SAINT LOUIS UNIVERSITY

Management Innovations: Going Agile in a Waterfall World

Presented by Dr. Michael Durbin

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THE REAL PROJECT DOCTOR

PROFESSIONAL:
Agile Fundamentals

WORKFORCE CENTER

St. Louis University

SAINT LOUIS UNIVERSITY
SCHOOL FOR PROFESSIONAL STUDIES

- Project Management Bachelor's, Minor, Certificate Programs
- Available Entirely Online
- Graduate with PMI-PMP Certification
- http://www.slu.edu/online

Soft Skills

- Communication
- Negotiation & Conflict Management
- Creative & Critical Thinking
- Problem solving
- Decision making
- Systems thinking
- Cultural awareness
- Learning
- Leadership
- Organizational
- Political awareness
- Facilitation
- Influence
- Change
- Others?

When it comes to project management…

- Everything should be made as simple as possible, but not simpler - Albert Einstein

- Any intelligent fool can make things bigger and more complex... It takes a touch of genius - and a lot of courage to move in the opposite direction. - E. F. Schumacher

PMI PMBOK

Project Management Institute

- Project Management Body of Knowledge
- Now with Agile

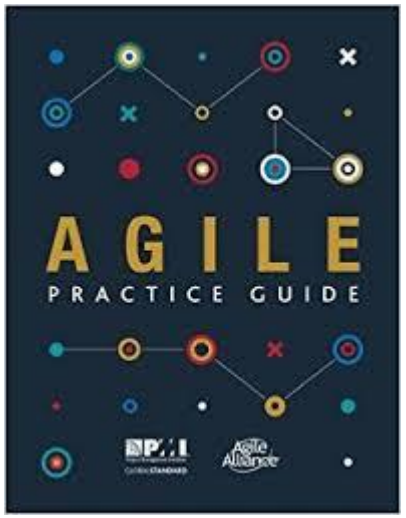
See Project Management Institute, A Guide to the Project Management Body of Knowledge, (PMBOK® Guide) –Sixth Edition, Project Management Institute, Inc., 2017, Table 1-4, Page 25

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Work 4.4 Manage Project Knowledge	4.5 Monitor and Control Project Work 4.6 Perform Integrated Change Control	4.7 Close Project or Phase
5. Project Scope Management		5.1 Plan Scope Management 5.2 Collect Requirements 5.3 Define Scope 5.4 Create WBS		5.5 Validate Scope 5.6 Control Scope	
6. Project Schedule Management		6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Durations 6.5 Develop Schedule		6.6 Control Schedule	
7. Project Cost Management		7.1 Plan Cost Management 7.2 Estimate Costs 7.3 Determine Budget		7.4 Control Costs	
8. Project Quality Management		8.1 Plan Quality Management	8.2 Manage Quality	8.3 Control Quality	
9. Project Resource Management		9.1 Plan Resource Management 9.2 Estimate Activity Resources	9.3 Acquire Resources 9.4 Develop Team 9.5 Manage Team	9.6 Control Resources	
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Monitor Communications	
11. Project Risk Management		11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Responses	11.6 Implement Risk Responses	11.7 Monitor Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	
13. Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Engagement	13.3 Manage Stakeholder Engagement	13.4 Monitor Stakeholder Engagement	

Agile Manifesto & PMI Agile Practice Guide

Table A2-1. Agile Manifesto Values Covered in the *Agile Practice Guide*

Value	*Agile Practice Guide* Coverage by Section and Title
Individuals and interactions over processes and tools	4.2 Servant Leadership Empowers the Team 4.3 Team Composition 5.1 Charter the Project and the Team 5.2.4 Daily Standups 6.2 Organizational Culture
Working software over comprehensive documentation	5.2.2 Backlog Preparation 5.2.3 Backlog Refinement 5.2.5 Demonstrations/Reviews 5.2.7 Execution Practices that Help Teams Deliver Value
Customer collaboration over contract negotiation	4.3 Team Composition 5.4 Measurements in Agile Projects 6.2 Organizational Culture 6.3 Procurement and Contracts 6.7 Organizational Structure
Responding to change over following a plan	5.2.1 Retrospectives 5.2.3 Backlog Refinement 5.2.5 Demonstrations/Reviews



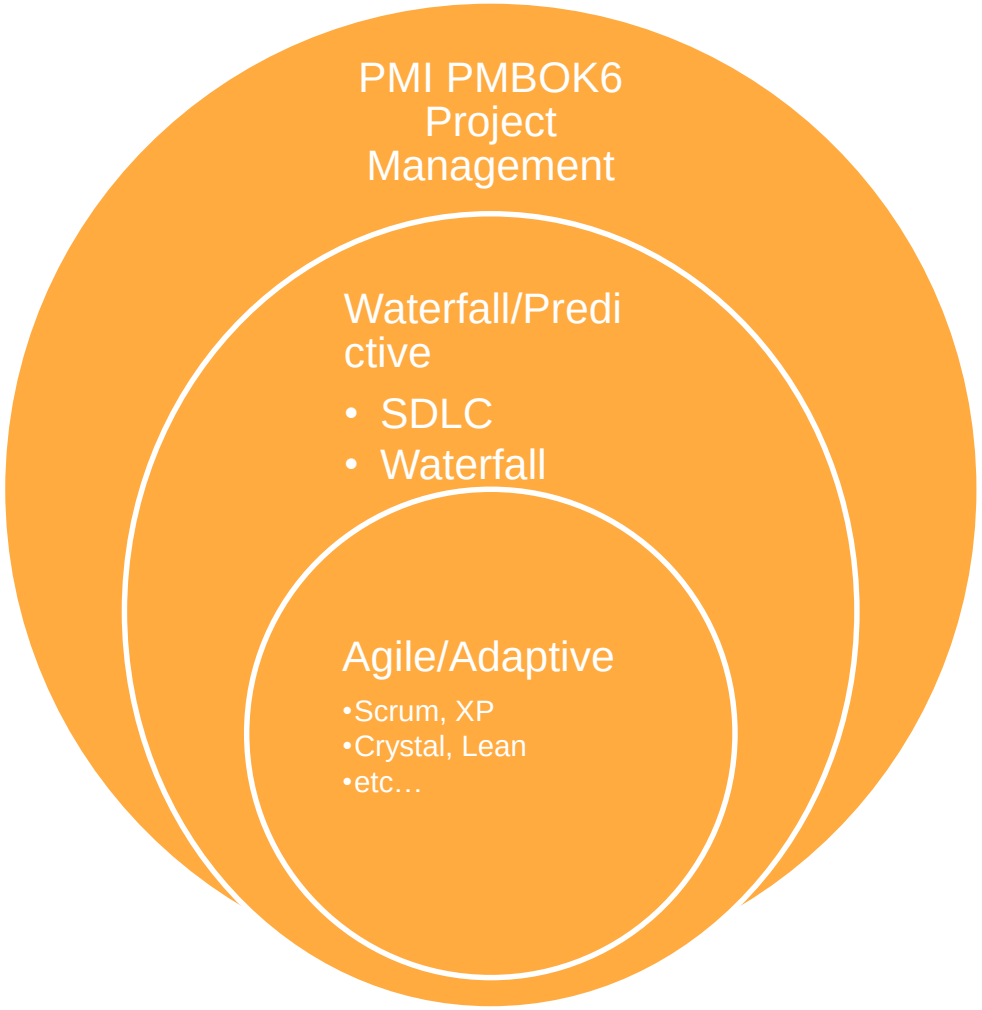
See Project Management Institute, Agile Practice Guide – First Edition, Project Management Institute, Inc., 2017, Table A2-1, Page 97.

