Risk Management is too Important for Project Managers
(Collaborative team games for risk management)

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Presenter Background

• Project Manager and Trainer
  • >25 years IT experience on utilities, defense, & finance
  • 10 years PMO Agile-to-Traditional Integration

• Agile Project Management
  • Helped create Agile method DSDM in 1994
  • 18 years agile project experience (XP, Scrum, FDD)
  • Board director of Agile Alliance and APLN
  • Author, trainer, and presenter Agile Conference 2001-12
  • Author “RMC’s PMI-ACP Exam Prep” book

• Traditional Project Management
  • PMP, PRINCE2 certifications
  • PMBOK v3 and v5 contributor and reviewer
  • Trainer for PMI SeminarsWorld 2005-2012
  • Presenter PMI Global Congress 2004-2012
  • PMI-ACP certification designer
Presenter Background

Agenda

- Risk Terminology
- The Bad News about Risk Management
- The Good News about Risk Management
- Improvements through Collaborative Games
  - Plan Your Trip (Plan Risk Management)
  - Find Friends and Foes (Risk and Opportunity Identification)
  - Post Your Ad (Qualitative Risk Analysis)
  - Today's Forecast (Quantitative Risk Analysis)
  - Backlog Injector (Plan Risk Responses)
  - Risk Radar (Monitor and Control Risks)
Risk Terminology

Unofficial definition of terms:

**Opportunity** – Good stuff that could happen to the project
   “Our current reporting engine meets the performance requirements”

**Risk** – Bad stuff that could happen to the project
   “Loss of key resources delays project handover to support”

**Risk Impact** – the result to the project should the risk occur

**Risk Probability** – the likelihood that the risk will occur

**Risk Severity** – Impact x Probability = the significance of a risk

**Issue** – Stuff that has happened, like a risk occurring
   “Decree: Business resource time will now to be charged to the project.”

**Assumption** – A low probability risk reworded as if it will not happen – and monitored
   “PCs will be available when required to start the project”

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The Cost of Poor Risk Management

Many IT projects fail - many of these failures could be avoided through better risk management

True cost of failure = Direct Cost (Project costs) + Indirect Costs (replace failed system, disruption to business, the lost revenue, lost opportunity costs)

\[
\text{GDP} \times 6.4\% \times 43\% \times 66\% \times 65\% \times 7.5:1 = \text{Cost yearly}
\]

In Texas this amounts to $2.2 billion per week, saving just 5% of this through better risk management would be worth $113M, per week, e.g. Next week

[1] NY Times: Economics
Typical Risk Management - Process Flaws

PMBOK Risk Management Process

1. Risk Management Planning (Decide how to...)
2. Risk Identification (Find them)
3. Qualitative Risk Analysis (Classify and rank)
4. Quantitative Risk Analysis (Numerical analysis)
5. Risk Response Planning (Plan counter measures)
6. Risk Monitoring and Control (Checking, controlling, reporting)

Typical Risk Management – Execution Flaws

Problems:

- **Poor engagement** - dry, boring, academic, done by PM, does not drive enough change
- **Done once** – typically near the start, when we know least about the project
- **Not revisited enough** – often “parked” off to one side and not reviewed again
- **Not integrated into project lifecycle** – poor tools for task integration
- **Poor ongoing visibility** – few stakeholders regularly review the project risks
Typical Risk Management – Issues

**Issue Summary:**

1. Flawed Process (or at least not optimally described)
2. Focused at the wrong time during the project
3. Dominated by the wrong resources

→ Weak Risk Management → Project Failures

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**Agile Tools For Change**

Business and team collaborate on accepting new changes and priority adjustments

- New Changes are prioritized into the backlog of remaining work
- Items may be reprioritised

**Agile Tools For Risk Management**

Business and team collaborate on incorporating risk avoidance and reduction activities

- Risk avoidance and reduction activities prioritized into the backlog of remaining work
- Risk items may be reprioritised

Business User Story

Risk Avoidance Story
Collaboration Benefits

1. **Generates wiser decisions** through the understanding of complex, cross boundary problems via shared information
2. **Promotes problem solving** rather than procedural decision making
3. **Fosters action** by mobilizing shared resources to get work done
4. **Builds social capital** by building relationships and understanding
5. **Fosters ownership of collective problems** by valuing participation and shifting power downwards

Source: Study by Steven Yaffee from the University of Michigan.

