



# Managing an Enterprise GIS Project: Create a Manageable Plan

Mirjam Stadelmann  
mstadelmann@esri.com

# Topics

- **Why do we plan**
- **What do we plan**
- **How do we plan**
- **Planning for project completion**

# Why Do We Plan?

Because things **change...**



## Examples...

Scope	COTS	Customization
Budget	\$100,000	\$90,000
Timeline	June 1, 2012	March 31, 2012
Software	ArcGIS 9	ArcGIS 10
Resource	Tech Lead = Joe	Tech Lead = Liz

## Why Do We Plan?

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

What you think



≠

What the client thinks

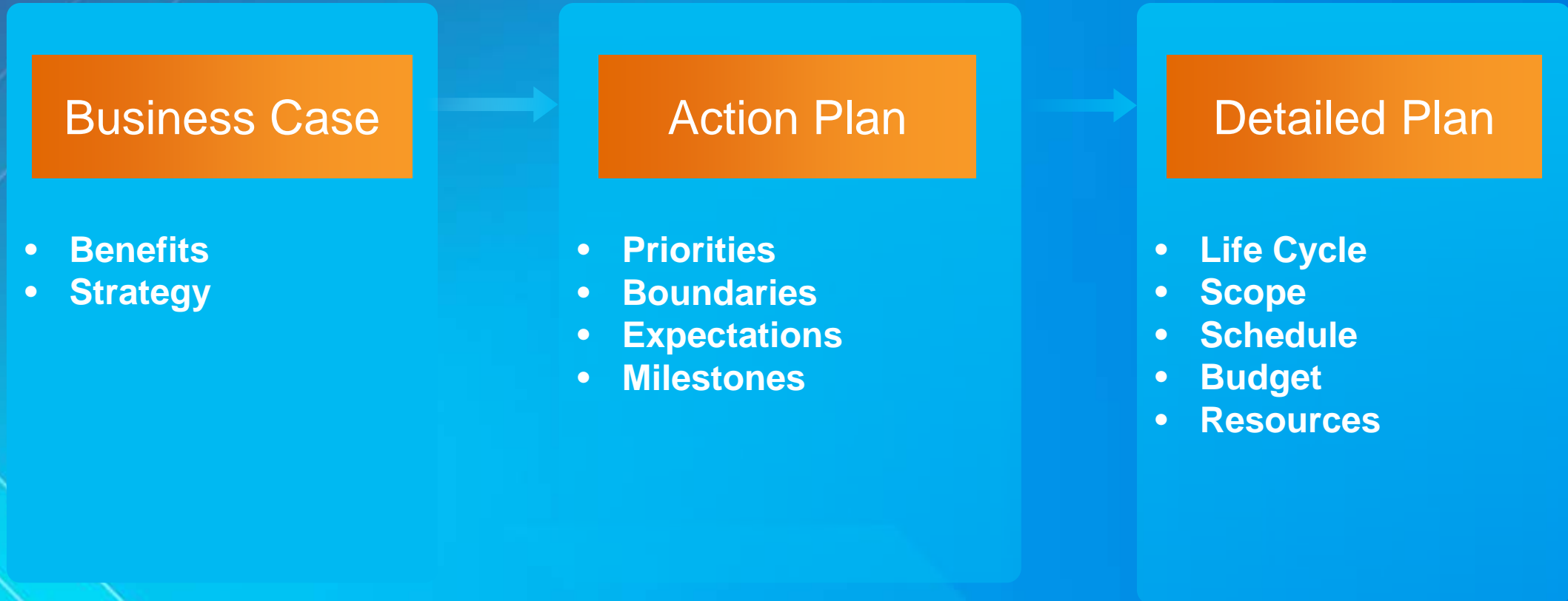




**Planning Depends on Communication**

Timely, clear, complete

# Think of Planning as a 3-Step Process



# Vision Setting Develop a Business Case



## The Business Case – Who Needs to Be Involved

Executive  
sponsor

Business  
managers

Key  
stakeholders



# The Business Case – Questions to Ask

- 1. What is the business problem you want to solve
- 2. What is the focus of your organization
- 3. Who are your key users
- 4. What value are you adding
- 5. What workflows or information products would benefit from location information
- 6. What are the primary apps and the key systems to integrate with
- 7. Where are you now with your implementation

WHO are the USERS...

