Capacity to Execute

Waterfall to Agile Transition Considerations - a Case Study

John Cvetko
CISSP, PMP, ZCEA

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Overview

- Section 1 - Case Study Overview
- Section 2 - Considerations for a Transition
- Section 3 - Case Study Transition Analysis

Section 1

Case Study Overview

Case Study – Organization XYZ

- Five Main Lines of Business (Programs)
- Complex, intertwined program workflows
- Regulatory/Compliance Obligations
- Management style
  - Facilitative function
  - Low risk tolerance
  - High degree of consensus decision making

Development Vendor

- Contracted development vendor
- Shared for all programs
- Fixed capacity
- Structured to handle both WF and Agile
- 10 percent budget variance allowed

Requirements Elicitation

- Multi-program business logic
- SME's availability
- BA's role
- Formal requirements signoff the sized

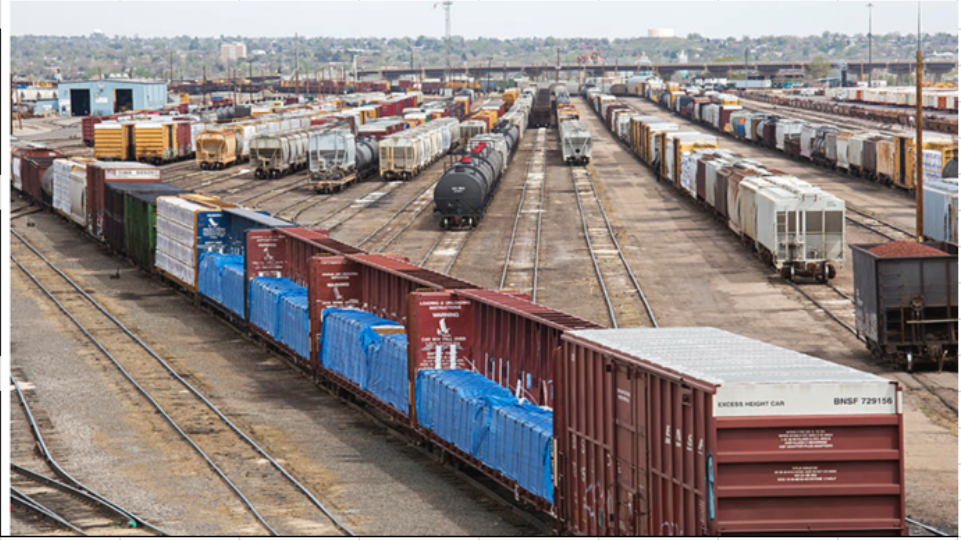
Hybrid Release Train

	December 2020 Release														
Project	12001	12002	12003	12004	12005	12006	12007	12008	12009	12010	12011	12012	12013	12014	12015
Program	P1	P1,4	P2,3	P1,4,5	P1,4	P2,3	P3,5	P1,3,4,5	P2	P1,4,5	P1,4	P1	P1,2	P4,5	P1,4
Type	Agile	WF	WF	WF	WF	WF	WF	WF	Agile	WF	WF	WF	WF	WF	WF
Status															

Project	12016	12017	12018	12019	12020	12021	12022
Program	P4,5	P1,4	P5	P2,3	P3,4	P1,3,4,5	P2
Type	WF	WF	Agile	WF	WF	WF	WF
Status							

Project	12023	12024	12025	12026	12027	12028	12029
Program	P4,5	P1,4	P5	P2,3	P3,4	P1,3,4,5	P2
Type	WF	WF	Agile	WF	WF	WF	WF
Status							

Project	12030	12031	12032	12033	12034	12035	12036
Program	P4,5	P1,4	P5	P2,3	P3,4	P1,3,4,5	P2
Type	WF	WF	Agile	WF	WF	WF	WF
Status							



XYZ Agile Initiative

- Started 3 years ago
- Invested in training and coaches
- Agile Projects Characteristics
  - Projects are small (< 900 Dev hrs.)
  - Isolated – low risk approach
  - Account for ~20% of all projects in the release

Stalled Agile Implementation

- Last Minute Changes to Waterfall Project
  - Forced a schedule slip that impacted time dependent projects
- Move Large Projects to Agile
  - Programs Balked
  - Not “standard Agile”
  - Created less confidence and increased distrust
- Modified the WF process to be more flexible

Survey

What do you think was the main cause for the stalled Agile implementation?

a. Vendor contract limitations

b. Management commitment

c. SME availability

d. Pace of the implementation

e. Perceived lack of value

f. Expectations set too high

g. Other

Section 2

Considerations for a Transition

What really is the Problem?