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Collaboration in Agile

1. **Planning Poker** – moves quickly yet engages team, builds consensus, finds outliers
2. **Group Decision Making** – Fist of Five voting
3. **Retrospectives** – joint diagnosis of issues and process adaptation
Collaborative Risk Management

Characteristics:
- **Promotes engagement** – fun, whole team, drives new stories and behaviours
- **Done frequently** – throughout the project as new information emerges
- **Updated Often** – linked to iteration planning, retrospectives and backlog grooming
- **Integrated into planning lifecycle** – Adds stories into the backlog, creates actions for retrospective process
- **Engaging, high visibility** – generates high visibility reminders for project risks and mitigation strategies

Collaboration Cautions

Collaboration does not equal Brainstorming

**Brainstorming**: Free flow of ideas from a group, no silly ideas, just get as many ideas out as possible, then refine
Popularized by Alex Osborn in the 1940's

Proved ineffective by various experiments from 1950’s-today
48 Students in 12 groups of 4 vs. 48 solo participants
Solo participants generated twice as many ideas
Solo ideas more “feasible” and “effective”

**Take Away**: Individual first, then consolidate and refine
Collaborative Risk Management

Similar PMBOK Steps; new roles, focus & approach

1. Risk Management Planning (Decide how to...)
2. Risk Identification (Find them)
3. Qualitative Risk Analysis (Classify and rank)
4. Quantitative Risk Analysis (Numerical analysis)
5. Risk Response Planning (Plan counter measures)
6. Risk Monitoring and Control (Checking, controlling, reporting)
PMBOK Risk Management Steps

1. Risk Management Planning
2. Risk Identification
3. Qualitative Risk Analysis
4. Quantitative Risk Analysis
5. Risk Response Planning
6. Risk Monitoring & Control

(1 Decide how)
(2 Find them)
(3 Sift)
(4 Measure)
(5 Decide actions)
(6 Act and measure)

Iterative Risk Management
1) Plan Your Trip (Plan Risk Management)

Purpose:
• Tailor RM approach to this project
• Educate the team in RM basics

Games:
1. 4C’s – Consider the Costs, Consequences, Context, Choices
2. Are we buying a Coffee, Couch, Car, or Condo?
3. Deposits and bank fees

Q: What would you take with you for a 2 hour hike?
Q: A 2 day hike?
Q: In winter?
Q: For kids or experiences adventurers?

Project size and significance:
Q: Are we buying a Coffee, Couch, Car, or a Condo?
   $2, $2,000, $20,000, $200,000
(Levels of rigor and need for professional help)
1) Plan Your Trip (Plan Risk Management)

Deposits and Bank Fees – understand value risk interaction

Cumulative Feature Value

Cumulative Feature Value + Issue impacts

Features

Time

Risks occurring

2) Find Friends and Foes (Risk and Opportunity Identification)

Purpose:
- Understand and identify Risks and Opportunities

Games:
- Doomsday Clock - identify risks (based on IEEE categories)
- Karma day - identify opportunities (based on IEEE categories)
2) Doomsday Clock

- Scrum Master (and team) as obstacle removers
- Scrum Master (and team) as risk look-outs and guards

2) Karma Day

- Scrum Master (and team) as opportunity enablers
- Scrum Master (and team) as opportunity ambassadors
3) Post Your Ad (Qualitative Risk Analysis)

