

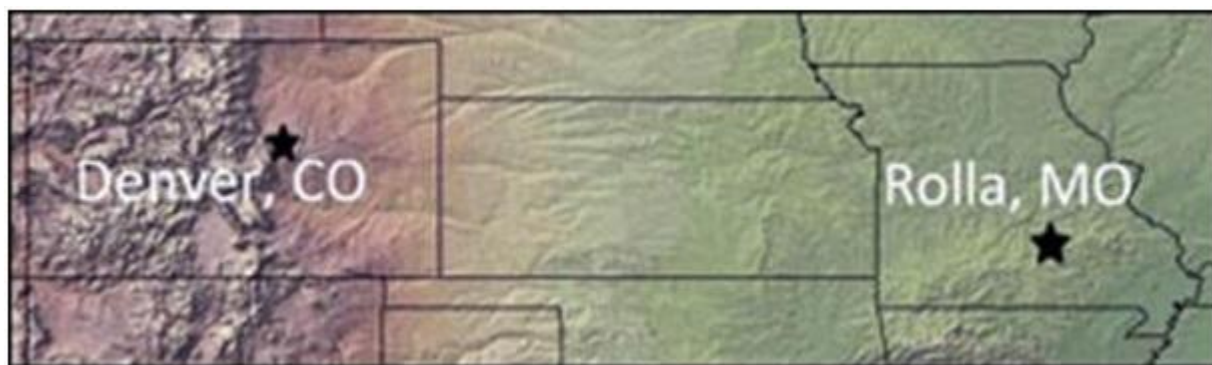
# Leading the Implementation of Agile in Government

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# Implementing Agile at USGS's NGTOC

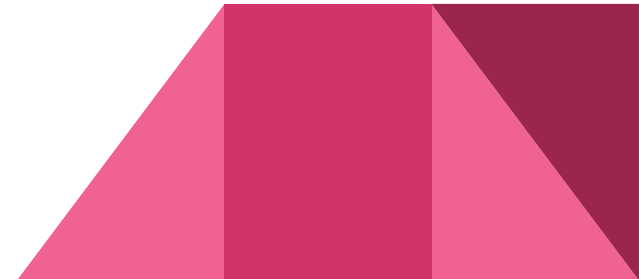
## **USGS Center Focused on Mapping the Nation**

The NGTOC provides essential support for the acquisition and management of trusted geospatial data, products, and services through world-class geospatial technical expertise and customer service for the U.S. Geological Survey and the Nation.

