PROJECT RISK MANAGEMENT – PROACTIVE AND EFFECTIVE

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for

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Topic's Overview

- Definition of risk management
- Benefits of effective risk management in projects
- Risk management processes and tools
- The other things we need to manage for RM

Do We Really Know How to Manage Project Risk?

- Methodologies
- Not quite right
- A disconnect
- Why?
  - Failure to consider fundamental principles
  - Project realities
  - Hopeless optimism
  - Connect reality to methodology

What is Risk

- Three components
    1. An event
    2. Probability of the occurrence of the event
    3. Impact of that event (or the amount at stake)
    - Trigger
- Both positive and negative

Where Uncertainty Comes From

Before Going to Manage the Risks

- Do we understand the project **constraints**?
- Have we ‘mapped’ the **stakeholders**?
- Do they understand the constraints
- Have we identified / documented **assumptions**?
- Do we know the overall project **objectives**?
- Have we defined the **success criteria** of the project?
- Do we know what we are getting into?

Triple Constraints, Competing Demands, Trilemma or Quad-lemma…

The laws of physics

- Always balance
- No guarantees
- Will always trickle down to quality
- Look at the trade-offs

Categories

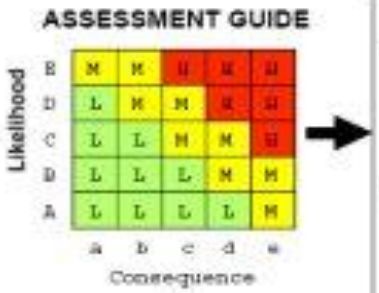
Risk ID – where to look for information

- Project specific information
  - Project description
  - WBS, product design
  - Cost estimate
  - Design and construction schedule
  - Procurement plan
  - Listing of team's issues and concerns
- Information gathering techniques
- Gut feel
- Assumptions
- Constraints

- In the Organization
  - Organizational priorities
  - Stakeholders
  - Change
  - Historic data
  - Checklists
  - Final project reports
  - Risk response plans
  - Organized lessons learned
  - Published commercial databases
  - Academic studies
  - PIR’s

Risk Analysis – Understand Where You Stand

Level	Likelihood
A	Remote
B	Unlikely
C	Likely
D	Highly Likely
E	Near Certainty



RISK ASSESSMENT

High (Red)
Unacceptable. Major disruption likely. Different approach required. Priority management attention required

Moderate (Yellow)
Some disruption. Different approach may be required. Additional management attention may be needed

Low (Green)
Minimum impact. Minimum oversight needed to ensure risk remains low

Level	Schedule	and/or	Cost
a	Minimal or no impact		Minimal or no impact
b	Additional resources required; able to meet		<5%
c	Minor slip in key milestones; not able to meet need date		5-7%
d	Major slip in key milestone or critical path impacted		7-10%
e	Can't achieve key team or major program milestone		>10%

Adapted from http://international.fhwa.dot.gov

Foundation of Risk – Detectability

- It is useful to consider the source of the risk
- Risks can be classified as either internal or external
- Identify the risk trigger
- Measures how to detect that risk
- A risk that is easy to detect is not necessarily a low priority risk

Prioritize Through Paired Analysis

- Each risk is compared with all other risks (one-on-one)
- Team votes on which is more significant
- Scores are tallied for priority list of risks

	A	B	C	D	E
A					
B	A				
C	A	B			
D	D	B	C		
E	A	B	E	D	

Risk Response Strategies

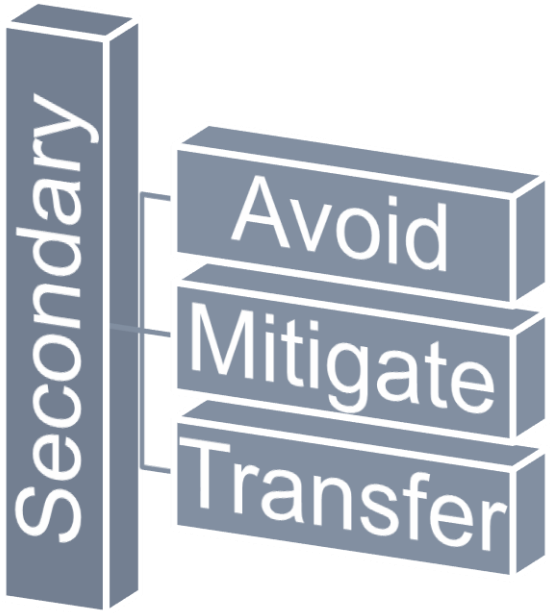
- Avoid the risk
- Reduce the probability of occurrence
- Reduce the impact of an occurrence
- Transfer the impact of an occurrence
- Accept the risk – develop a contingency plan