- What is the purpose for the initiative?

> "If I had an hour to solve a problem and my life depended on the solution, I would spend the first 55 minutes determining the proper question to ask, for once I know the proper question, I could solve the problem in less than five minutes."

Albert Einstein (1879 - 1955) Physicist & Nobel Laureate

Business Case

- An Agile transition is a business investment
  - Analysis
  - Purpose
  - Identify potential roadblocks
  - Context specific considerations
  - Expectations

Implementation Planning

- Approach to implementation
  - Big Bang
  - Waves or Phases
  - Emergent

"Plans are of little importance, but planning is essential" *Churchill*

SDLC Approach

Waterfall

- Project Metrics
- Product Metrics
- Product Value

Agile

- Project Metrics
- Product Metrics
- Product Value

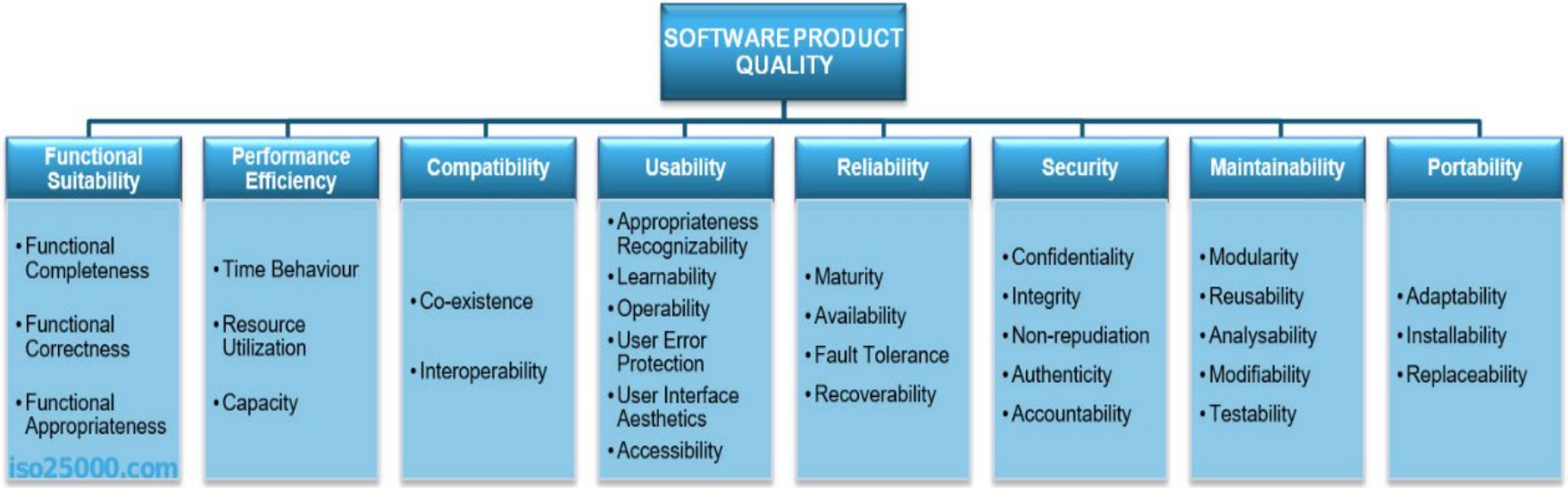
SDLC Metric Crosswalk

	Metric Terminology*	
Quantitative	**Agile**	**Waterfall**
The proposed features, enhancements, upgrades.	Backlog	Requirements
Ranking of the most desirable features.	Ordered backlog	Requirement prioritization
Incomplete or inconsistent requirements.	Recidivism rate	Changes to requirements
The completion of projects to schedule and budget.	Agile Earned Value[4]; Epic burndown	Earned value, Schedule variance[3]
The average work a team does over time.	Velocity	Earned value
Consistency in workflow across the teams.	Cumulative flow	Resource leveling
Overall bugs/defects found in user testing	Defect rate	Defect rate
Defects found in production.	Escaped defect rate	Leakage rate
Average time it takes to fix a defect.	Defect resolution rates	Defect resolution rates
Cost to deliver all requirements.	Total epic costs	Total project costs
Qualitative Measurements		
User experience	UX studies, surveys	UX studies, surveys
Client satisfaction	Surveys	Surveys