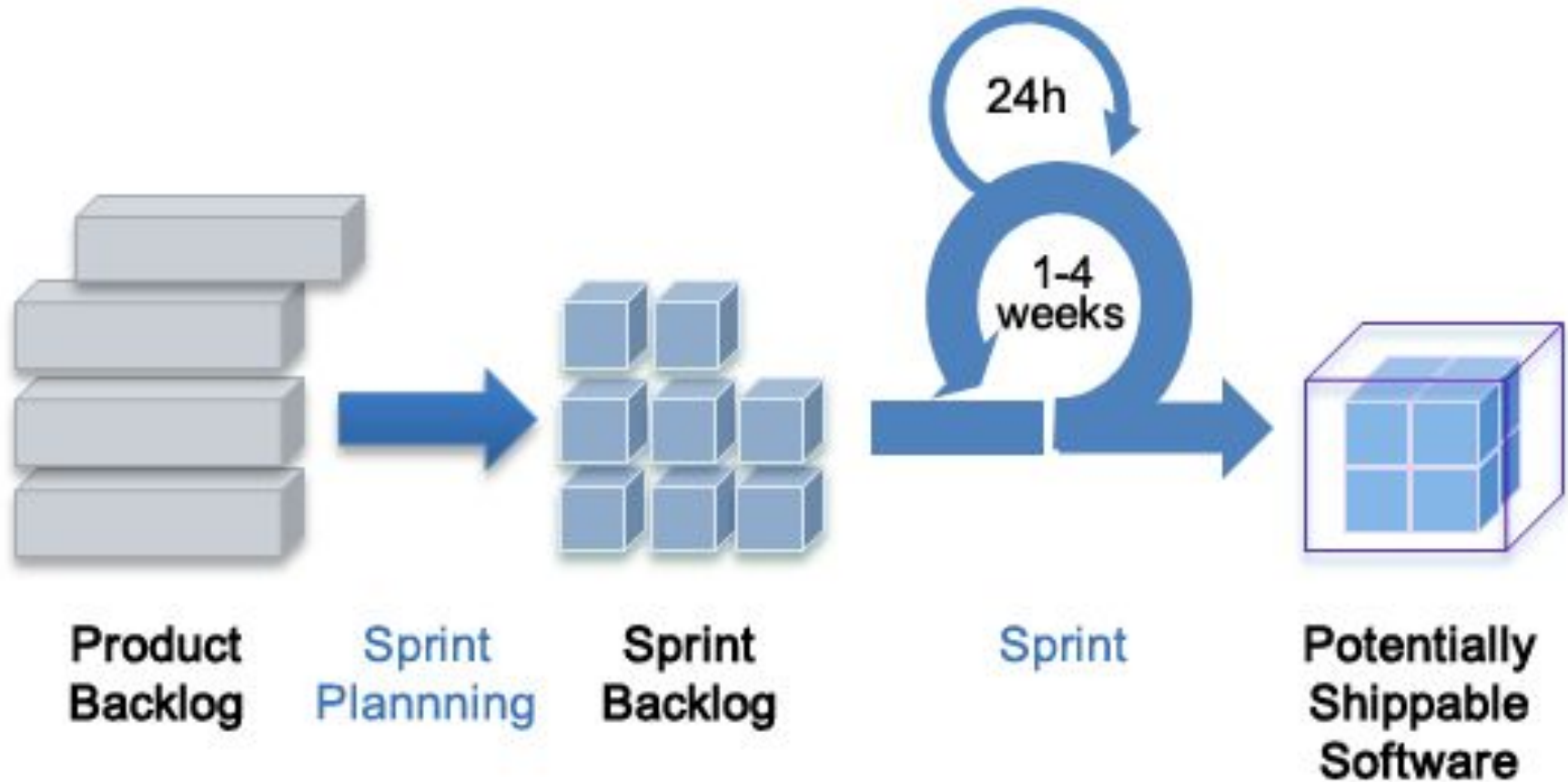


# Result of NGTOC going Agile

- Improved Communication
- Improved Quality of Code
- Improvements in Workforce and Teams
- Improvements in Project Planning
- Overall: Better control in an uncertain environment

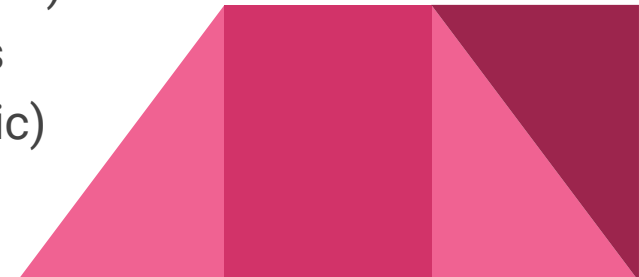


# What is Agile?

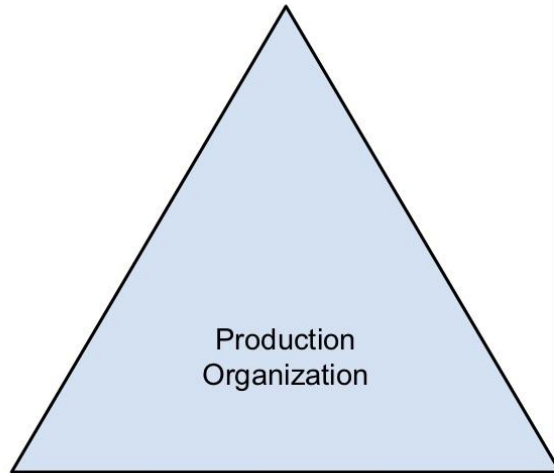


# Our Starting Point in Systems Development...

- How Work was Managed...
  - Supervisors acting as “Super” Project Managers
  - Developers working alone on tasks
  - Lack of resources to effectively manage work
  - Infrequent vehicles for communication
  - No (common) PM methodology
- Results...
  - No commitment from developers
  - Stakeholders changing requirements (continuously)
  - Overly dependent upon any single developer (risk!)
  - No unified understanding of direction OR status
  - *Notions* of control (...but organizationally chaotic)



