Agile & CMMI

Are They Good Bedfellows?

presented by

Rebecca McKaughan

Agile Coach / Trainer / Chief Consultant

RAM Quality Solutions, LLC

Tackling Your Needs Head On

Rebecca McKaughan

SAFe™ 4.0 Program Consultant (SPC4), Scaled Agilist (SA), Certified Lean-Agile Project Manager, Certified Scrum Product Owner (CSPO), Certified ScrumMaster (CSM)

Test Engineer | **Project Manager** | **QA Manager** | **Configuration Manager** | **Agile Coach**

World Traveler

Foodie

Disney Fanatic

Purple

Aunt to 6

Direct Sales Consultant

RAM Quality Solutions, LLC

Tackling Your Needs Head On

Agenda

- What is Agile?
- Agile Manifesto
- Agile Principles
- Agile Core Tenants
- Agile Methods
- Agile Ceremonies
- Agile Artifacts
- Mapping Agile to CMMI
- Case Study

Agile Terminology

- Acceptance Criteria
- Capacity
- Continuous Delivery (CD)
- Continuous Integration (CI)
- Cross Functional
- Daily Stand-up
- Definition of Done
- Disciplined Agile Delivery (DAD)
- Extreme Programming (XP)
- Iteration
- Iteration Backlog
- Iteration Planning
- Kanban
- Large-Scale Scrum (LeSS)
- Lean
- Non-Functional Requirements (NFRs)
- Product Backlog
- Product Backlog Refinement
- Retrospective
- Scaled Agile Framework (SAFe)
- Scrum
- SPIKE
- Story/Task Board
- User Story
- Velocity

