

# Risk Management Planning

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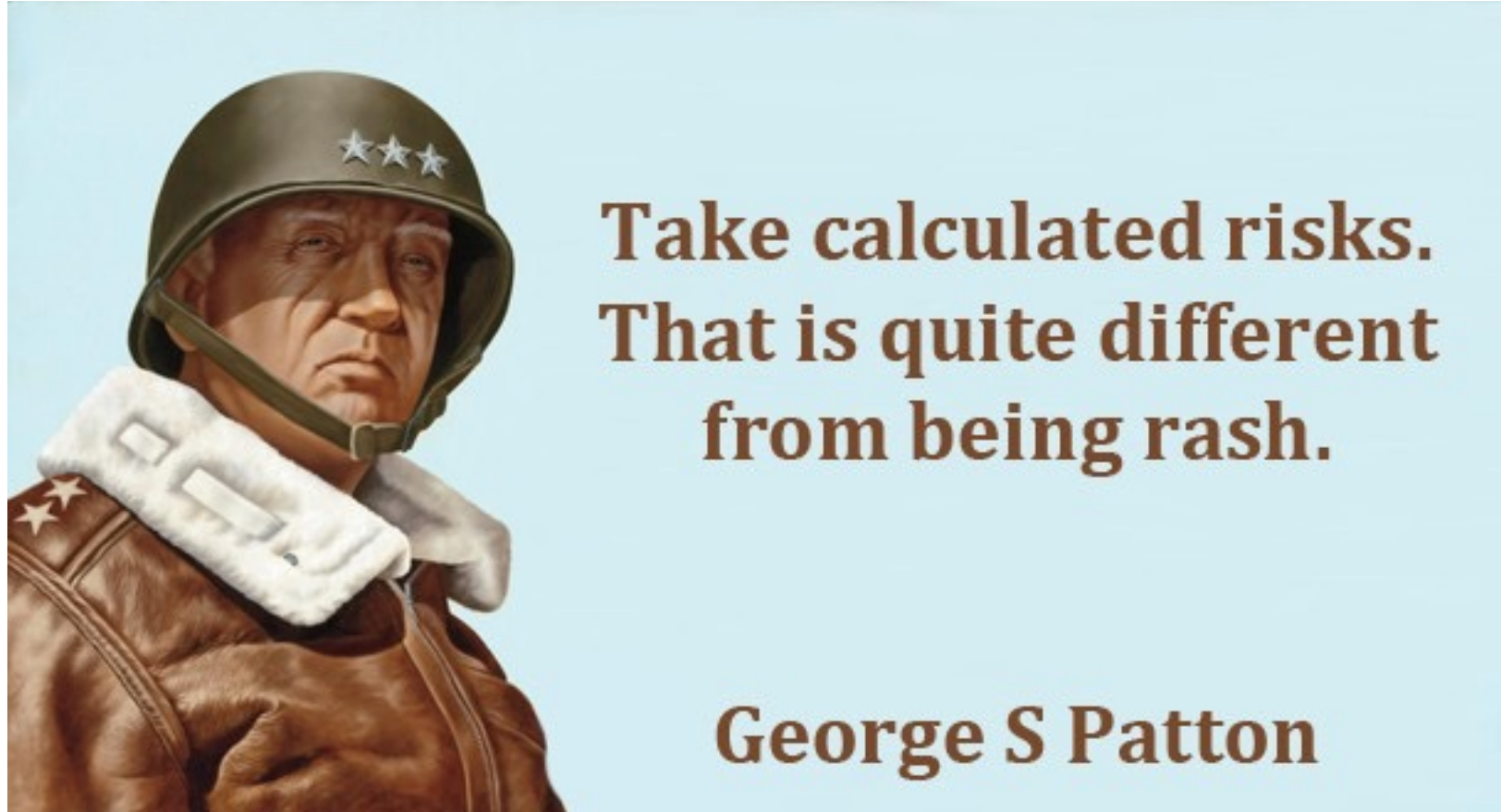
# The Problem



# Why Care



# The Solution



# Project Risk Management

- Definition and Importance
- Four ways to handle risks
- Risk Management Processes
  - Plan Risk Management
  - Identify Risks
  - Evaluate Risks
  - Plan Risk Responses
- Project Risk by Phases



# Project Risk Definition

- Project risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives such as scope, schedule, cost and quality
- A risk may have
  - one or more causes
  - one or more impacts

Source: PMBOK 5<sup>th</sup> Edition.



