Waterfall and Agile and Lean, Oh My!

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History/Background
Purists

Absolute adherence to traditional rules, structures and...

PROJECT METHODOLOGIES
Kanban

Lifecycle Phases

<table>
<thead>
<tr>
<th>ToDo</th>
<th>Doing</th>
<th>Done</th>
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</table>

Scrum

Lean DMAIC

**DEFINE**
Define the problem.

**MEASURE**
Quantify the problem.

**ANALYZE**
Identify the cause of the problem.

**IMPROVE**
Identify and implement the solution.

**CONTROL**
Maintain the solution.
# Methodology Comparison

<table>
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<tr>
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<th>Planning</th>
<th>Execution</th>
<th>Operationalize</th>
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<tr>
<td>Waterfall</td>
<td>Requirements Document &amp; Detailed Plan</td>
<td>Design, Develop, Test &amp; Deliver</td>
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<td>Final Support Phases</td>
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<td>DMAIC (Greenbelt)</td>
<td>Define/Measure/Analyze/Improve (Scoping)</td>
<td>Improve (Implement)</td>
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From Kansas to Oz

Kanban
Without Work In Progress (WIP) limits

Scrum
With multiple product owners and epics vs stories

Waterfall
Without having full requirements or full sponsorship

DMAIC
Without a grand vision or discrete efficiency goals
Blending

Scrum & Kanban =

Scrum & Waterfall =

DMAIC & Kanban =

Scrum - Ban

Scrum - Fall

DMAIC - Ban
Key Factors

1. Checkmark list
2. Schedule
3. Teamwork
4. Inspection
5. Delivery
6. Progress
## Scrum-Fall

**Users, including “Why”**

1. **Customer** - heavier involvement in Planning
2. **Team** - works together to complete stories regardless of roles
3. **Project** - Few unknowns and one big bang delivery

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Scrum-Fall: Student Activities Online

**Requirements:** SCRUM stories

**Schedule:** Sprints transitioned to Waterfall

**Build:** Iterations → Dated tasks

**Testing:** Done with each sprint; separate round at end for Waterfall

**Delivery:** Throughout project with final at end.

**Stabilization:** Scheduled support activities
### Water-Ban

- **Customer** - not heavily involved
- **Team** - specialized, only used in certain stages
- **Project** - requirements are known upfront; scope prioritized by the team

#### Functional Specification

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**Water-Ban: Going Google**

**Requirements:** Defined upfront

**Schedule:** Based on two delivery dates (early adopters & everyone else)

**Build:** Constant Flow using an Electronic Kanban Board

**Testing:** Three cycles of testing scheduled

**Delivery:** Two separate go-live dates

**Stabilization:** Included as discrete lifecycle stage
Decision Matrix - Reaching the Crossroads

Dorothy Gale:
Now which way do we go?

The Scarecrow:
Pardon me, this way is a very nice way.

It's pleasant down that way, too.

Of course, some people do go both ways.
Planning

1. Level of customer participation on the project team
   - Full: Intermittent
   - Often: Sometimes

2. Level of requirement/user story details needed prior to the start of execution
   - High: Medium High
   - Medium: Low

3. Project team methodology preference/experience
   - Waterfall: DMAIC
   - SCRUM: Kanban

4. Primary project driver
   - Process: Unfamiliar
   - Timeline: Functionality

5. Ongoing measures required post project
   - Required: Recommended
   - Optional: Rarely/N/A

Planning Methodology

- DMAIC: 0
- Waterfall: 2
- SCRUM: 3
- Kanban: 3

Scrum
Kanban
Execution

6 Level of team oversight needed
- High
- Medium
- Low

7 Ability to respond to changes to scope, timeline, and/or resources
- Easy
- Moderate
- Difficult

8 Level of dependencies within the project
- Many
- Some
- Few

9 Level of 3rd party vendor management (e.g. RFP)
- High
- Medium
- Low or N/A

10 Delivery approach
- Iterative
- Constant Flow
- Big Bang

Execution Methodology
- Waterfall: 2
- SCRUM: 2
- Kanban: 3

Kanban
Analyze the Results

Planning Methodology

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Execution Methodology

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Kanban - OR - Scrum-Ban

Blend Matrix
Driven by the methodology...
...not driving the methodology

- Communication/Change Management
- Testing
- Management Commitment/buy-in
Let’s Practice!

Decision Tool
ntrda.me/decision
Planning

Government Data Compliance Project:

- Experienced specialized team
- Recent Agile training
- Customer available, when needed
- Requirements provided
- Loose timeline, eventual final deadline

- Level of customer participation
- Level of requirement details needed
- Team methodology preference/experience
- Primary project driver
- Ongoing measures required post project
Execution

Government Data Compliance Project:

- Team has mixture of skills and buy-in
- Members of other high risk projects
- Potential Compliance consultants
- Discrete deliverables, delivered at will
- Some cross-dependencies

- Level of team oversight needed
- Ability to respond to change
- Level of dependencies within the project
- Level of 3rd party vendor management
- Delivery approach
# Practice - Results

## Planning

1. Level of customer participation on the project team
   - Full: x
   - Often: x
   - Sometimes: 
   - Intermittent: 

2. Level of requirement/user story details needed prior to the start of execution
   - High: x
   - Medium: 
   - High Medium: 
   - Medium Low: 

3. Project team methodology preference/experience
   - Waterfall: 
   - DMAIC: 
   - SCRUM: x
   - Kanban: x

4. Primary project driver
   - Process: 
   - Timeline: x
   - Unfamiliar: 
   - Functionality: 

5. Ongoing measures required post project
   - Required: 
   - Recommended: 
   - Optional: 
   - Rarely/ N/A: x

## Execution

6. Level of team oversight needed
   - High: x
   - Medium: 
   - Low: 

7. Ability to respond to changes to scope, timeline, and/or resources
   - Easy: 
   - Moderate: x
   - Difficult: 

8. Level of dependencies within the project
   - Many: 
   - Some: 
   - Few: x

9. Level of 3rd party vendor management (e.g. RFP)
   - High: 
   - Medium: 
   - Low or N/A: x

10. Delivery approach
    - Iterative: x
    - Constant Flow: x
    - Big Bang: 

## Methodology

### Planning Methodology
- DMAIC: 2
- Waterfall: 1
- SCRUM: 2
- Kanban: 4

### Execution Methodology
- Waterfall: 0
- SCRUM: 4
- Kanban: 2

---

Kan-Scrum
SAFE
Secure Authentication
for Everyone
Ruby Slippers Exercise
Ruby Slippers
Exercise #1

SCRUM

Involved customers get pulled to another project leaving the technical team to finish the work

SCRUM-Ban
SCRUM-Fall
Cancel the Project
Ruby Slippers
Exercise #2

Kanban

The NEW project sponsor wants to see deliverable progress on her priority items

Kan-Fall
Kan-Scrum
Kan-DMAI
Ruby Slippers
Exercise #3

SCRUM-Fall
SCRUM-Ban
Stay the Course

More resources added due to request for more customer demos and a shorter timeline.

34
Ruby Slippers
Exercise #4

Kanban

The benefits of your project do not align with the EVP's newly announced university goals?

Kan-Fall
Cancel the Project
Kan-SCRUM
Customers have asked to have products reviewed and released as they become available.
Thank you!

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Special Thanks to our OIT colleagues for their contributions to this presentation.

Go IRISH!!!

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Decision Tool
ntrda.me/decision

Blend Matrix
ntrda.me/blends