Software Quality

- Quality Metrics
  - Quantitative and Qualitative Characteristics
  - Why measure?
  - Use during a transition

ISO 25010 Software Quality Standard

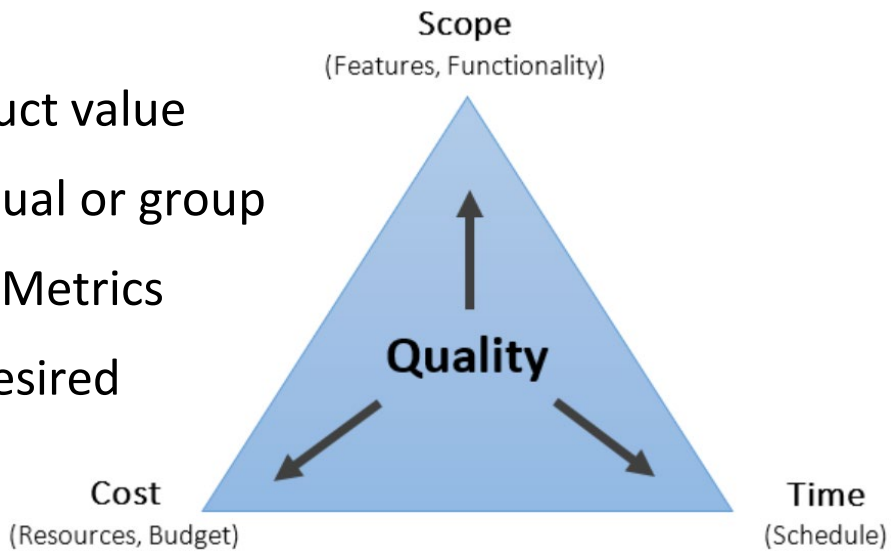


Quality Characteristics

- Selection Overview
  - **Functional Completeness**
  - **Usability**
  - **Security**
  - **Modifiability**

Value

- Product Value
  - Agile has heavy emphasis on product value
  - Value, like quality varies by individual or group
  - Product Value = Project + Product Metrics
    - Scope, schedule, budget and desired quality characteristics