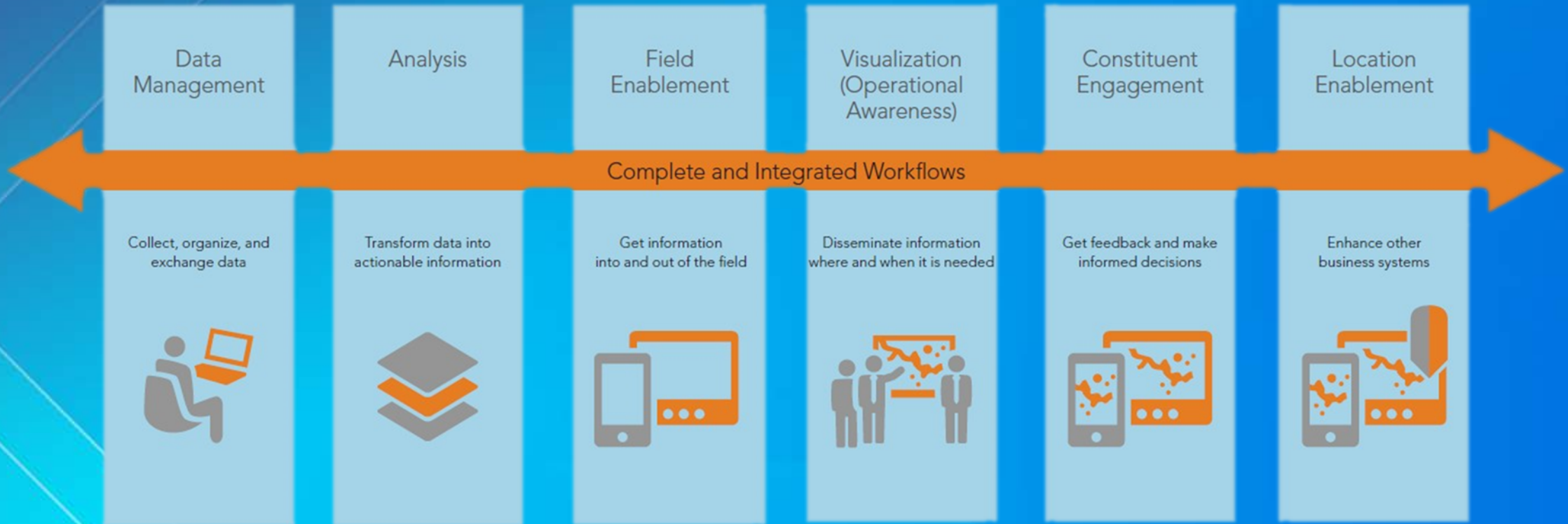
....and what are their  
business needs



**Its all about business objectives**

Providing value through GIS  
technology

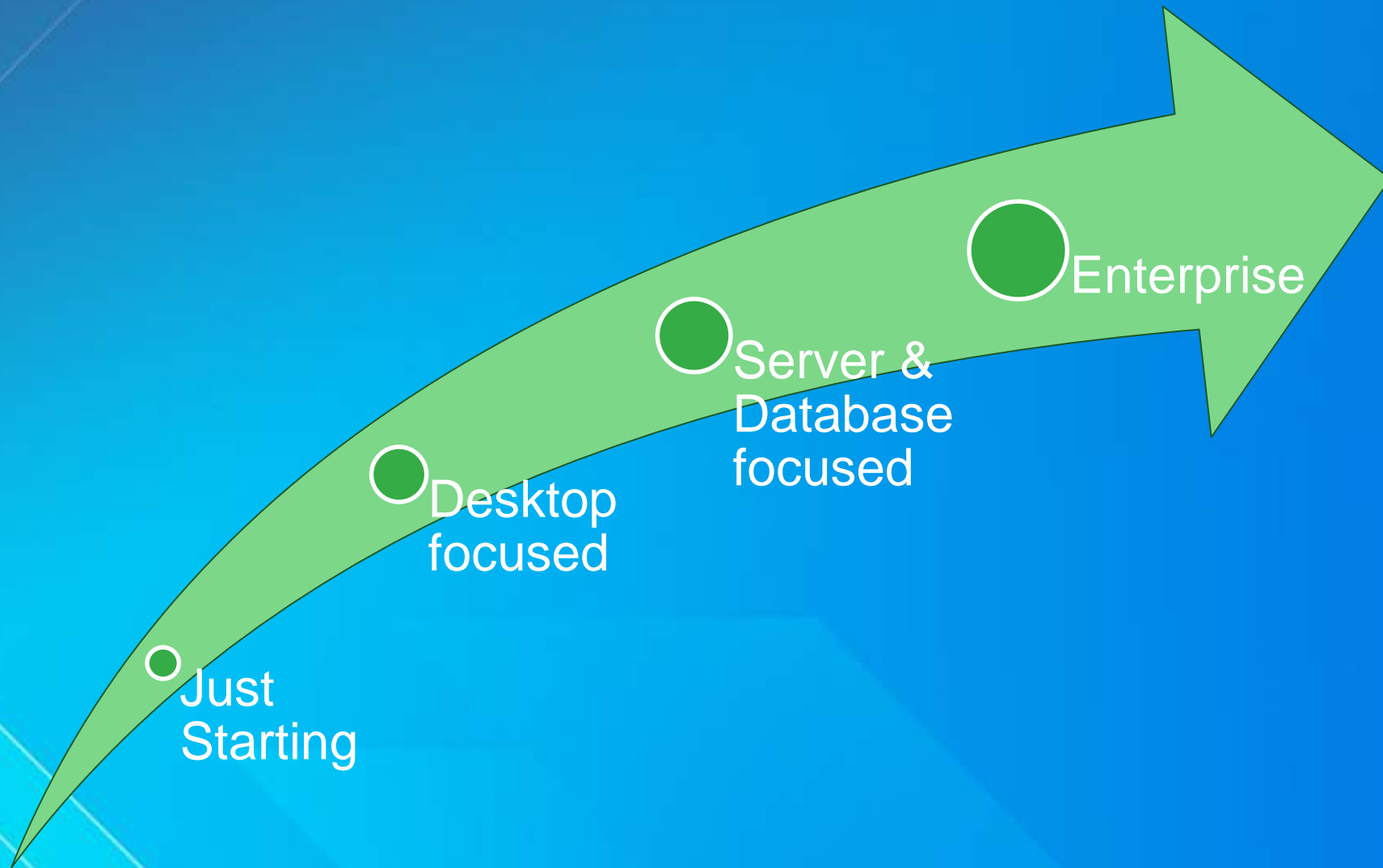
# Understand Your Organization's Focus in the Context of GIS Patterns



# Using the ArcGIS Platform to Transform Your Business



# Understand Where You Are in Your Implementation



# Action Plan



## So You Have a Business Case...What Next?

- Develop an action plan
- Lay out an implementation approach
- Get approval
- Move to next phase

# What to Include in the Action Plan



action  
plan



- Scope of the program
- Priorities
- Initial operating capability
- Later stage capabilities
- Time frames and milestones
- Resource needs
- Cost estimate



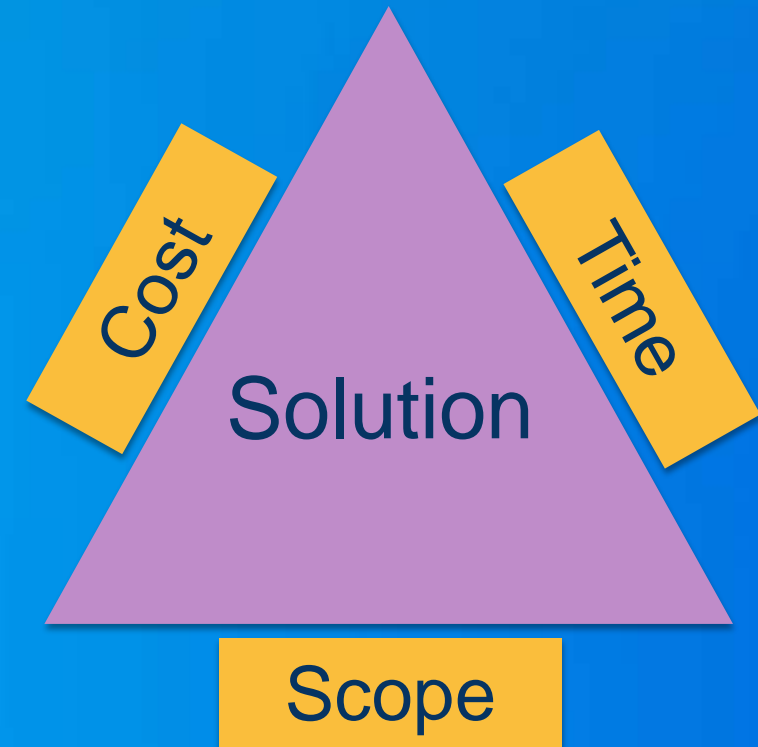


# Detailed Plan



# Why Develop a Detailed Plan?

- **Defines the Project Execution Roadmap**
  - Project life cycle
  - Deliverables
  - Timing, sequence of events
  - Resources
  - Communications
- **Defines when you are done**
  - Quality expectations
  - Acceptance Criteria