- For both threats and opportunities
  - Acceptance: accepting the consequences of the risk. Active (developing a contingency plan), or passive
- **Strategies for negative threats**
  - **Avoidance**
  - **Transfer**
  - **Mitigate**
- **The strategies for positive risks /opportunities**
  - **Exploit**
  - **Share**
  - **Enhance**

Contingency

- The strategies for contingent response:
  - Contingency Plans
  - Financial Reserves
  - Staffing Reallocation Reserve
    - Can also look into the concept of the S.W.A.T Team
  - Workarounds

Residual and Secondary Risks



Critical Chain

- Based on the theory of constraints (TOC)
- A management philosophy by Eliyahu M. Goldratt
- Objective: produce more items in less time through the effective use of resources and time
- Used to identify the project's schedule constraint and determine how to improve the situation

Critical Chain – How?

- Apply CPM
- Apply resources
- Identify the “drum resource”: the root cause
- Add buffers - non-work schedule activities to manage uncertainty
  - Size - based on uncertainty in duration of the chain of dependent activities
- Plan for latest possible start and finish dates
- Focus on managing buffer durations

Critical Chain – Benefits

1. Completing projects more quickly
2. Funneling more projects through the organization without adding resources
3. Use cross-project dependency of critical resources
4. A means to stagger projects

Principles

- Contrary to our general belief that events average out
  - In a series of depending events with statistical variations – things do not average out and our performance is as good as our weakest link
- Lean principles
- Student Syndrome
- Murphy's Law
- Parkinson's Law
- Multi Tasking (the legend…)

Refining It

- Escalation procedures (change, risk, issues, updates)
- Proactive
  - Alert stakeholders on a timely manner
- Collaborate
  - Swap resources based on project urgency, emergency, deadlines and condition
  - We all have emergencies
  - Our projects are all important
- ID top 3 projects (paired analysis) for ‘right of way’
- Be mindful of the organizational needs
- ‘Give and take’ means give and take

Lean - Just Enough, Just In Time

- Taiichi Ohno, Toyota production executive
- Systematically minimizes waste (Muda) in the value stream
  - Defects
  - Overproduction
  - Inventories (in process or finished goods)
  - Unnecessary processing
  - Unnecessary movement of people
  - Unnecessary transport of goods
  - Waiting

Poka Yoke

- Mistake proofing
- A simple method to prevent defects from occurring in the business processes
- By Shigeo Shingo, industrial engineers at Toyota, 1960's
- FMA Baka-Yoke

Communication Plan – Keep In Mind

- 100%-100%
- Context – what's happened before? What's the history?
- Stakeholder Analysis
- The strategy for going about communicating (technology, methods, techniques)
- Audiences
- Messages
- Conduct a research-communication audit
- R&R
- Purpose – what each communication activity is designed to achieve
- How effective each activity is
- Ground rules and code of conduct
  - General
  - Email
  - Meetings

Proactive Risk Management

- Early measure of complexity level
- Early assessment for risk sources, characteristics, magnitude and type
- Attempt to draft an approach and potential response

How to Do it? Some Tools

- Define what needs to take place (WBS)
- Identify R&R (OBS)
- Measure the level of complexity
  - (size, timelines, budget, moving parts, integration, teams, environment, technical, political, organizational)
- Conduct a Readiness Assessment
- Prepare Project Definition Meeting (Pre-Kickoff)
- Complete a Stakeholder Analysis