Agile in PMBOK Knowledge Areas

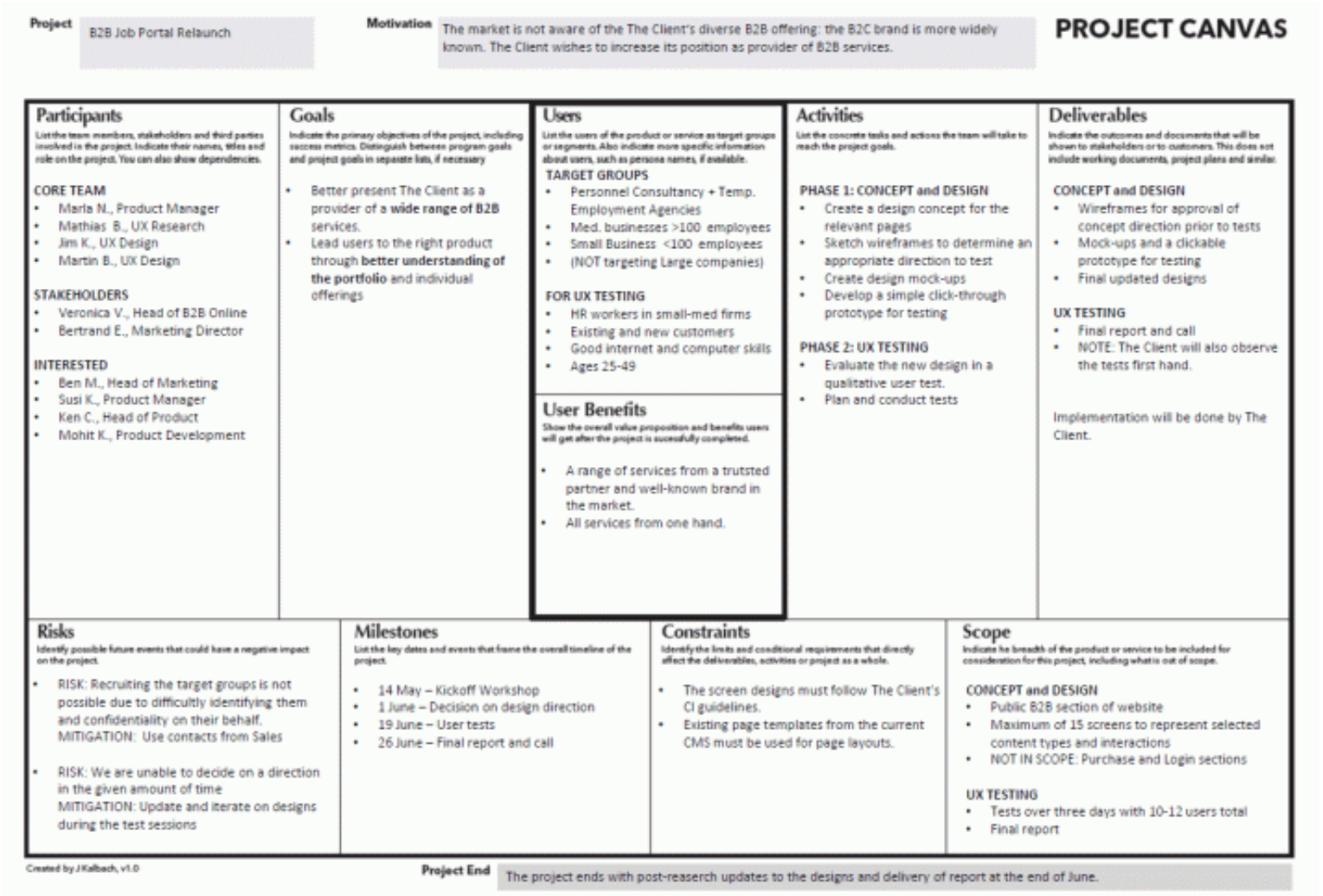
PMBOK Guide Knowledge Area	Application in an Agile
Integration	Team members integrate plans and components Product planning and delivery delegated to team PM integrates overall, ensure changes are handled
Scope	Scope is defined/redefined throughout the project Backlog = requirement Requirements kept as a living document
Schedule	PM knows tools & techniques (e.g. SCRUM, sprints)
Cost	Use lightweight estimation for high-level, detailed for short term
Quality	Frequent quality reviews = recurring retrospectives
Risk	Frequent reviews of incremental work product
Communications/ Stakeholders	Posting project artifacts Regular stakeholder reviews Quickly address misalignment, dependency or issue
Procurement	Shared risk between buyer and seller Change happens without impacting contract

See Project Management Institute, Agile Practice Guide –First Edition, Project Management Institute, Inc., 2017, Table A1-2, Page 91.

Project Success = (PMI(Waterfall(Agile)))



Agile Project Canvas



Project B2B Job Portal Relaunch

Motivation The market is not aware of the The Client's diverse B2B offering: the B2C brand is more widely known. The Client wishes to increase its position as provider of B2B services.

PROJECT CANVAS

Participants

List the team members, stakeholders and third parties involved in the project. Indicate their names, titles and role on the project. You can also show dependencies.

CORE TEAM
- Marla N., Product Manager
- Mathias B., UX Research
- Jim K., UX Design
- Martin B., UX Design

STAKEHOLDERS
- Veronica V., Head of B2B Online
- Bertrand E., Marketing Director

INTERESTED
- Ben M., Head of Marketing
- Susi K., Product Manager
- Ken C., Head of Product
- Mohit K., Product Development

Goals

Indicate the primary objectives of the project, including success metrics. Distinguish between program goals and project goals in separate lists, if necessary

- Better present The Client as a provider of a **wide range of B2B** services.
- Lead users to the right product through **better understanding of the portfolio** and individual offerings

Users

List the users of the product or service as target groups or segments. Also indicate more specific information about users, such as persona names, if available.

TARGET GROUPS
- Personnel Consultancy + Temp. Employment Agencies
- Med. businesses >100 employees
- Small Business <100 employees
- (NOT targeting Large companies)

FOR UX TESTING
- HR workers in small-med firms
- Existing and new customers
- Good internet and computer skills
- Ages 25-49

User Benefits

Show the overall value proposition and benefits users will get after the project is successfully completed.

- A range of services from a trutsted partner and well-known brand in the market.
- All services from one hand.

Activities

List the concrete tasks and actions the team will take to reach the project goals.

PHASE 1: CONCEPT and DESIGN
- Create a design concept for the relevant pages
- Sketch wireframes to determine an appropriate direction to test
- Create design mock-ups
- Develop a simple click-through prototype for testing

PHASE 2: UX TESTING
- Evaluate the new design in a qualitative user test.
- Plan and conduct tests

Deliverables

Indicate the outcomes and documents that will be shown to stakeholders or to customers. This does not include working documents, project plans and similar.

CONCEPT and DESIGN
- Wireframes for approval of concept direction prior to tests
- Mock-ups and a clickable prototype for testing
- Final updated designs

UX TESTING
- Final report and call
- NOTE: The Client will also observe the tests first hand.

Implementation will be done by The Client.

Risks

Identify possible future events that could have a negative impact on the project.

- RISK: Recruiting the target groups is not possible due to difficultly identifying them and confidentiality on their behalf.
  MITIGATION: Use contacts from Sales
- RISK: We are unable to decide on a direction in the given amount of time
  MITIGATION: Update and iterate on designs during the test sessions

Milestones

List the key dates and events that frame the overall timeline of the project.

- 14 May – Kickoff Workshop
- 1 June – Decision on design direction
- 19 June – User tests
- 26 June – Final report and call

Constraints

Identify the limits and conditional requirements that directly affect the deliverables, activities or project as a whole.

- The screen designs must follow The Client's CI guidelines.
- Existing page templates from the current CMS must be used for page layouts.

Scope

Indicate he breadth of the product or service to be included for consideration for this project, including what is out of scope.