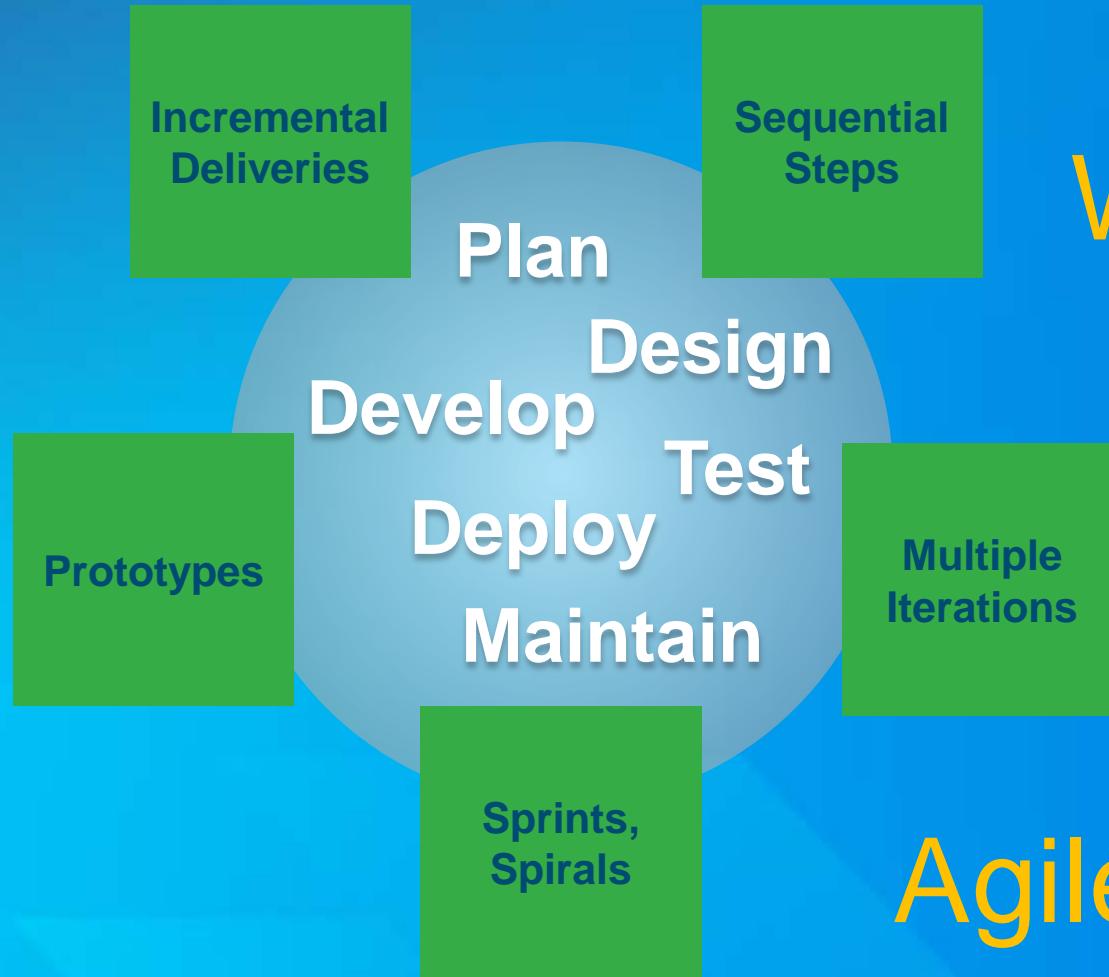


# Build the Right Plan for the Project

- **Adapt management style to the project**
  - What project life cycle?
  - What phasing strategy?
  - How to organize your team?
  - Are partners involved?
- **Decide on relevant communications**
  - Progress, customer engagement, acceptance, change
- **Organize your plan around a detailed schedule**