Agility

is where you have

Predictability

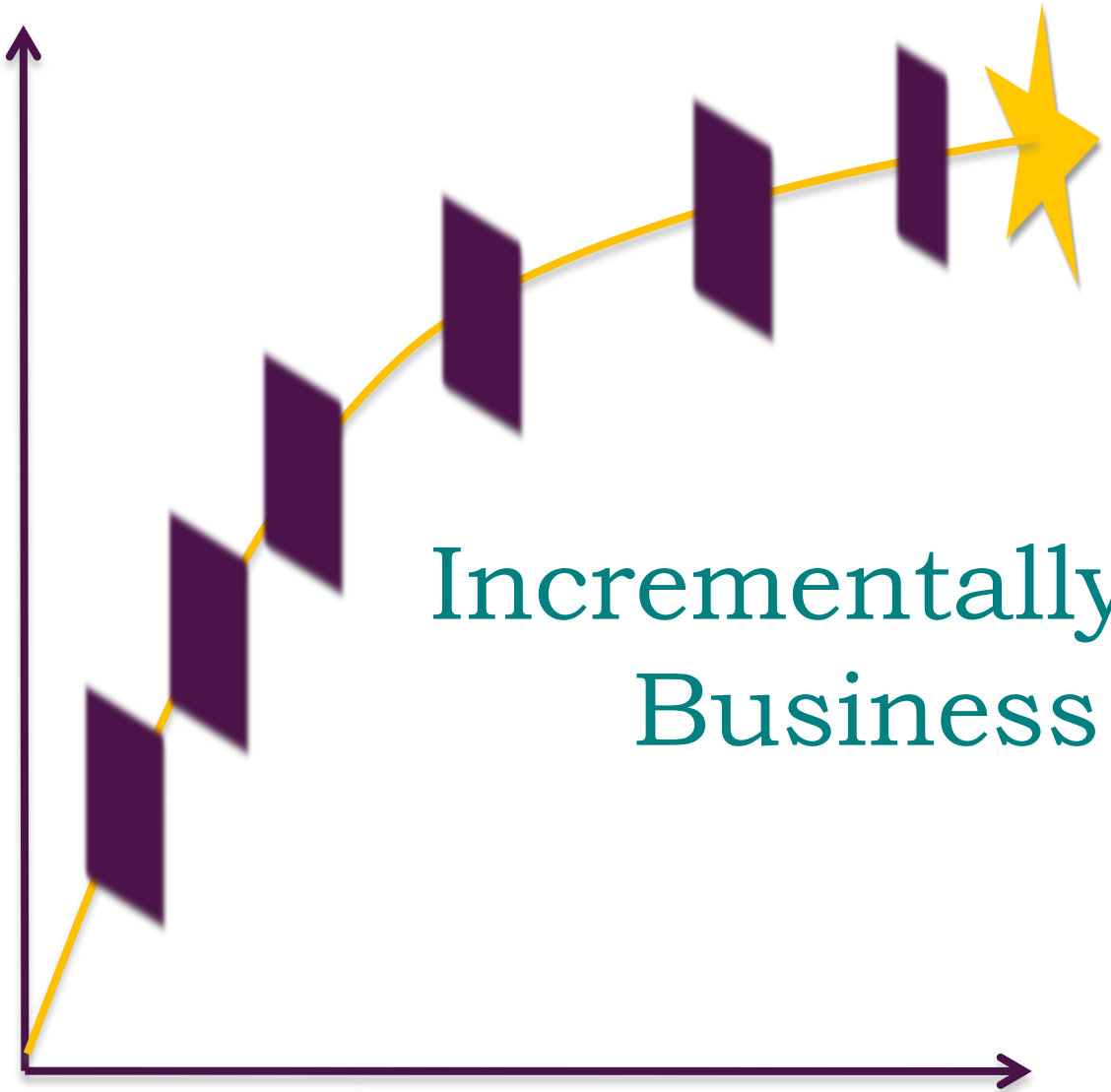
and *faster* realization of

Business Value

RAM Quality Solutions, LLC

Tackling Your Needs Head On

Ref: Alan Chedalawada, Net Objectives

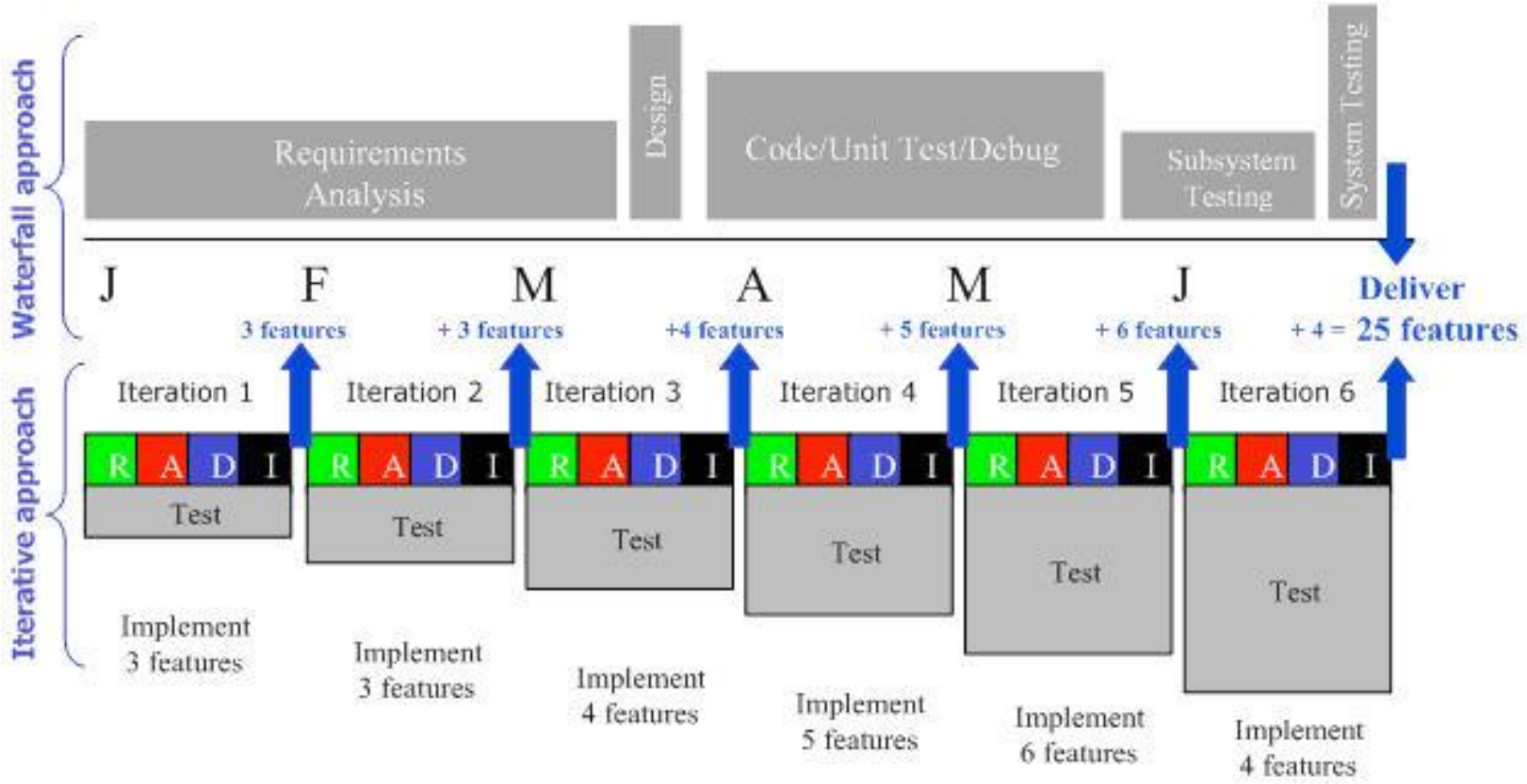


Incrementally Realizing Business Value

RAM Quality Solutions, LLC
Tackling Your Needs Head On

Ref: Alan Chedalawada, Net Objectives

Agile Incremental Approach

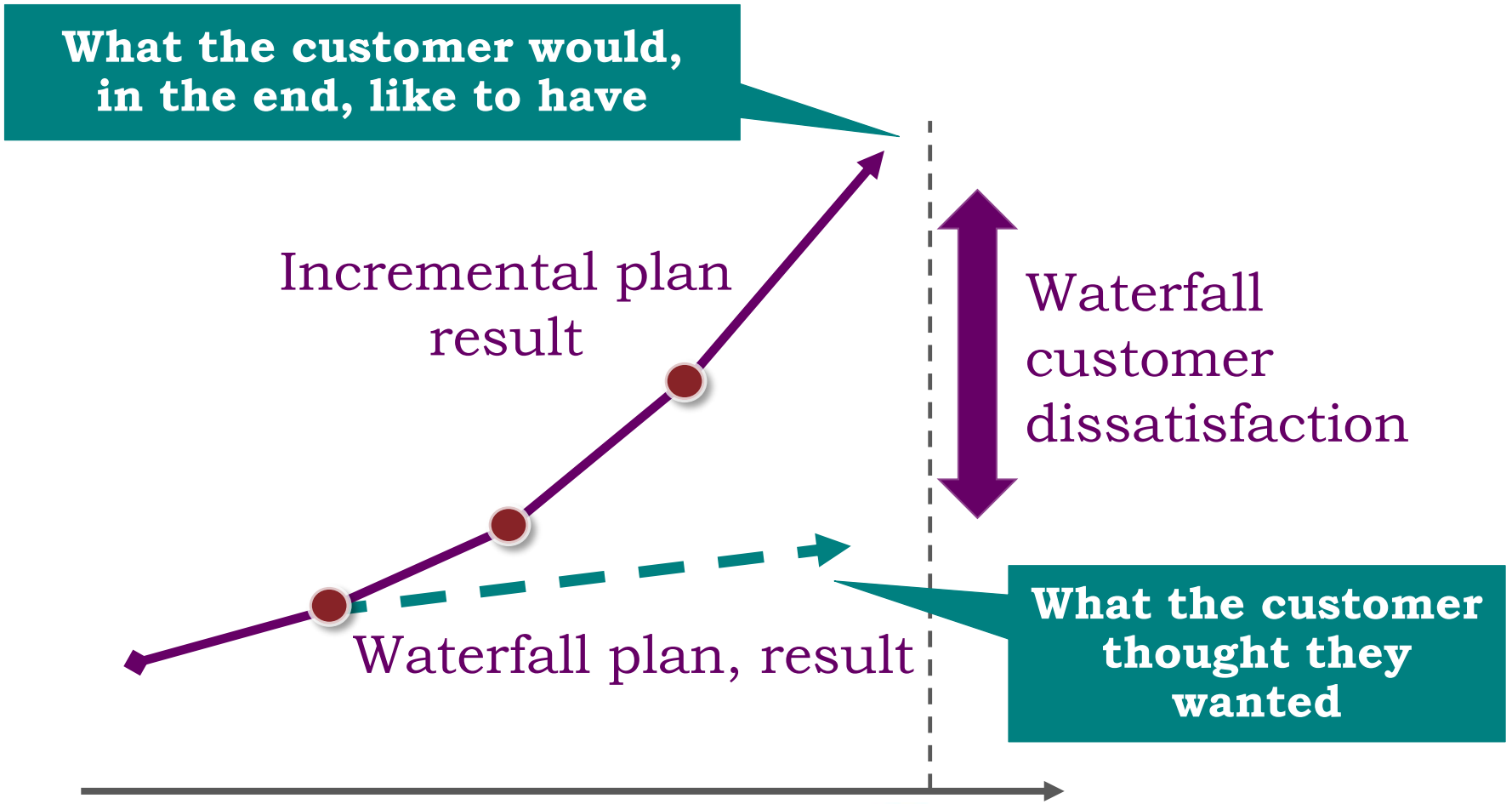


agile DAD

Pros of Agile Development

- Well-defined milestones
- Resolves risks early
- Fosters experimentation to unearth requirements
- Measures progress via actual system development
- Provides for early partial deployment
- Receives customer feedback early and often
- Increases adaptability
- Improves speed to market
- Reduces waste
- Higher productivity
- Greater predictability
- Improves quality

Delivers Better Fit for Customer



Agile Manifesto

Manifesto for Agile Software Development

We are uncovering better ways of developing
software by doing it and helping others do it.
Through this work we have come to value:

Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan

That is, while there is value in the items on the right,
we value the items on the left more.

Principles Behind the Agile Manifesto

We follow these principles:

Our highest priority is **to satisfy the customer through early and continuous delivery of valuable software**.

Welcome changing requirements, even late in development.
Agile processes harness change for the customer's competitive advantage.

Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.

Business people and developers must work together daily throughout the project.

Build projects around **motivated individuals**. Give them the environment and support they need, and **trust them to get the job done**.

The most efficient and effective method of conveying information to and within a development team is **face-to-face conversation**.

Principles Behind the Agile Manifesto

We follow these principles:

Working software is the primary measure of progress.

Agile processes promote sustainable development. The sponsors, developers, and users should be able to **maintain a constant pace indefinitely**.

Continuous attention to technical excellence and good design enhances agility.

Simplicity – the art of maximizing the amount of work not done – is essential.

The best architectures, requirements, and designs emerge from **self-organizing teams**.