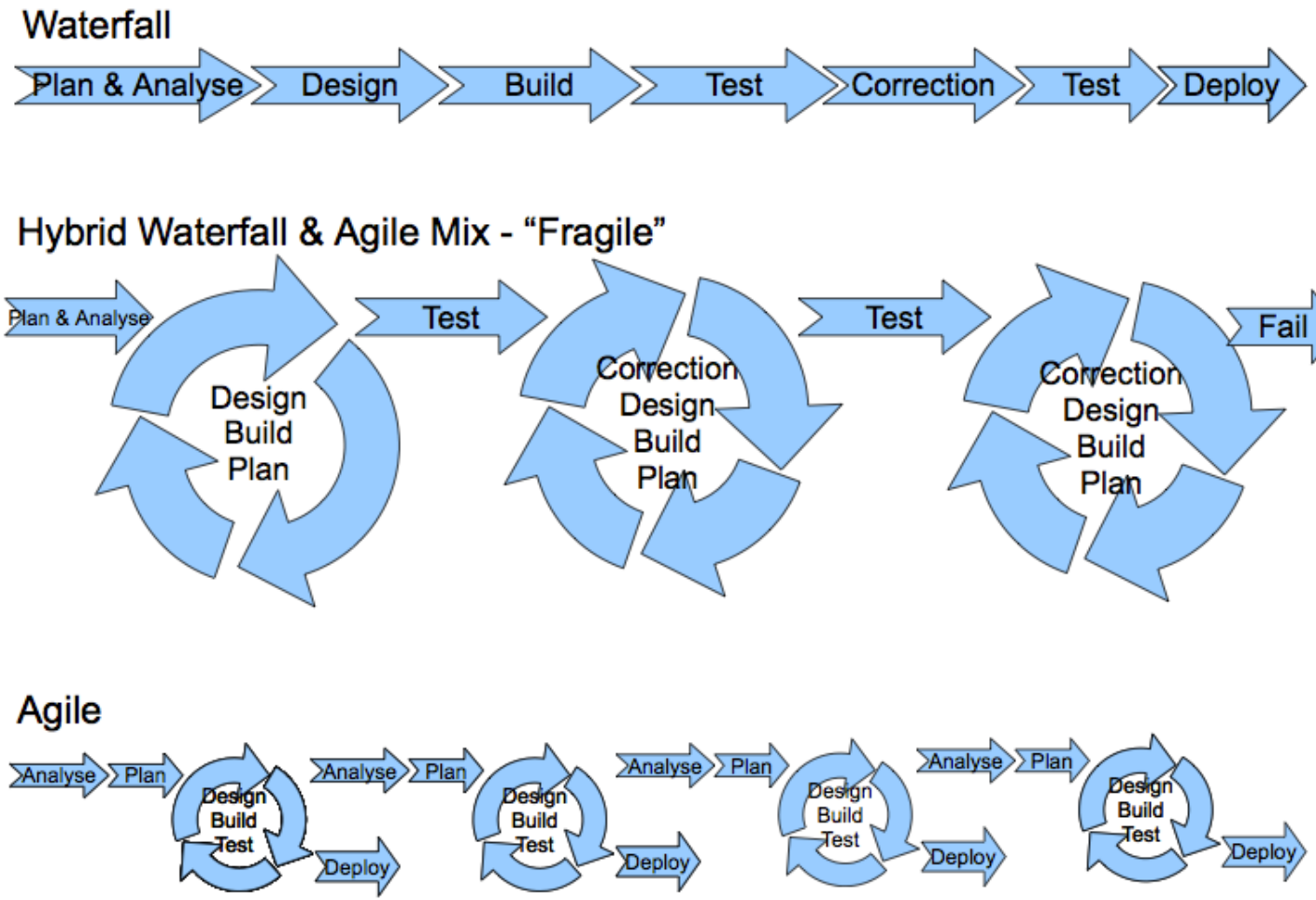
CONCEPT and DESIGN
- Public B2B section of website
- Maximum of 15 screens to represent selected content types and interactions
- NOT IN SCOPE: Purchase and Login sections

UX TESTING
- Tests over three days with 10-12 users total
- Final report

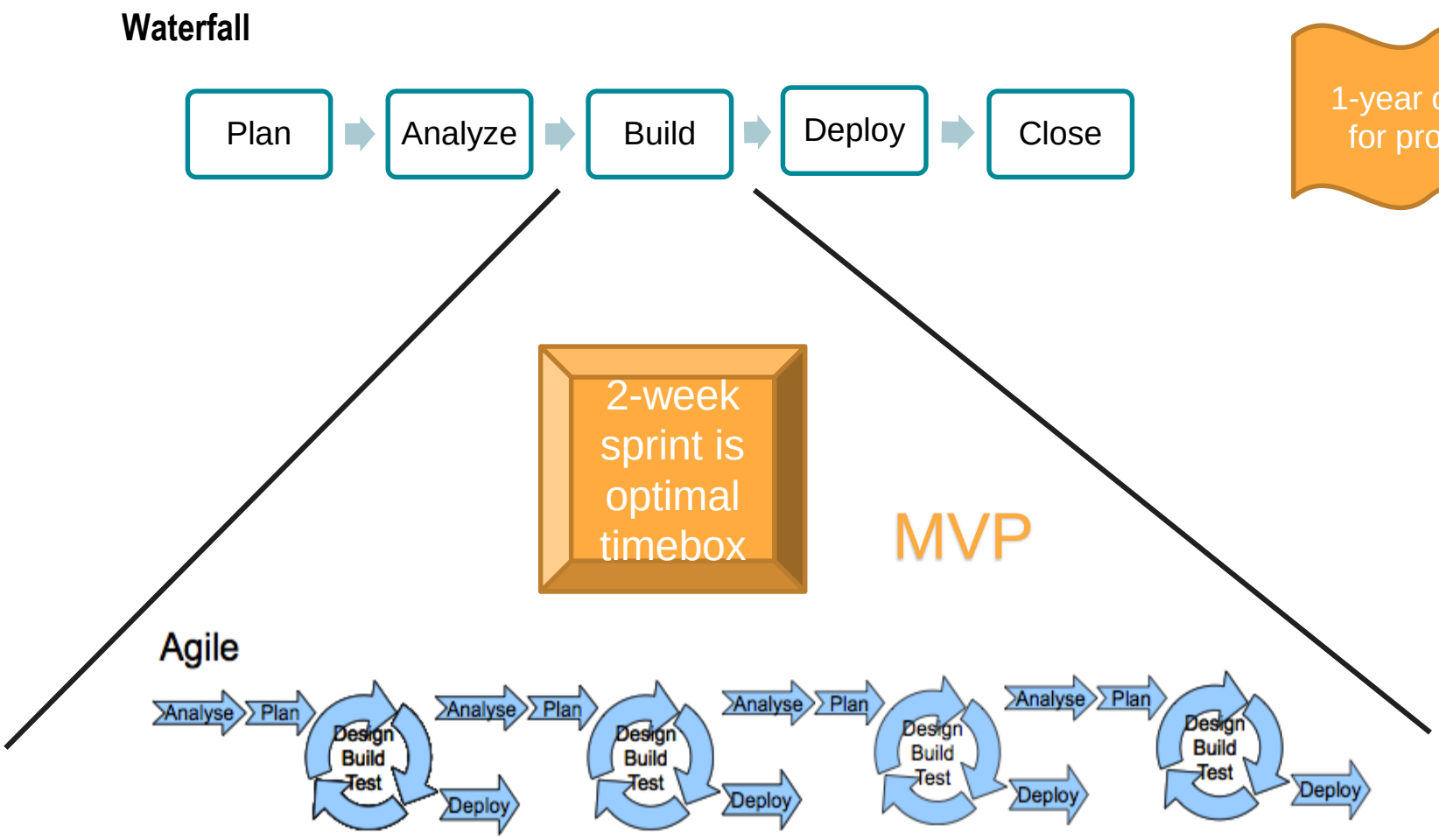
Created by J.Kalbach, v1.0

Project End The project ends with post-reaserch updates to the designs and delivery of report at the end of June.

