The Silver Lining of Project Uncertainties
Opportunities in Disguise

Webinar 2014

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Discovery consists of looking at the same thing as everyone else and thinking something different.

*Albert Szent-Györgyi—Nobel Prize Winner*
Agenda

• Confusion
• Principles of Risk and Uncertainty Management
• Core PM Conflict
• Study & Research Method
• Results
• Implications
Poll Question 1
Project Risk and Project Uncertainty
Confusing Standards: Risk ≠ Uncertainty

Citations from PMBoK 5th edition:

- Project risk has its origins in the uncertainty present in all projects.
- Individual project risks are different from overall project risk. Overall project risk … is more than the sum of the individual risks with a project, since it includes all sources of project uncertainty.
- Organizations perceive risks as the effect of uncertainty on projects and organizational objectives.
- Risk threshold, which refers to measures along the level of uncertainty or the level of impact…

Our proposition: Risk ≠ Uncertainty
Principles of Project Risk Management

Risk

Don’t Change Value Proposition

Precondition: Well defined project objectives.
Management focus: Adhere to initial objectives minimize variation and identify risk drivers.
Processes of project risk management:
Plan Risk Management, Identify Risks, Qualitative & Quantitative Risk Analysis, Plan Risk Responses, Control Risks.
Principles of Project Uncertainty Management

Uncertainty

Precondition: Well defined project value proposition.

Management focus: Maximize project value and identify value drivers.

Processes of project uncertainty management: Discover, select, exploit opportunities and change value proposition.

Change Value Proposition

Alternative Base Lines

Time
Core PM Conflict: Risk vs. Uncertainty

Focus on initial plans: Avoid plan changes in situations of risks.

Focus on project results: Change plans in situations of uncertainty and exploit opportunities.
Poll Question 2
Project Value
Study’s Research Objectives

Research Objectives

1. Identify categories of uncertainties.
2. Identify categories of project value opportunities.
3. Identify who discovers project value opportunities.
Study & Research Method

Exploratory case based interview study

• 42 case studies
• 90-minute interviews with semi-structured questionnaire
• Creation of case study protocol and database

<table>
<thead>
<tr>
<th>Project Category</th>
<th>Frequencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Systems Projects</td>
<td>20</td>
</tr>
<tr>
<td>Product and Service Development Projects</td>
<td>9</td>
</tr>
<tr>
<td>Construction Projects</td>
<td>4</td>
</tr>
<tr>
<td>Business &amp; Organization Change Projects</td>
<td>3</td>
</tr>
<tr>
<td>Research &amp; Development Projects</td>
<td>2</td>
</tr>
<tr>
<td>Project-like tasks</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
</tr>
</tbody>
</table>
Case Stories

Case 1: IT projects in a merger.
- Uncertainty was mainly caused by differing stakeholders’ perspectives.
- Several opportunities were identified and were discussed.

Case 2: Major IT project in High-Tech company.
- Uncertainty was mainly caused by competing technologies.
- Identified opportunities related to technologies.
- Revised budget and schedule to accomplish higher project value.
- One identified opportunity rejected due to lack of resources.
- Senior management involved in opportunity selection.
Poll Question 3

Project Uncertainties
### Categories of Project Uncertainties

<table>
<thead>
<tr>
<th>Uncertainty Categories</th>
<th>Uncertainty Sources</th>
<th>Frequencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder uncertainty</td>
<td>Inexperience, change, contracts</td>
<td>18</td>
</tr>
<tr>
<td>Organizational uncertainty</td>
<td>M&amp;A, politics, unknown legacy system</td>
<td>10</td>
</tr>
<tr>
<td>Technological uncertainty</td>
<td>Tech. issues, tight specs</td>
<td>8</td>
</tr>
<tr>
<td>Contextual uncertainty</td>
<td>Legal, market</td>
<td>6</td>
</tr>
<tr>
<td>Task uncertainty</td>
<td>Unknown complexity</td>
<td>2</td>
</tr>
<tr>
<td>Malmanagement</td>
<td>Self induced uncertainty</td>
<td>4</td>
</tr>
</tbody>
</table>

- Stakeholder capabilities and dynamics are the most frequent source of uncertainties!
- Mergers and acquisitions and politics lead to uncertainty.
### Nature of Project Value Opportunities

<table>
<thead>
<tr>
<th>Opportunity Category</th>
<th>Value Opportunities</th>
<th>Frequencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project &amp; Business</td>
<td>Opportunities beyond original solution: Multiplier</td>
<td>11</td>
</tr>
<tr>
<td>Implementation process</td>
<td>Process improvement: Monitoring, versioning</td>
<td>8</td>
</tr>
<tr>
<td>Future Business</td>
<td>Project life cycle: Beyond project</td>
<td>7</td>
</tr>
<tr>
<td>Technology</td>
<td>Testing solution, virtual solution</td>
<td>3</td>
</tr>
</tbody>
</table>

- Technical opportunities are less frequent than expected!
- Not every situation of uncertainty leads to opportunities!
Poll Question 4
Project Opportunity Recognition
Stakeholders Recognizing Opportunities

- Opportunities are mainly recognized by project managers!
Opportunity Recognition & Exploitation

- 4 cases identifying real opportunities and misperceiving opportunities
- 2 cases having both exploited and unexploited opportunities
- Identifying opportunities is not easy or natural!
- Exploitation of more than two opportunities not observed!
- Very few rejected opportunities!
## Value Effects of Opportunities