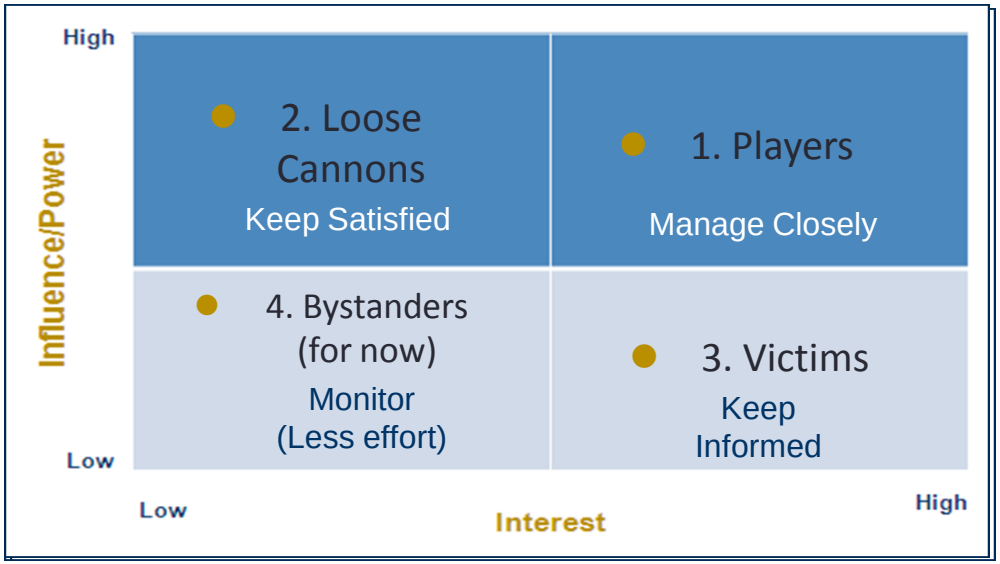
Readiness Assessment

1. Describe the culture and organizational readiness
2. Are sponsors / key stakeholders going to be affected by the project? Have they been notified?
3. What is the driving force behind the project? Internal or external?
4. Are the affected functional areas ready? Do they have staff in place to implement and realize the deliverables?
5. Who is ultimately responsible for the change and who are the executives who champion it?
6. What barriers may prevent the change form occurring?
7. Describe the users and their willingness to accept the change
8. Were change efforts in the past successful? If not – why, and what could have been done differently?
9. What other organizational initiatives take place at the same time?
10. What currency / language has worked in gaining buy-in from users to embrace the change?

Project Definition (Pre-Kick-off stakeholder exploratory) Meeting – One on One

1. Includes stakeholders' wants and needs
2. What benefits and challenges they may see for the project
3. Any special needs and considerations they might have
4. Challenges they may see or that surface for the projects
5. How they expect to be involved (or not)
6. What information they have, need or use
7. What type of communication they prefer
8. Areas of potential conflict with them or between them and other stakeholders
9. Areas of sensitivities they might have
10. Any sensitivities or issues they have regarding other stakeholders or any of the project elements

Stakeholder Analysis



- Provide answers to those who define Project success and acceptance criteria
- They are also the approvers of changes, deliverables and other decisions

Your Deeper View of Stakeholders

- Roles, Responsibilities
- Expectations from project / role
- Level of participation and timing
- Perceived attitude toward risk
- What information do they want from us / message style
- What motivates them
- Are they here by choice
- Are they involved in other projects? Which ones? How many?
- Hidden agendas?
- Active feuds?
- Power base
- Transactional vs. Transformational
- Measure resistance vs. activity level
- The stakeholder's attitude toward the project

- The stakeholder's attitude toward me as a PM – their opinion about my work;
- What can we do to leverage / neutralize the stakeholder to benefit the project
- What financial or emotional interest do they have about the project and its outcome
- Who influences their opinion generally and specifically of me
- If they are not a likely supporter, what can win them over
- If an opposition – how we will be able to manage and reduce their opposition
- Credibility - estimates, performance
- Personality, style and reputation
- Allies and enemies they might have
- Check if based on good information

Risk Dependencies

- Comes in two different contexts
  1. Dependencies on other projects
  2. Risks from within the project that may trigger other risks
- Again - a paired analysis
  - Based on urgency, crisis level, deadlines, and overall importance of the project in its current state to the organization
  - Repeat regularly / collaborate

	Project A	Project B	Project C	Project D
Project A		?	?	?
Project B			?	?
Project C				?