Agile and Waterfall Options

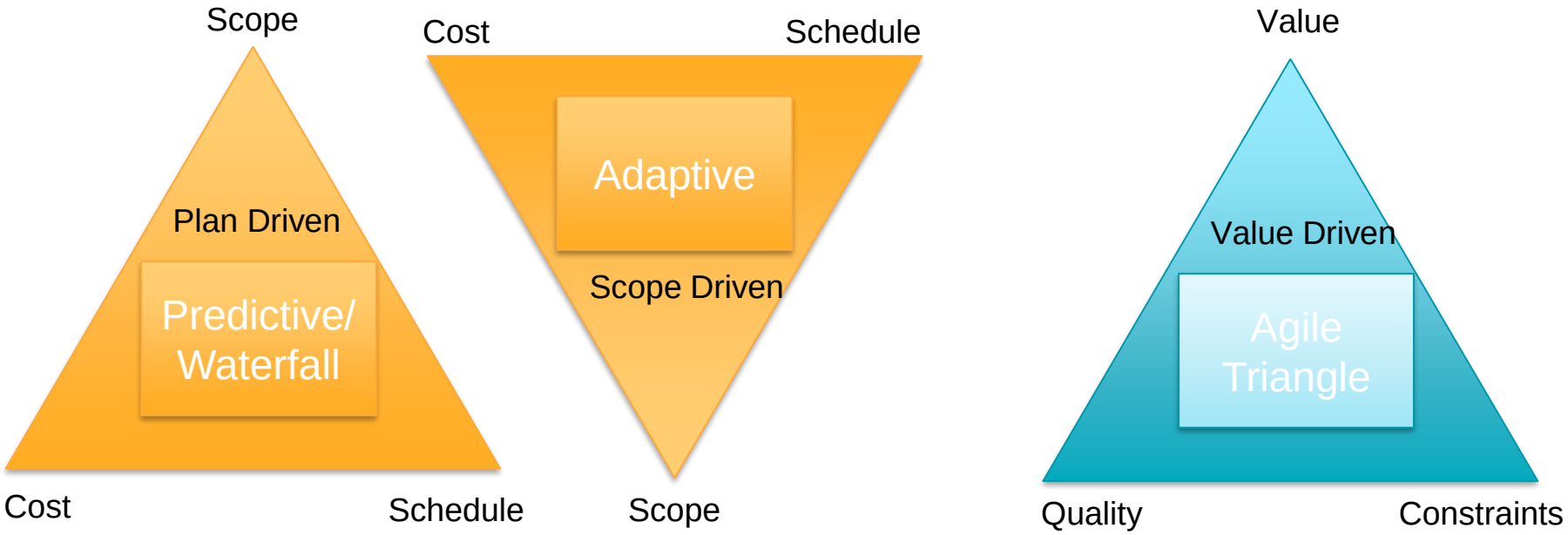


Agile and Waterfall Options



Triple Constraints

Fixed/Constraint



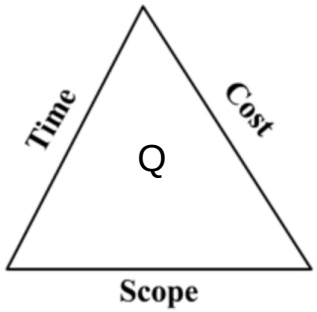
Variable/Estimate

Integration

Project Integration
- Develop Charter
- Develop PM Plan
- Direct & Manage Work
- Manage Project Knowledge
- Monitor & Control Project Work
- Perform Integrated Change Control
- Close Project or Phase

Quality
- Plan
- Manage Quality
- Control Quality

Initiate	Plan	Execute/Monitor/Control	Close
Roadmap Releases Workstream Project KA	Backlog • Epics • Backlog Project KA • Quality • Risk • Triple Constraint	Sprints Refine Backlog Item Tracking Project KA	Sprint Review Sprint Retrospective Project KA



Sprint Goals

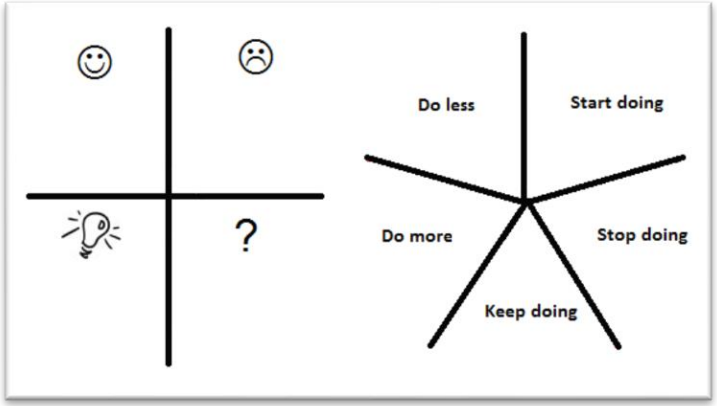
Scrum Meetings

Sprint Planning | **Daily Scrum** | **Sprint Review** | **Sprint Retrospective**

Scrum Ceremonies

Quality
- Plan
- Manage Quality
- Control Quality

- Short Iterations
- Daily Standup
- Potentially Shippable Product
- Frequent Course Correction
- Product Backlog Grooming



Scrum Meetings

Sprint Planning | **Daily Scrum** | **Sprint Review** | **Sprint Retrospective**

SCRUM Hierarchy

Program / Project

Boards
- Team Level
- Workstream

Epic
- Business Area/Subject Area/Tech Debt
- Maps back to Roadmap

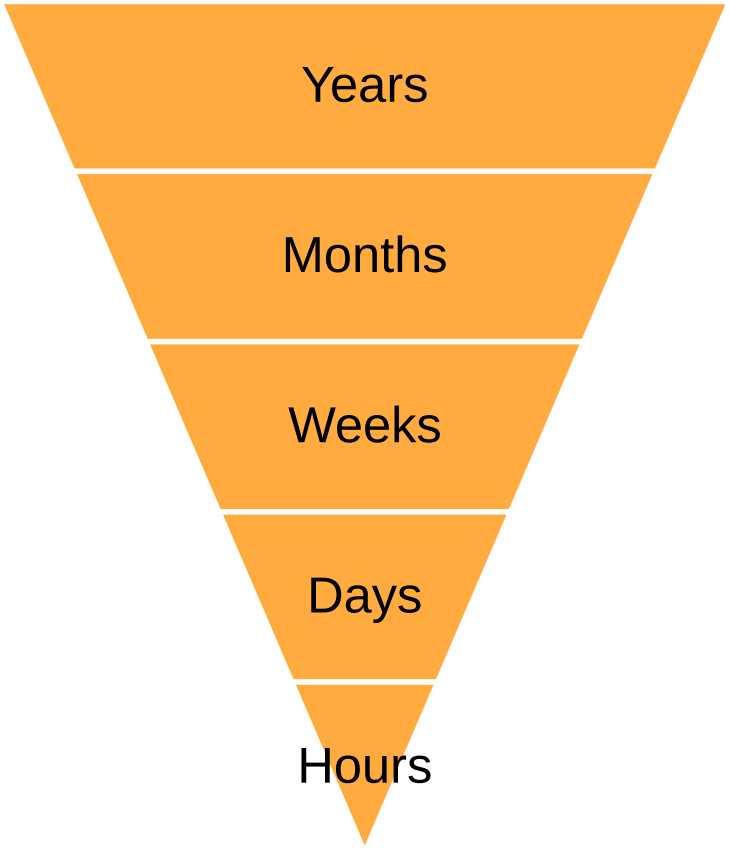
Features
- Chunk of functionality
- Delivers business value
- a.k.a as Capabilities

Sprints/ Spikes

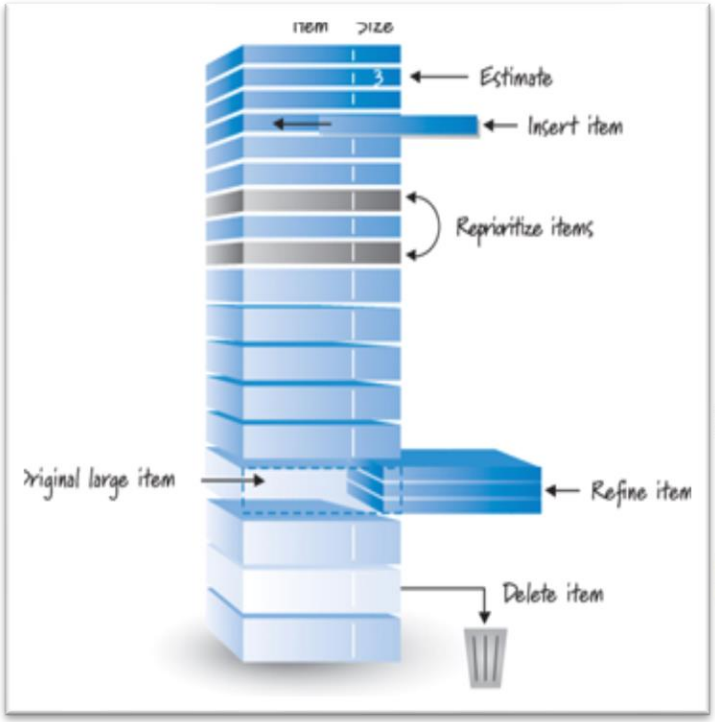
Issue
- Issues (user story, task, bug/defect)
- Components/Labels (Jira)
- Workflow (To do, In Progress, Done)