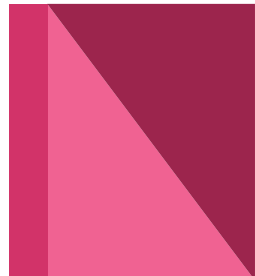
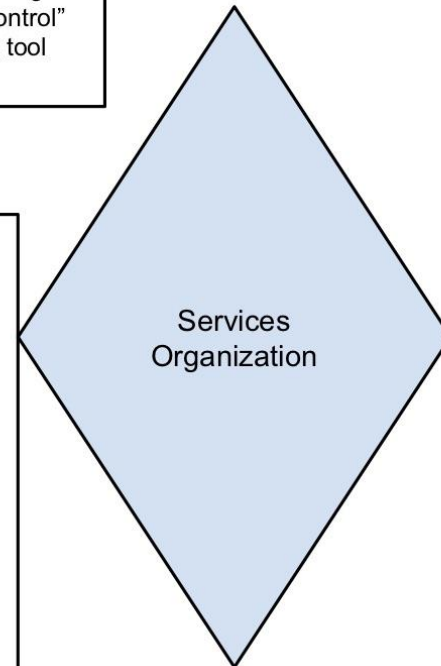
# Organizational Paradigm Shift



- Pyramid shaped
  - Lots of people at the bottom
  - Few at the top
- Hierarchy is important
- Most common with commodity production
- Product hasn't changed in decades/centuries
- Ideas less important than repetition
- Employees creativity, etc, not critical
- Chain of Command involved in every aspect of problem solving
- Leaders: "Command and Control"
- Waterfall: effective planning tool

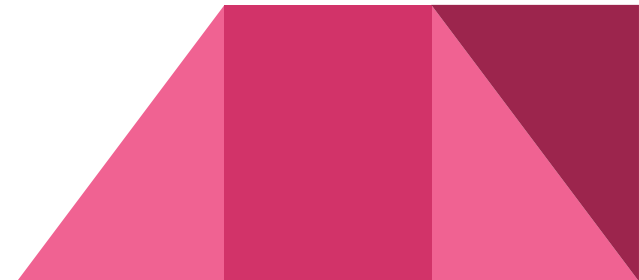
VS.

- Diamond shaped
  - Big in the middle
- "Flat" teaming more important
- Product line constantly changing/evolving
- Ideas critical
- Communication critical
- Employees creativity critical to organizational success
- Self Organizing Teams facilitate problem solving
- Leaders: "Facilitate and Enable"
- Agile: effective planning tool

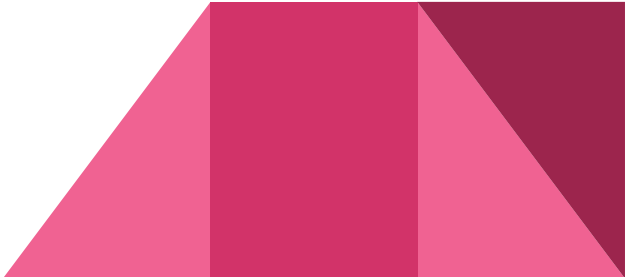


# Implementation at NGTOC

- Theory is all well and good...
- What we did:
  - Mass Training (“Tipping Point”)
  - Facilitate Follow up Discussions (and Decisions)
  - Provided direction and leeway to “vanguard” teams
    - “Operationally Experimented”
  - Spread best practices and encouraged others
  - Hired PMs to focus on development areas

