Agile Risk Management

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THE BASICS
- Founded 1994
- International (U.S. and U.K. Offices)
- 20+ Employees [+Industry Thought Leaders]
- Industry Leaders [Software Consulting Services]

HIGH-LEVEL FINANCIALS
- Profitable
- Small Business
- Self-Funded
- Growing

OUR REPUTATION
“I would definitely describe them as experts in their field. We are much more disciplined now than we were before, much more.”

- Bob Lento, President, Convergys Information Management

OUR SIGNATURE
- Centers of Excellence
- Build, Operate, Transfer (BOT)
- Consulting

OUR EXPERIENCE
- Combined 50+ years experience
- Authors of Publications and Books Used as Industry Guidelines
- Frequent Guest Speakers at Industry Conferences
The Challenge

- Has the adoption of Agile techniques magically erased risk from software projects?
- Can Agile and lean techniques be leveraged to make managing risk part of the day-to-day activities of teams while reducing overhead?
The Challenge

- Team based Agile wrestles with scaling requiring other frameworks.
- CMMI® provides a framework for scaling Agile leveraging a robust and repeatable structure.
- CMMI implementations carry a substantial level of perceived overhead.
More Challenges

Managing Perceptions:
There are too many other things to do directly related to delivering functionality.
Risk management processes are driven by a need for an external certification.
Common risks are continually identified and nothing is done about those risks.
A great deal of explicit risk management becomes unnecessary when a project uses an agile approach

Mike Cohn, Mountain Goat Software
<table>
<thead>
<tr>
<th>Risk</th>
<th>Agile Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigating Schedule Flaw</td>
<td>Scrum provides feedback loops to mitigate invalid estimates. Teams update the release plan at the end of every.</td>
</tr>
<tr>
<td>Mitigating Specification Breakdown</td>
<td>A scrum delivery team will work collaboratively with the product owner to ensure alignment between what is requested and how it can be delivered.</td>
</tr>
<tr>
<td>Mitigating Scope Creep</td>
<td>The product owner will evaluate the new backlog items and decide what action to take: add, delete, trade-out in priority with other product backlog items.</td>
</tr>
<tr>
<td>Mitigating Personnel Loss</td>
<td>Self-organizing teams focus problems impacting work resulting in higher morale.</td>
</tr>
<tr>
<td>Mitigating Productivity Variation</td>
<td>Agile teams address the performance at the end of every sprint as part of the retrospective.</td>
</tr>
</tbody>
</table>
Implementation: Agile Risk Management

Identify knowable risks. – Identify the knowable risks when generating the initial backlog.

Build mitigation for common risks into the definition of done.

Generate stories for less common risks and add them to the projects backlog.

Review risks when grooming stories.

Carve out time during planning to identify emerging risks.
Carve out time when you are developing the backlog and ask as diverse a group possible to identify the potential problems.

Form a small team (consider the Three Amigos) to interview stakeholders that either were not part of the planning exercise.

Gather risk data though surveys when the program stakeholders are geographically diverse.

Interview customers or potential customers.

Periodically discuss risks either as an agenda item or as a follow-on to standard meetings.
Agile Risk Management In Practice

Light Approach Influenced by Michael Lant

1. Identification: SWOT Analysis (Initially during project chartering, refresh at each planning exercise)

2. Classify: At a story or defect level using a simple taxonomy

3. Quantify: Performed by the respective SME not PM
   - Impact: Measure of affect on a simple 1 – 5 (High) scale (I reflect value or days)
   - Probability: Likelihood on a simple 1 – 5 (High) scale
4. Rate: Matrix: 5 x 5

<table>
<thead>
<tr>
<th>Probability</th>
<th>Impact</th>
<th>Critical (25)</th>
<th>Serious (15 - 20)</th>
<th>Moderate (6 - 12)</th>
<th>Moderate (1 - 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>1</td>
<td>Requires urgent action</td>
<td>Requires notification of responsible executive and senior executives</td>
<td>Requires notification of senior manager</td>
<td>Reviewed quarterly</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Requires notification of responsible executive and senior executives</td>
<td>Requires notification of all senior stakeholders</td>
<td>Requires notification of senior manager</td>
<td>Add story to backlog (low priority)</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Tracked as soon as identified (add story to backlog)</td>
<td>Monitored and reviewed during planning sessions (add story to backlog)</td>
<td>Monitored and reviewed during release planning sessions (add story to backlog)</td>
<td>Add story to backlog (low priority)</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
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5. ACT!
6. Repeat
Measuring Risk: Burn Down Chart

• The risk burn-down chart is then created by plotting the sum of the risk exposure values from the census.
# Measuring Risk: Value At Risk

<table>
<thead>
<tr>
<th>Description</th>
<th>An evaluation of the cost impact of risks that have not been un-remediated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>Facilitate the management of the impact of probability weighted net present value of un-remediated risk through transparency and monitoring</td>
</tr>
<tr>
<td>Utilization</td>
<td>The impact value of risk is monitored at specific points of the program life cycle, where the cost impact of risk is above program risk tolerance specific remediation plans will be established to reduce the estimated risk impact</td>
</tr>
</tbody>
</table>
| Data Required | $\sum (\text{Net Present Value of Un-remediated Risk})$  
Risk Tolerance |
| Calculation | Value at Risk = Probability Weighted Net Present Value of Estimated Cost Impact of Un-remediated Risk |
| Timing      | Work Unit Completion – Specific Points |
| Baseline    | Not Applicable |
| Industry Data | None |

![Graph showing Value At Risk](image-url)
Quantitative Results

Productivity
- Productivity approximately 60% higher than classic projects.
- Variance of Agile data is higher with observations significantly higher.

Time to Market
- Scale seems to reduce speed to market (thinner data).
- New scaled Agile frameworks such as SAFe may further improve time-to-market.

Quality
- More effective reviews and testing is a contributor to improved quality.
- Agile data continues to show higher levels of variance due to different interpretations of frameworks.
Lessons Learned
Lessons Learned

Risk management become a series of conversations not a series of documents.

Risk management using CMMI® and Agile becomes leaner and a truly continuous process.

Each build is assessed, issues identified and the backlog of tasks is reviewed and prioritized and the most important tasks, issues and risk mitigation are scheduled for the next sprint.
Next Steps: Questions

There is a perception from the business that CMMI® and Agile don’t work together?
  – Ahhhhh . . . yes

Perception that Agile can be a random walk. How can projects work without a effective requirements management?
  – Product owner involvement
  – Value burn-up

Risk management when contracting for Agile?
  – Output based contracts
  – Fixed . . .