# Choosing an Implementation Life Cycle

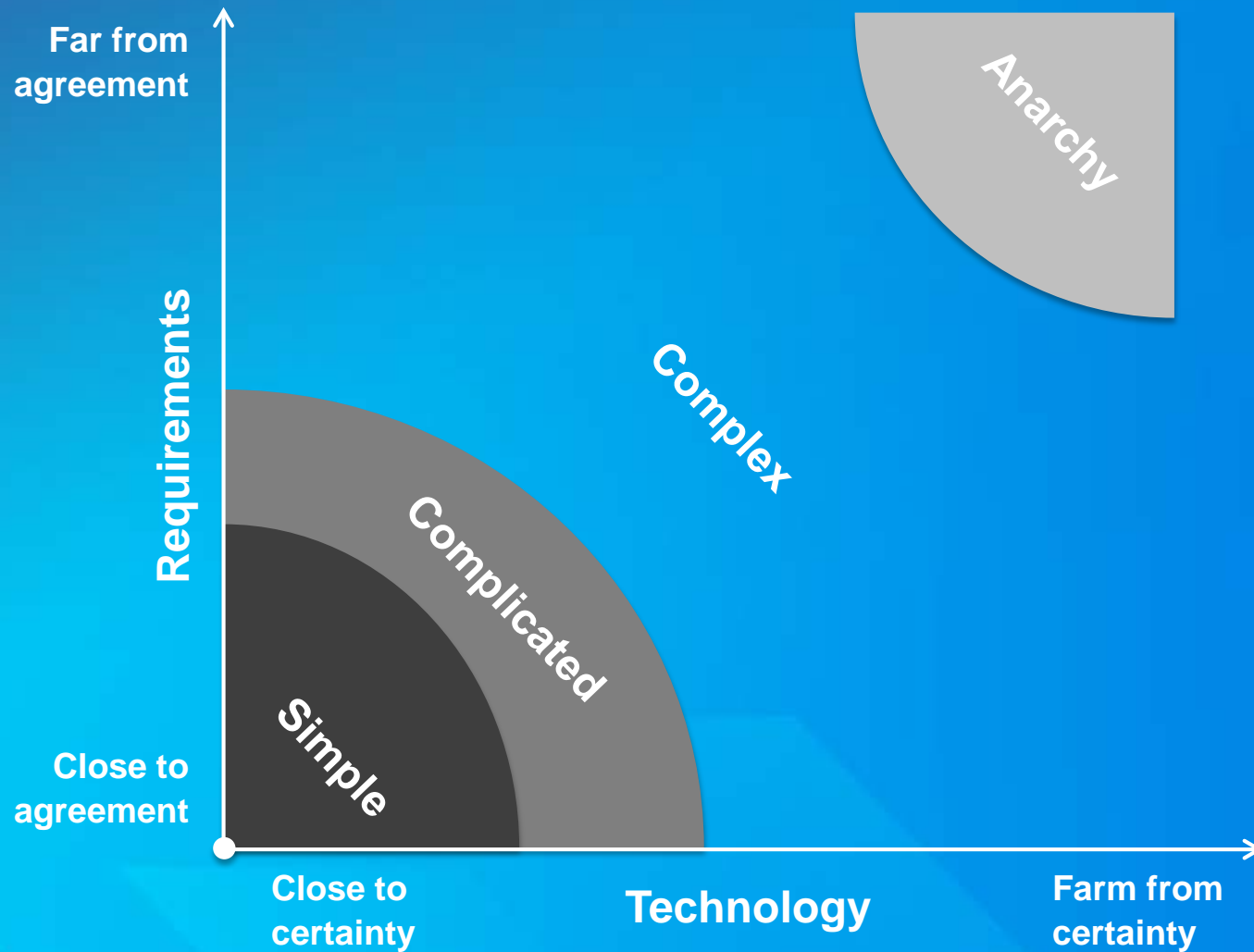
Staged



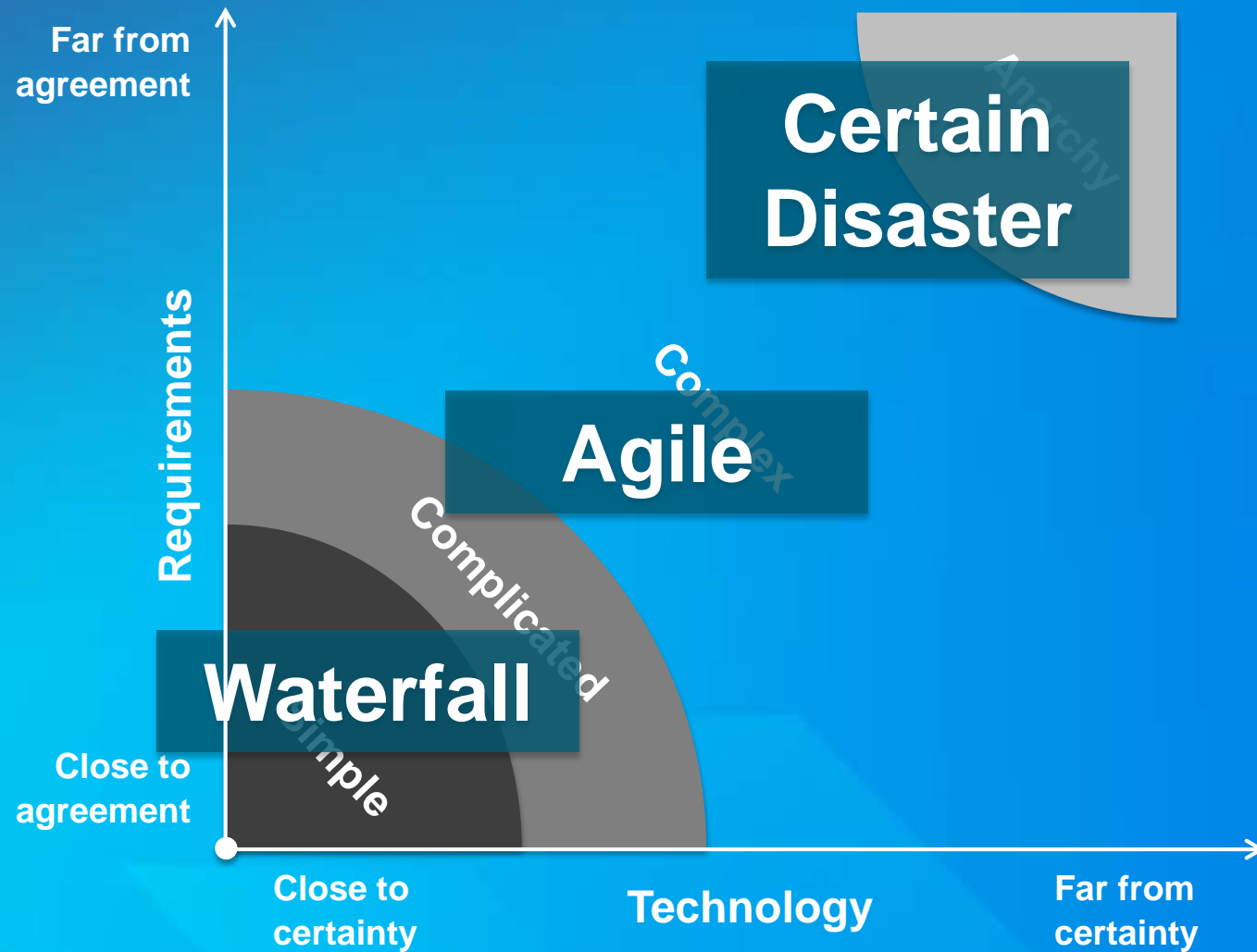
Waterfall

Agile/Scrum

# How Requirements, Technology Affect your Choice

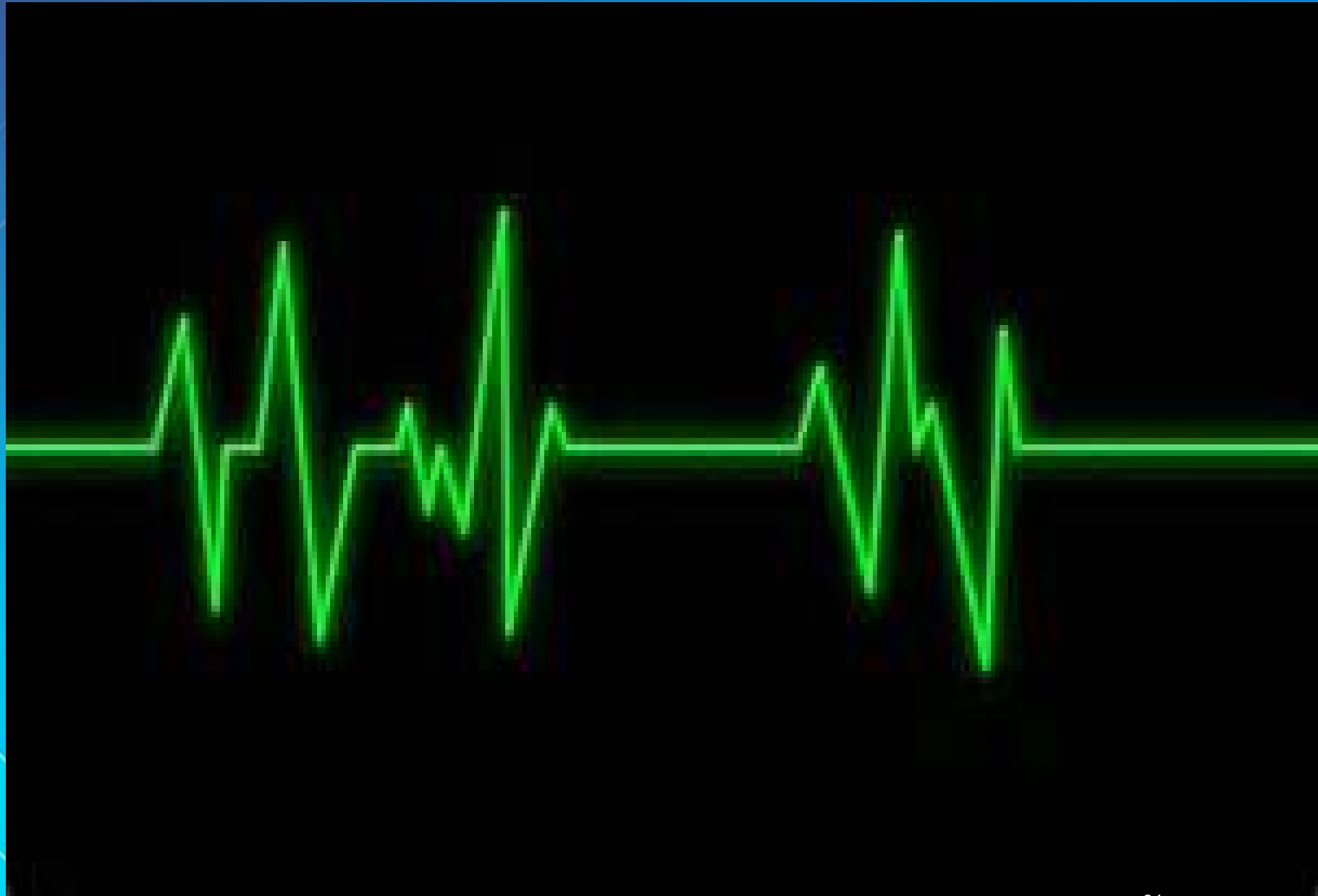


# How Requirements, Technology Affect your Choice



# When do these Models Work Best?

	Waterfall	Staged Delivery	Agile
Scope, Technology, Contract	<ul style="list-style-type: none"><li>• Clear requirements</li><li>• Fixed deliverables</li><li>• Single application</li></ul>	<ul style="list-style-type: none"><li>• Several applications</li><li>• Prototypes expected</li></ul>	<ul style="list-style-type: none"><li>• Flexible scope, deliverables</li><li>• One or several applications</li></ul>
Size, Duration	<ul style="list-style-type: none"><li>• Small size, short duration project</li></ul>	<ul style="list-style-type: none"><li>• Medium or large size, mid to long duration</li></ul>	<ul style="list-style-type: none"><li>• Any size or duration project</li></ul>
Capacity, Capabilities, Environment	<ul style="list-style-type: none"><li>• Limited capacity, resources, and environment</li><li>• Frequent turnover on project team</li></ul>	<ul style="list-style-type: none"><li>• Capacity, resources, and environment to support multiple releases</li></ul>	<ul style="list-style-type: none"><li>• Customer EXPECTS collaboration</li><li>• Stable, experienced project team</li></ul>