Purpose:
- Classify and rank risks and opportunities

Games:
- Investors and Help Wanted
- Tug of War

### Traditional Probability and Impact Matrix

<table>
<thead>
<tr>
<th>Probability</th>
<th>0.9</th>
<th>0.7</th>
<th>0.5</th>
<th>0.3</th>
<th>0.1</th>
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</thead>
<tbody>
<tr>
<td>0.05</td>
<td>0.09</td>
<td>0.14</td>
<td>0.10</td>
<td>0.06</td>
<td>0.01</td>
</tr>
<tr>
<td>0.04</td>
<td>0.07</td>
<td>0.14</td>
<td>0.10</td>
<td>0.06</td>
<td>0.01</td>
</tr>
<tr>
<td>0.03</td>
<td>0.03</td>
<td>0.10</td>
<td>0.04</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>0.02</td>
<td>0.09</td>
<td>0.20</td>
<td>0.04</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>0.01</td>
<td>0.18</td>
<td>0.40</td>
<td>0.08</td>
<td>0.01</td>
<td>0.01</td>
</tr>
</tbody>
</table>

- 0.05 / Very Low
- 0.10 / Low
- 0.20 / Moderate
- 0.40 / High
- 0.80 / Very High
3) Post Your Ad (Qualitative Risk Analysis)

4) Today’s Forecast (Quantitative Risk Analysis)

Purpose:
- Measure risks and opportunities

Games:
- Dragon’s Den – “Next Best Dollar Spent”
- Battle Bots – simulations
4) Today’s Forecast (Quantitative Risk Analysis)

Expected Monetary Value (EMV) = Impact x Probability

Expected Monetary Value (EMV) = $80,000 x (50%) = $40,000

Residual Risks = remaining risks after risk response
e.g. reduce reporting performance risk by running on a faster server, risk prob. halved

Secondary Risks = new risks as a result of risk response
e.g. move to new corporate cloud platform for reporting - this has it’s own new risks

Net EMV = Residual Risk (EMV) + Secondary Risk (EMV)

<table>
<thead>
<tr>
<th>Risk</th>
<th>Initial EMV</th>
<th>Residual EMV</th>
<th>Secondary EMV</th>
<th>Net EMV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reporting Engine</td>
<td>$60,000</td>
<td>$30,000</td>
<td>$10,000</td>
<td>$40,000</td>
</tr>
<tr>
<td>Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iOS Integration</td>
<td>$30,000</td>
<td></td>
<td>$10,000</td>
<td>$30,000</td>
</tr>
<tr>
<td>Facebook compatibility</td>
<td>$50,000</td>
<td>$30,000</td>
<td></td>
<td>$30,000</td>
</tr>
<tr>
<td>3rd Party Components</td>
<td>$40,000</td>
<td>$20,000</td>
<td></td>
<td>$20,000</td>
</tr>
<tr>
<td>QA Continuity</td>
<td>$15,000</td>
<td></td>
<td>$5,000</td>
<td>$15,000</td>
</tr>
</tbody>
</table>

5) Backlog Injector (Plan Risk Responses)

Purpose:
• Ensure risk and opportunities responses are actioned

Games:
• Junction Function
• Dollar Balance
• Report Card
• Inoculator
5) Backlog Injector (Plan Risk Responses)

Junction Function – Decide what to do about the risks
Options:
• Avoidance – eliminate the cause of the risk
• Mitigation – reduce probability of the occurrence
• Transference – insurance, outsource, etc.
• Acceptance – accept and communicate to stakeholders

Dollar Balance – understand ranking with features

Risk Severity ---- Feature Priority

Net Expected Monetary Value – Business Value

(Probability % x Impact $)

Prioritized Risk List

Prioritized Response Actions

Prioritized Feature Value

<table>
<thead>
<tr>
<th>Prioritized Risk List</th>
<th>Prioritized Response Actions</th>
<th>Prioritized Feature Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>50% x $9000</td>
<td>Action</td>
<td>$5,000</td>
</tr>
<tr>
<td>50% x $8000</td>
<td>Action</td>
<td>$4,000</td>
</tr>
<tr>
<td>50% x $3000</td>
<td>Action</td>
<td>$3,000</td>
</tr>
<tr>
<td>25% x $6000</td>
<td>Action</td>
<td>$2,000</td>
</tr>
<tr>
<td>25% x $2500</td>
<td>Action</td>
<td>$1,000</td>
</tr>
<tr>
<td>25% x $500</td>
<td>Action</td>
<td>$500</td>
</tr>
<tr>
<td>10% x $500</td>
<td>Action</td>
<td>$100</td>
</tr>
</tbody>
</table>
5) Backlog Injector (Plan Risk Responses)