SDLC Approach

Waterfall

- Project Metrics
- Product Metrics
- Product Value

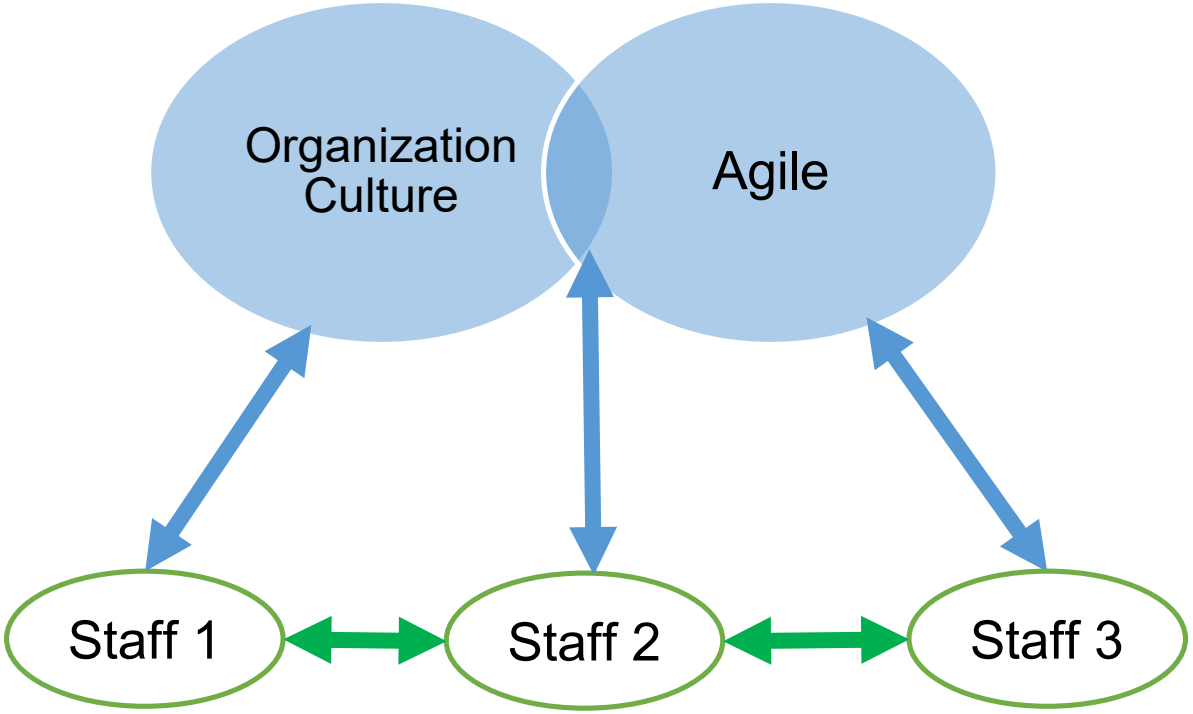
Agile

- Project Metrics
- Product Metrics
- Product Value
- Values and Principles

Organizational Constraints

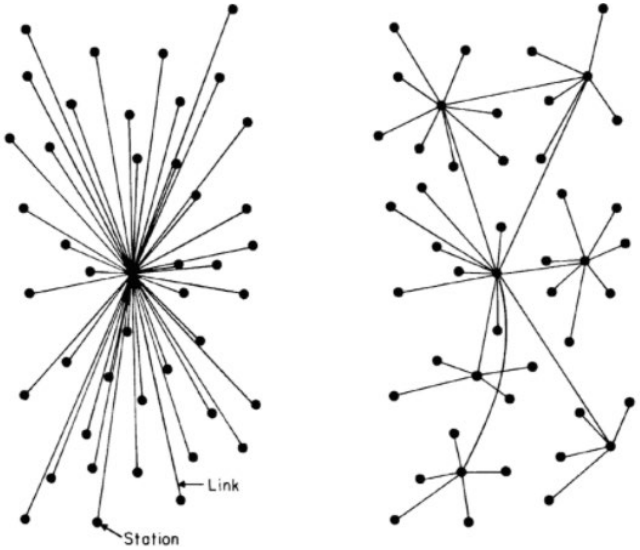
- Understand the context of the organization
  - Regulations
  - Risk tolerance
  - Management style
  - Contract obligations

Culture Clash



Intent Based Leadership

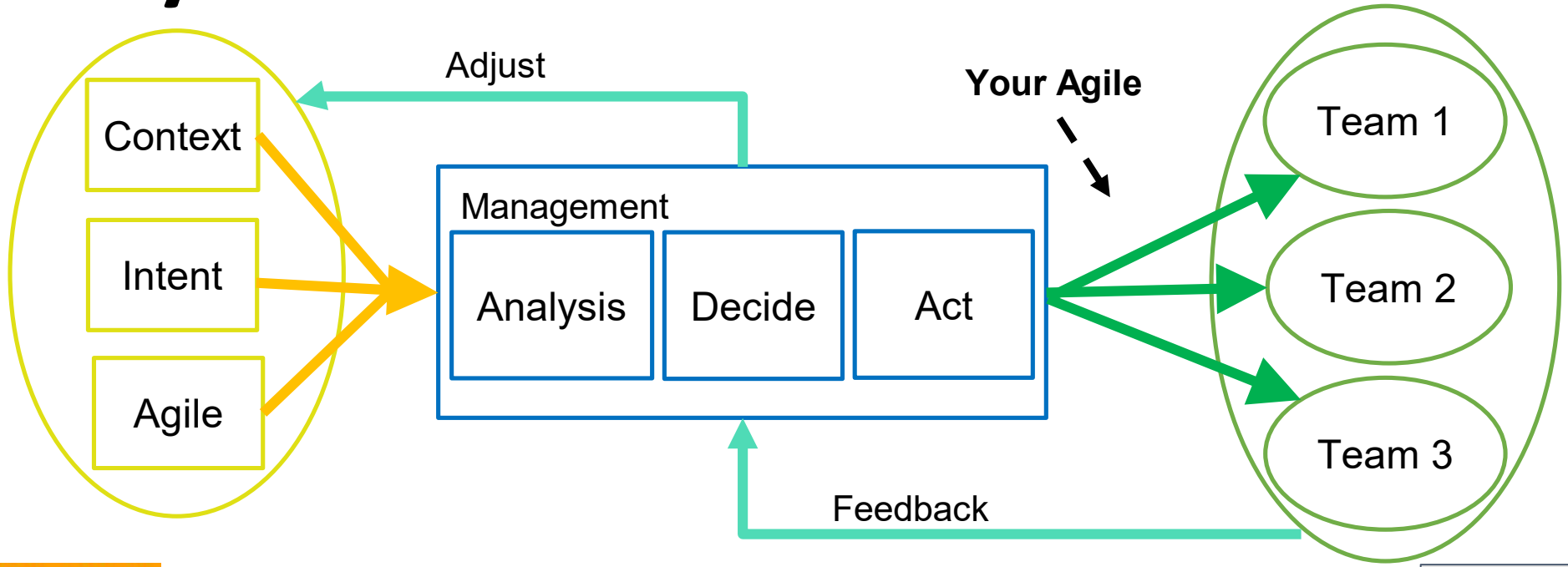
- Intent Statements
  - History
  - Modern use
  - Benefits
  - Adopted by Business
  - Caveat