# Project Team Roles

## Development



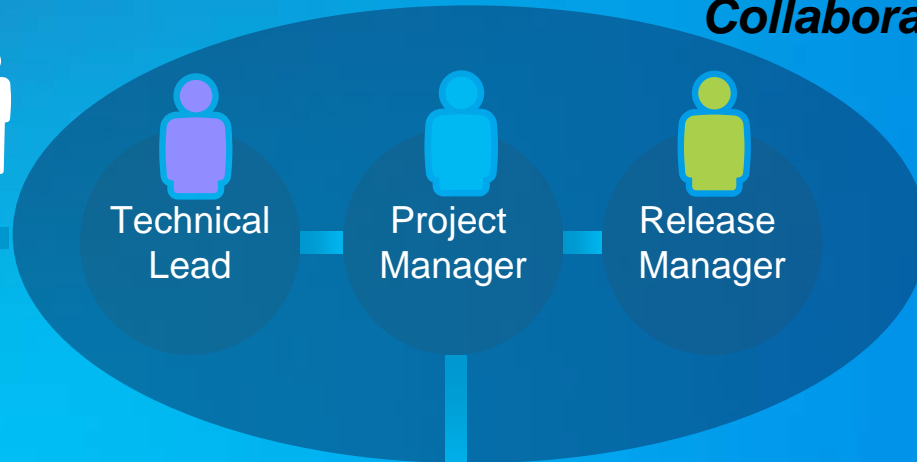
- Developers
- Database Analysts
- UI Specialist

## Analysis / Design



- SMEs
- Business Analyst
- Usability Expert
- Data Architect
- System Architect

## Core Team Collaboration



## QA/Testing/ Release Management



- Testers
- Build Specialist
- System Support
- Configuration Manager
- Technical Writer

## Extended Team Roles

Project Oversight



# Teaming Partners Involve More Logistics

- How do incorporate them in the “business rhythm”
- Synchronizing schedules
- Review of deliverables



# How to Plan for Effective Communications

- **Match style, content with audience, message**
- **Plan for customer involvement at ALL stages**
  - Business Rhythm
  - Remain in SELL mode
  - Consider sponsor, stakeholders
- **Plan for review milestones**
  - Visibility, tangible progress

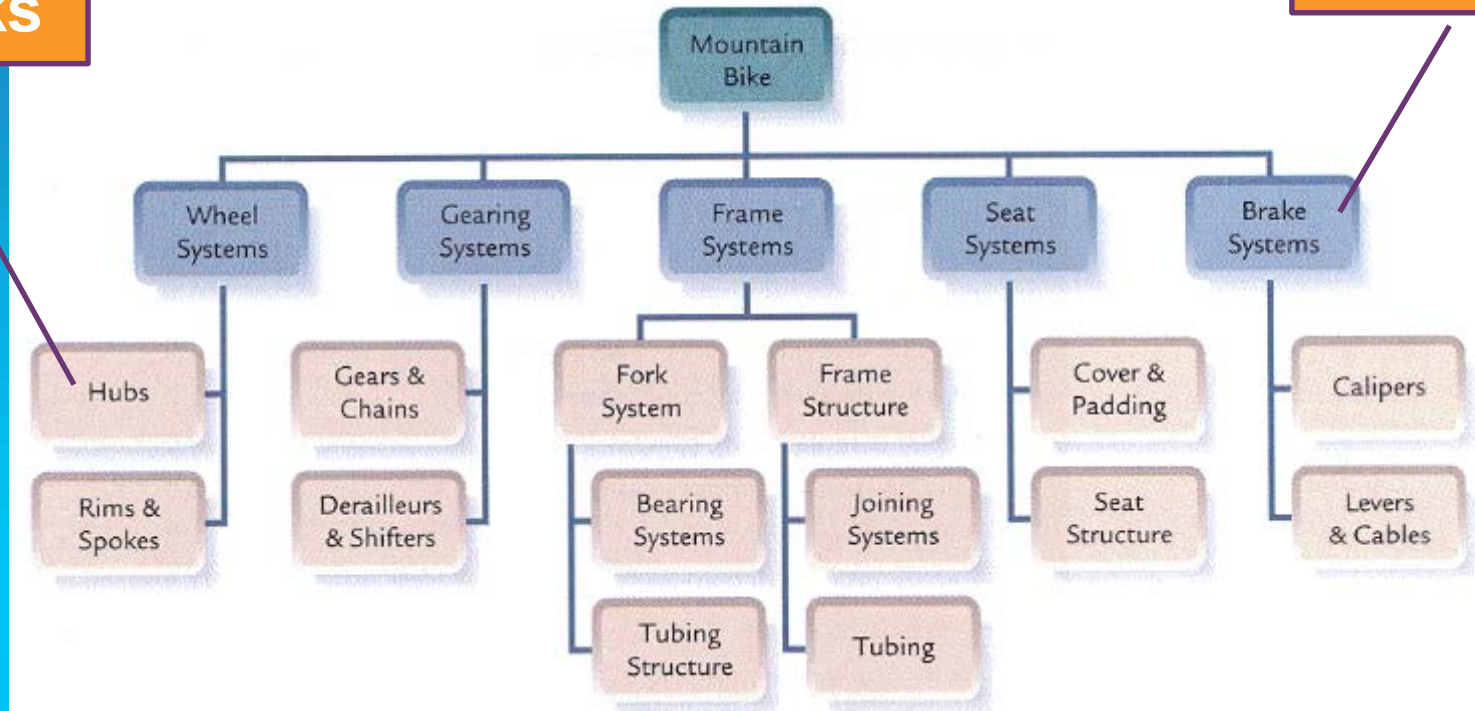


# Use a Work Breakdown Structure (WBS)

## How to Build a Bicycle

Subtasks

Tasks



Accuracy  
of  
charging

Too few

Ease of  
reporting



Ease of  
charging

Too many

Complexity

**A Good WBS....**

Needs to find a balance



# Which is the best example of a *balanced* WBS?

Level	WBS	Description
1	A0100	Design
1	A0200	Develop
1	A0300	Test
1	A0400	Deploy

1

Level	WBS	Description
1	A0100	Design
2	A0110	Kickoff Meeting
2	A0120	Design Document
1	A0200	Develop
2	A0210	Prototype
2	A0220	Custom Development
1	A0300	Test
2	A0310	Internal Acceptance Test
2	A0320	User Acceptance Test
1	A0400	Deploy
2	A0410	Install
2	A0420	Warranty

2

Level	WBS	Description
1	A0100	Design
2	A0110	Kickoff Meeting
3	A0111	Kickoff Meeting Notes
2	A0120	Design Document
3	A0121	Design Document Draft
3	A0122	Design Document Review
3	A0123	Design Document Final
3	A0124	Design Document Final Review
1	A0200	Develop
2	A0210	Prototype
3	A0211	Prototype Design
3	A0212	Prototype Development
3	A0213	Prototype Review
2	A0220	Custom Development
3	A0221	Develop User Interface
3	A0222	Develop Application
3	A0223	Review Application
1	A0300	Test
2	A0310	Internal Acceptance Test
3	A0311	Develop Test Scripts
3	A0312	Review Test Scripts
3	A0313	Internal Acceptance Test
2	A0320	User Acceptance Test
3	A0321	Develop Test Scripts
3	A0322	Review Test Scripts
3	A0323	User Acceptance Test
1	A0400	Deploy
2	A0410	Install
3	A0411	Travel to Client Site
3	A0412	Review Client Environment
3	A0413	Install
2	A0420	Warranty

3



# Which is the best example of a *balanced* WBS?

- It depends...
  - Size of project (hours)
  - Length of project (time)
  - Contract requirements