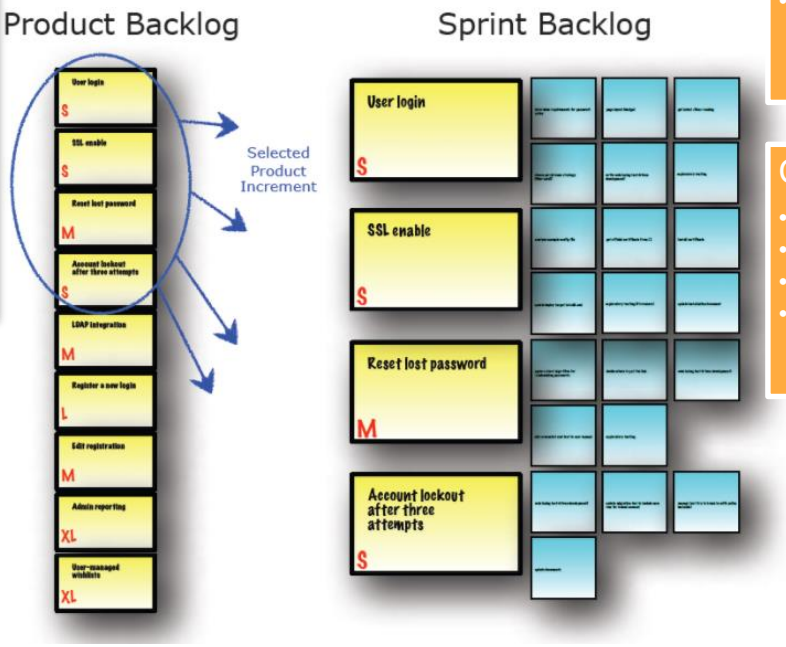
Subtask
- Assignable unit/division of work

Sprint Team Metrics



Product Backlog & Refinement





MoSCoW

Scope

- Plan
- Collect Requirement
- Define Scope
- Create WBS
- Validate Scope
- Control Scope

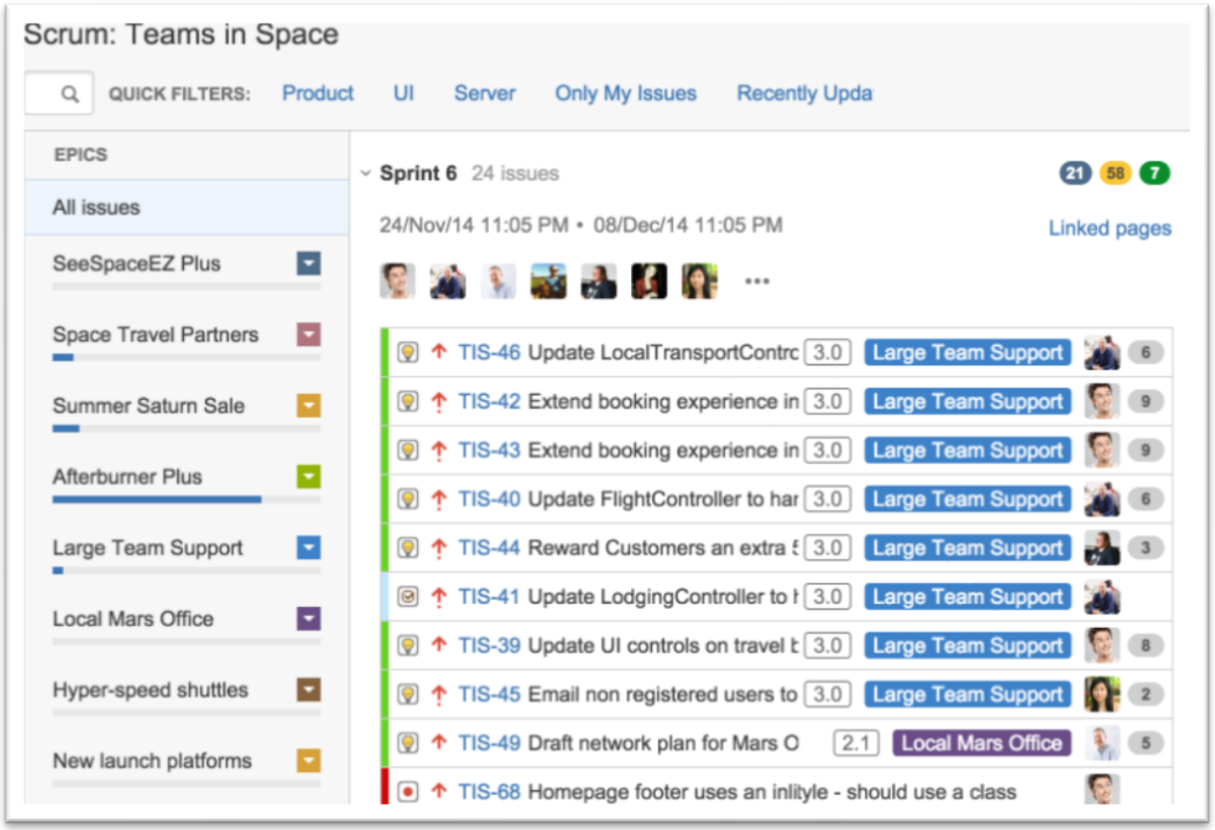
Schedule

- Plan
- Define Activities
- Sequence Activities
- Estimate Activity Durations
- Develop Schedule
- Control Schedule

Cost

- Plan
- Estimate Costs
- Determine Budget
- Control Costs

EPICS, Tasks, Sub-tasks



WBS Stacked

Scope

- Plan
- Collect Requirement
- Define Scope
- Create WBS
- Validate Scope
- Control Scope

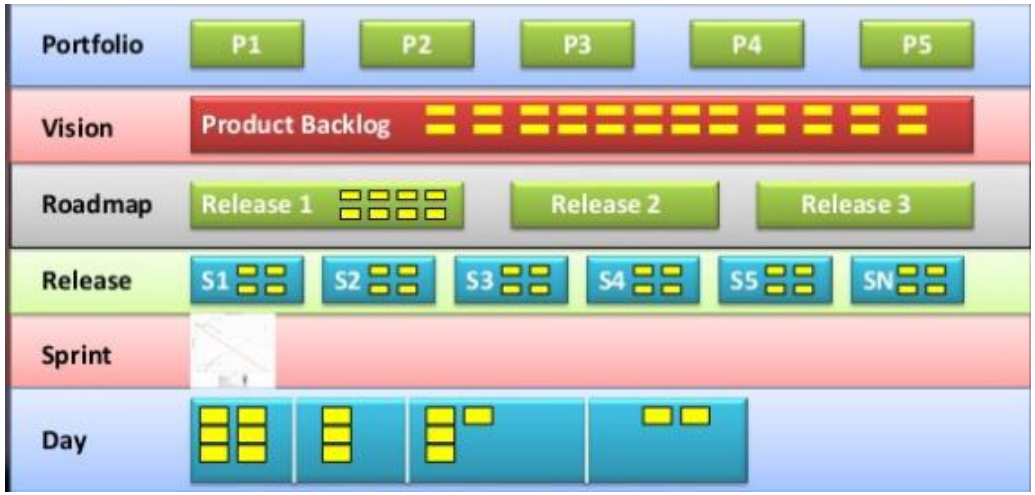
Schedule

- Plan
- Define Activities
- Sequence Activities
- Estimate Activity Durations
- Develop Schedule
- Control Schedule