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# Project risk

- More than the sum of the identified risks—there's an overarching risk as well



# What can be done about risks?

- Avoid
  - Use another method
  - Don't perform the risky activity
- Transfer
  - Share or transfer the impact
  - Insurance is a major approach used here
- Mitigate
  - Reduce *probability* of an impact
  - Reduce *degree of potential* impact
- Accept
  - The activity is necessary and you cannot think of any cost-effective ways to mitigate the potential impacts of the risk





# Example

- Before paint can be applied, the surface must be cleaned. Toxic chemicals are one method of cleaning. Risk: someone may injure their skin or their eyes due to a spill or splash of the chemical. Options:
  - Avoid:
    - find another method of cleaning—would high-pressure water work as well? Could a longer delay for curing be considered? Is painting really necessary?
  - Transfer:
    - get insurance on the workers; if toxic exposure is based on time limits, use a larger workforce for shorter each. (An unethical method sometimes used: outsource internationally)
  - Reduce the probability of injury:
    - require protective equipment such as clothing and safety goggles and mask; provide training and information to the workers.
  - Reduce the degree or impact of possible injury:
    - ensure that onsite first aid attendants are available; eyewash stations, etc.
  - Accept: do nothing



# More definitions

- Risk Appetite
  - Degree of uncertainty an entity is willing to take on in anticipation of a reward
- Risk tolerance
  - The degree, amount, or volume of risk that an organization or individual will withstand
- Risk threshold
  - Point above which a stakeholder or organization is no longer willing to accept the level of uncertainty or impact



# Example

- Think about Northern Gateway, a proposed oil pipeline in northern British Columbia
  - Risk appetite may be greater for the stakeholders who anticipate personal gain, or who value economic benefits more highly
  - Risk tolerance and threshold may be very low for those concerned about impact on wildlife, particularly if they do not see the value of the anticipated benefits in economic activity.
- On a personal level
  - Is there any level of uncertainty you will accept for your child's safety?
- Note that there are also risks for “do nothing”



# Plan Risk Management (process)

- Make an overall plan of how the project will identify, track and respond to risks
- Inputs:
  - Project plan, project charter, shareholder register, enterprise environmental factors, organizational process assets
- Tools:
  - Analytical techniques
  - Expert judgment
  - Meetings
- Outputs
  - Risk Management Plan
  - (note that this becomes input to the other four risk management processes: Identify Risks, Perform Qualitative Risk Analysis, Perform Quantitative Risk Analysis, Plan Risk Responses)
- Comment:
  - The complexity of the Risk Management Plan will vary with the complexity of the overall project.



# Identify Risks (process)

- Inputs
  - Most of the other documents you already have regarding the project
  - Enterprise environmental factors and Organizational Process Assets
- Tools and Techniques
  - Fact finding: Documentation reviews, etc.
  - Risk Breakdown Structure
  - Diagramming techniques
  - SWOT
  - Expert judgment
- Outputs
  - Risk Register



# Risk Breakdown Structure

- Groups and categorizes risks
- Identifies Response (Mitigation)



# Risk Breakdown Structure Example

## Legend:

RA: Risk Avoidance

RS: Risk Sharing

RR: Risk Reduction

RT: Risk Transfer

Level 1	Level 2	Level 3—Risks	Mitigation
Packing	Pack Kitchen	Cuts from handling sharp knives	Buy small boxes for packing knives (RR)
		Cuts from cracked glasses that break while being packed	Discard cracked glasses (RA)
		Transporting alcoholic beverages	Give opened bottles to Dion or Carlita (RA)
	Pack Living Room	Damage to antique furniture	Supervise wrapping and loading personally (RR) and require movers to insure against damage (RT)
		Lose parts while taking apart the entertainment center	Buy box of large freezer bags with a marker to bag and label parts (RR)
		Break most valuable electronics—TV, DVD, Turner Speakers	Buy boxes of the right size with sufficient bubble wrap (RR)