Level	WBS	Description
1	A0100	Design
1	A0200	Develop
1	A0300	Test
1	A0400	Deploy

1

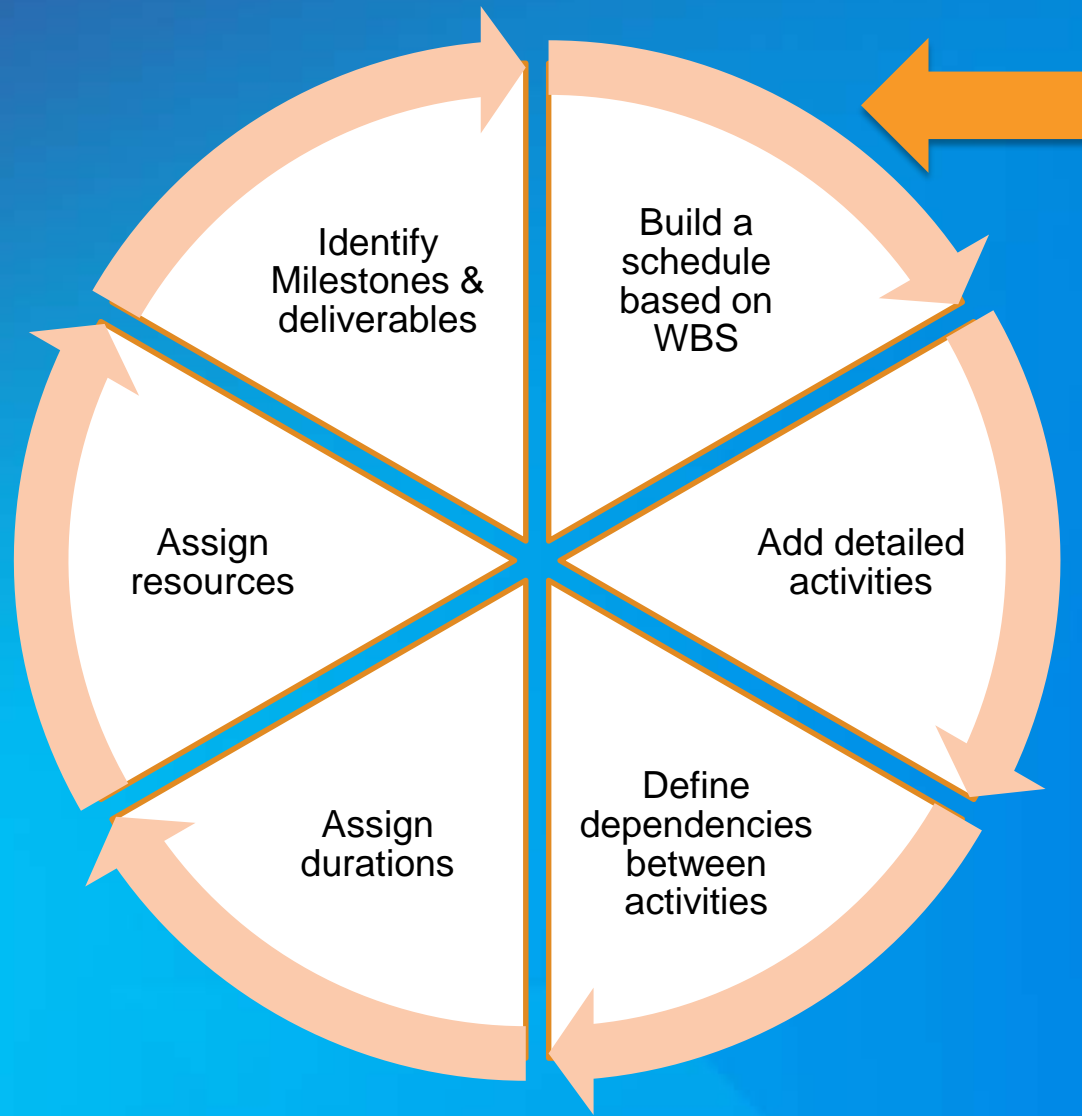
Level	WBS	Description
1	A0100	Design
2	A0110	Kickoff Meeting
2	A0120	Design Document
1	A0200	Develop
2	A0210	Prototype
2	A0220	Custom Development
1	A0300	Test
2	A0310	Internal Acceptance Test
2	A0320	User Acceptance Test
1	A0400	Deploy
2	A0410	Install
2	A0420	Warranty

2

Level	WBS	Description
1	A0100	Design
2	A0110	Kickoff Meeting
3	A0111	Kickoff Meeting Notes
2	A0120	Design Document
3	A0121	Design Document Draft
3	A0122	Design Document Review
3	A0123	Design Document Final
3	A0124	Design Document Final Review
1	A0200	Develop
2	A0210	Prototype
3	A0211	Prototype Design
3	A0212	Prototype Development
3	A0213	Prototype Review
2	A0220	Custom Development
3	A0221	Develop User Interface
3	A0222	Develop Application
3	A0223	Review Application
1	A0300	Test
2	A0310	Internal Acceptance Test
3	A0311	Develop Test Scripts
3	A0312	Review Test Scripts
3	A0313	Internal Acceptance Test
2	A0320	User Acceptance Test
3	A0321	Develop Test Scripts
3	A0322	Review Test Scripts
3	A0323	User Acceptance Test
1	A0400	Deploy
2	A0410	Install
3	A0411	Travel to Client Site
3	A0412	Review Client Environment
3	A0413	Install
2	A0420	Warranty

