories
- Named Resources
Finalizing the Schedule

- Analyze schedule
- Gain agreement by performing team
- Establish baseline
How Do you Know You Have A Good Schedule?

*Use tools AND common sense to evaluate!*

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

Planning the Work - How to Create a Manageable Enterprise GIS Project Plan
Use your Schedule as a Tracking Tool!

- Gather inputs to status
- Set Project Status Date
- Update Actual Start/Finish Dates
- Update % Completion
- Move incomplete work
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

Esri UC2013 . Technical Workshop . Planning the Work - How to Create a Manageable Enterprise GIS Project Plan
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>
Plan for Change

• Changes happen in every project
  - Schedule, requirements, priorities, budget, resources, etc.

• Be clear about the consequences
  - Too much change will derail a project

• Key elements of change communication
  - Scope, impact, justification, approval decision
Key Takeaways

• Develop a strategy first and write it down!
• Reaffirm objectives, commitments at the beginning of the project
• Develop a realistic schedule
• Plan for project completion
• Manage the project to the plan!
Additional Resources

• **Esri project methodology**
  - 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)

• **Quality Management**
Questions?
Thank you…

Please fill out the session evaluation

**Offering ID**: 1388

**Online** – www.esri.com/ucsessionsurveys

**Paper** – pick up and put in drop box