# Risk Register

- List of identified Risks
- List of potential Responses
- Over the life of the project will add:
  - Updates to probabilities of the risk occurring
  - Information on occurrences, if any
  - Information on actual responses and the success or lack of success of those responses



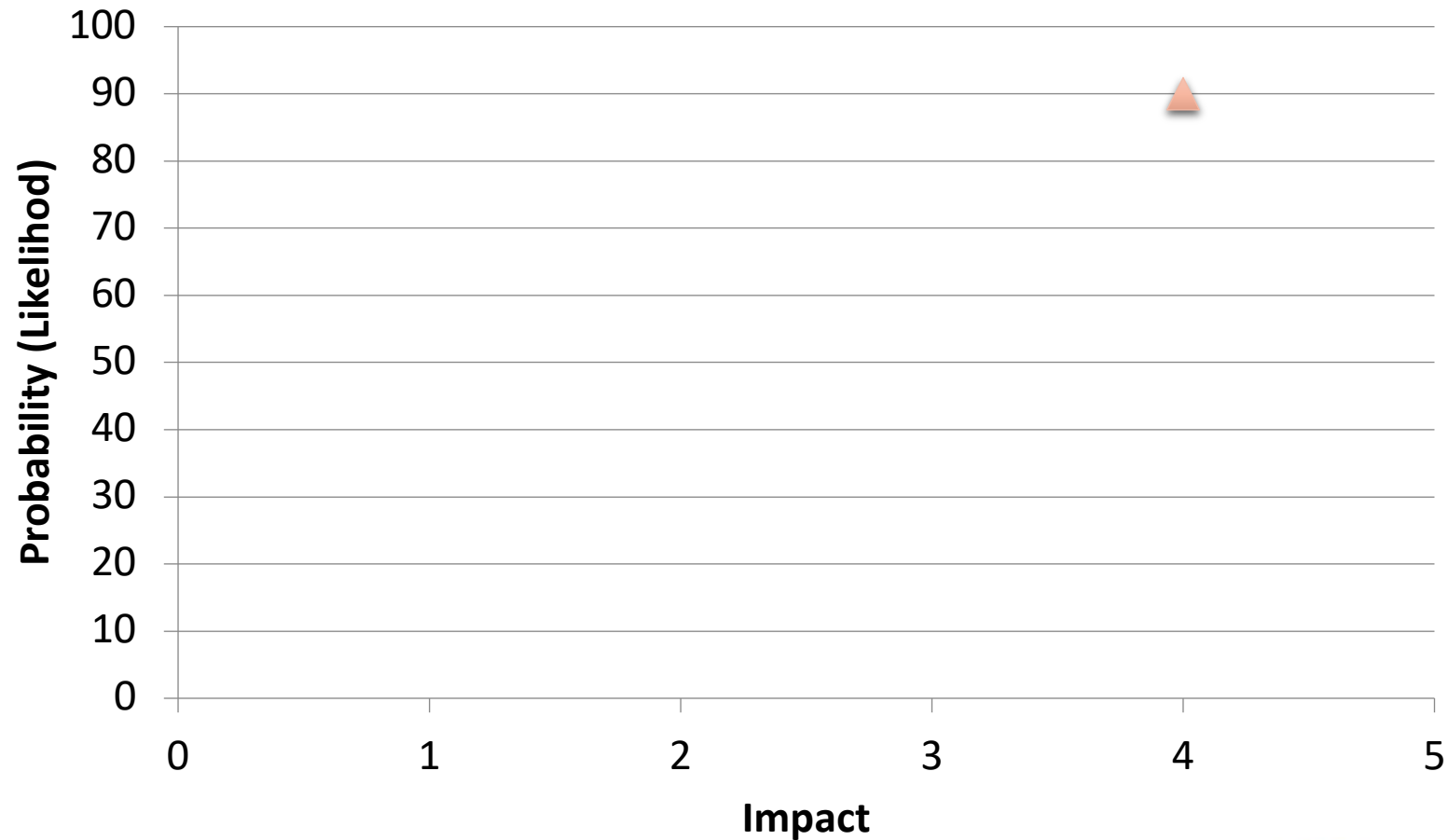


# Qualitative Risk Analysis

- Should always be done
- Considers what are the risks, what can be done about them
- Categorization of risks
- Urgency of risks
  - May vary through the project;
    - Most concern for imminent risks
    - at some point a risk may no longer be an issue
- Updates the risk register:
  - New information about risk probability and impacts
  - New rankings or scores
  - New assumptions



# Probability and Impact Matrix



# Probability and Impact Matrix

- Place identified risks on the matrix
- The closer to top-right, more important to try to identify how to move down and/or to the left.



# Quantitative Risk Analysis

- Quantitative Risk Analysis attempts to use published data to quantify the risks:
  - Industry data about probabilities
  - Data about typical costs
- Uses a variety of tools
  - Data gathering
  - Sensitivity Analysis
  - Expected monetary value analysis
  - Modeling and simulation
  - Expert judgment
- May be expensive; usually is cost-justified for large, complex projects
- May NOT be cost-justified on smaller projects
- Would also update the risk register with the new information



# In-class activity

- Consider a major proposed project locally, the replacement of the Patullo Bridge
- With your group, identify at least ten things that could happen to impact the success of a bridge replacement project. Place each of the ten items on your Probability and Impact Matrix
- On another colour of post-it, identify things that could be done about the risk. Draw an arrow toward “reduced probability” or “reduced impact” or both
- Be ready to explain to the instructor or to members of another group, and at that point, if your explanation is accepted, you may MOVE your risk to the left or DOWN
- Get a group member to take a photo of your matrix to post to the class website