3





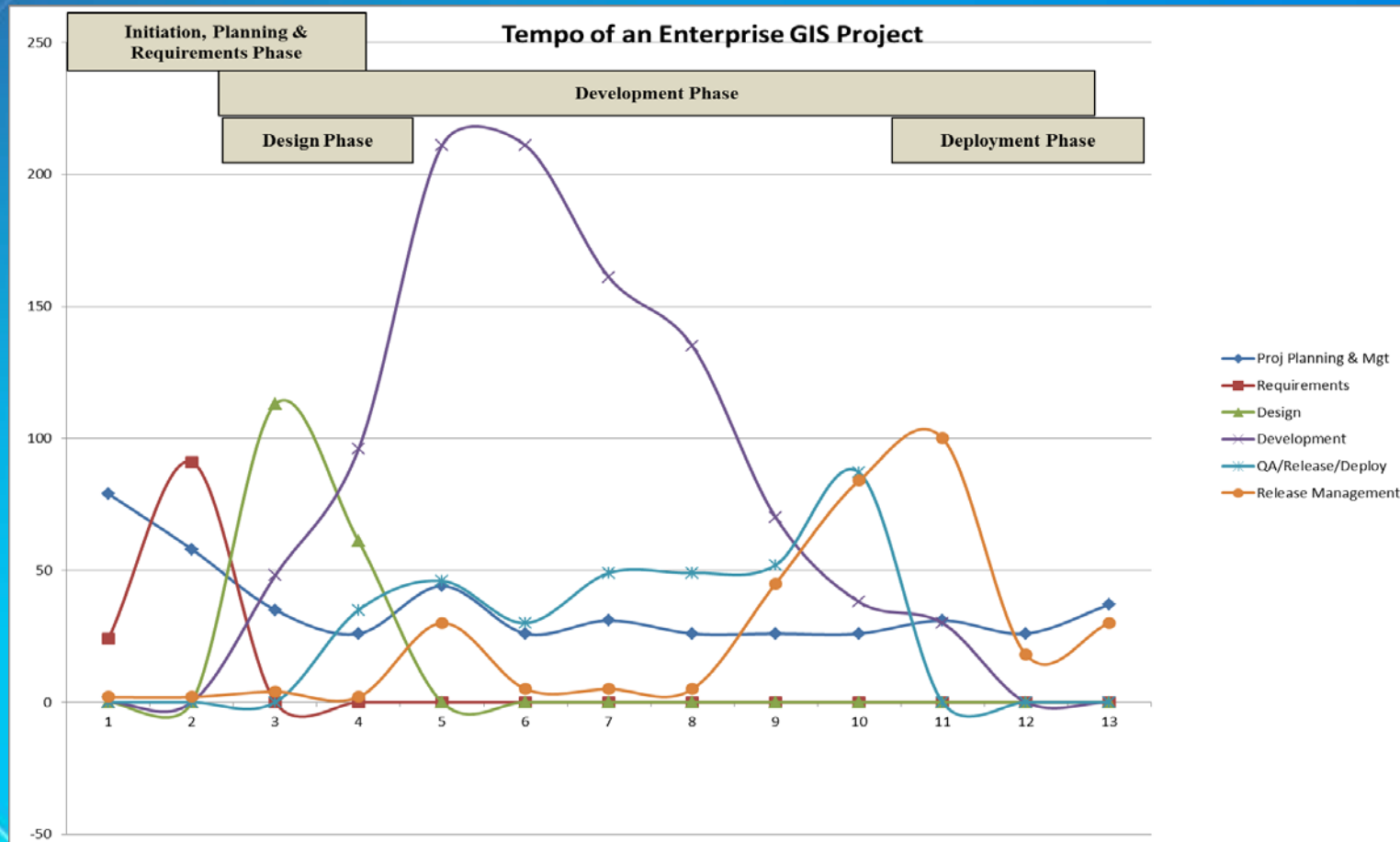
**Start  
Here**

**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!

Esri U Revised Schedule						
Name	2014					
	Q1			Q2		
	Jan	Feb	Mar	Apr	May	Jun
Plan						
Design						
Design Document						
Develop						
Test						
User Guide						
Deploy						
Project Acceptance						
Support						

# 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**

**Using a Standard WBS**

**Technical team provided estimates**

**All activities and deliverables are accounted for**

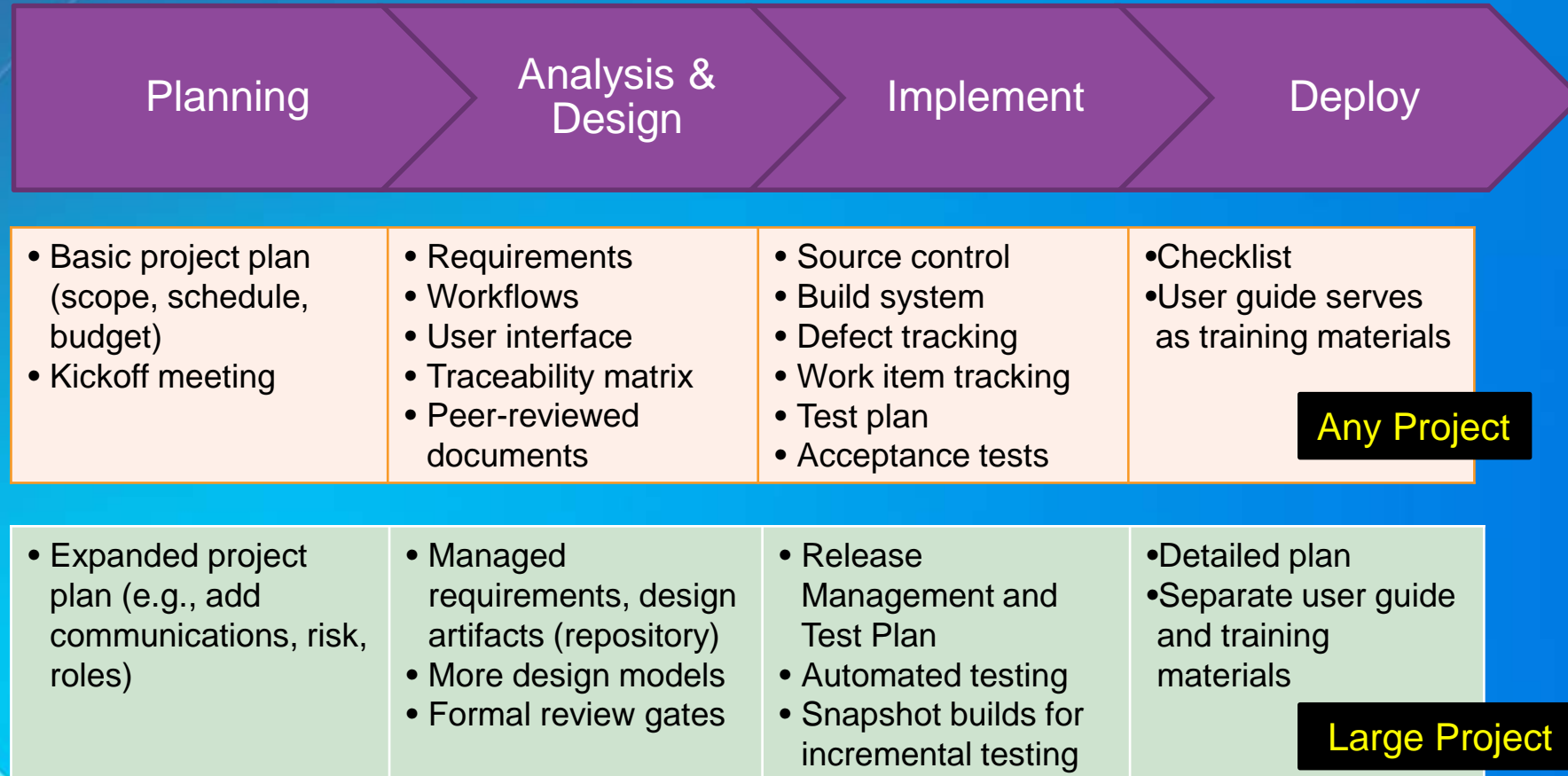
**Relative effort and duration of tasks makes sense**