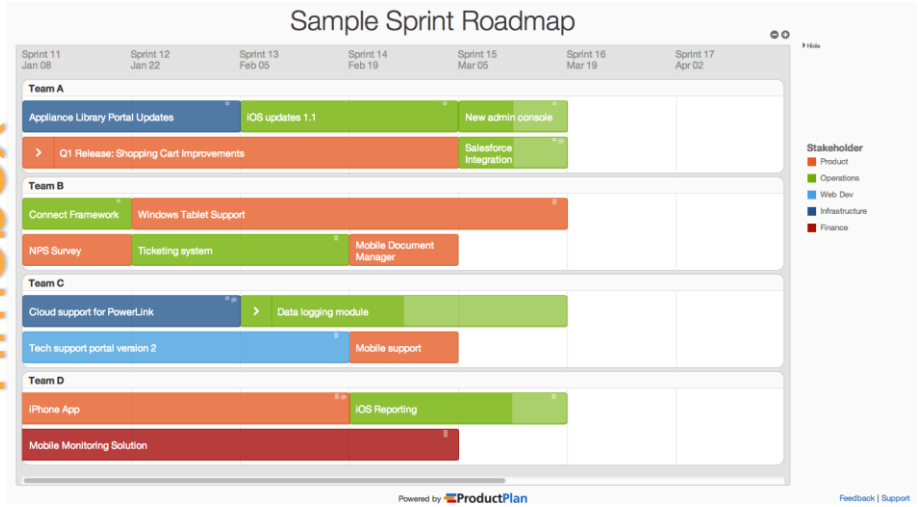
Cost

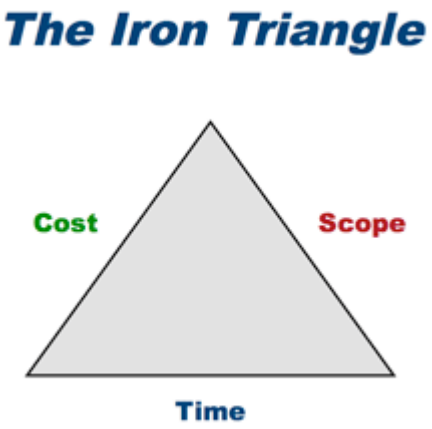
- Plan
- Estimate Costs
- Determine Budget
- Control Costs

Roadmap, Release, Timebox



Timebox





Scope

- Plan
- Collect Requirement
- Define Scope
- Create WBS
- Validate Scope
- Control Scope

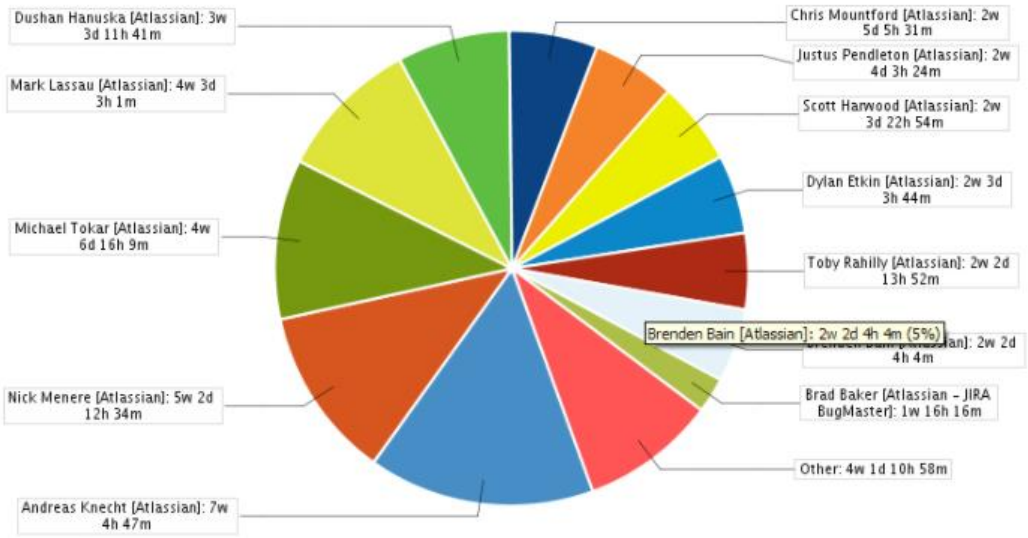
Schedule

- Plan
- Define Activities
- Sequence Activities
- Estimate Activity Durations
- Develop Schedule
- Control Schedule

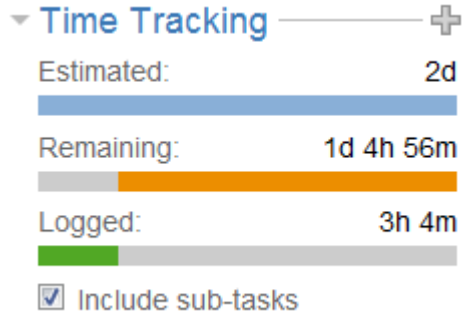
Cost

- Plan
- Estimate Costs
- Determine Budget
- Control Costs

Team Capacity



	hours	%
Andreas Knecht [Atlassian]	1180	15%
Nick Menere [Atlassian]	900	11%
Michael Tokar [Atlassian]	832	10%
Mark Lassau [Atlassian]	747	9%
Dushan Hanuska [Atlassian]	587	7%
Chris Mountford [Atlassian]	461	6%



Scope

- Plan
- Collect Requirement
- Define Scope
- Create WBS
- Validate Scope
- Control Scope

Schedule

- Plan
- Define Activities
- Sequence Activities
- Estimate Activity Durations
- Develop Schedule
- Control Schedule

Cost

- Plan
- Estimate Costs
- Determine Budget
- Control Costs

Team

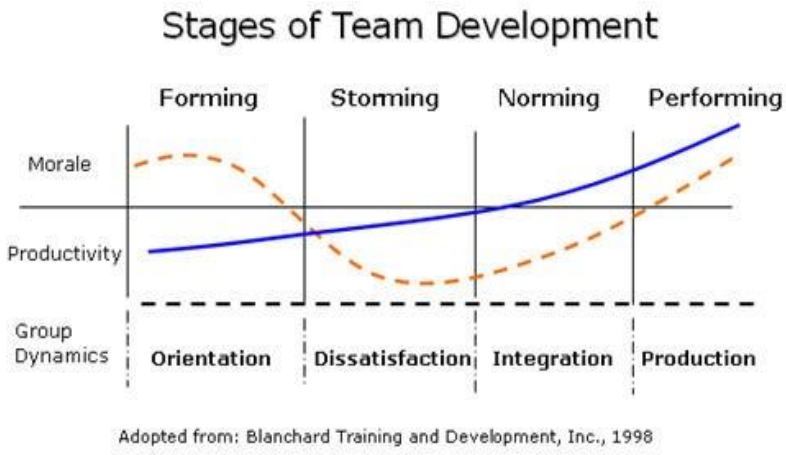
Roles

- Product Owner
- Scrum Master
- Scrum Team

Meetings

- Sprint Planning
- Daily Scrum
- Sprint Review
- Sprint Retrospective

Make Peace Not War



Resources

- Plan
- Estimate Activity Resources
- Acquire Team
- Develop Team
- Manage Team
- Control Resources

Stakeholder

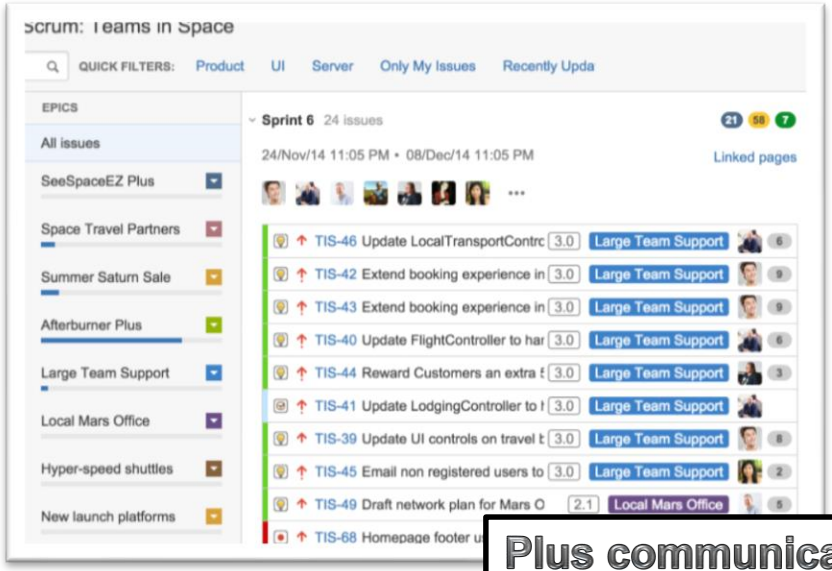
- Identify
- Plan
- Manage Engagement
- Control Engagement