At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

Agile Principles

Visibility & Transparency

Inspect and Adapt

Self-Organizing Teams

Cross Functional Teams

Regular Deliveries

Core Tenants of Agile

Develop Collaboratively

Develop Iteratively

Manage Requirements

Continuously Verify Quality

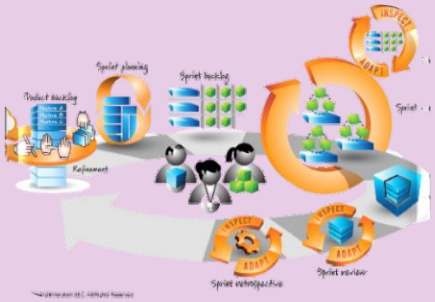
Manage Change

Promote an Architectural Vision

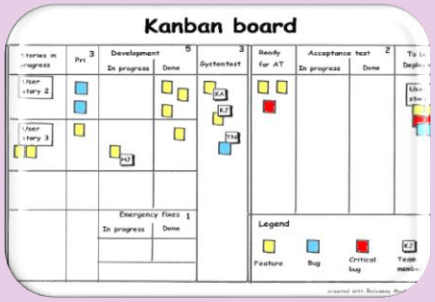
Manage Risk

Agile Methods

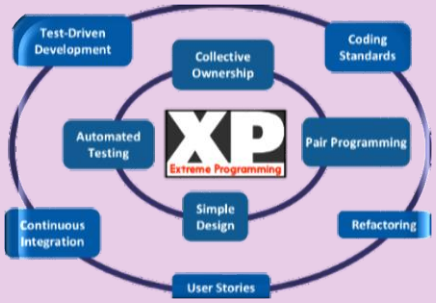
Lean



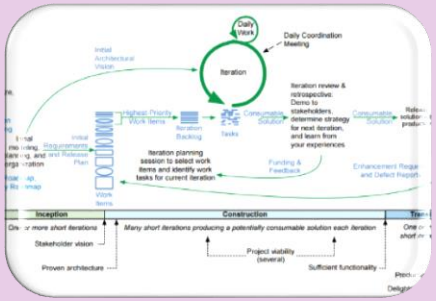
Scrum



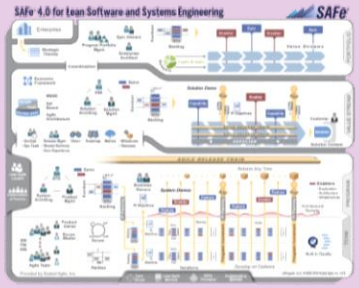
Kanban



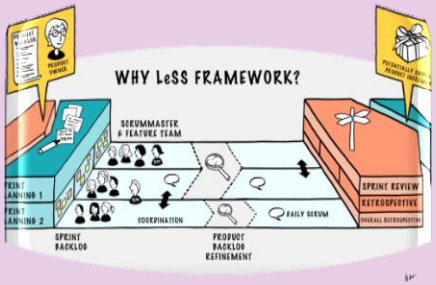
Extreme Programming (XP)



Disciplined Agile Delivery (DAD)



Scaled Agile Framework (SAFe)



Large-Scale Scrum (LeSS)

Agile Ceremonies

- Product Backlog Refinement
- Release Planning
- Iteration Planning
- Daily Stand-up
- Iteration Demonstration/Review
- Retrospective

Agile Artifacts

- Product Vision
- Roadmap
- Product & Iteration Backlogs
- User Stories & Acceptance Criteria
- Story / Task Boards
- Progress Tracking Charts
- Definition of Done
- Risk & Impediment List
- Production Ready Working Software
- Automated Test Scripts
- Team Norms/Working Agreements
- Technical Practices (XP) & Standards

Mapping Agile to CMMI

CMMI Process Area	Agile Artifacts/Ceremonies
Causal Analysis & Resolution (CAR)	Retrospective; Peer & Code Reviews
Configuration Management (CM)	Build Scripts; Build Process; CM Standards; Architecture Diagrams; Code Repository; Environment Structure; Agile Workflow
Decision Analysis & Resolution (DAR)	Backlog Prioritization Criteria; Spikes; Prototypes; Customer Feedback
Integrated Project Management (IPM)	Story/Task Boards; Progress Tracking Charts; Product Vision; Product Backlog; Product Roadmap; Definition of Done; Retrospective; Iteration Planning; Daily Stand-ups; Iteration Demo/Review; Release Planning; Capacity Plan; Velocity
Measurement & Analysis (MA)	Progress Tracking Charts; Story/Task Boards; Retrospective; Velocity; Peer Review; Automated Test Results; Automated Test Scripts; Customer Feedback
Organizational Process Definition (OPD)	Agile Workflow; Coding, Testing, Documentation, & CM Standards; Team Norms/Working Agreements; Agile Training

Mapping Agile to CMMI

CMMI Process Area	Agile Artifacts/Ceremonies
Organizational Process Focus (OPF)	Retrospective; Customer Feedback
Organizational Performance Management (OPM)	Progress Tracking Charts; Story/Task Boards; Retrospective; Velocity; Peer Review; Automated Test Results; Customer Feedback; Iteration Demo/Review; Roadmap; Release Planning; Iteration Planning
Organizational Process Performance (OPP)	Customer Feedback; Iteration Demo/Review; Progress Tracking Charts; Story/Task Boards; Velocity; Roadmap; Automated Test Results
Organizational Training (OT)	Agile Training; Retrospective; Technical Practices (XP) & Standards
Product Integration (PI)	Iteration Demo/Review; Customer Feedback; Daily Stand-ups; User Stories & Acceptance Criteria; Production Ready Working Software; Progress Tracking Charts; CM Standards – Continuous Integration (CI); Automated Test Scripts & Results