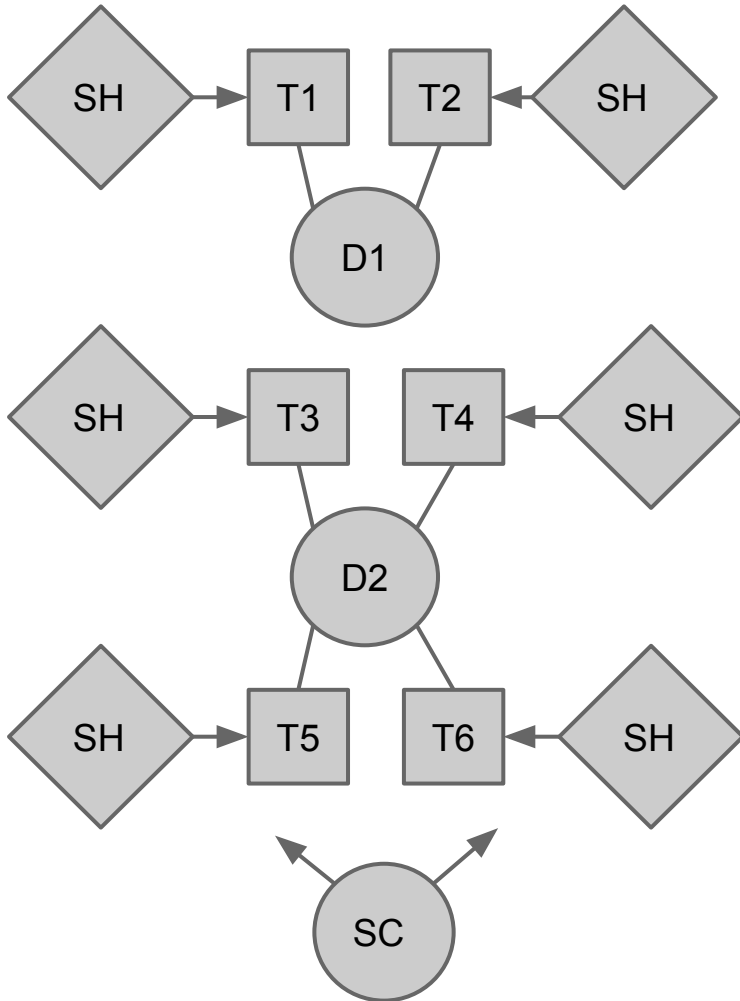


# Implementation: Changing how Requirements are Managed

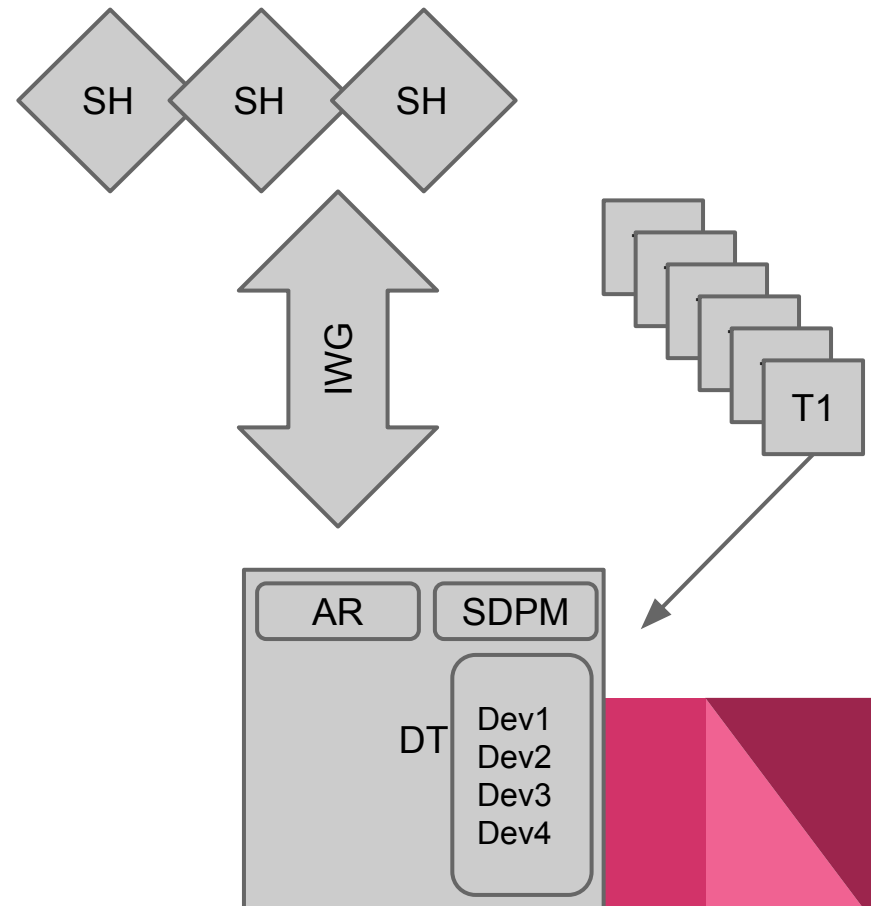
- Scheduling vs. Prioritization
    - Scheduling is only realistic in repetitive tasks
    - Prioritization focuses team and stakeholders
      - Enables “weak” commitment on long range tasks
      - Enables “strong” commitment on specific, short range tasks
  - Organization of Stakeholders (one voice)
    - SDB & IWGs
    - Opportunity for theme leads to organize/prioritize
  - Organization of Tasks
    - Use of system to expose tasks (Jira)
      - Facilitates Stakeholder interaction
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# Implementation: Focus on Teaming