Report Card – Preparing the info for having the backlog insertion discussion

<table>
<thead>
<tr>
<th>Risk</th>
<th>Initial EMV</th>
<th>Residual EMV</th>
<th>Secondary EMV</th>
<th>Net EMV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reporting Engine</td>
<td>$50,000</td>
<td>$30,000</td>
<td>$10,000</td>
<td>$40,000</td>
</tr>
<tr>
<td>Performance</td>
<td>$30,000</td>
<td>-</td>
<td>-</td>
<td>$30,000</td>
</tr>
<tr>
<td>iOS Integration</td>
<td>$50,000</td>
<td>$30,000</td>
<td>-</td>
<td>$30,000</td>
</tr>
<tr>
<td>Facebook compatibility</td>
<td>$40,000</td>
<td>-</td>
<td>$20,000</td>
<td>$20,000</td>
</tr>
<tr>
<td>3rd Party Components</td>
<td>$15,000</td>
<td>-</td>
<td>-</td>
<td>$15,000</td>
</tr>
</tbody>
</table>

Backlog Injector

Inoculator - Getting risk response actions into the backlog
Backlog Injector

**Inoculator** - Getting risk response actions into the backlog

Inclusion in a common backlog is essential for visibility

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**6) Risk Radar** *(Monitor and Control Risks)*

**Purpose:**
- Monitor and control risks, opportunities, and process

**Approaches:**
- Risk Burn Down Graphs
- Risk Retrospectives
- Rinse and Repeat
6) Risk Radar (Monitor and Control Risks)

<table>
<thead>
<tr>
<th>ID</th>
<th>Short Risk Name</th>
<th>Jan Impact</th>
<th>Feb Impact</th>
<th>Mar Impact</th>
<th>Apr Impact</th>
<th>Prob</th>
<th>Sev</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>JDBC driver performance</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Calling Oracle stored proc. via web service</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Remote app. Distribution to PDAs</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Oracle Warehouse Builder stability</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Legacy system stability</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>Access to user community</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Availability of Architect</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
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<tr>
<td>8</td>
<td>Server upgrade necessary</td>
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<td>1</td>
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<td>9</td>
<td>3</td>
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<td>9</td>
<td>Oracle Handheld Warehouse browser launch</td>
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<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>PST Changes for British Columbia</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Risk Retrospective:

1. Are we eliminating or reducing our risks?
2. How is our remaining Risk EMV burning down?
3. What is our Risk EMV Reduction Velocity per iteration?
4. When will our remaining Risk EMV be zero?
5. Do we have any new or escalating risks?
6. What are the root causes of our risks, and can we eliminate any of them?
7. Which risk avoidance or elimination strategies are working and which are not?
8. For risks that we chose to transfer, how are the third parties managing them? What can we learn from them, or would we be better bringing them back internally?
9. How are our team risk management capabilities developing?
10. Where do we still need mentoring and support?
6) Risk Radar (Monitor and Control Risks)

1. Update Risk lists and EMV scores
2. Groom backlog for new features + risks
3. Rebalance priorities
4. Update risk radiators
5. Examine outsourced risks
6. Check assumptions for validity
7. Review opportunity list for possible wins
Summary

More Good News:

The “CHOAS Manifesto” report, the Standish Group, 2012

“The agile process is the universal remedy for software development project failure. Software applications developed through the agile process have three times the success rate of the traditional waterfall method and a much lower percentage of time and cost overruns.” - (page 25)

Summary / Additional Resources

- Collaboration brings huge benefits for risk and opp. management
- Awareness changes behaviour and changes outcomes
- Fun activities are more memorable

Book on Risk Management for Software Projects
“Waltzing with Bears”, Tom DeMarco and Tim Lister

Resources:
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