Dependencies

- Two or more activities depend on each other
- Most common - “Finish to Start”
  - Cannot put up the walls until the foundation is dry
- Dependencies force a constraint on the project’s timeline

Try to break dependencies

- Resist the Natural Urge to Sequence Things
- Example: Making coffee
    1. Grind coffee beans
    2. Put filter in the coffee machine
    3. Pour coffee beans in the filter, and close
    4. Fill the coffee pot with water, and pour the water into the tank
    5. Replace the coffee pot on the heater
    6. press the “ON” button
- A few things we can do in parallel

Eliminate Soft Dependencies

- A soft dependency – not mandatory, but a “good practice”
  - Paint, or lay the carpet first
- Eliminate them
  - These dependencies are in-built risk management
  - An attempt to control the risk
  - The result - masking risk management into the schedule
  - While proper project risk management is usually overlooked
- Instead, break the dependency, and count it as a risk
- And manage it, instead of hiding the details in the schedule

Hard Dependencies? Eliminate Them with an Interface

- An interface - a simulation or placeholder, that mocks up the dependency
  - The walls could be constructed ahead of time, if we had a mock foundation
  - The majority of the foundation could be poured as long as we had some mock up
  - The walls could then be attached later with steel reinforcement
- Need to think outside the box

Interface

- What if we do not use the coffee pot to fill the tank?
  - Other containers, one small, and one just the size to fill the tank less the size of the small container
  - Somebody quickly fills the small reservoir with ice cold water, dumps it in the coffee machine, and turns it on
  - It will take a while for the cold water to heat up. While the beans are being ground, the larger water container is being filled with room temperature water, and dumped into the machine
  - The rest of the process goes as planned
- Now the entire activity cycle time is dependent on the time it takes to grind the coffee and dump it into the filter
- **Just consider cost-benefit and risk-reward analysis**

Break the Dependencies

- Resist the urge the naturally order things
- Breaking soft dependencies with risk planning
- Break hard dependencies with interfaces
- Review you current project plan and look for them

Enhanced Risk register

- Who raised the risk
- When it was raised
- Category
- Probability, impact
  - How the impact may change over the life of the project
  - Impact on specific objectives and success criteria
  - A note re: disagreements about P/I
- Trigger
- Measurement of detectability

- Proximity
- Status
- Response strategy / category
- Response actions
  - Mitigation / response actions already taken
- Cross project risks
- Operations and business risks
- Roles and Responsibilities
  - Owner
  - Actionee

Influencers on Risk Strategy

- Customer quality expectations
- Number of organizations involved and relationships between them
- Stakeholders' specific needs
- Importance, complexity, scale of project
- Assumptions, constraints, existing issues
- Organization's environment (legal, government, regulatory)
- Organization's approach to risk

What to Consider in RM Strategy

- Risk management procedures
- Tools and techniques to be used
- Records to be kept
- Risk reporting
- Timing and frequency of RM activities
- Roles and responsibilities of RM procedure
- Risk scales to be used (probability, impact, proximity, detectability)
- Categorization
- Response categories
- Early warning indicators
- Tolerances
- Budget – will it be established and how will be controlled

Early Warning Indicators and Progress

- Percentage of work packages / approvals - accomplished / not accomplished to schedule
- Number of issues being raised (per period, relative)
- Percentage of issues remain unresolved
- Average number of days issues remain unresolved
- Average number of defects captured in quality inspections (in relation to requirements)
- Adherence to budget (rate of spend behind or ahead of planned spend)
- Adherence to schedule (days behind / ahead of schedule)
- Number and nature of CR’s

Clear and Unambiguous Expression

- Risk cause
  - Source / event that gives rise to the risk
  - Drivers / triggers
- Risk event
  - The area of uncertainty
- Risk effect
  - Impact the risk will have on project objectives should it materialize
  - General and specific per objective / success criteria

Summary

- Risk management methodology
- Identification
- Categories
- Analysis
- Detectability
- Response
- Risk management
- Monitor and control

THANK YOU !

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