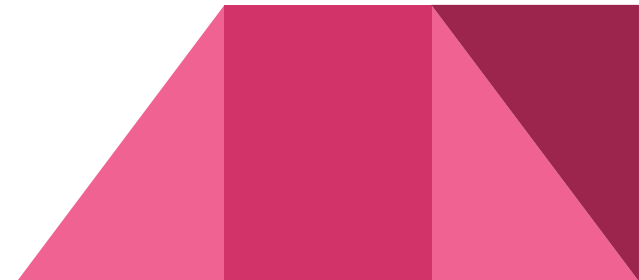


vs.



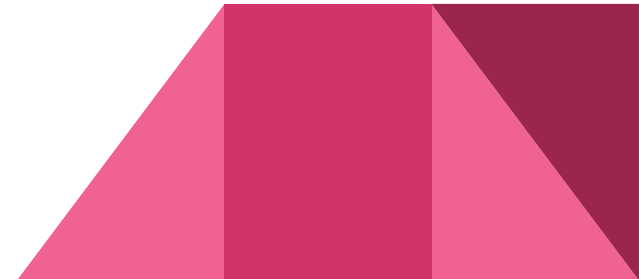
# Implementation: Changing How we Managed Expectations

- Focus on Communication Platforms to improve “situational awareness” for Themes
- Technical methods:
  - Project & Collaboration (Google) Site (high level)
  - Jira Projects (detailed)
- Collaborative methods:
  - Governance Boards
  - Innovation Working Groups (IWGs)
  - Team driven Sprint Planning and Review sessions
  - Hierarchical arrangement of Non-Hierarchical meetings



# Implementation: Changing How we Managed Expectations (cont.)

- Review Gates:
  - FY Planning timeline (1x year)
  - Quarterlies (4x year)
  - Monthly Updates (12x year)
  - Sprint to Sprint (~2 wks)
- Opportunities to re-engage
  - Deal with uncertainty/reality
  - Opportunity for theme leads to understand & engage
  - Re-prioritize based upon latest opportunities (or not)



# Implementation: What was Learned... What it Took


- Positive Environment

- Open to Learning & Improving
  - Avoid an aversion to risk
  - ...and change is “scary”...and try to keep it fun (Fish Philosophy)
- Solutions were teamed (Toyota Kata)
  - Employee driven solutions create buy-in AND a solution that’s more likely to be successful

- Sought support from above, below, and left and right

- Financial support from Senior Leadership
- Key leaders were terrifically supportive
- Presentations, desk side chats, etc to build understanding

- Understanding and Flexibility

- Know methodologies, industry best practices
  - ...but be able to apply them in your organization
  - Kata: internal organizational learning...not just copying from others
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# Results (and Challenges)

- Improved Communication
    - (Expense of Communication)
    - Sprint Reviews, IWGs, Jira, Project Pages, SDB Reviews
  - Improved Quality of Code
    - (Really on Developers, now)
    - Creativity, enterprise solutions
  - Improvements in workforce/teams
    - (Dealing with low performers)
    - Teams allow for learning...and reducing risk
    - Slower “churn” of contracted developers
  - Improvements in Project Planning
    - (Directing Self Organizing Teams)
    - Increased commitment from developers
    - Reduced change from Stakeholders
  - Overall: Better control in an uncertain environment
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