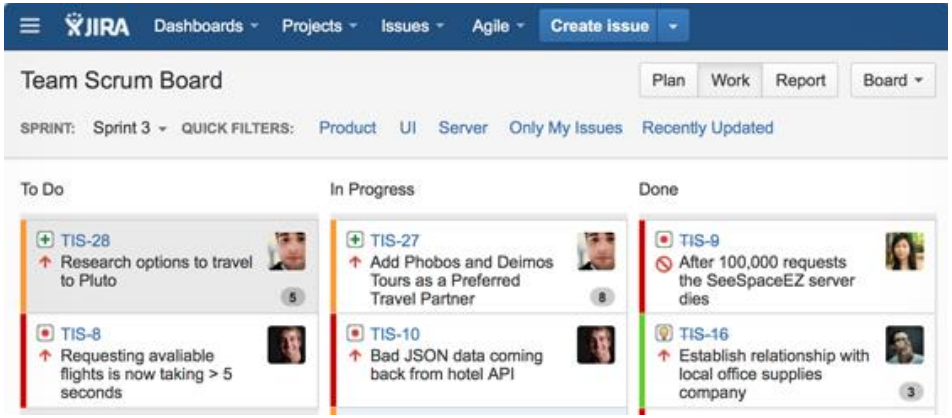
Servant Leader

Information Radiator

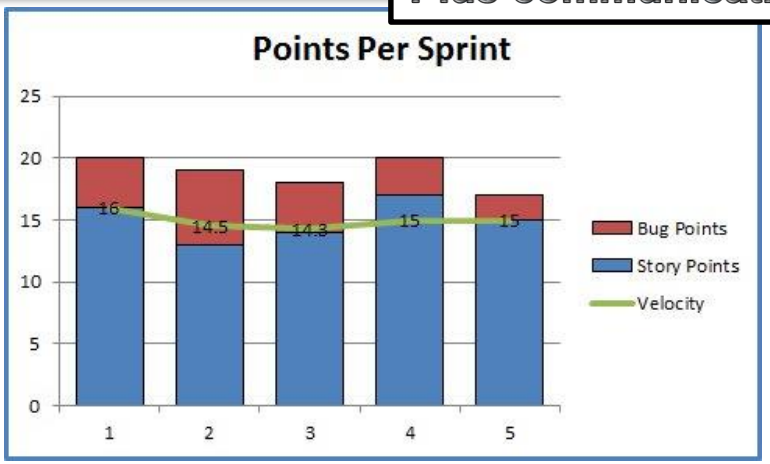
Communication

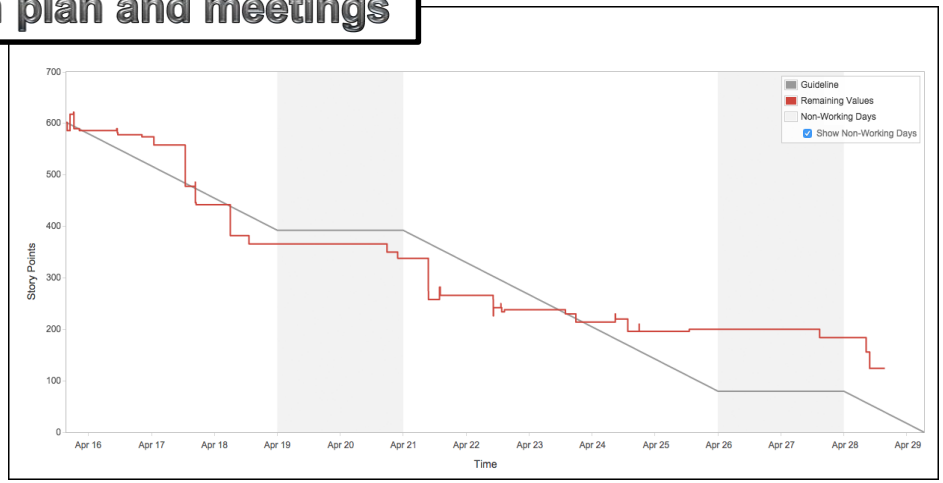
- Plan
- Manage Communications
- Monitor Communications





Plus communication plan and meetings





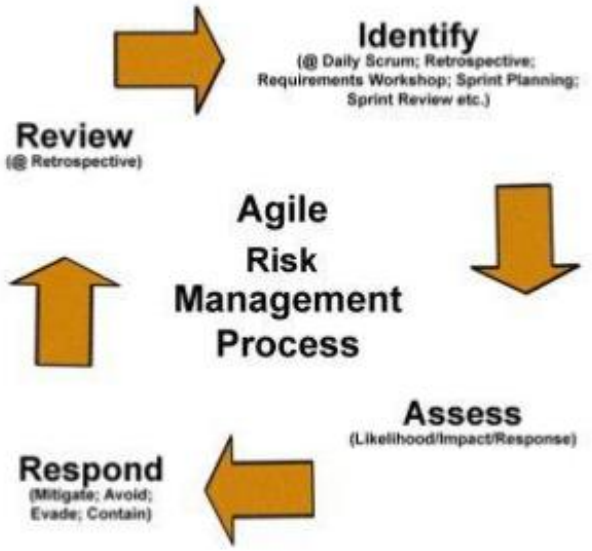
Item Tracking Epics

Risk
- Plan
- Identify Risk
- Perform Qualitative Risk Analysis
- Perform Quantitative Risk Analysis
- Plan Risk Responses
- Implement Risk Response
- Control Risk

Quality
- Plan
- Mange Quality
- Control Quality

Epics

- Issues
- Gaps
  - Missed requirement
- Enhancements
  - Change Request
- Risks
- Defects



Case Studies 1

Before:

- Leadership vacuum
- Kanban without accountability

After:

- Full scrum
- Three week sprint
- JIRA
- User stories, tasks, sub-tasks

Case Studies 2

Before:

- Management overload, due to information vacuum
- Conflate hours with story points for estimating
- Full Scrum with Agile Coach
- No ownership
- Two week sprint

After:

- Down-sized management
- Assign ownership early during sprint
- Separate story points from estimating hours
- Wrap Scrum with PMI project management

How are you doing?

Values

Change

Visibility

Manage up

What's Next:

- PMI Director of Continuing Education – 2019/20 events
- More sessions – Hacking PM & New 2020 PMP Exam Domains (People, Process, Business Environment)

Contact Information:

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- Website: mp3durbin.com
- LinkedIn: https://www.linkedin.com/in/mpdurbin/

Thank You!

Appendix A

Story Points Rubric

Small	• 0-1 Story Points (SP) • Administrative, trivial, bits throughout sprint
Medium	• 2-3 SP • Baseline for assignable work, mostly one person
Large	• 5-8 SP • Complex, lots of start/stops, many resources
Extra Large	• 13 SP • Only thing a resource can do in the sprint
Epic	• 20-40+ SP • Needs decomposition - Backlog Refinement

JIRA Types, Priority and Labels

- JIRA Types:
  - Epic – Too big for a sprint
  - Story – A requirement from the product owner or user
  - Task – an assignable piece of work
    - Can be broken down into subtasks
  - Bug – Related to a Defect, Gap, or Enhancement with appropriate label
- JIRA Priority:
  - Use Priority: Blocker, Critical, Major, Minor, or Trivial as needed
- JIRA Labels:
  - None – use for normal Tasks and Subtasks
    - None required – use as needed with JIRA types and/or Priority
  - Defect –defects found during any testing phase, use with Priority list above
  - Gap – a gap or missed requirements, use with Priority listed above
  - Enhancement – a change requested by product owner or users that was not in the requirements; use with Priority listed above
  - Dependency – a know dependency for the task to start, complete, or to be successful; ; use with Priority listed above

Scrum Cheat Sheet

Roles

Scrum Team

- Team is cross-functional and consists of 5-9 people
- There are no set project roles within the team
- Team defines tasks and assignments
- Team is self-organizing and self-managing
- Maintains the Sprint Backlog
- Conducts the Sprint Review

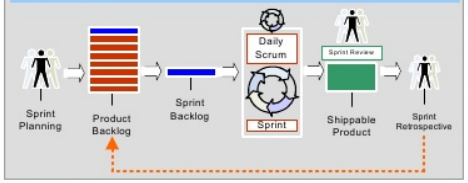
Product Owner (PO)

- Accountable for product success
- Defines all product features
- Responsible for prioritizing product features
- Maintains the Product Backlog
- Insures team working on highest valued features

Scrum Master (SM)

- Holds daily 15 minute team meeting (Daily Scrum)
- Removes obstacles
- Shields the team from external interference
- Maintains the Sprint Burndown Chart
- Conducts Sprint Retrospective at the end of a Sprint
- Is a facilitator not a manager

Process



Tools

Task Board

- White Board containing teams Sprint goals, backlog items, tasks, tasks in progress, "DONE" items and the daily Sprint Burndown chart.
- Scrum meeting best held around task board
- Visible to everyone

Artifacts

Product Backlog - (PB)

- List of all desired product features
- List can contain bugs, and non-functional items
- Product Owner responsible for prioritizing
- Items can be added by anyone at anytime
- Each item should have a business value assigned
- Maintained by the Product Owner

Sprint Backlog – (SB)

- To-do list (also known as Backlog item) for the Sprint
- Created by the Scrum Team
- Product Owner has defined as highest priority

Burndown Chart – (BC)

- Chart showing how much work remaining in a Sprint
- Calculated in hours remaining
- Maintained by the Scrum Master daily

Release Backlog – (RB)

- Same as the Product Backlog. May involve one or more sprints dependent on determined Release date

"DONE"= Potentially Shippable!