Mapping Agile to CMMI

CMMI Process Area	Agile Artifacts/Ceremonies
Project Monitoring & Control (PMC)	Customer Feedback; Iteration Demo/Review; Risk & Impediment List; Product Backlog Refinement; Iteration Planning; Daily Stand-ups; Progress Tracking Charts; Story/Task Boards; Retrospective
Project Planning (PP)	Roadmap; Release Planning; Iteration Planning; Product Vision; Team Norms/Working Agreements; Retrospective; Technical Practices (XP) & Standards
Process & Product Quality Assurance (PPQA)	Peer Reviews; Story/Task Boards; Retrospective; Agile Training; CM Standards – Continuous Integration (CI); Risk & Impediment List; Agile Workflow
Quantitative Project Management (QPM)	User Stories & Acceptance Criteria; Non-Functional Requirements (NFRs); Peer Reviews; Automated Test Scripts & Results; Definition of Done; Customer Feedback; Iteration Demo/Review
Requirements Development (RD)	Product Backlog; Product Backlog Refinement; User Stories & Acceptance Criteria; Customer Feedback; Iteration Demo/Review

Mapping Agile to CMMI

CMMI Process Area	Agile Artifacts/Ceremonies
Requirements Management (REQM)	User Stories & Acceptance Criteria; Product & Iteration Backlogs; Story/Task Boards; Product Backlog Refinement; Iteration Planning; Release Planning; Daily Stand-ups
Risk Management (RSKM)	Risk & Impediments List; Retrospective; Daily Stand-ups
Supplier Agreement Management (SAM)	Release Planning; Daily Stand-ups; Risk & Impediment List; Roadmap
Technical Solutions (TS)	Technical Practices (XP) & Standards; Release Planning; Iteration Planning; Daily Stand-ups; User Stories & Acceptance Criteria; Production Ready Working Software
Validation (VAL)	User Stories & Acceptance Criteria; Iteration Demo/Review; Production Ready Working Software; Automated Test Scripts & Results
Verification (VER)	User Stories & Acceptance Criteria; Iteration Demo/Review; Production Ready Working Software; Automated Test Scripts & Results

Case Study

- 40-50 person program in the Federal Government
- Application for ~4000 users world wide
- 2006 - Waterfall development appraised at CMMI Level 3
- 2007 – Began transition to Agile
  - Agile Coaches trained & coached the program on their Agile journey
- 2009 – Fully Agile development reassessed & appraised at CMMI Level 3
  - QA team trained CMMI appraisal team on Agile practices

RAM Quality Solutions, LLC
Tackling Your Needs Head On

RAM Quality Solutions, LLC

Tackling Your Needs Head On

Credits

- Alan Chedalawada, Net Objectives
- IBM Disciplined Agile Delivery (DAD), Rational Method Composer
- AgileDAD, V. Lee Henson
- Scaled Agile Framework® (SAFe®), Dean Leffingwell
- CMMI for Development Third Edition, Mary Beth Chrissis, Mike Konrad, & Sandy Shrum
- Agile Project Management with Scrum, Ken Schwaber

Agile Resources

- Scaled Agile Framework® (SAFe®) Website: **www.scaledagileframework.com** – Information about SAFe and how to scale Agile from the team level to the enterprise level for medium to very large organizations.
- Jeff Sutherland's Website: **www.jeffsutherland.com** - He provides various content related to software programming and technology and Scrum.
- Mike Cohn's Website on Scrum: **www.mountaingoatsoftware.com/scrum**
- Scrum Alliance: **www.scrumalliance.org**
- AgileAlliance: **www.agilealliance.org** - A great library of Agile and Scrum articles.
- Extreme Programming (XP) Website: **www.eXtremeProgramming.org**
- Ron Jeffries' Website: **www.xprogramming.com** - Information about Scrum's technical brother, Extreme Programming (XP), also has good articles on planning and metrics

Contact Information

Rebecca McKaughan, SPC4, SA, CSPO, CSM
Chief Consultant / Agile Coach / Trainer
rebecca@ramqs.com
C: 703.217.9574

Aaron Sarver
Associate Consultant / Quality Analyst
aaron@ramqs.com
C: 702.302.2976

RAM Quality Solutions, LLC
Tackling Your Needs Head On