**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.



# 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



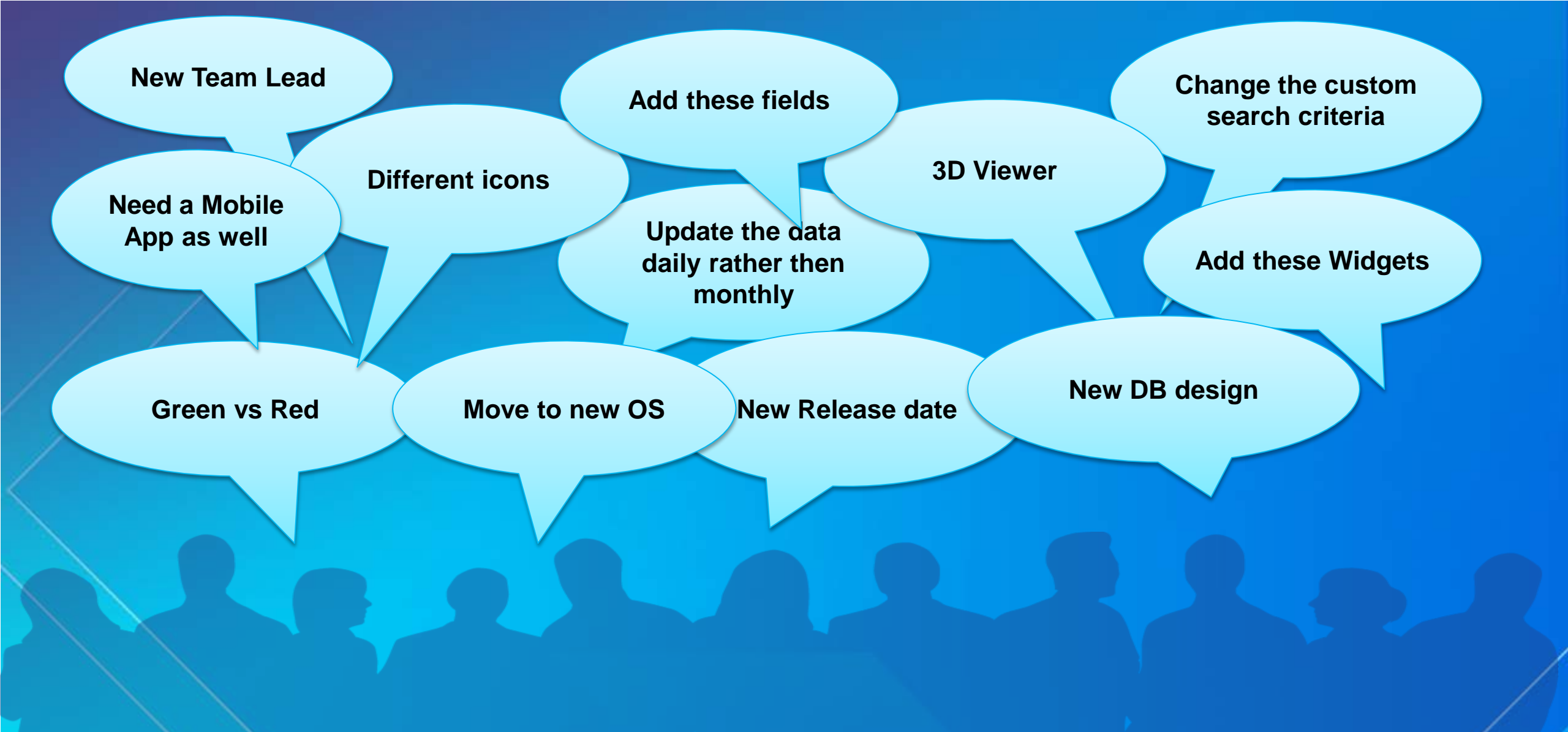
# Acceptance Criteria

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



Deliverable	Reviews	Acceptance Criteria
Map Viewer Module	<ul style="list-style-type: none"><li>▪ Internal tests</li><li>▪ User acceptance test(s)</li></ul>	<ul style="list-style-type: none"><li>▪ Module functionally complete</li><li>▪ No Severity 1 errors</li><li>▪ No Severity 2 errors</li></ul>
Requirements specification	<ul style="list-style-type: none"><li>▪ (XX) Internal peer review(s)</li><li>▪ (XX) Customer review(s)</li></ul>	<ul style="list-style-type: none"><li>▪ Review draft delivered</li><li>▪ Mutually agreed to comments incorporated</li><li>▪ Final delivered</li></ul>





**New Team Lead**

**Add these fields**

**Change the custom search criteria**

**Need a Mobile App as well**

**Different icons**

**3D Viewer**

**Update the data daily rather than monthly**

**Add these Widgets**

**Green vs Red**

**Move to new OS**

**New Release date**

**New DB design**



## **Manage Change**

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

# Managing GIS Projects in the Enterprise

## Key Challenges

### Vision

- Business case
- Alignment
- Leadership
- Stakeholders

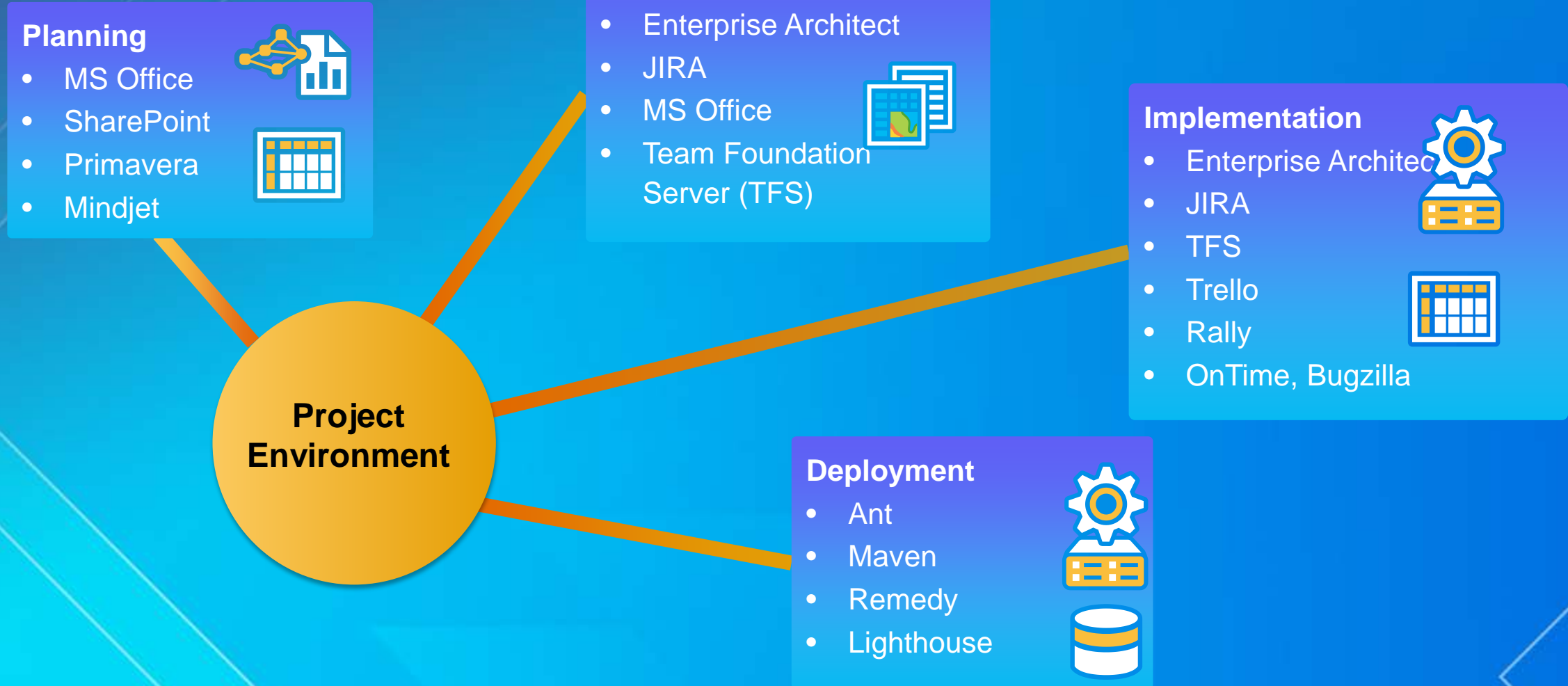
### Planning

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

### Results

- On track
- Quality
- Change

# What Tools do You Need



## Strategy and Planning—Review

- **Focus on business requirements**
- **Understand your stakeholders and what is important to them**
- **Continually reaffirm objectives, commitments**
- **Match your plan to the business rhythm of your project**
- **Plan for change**
- **Plan for project completion**

**“By failing to prepare,  
you are preparing to fail”**

**Benjamin Franklin**

*Author, scientist, politician*

**“Plans are nothing;  
planning is everything”**

**Dwight D. Eisenhower**

*34<sup>th</sup> 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**
  - *Launching Your Location Platform; the Esri Guide.* <http://www.esri.com/LaunchGuide>
  - *Measuring Up: The Business Case for GIS, Volume 2*, by Christopher Thomas, Brian Parr, and Britney Hinthorne. Esri Press, 2012
  - *The Business Benefits of GIS: An ROI Approach*, by David Maquire, Victoria Kouyoumjian, and Ross Smith. Esri Press, 2008
- **Project Management**
  - *Software Project Secrets. Why Software Projects Fail*, by George Stepanek. Apress, 2012.
  - *Making Things Happen: Mastering Project Management*, by Scott Berkun. . O'Reilly Media, 2008
  - Project Management Body of Knowledge (PMBOK)
  - Project Management Institute ([www.pmi.org](http://www.pmi.org))
- **Quality Management**
  - *Managing for the Sustained Success of an Organization – a Quality Management Approach*, ISO 9004:2009 ([www.iso.org](http://www.iso.org))



Understanding our world.