FAQ

- ***Who decides when a Release happens?*** At the end of any given Sprint the PO can initiate a Release.
- ***Who is responsible for managing the teams?*** The teams are responsible for managing themselves.
- ***What is the length of a task?*** Tasks should take no longer than 16 hours. If longer then the task should be broken down further.
- ***Who manages obstacles?*** Primary responsibility is on the Scrum Master. However, teams must learn to resolve their own issues. If not able then escalated to SM.
- ***What are two of the biggest challenges in Scrum?*** Teams not self-managing, Scrum Master managing not leading.

Meetings

Sprint Planning – Day 1 / First Half

- Product backlog prepared prior to meeting
- First half – Team selects items committing to complete
- Additional discussion of PB occurs during actual Sprint

Sprint Planning – Day 1 / Second Half

- Occurs after first half done – PO available for questions
- Team solely responsible for deciding how to build
- Tasks created / assigned – Sprint Backlog produced

Daily Scrum

- Held every day during a Sprint
- Lasts 15 minutes
- Team members report to each other not Scrum Master
- Asks 3 questions during meeting
- *"What have you done since last daily scrum?"*
- *"What will you do before the next daily scrum?"*
- *"What obstacles are impeding your work?"*
- Opportunity for team members to synchronize their work

Sprint Review

- Team presents "done" code to PO and stakeholders
- Functionality not "done" is not shown
- Feedback generated - PB maybe reprioritized
- Scrum Master sets next Sprint Review

Sprint Retrospective

- Attendees – SM and Team. PO is optional
- Questions – What went well and what can be improved?
- SM helps team in discovery – not provide answers

Visibility + Flexibility = Scrum

Glossary of Terms

- **Time Box** - A period of time to finish a task. The end date is set and can not be changed
- **Chickens** – People that are not committed to the project and are not accountable for deliverables
- **Pigs** – People who are accountable for the project's success
- **Single Wringable Neck** – This is the Product Owner!

SCRUM CHEAT SHEET

Estimating

User Stories

- A very high level definition of what the customer wants the system to do.
- Each story is captured as a separate item on the Product Backlog
- User stories are NOT dependent on other stories
- **Story Template**:
- "As a <User> I want <function> So that <desired result>
- **Story Example**:
- As a user, I want to print a recipe so that I can cook it.

Story Points

- A simple way to initially estimate level of effort expected to develop
- Story points are a relative measure of feature difficulty
- Usually scored on a scale of 1-10. 1=very easy through 10=very difficult
- **Example**:
- "Send to a Friend" Story Points = 2
- "Shopping Cart" Story Points = 9

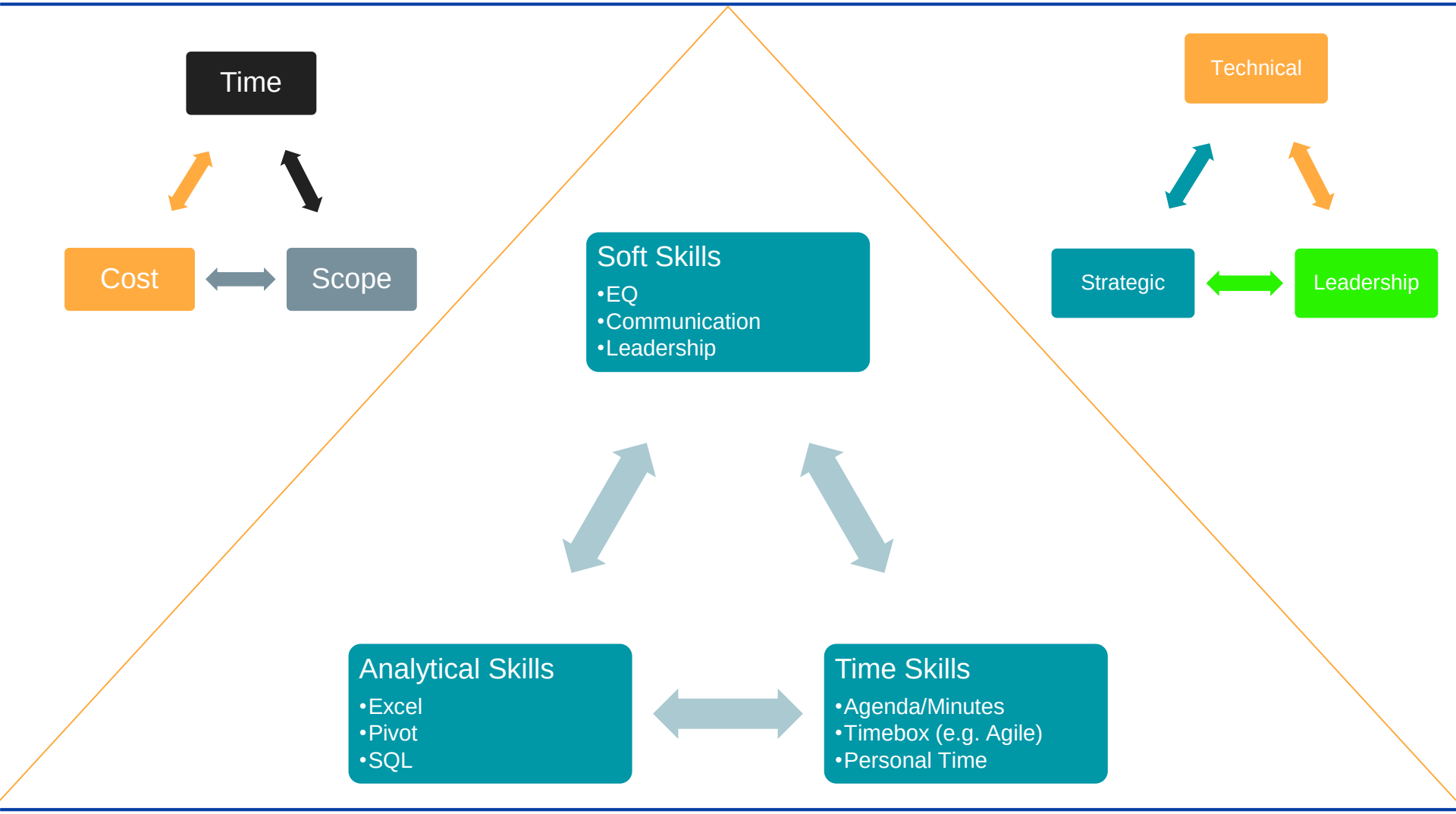
Business Value

- Each User Story in the Product Backlog should have a corresponding business value assigned.
- Typically assign (L,M,H) Low, Medium, High
- PO prioritizes Backlog items by highest value

Estimate Team Capacity

- Capacity = # Teammates (Productive Hrs x Sprint Days)
- Example – Team size is 4, Productive Hrs are 5, Sprint length is 30 days.
- Capacity = 4 (5 x30) = 600 hours
- **NOTE**: Account for vacation time during the Sprint!

Velocity

- The rate at which team converts items to "DONE" in a single Sprint – Usually calculated in Story Points.

Triple Bonus