CENTRALIZED (A)

DECENTRALIZED (B)

Synthesis


Adjust
Your Agile
Context
Intent
Agile
Management
Analysis
Decide
Act
Team 1
Team 2
Team 3
Feedback

Section 3

XYZ Case Study Transition Analysis

Champions and Business Case

- XYZ Agile business case
  - No analysis, i.e., lack of problem definition and context
  - Internal staff advocated for Agile using superlatives alone
- XYZ Agile champions
  - Had a solution looking for a problem
  - Incorrect expectations

Management Intent and Planning

- Management Intent
  - Intent not established
- Implementation Planning
  - Emergent approach = opportunistic
  - Planning did not go beyond training, coaching and small project

Quality Performance

- Product Quality
  - Functional Completeness
    - Measured by change requests - No significant change
    - Demo's were appreciated – continued feedback was appreciated
  - Usability
    - Measured through surveys - No significant change
    - The meetings with developers with end users was a positive

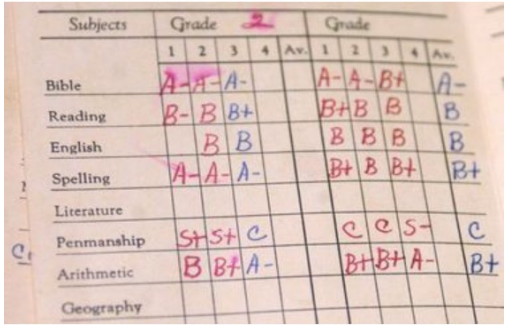
Quality Performance

- Product Quality
  - Security –
    - Measured by changes – no significant issues
    - Utilized S-Scrum – tagging of user stories ensured that
  - Modifiability –
    - Measured by defect rate and time to repair – no significant issues

XYZ Perceived Value

- Value (Waterfall and Agile)
  - Macro level value – Executive business/governance
    - Generally, the organization was getting the big things done
    - Frustrated with level of understanding (roadmap)
  - Micro level value – Mid-management and staff level
    - Constant backlog reordering
      - The time component of value was not satisfied.

Report Card



Subjects	Grade 2					Grade				
	1	2	3	4	Av.	1	2	3	4	Av.
Bible	A-	A-	A-			A-	A-	B+		A-
Reading	B-	B	B+			B+	B	B		B
English		B	B			B	B	B		B
Spelling	A-	A-	A-			B+	B	B+		B+
Literature										
Penmanship	S+	S+	C			C	C	S-		C
Arithmetic	B	B+	A-			B+	B+	A-		B+
Geography										

- Positives
  - Training and coaching
  - Successful project delivery
  - Secure Scrum
  - Users got more time with engineers
- Challenges
  - Incorrect problem definition
  - Solution looking for a problem
  - Oversold expectations
  - No Agile contextualization
  - Created distrust

Thank You!

John Cvetko

John.cvetko@tekasc.com

503-799-2242