# Controlling Risks

- Throughout the project, the project manager must continue to update the risk register, as new risks are identified, and the project retires consideration of risks that are no longer possible
- Risk reassessments and risk audits can be used to monitor and control the risk management processes
- There are costs associated with the contingency reserve, so if it can be identified that some portion of this reserve can be released, it is a benefit to the organization and to the project



# Project Change Management

- Identification of a risk or occurrence of a risk may create a need for a Project Change.
- Change Management is part of the Project Integration Management knowledge group
- Reminder of a typical change management process:
  - Identify a change request
  - Consider the impacts and costs (may have a committee for this)
  - Make a decision
  - Identify what plans must be updated
  - Inform affected stakeholders of the decision
  - Proceed
- The PMO may have forms and template procedures available for project use



# Risk throughout the project

- The levels of risk change throughout the project
- The risk-over-time profile may be typical to certain project types:
  - Early for projects that use new technology
  - Late for politically sensitive projects
  - During procurement where this is a large portion of the budget





# Risk Management - Summary

- Project risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives such as scope, schedule, cost and quality
- A risk may have
  - one or more causes
  - one or more impacts

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# Risk Management – Summary (continued)

- Risk Management Processes
  - Plan Risk Management
  - Identify Risks
  - Perform Qualitative Risk Analysis
  - Perform Quantitative Risk Analysis
  - Plan Risk Responses
  - Control Risks



# Project Risk Management

- Risk Management Process in the Planning Process Group
  - Plan Risk Management
  - Identify Risks
  - Perform Qualitative Risk Analysis
  - Perform Quantitative Risk Analysis
  - Plan Risk Responses
- Risk Management Processes in the Monitoring and Controlling Process Group
  - Control Risks



# Homework

- Read and Review Chapters 15 & 16
- Read and Review Supplemental slide decks 12 & 13



# Questions?

