Capacity to Execute

Waterfall to Agile Transition Considerations - a Case Study

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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

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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

<table>
<thead>
<tr>
<th>Metric Terminology*</th>
<th>Quantitative</th>
<th>Agile</th>
<th>Waterfall</th>
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</thead>
<tbody>
<tr>
<td>The proposed features, enhancements, upgrades.</td>
<td>Piggyback</td>
<td>Backlog</td>
<td>Requirements</td>
</tr>
<tr>
<td>Ranking of the most desirable features.</td>
<td>Ordered backlog</td>
<td>Recidivism rate</td>
<td>Requirement prioritization</td>
</tr>
<tr>
<td>Incomplete or inconsistent requirements.</td>
<td>Recidivism rate</td>
<td>Changes to requirements</td>
<td></td>
</tr>
<tr>
<td>The completion of projects to schedule and budget.</td>
<td>Agile Earned Value⁴; Epic burndown</td>
<td>Earned value, Schedule variance³</td>
<td></td>
</tr>
<tr>
<td>The average work a team does over time.</td>
<td>Velocity</td>
<td>Earned value</td>
<td></td>
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<tr>
<td>Consistency in workflow across the teams.</td>
<td>Cumulative flow</td>
<td>Resource leveling</td>
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<tr>
<td>Overall bugs/defects found in user testing</td>
<td>Defect rate</td>
<td>Defect rate</td>
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<tr>
<td>Defects found in production.</td>
<td>Escaped defect rate</td>
<td>Leakage rate</td>
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<tr>
<td>Average time it takes to fix a defect.</td>
<td>Defect resolution rates</td>
<td>Defect resolution rates</td>
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</tr>
<tr>
<td>Cost to deliver all requirements.</td>
<td>Total epic costs</td>
<td>Total project costs</td>
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### Qualitative Measurements

| UX studies, surveys | Surveys | UX studies, 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
Synthesis

Context
Intent
Agile

Management
Analysis
Decide
Act

Adjust

Feedback

Your Agile

Team 1
Team 2
Team 3

Capacity to Execute – Waterfall to Agile Transition
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

• **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!

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