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequencies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder Satisfaction</td>
<td>17</td>
<td>77%</td>
</tr>
<tr>
<td>Sponsor Satisfaction</td>
<td>15</td>
<td>68%</td>
</tr>
<tr>
<td>Financial Returns</td>
<td>13</td>
<td>59%</td>
</tr>
<tr>
<td>Schedule</td>
<td>13</td>
<td>59%</td>
</tr>
<tr>
<td>Quality (Performance)</td>
<td>12</td>
<td>55%</td>
</tr>
<tr>
<td>Budget</td>
<td>11</td>
<td>50%</td>
</tr>
<tr>
<td>Outcome (Specs)</td>
<td>10</td>
<td>46%</td>
</tr>
<tr>
<td>Quality (Grade)</td>
<td>8</td>
<td>36%</td>
</tr>
<tr>
<td>Non-financial Benefits</td>
<td>6</td>
<td>27%</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>18%</td>
</tr>
</tbody>
</table>

Opportunities have positive effects on project outcomes.
Linking Uncertainties with Opportunities

• Not all uncertainties are linked with opportunities.
• But all opportunities are linked to uncertainties!

=> Uncertainties are not bad per se!
• Business perspective is key to opportunity perception and exploitation!
• !Constraint management is constrained to risks!
• Note: Only 7 opportunities were perceived by others
## Implications for PM Practice

### Project Uncertainty Identification Checklist

<table>
<thead>
<tr>
<th>Category</th>
<th>Questions</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stakeholder uncertainty</strong></td>
<td>Do all stakeholders have the skill sets and capabilities assumed in the project plan?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do key stakeholders change during project implementation?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Organizational uncertainty</strong></td>
<td>Does the organizational or corporate structure change significantly?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Technological uncertainty</strong></td>
<td>Are technical issues surprising?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are technical specs very difficult to meet because they are too restrictive?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Contextual turbulences</strong></td>
<td>Are there new laws or changes to other regulatory bodies which were not anticipated in the project plan?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do original market conditions significantly differ from the beginning of the implementation?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Project characteristics</strong></td>
<td>Is the project complex and are specific measures in place to address complexity issues?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Implications for PM Practice**

**Project Opportunity Identification Checklist**

<table>
<thead>
<tr>
<th>Category</th>
<th>Questions</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Are there technical alternatives that would be beneficial to improving project outcomes?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementation process</td>
<td>Are there possibilities to change and improve the implementation procedures to improve project outcomes?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project &amp; business</td>
<td>Are there additional applications for the original solution?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Could the solution serve as a standard for other clients or stakeholders?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Future business</td>
<td>Are there possibilities to create revenue sources over the system’s life cycle?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Poll Question 5
Current Role of Project Manager
Roles of Project Managers

<table>
<thead>
<tr>
<th>Responsibilities</th>
<th>Risk Perspective</th>
<th>Uncertainty Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Focus</td>
<td>Variation Drivers</td>
<td>Value Drivers</td>
</tr>
<tr>
<td>Project Definition</td>
<td>Statement of Work</td>
<td>Stakeholder Needs</td>
</tr>
<tr>
<td>Project Planning</td>
<td>Baseline</td>
<td>Business Case</td>
</tr>
<tr>
<td>Project Execution</td>
<td>Avoid Variation</td>
<td>Identify Opportunities</td>
</tr>
<tr>
<td>PM’s Role</td>
<td>Project Analyst</td>
<td>Project Leader</td>
</tr>
</tbody>
</table>

- Both perspectives are important to create project value.
Implications for PM Practice

• Flexible management expertise to quickly assess situations and identify opportunities.
• Need to augment technical and management skills with business knowledge.
• Reposition project management from constraint management to business management.
Project Value Management Education

• How to teach project managers?
  – Uncertainty is not bad per se.
  – Think and act entrepreneurial.
  – Create a business mindset.

• Which content should be taught?
  – Management of change: Changing project plans.
  – Analyses of project value opportunities.
  – Value management concepts and tools.
Stevens’ Project Management Master’s

Master’s of Science in

Enterprise Project Management

12-course degree program with focus on:

- **Business:**
  Strategic management, Marketing, Finance and Accounting

- **Leadership:**
  Organizational Behavior, Self Awareness, and Change Management

- **Project Management:**
  Fundamentals, Project Analytics, Project Value Management, and Portfolio Optimization
Stevens’ Project Management Educations

• Stevens Alum Henry Gantt invented his bar chart in 1919
• First Project Management Course in 1986
• Registered Education Provider (R.E.P.) with Project Management Institute (PMI)
• Accredited by PMI Global Accreditation Center in 2004
• The only one in New Jersey, New York and Connecticut
• 1,300 Graduate Certificates awarded since inception
• 2007 PMI Education Provider of the Year
• 2012 Re-Accreditation
Final Comments

Publications:

• Monograph is available:
The Silver Lining of Project Uncertainties
  – Sponsored Research monographs are available to members for free download.
  – Monographs can also be purchased at the PMI Store on PMI.org.

Interested in participating in project management research?

• We need more organizations to participate!!!!
• Please do not hesitate to contact us!

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This study was funded by the PMI Academic Resources Department
For more information, please visit:

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