Betrayed by Best Practice

How excessive trust in conventional wisdom kills big projects - and what to do about it

Rice Global E&C Forum
Engineering & Construction

February 10, 2012

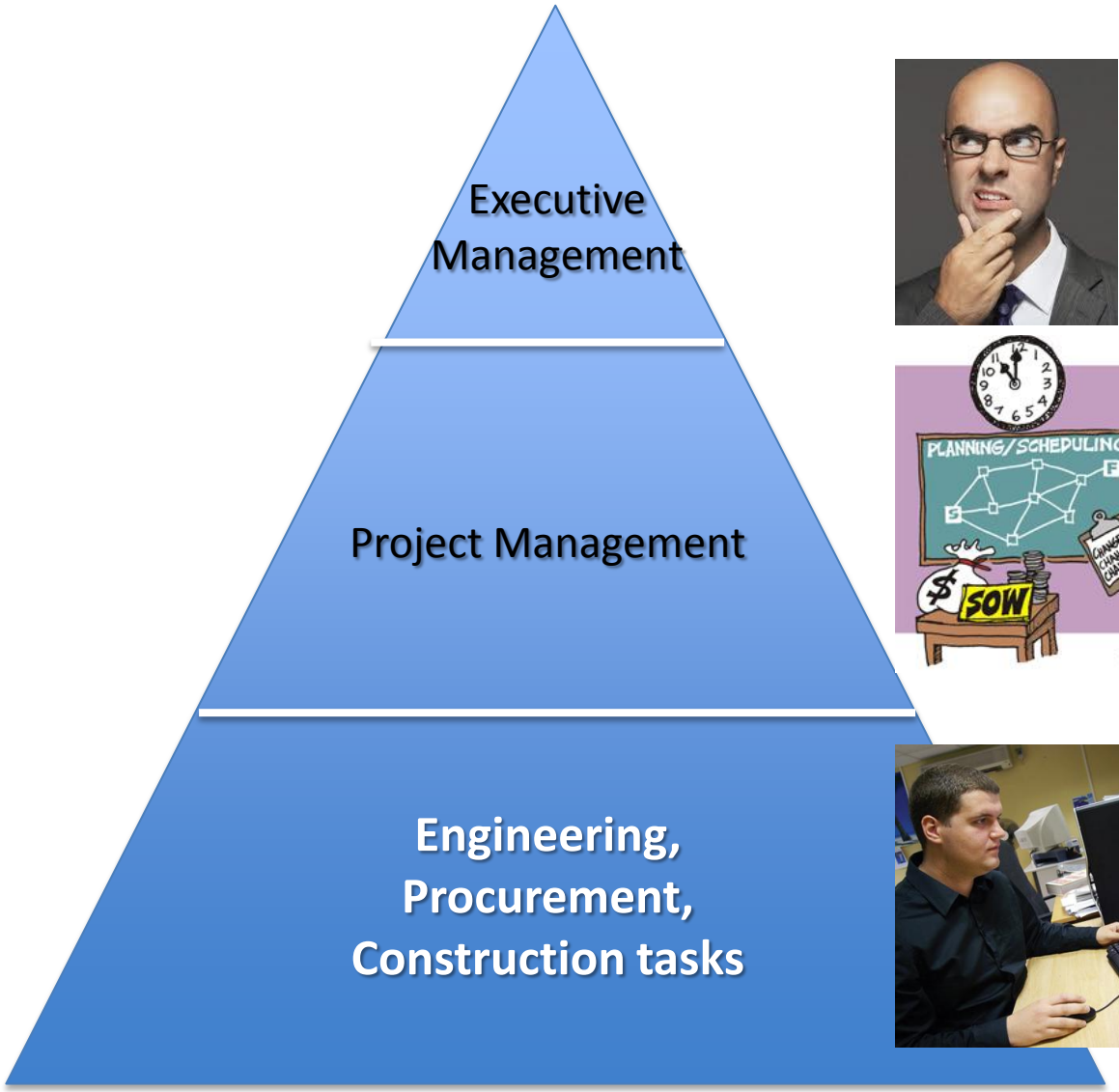
Westney Consulting Group
www.westney.com

Topics

- What do we mean by “best practices”?
- How do we apply best practices to projects?
- Taking aim at best practice malpractice
- Moving from best to even better practices

Why do we think that best practices will result in above-average performance?

Best practices are most useful for critical, complex, repetitive tasks



Topics

- What do we mean by “best practices”?
- How do we apply best practices to projects?
- Taking aim at best practice malpractice
- Moving from best to even better practices

In spite of widespread adaptation of best practices, projects still fail to deliver expected results

- ***65%*** *of industrial projects with budgets larger than $1 billion (in 2010 $) failed to meet business objectives. In some industrial sectors the failure rate was as high as 75%.* [2]

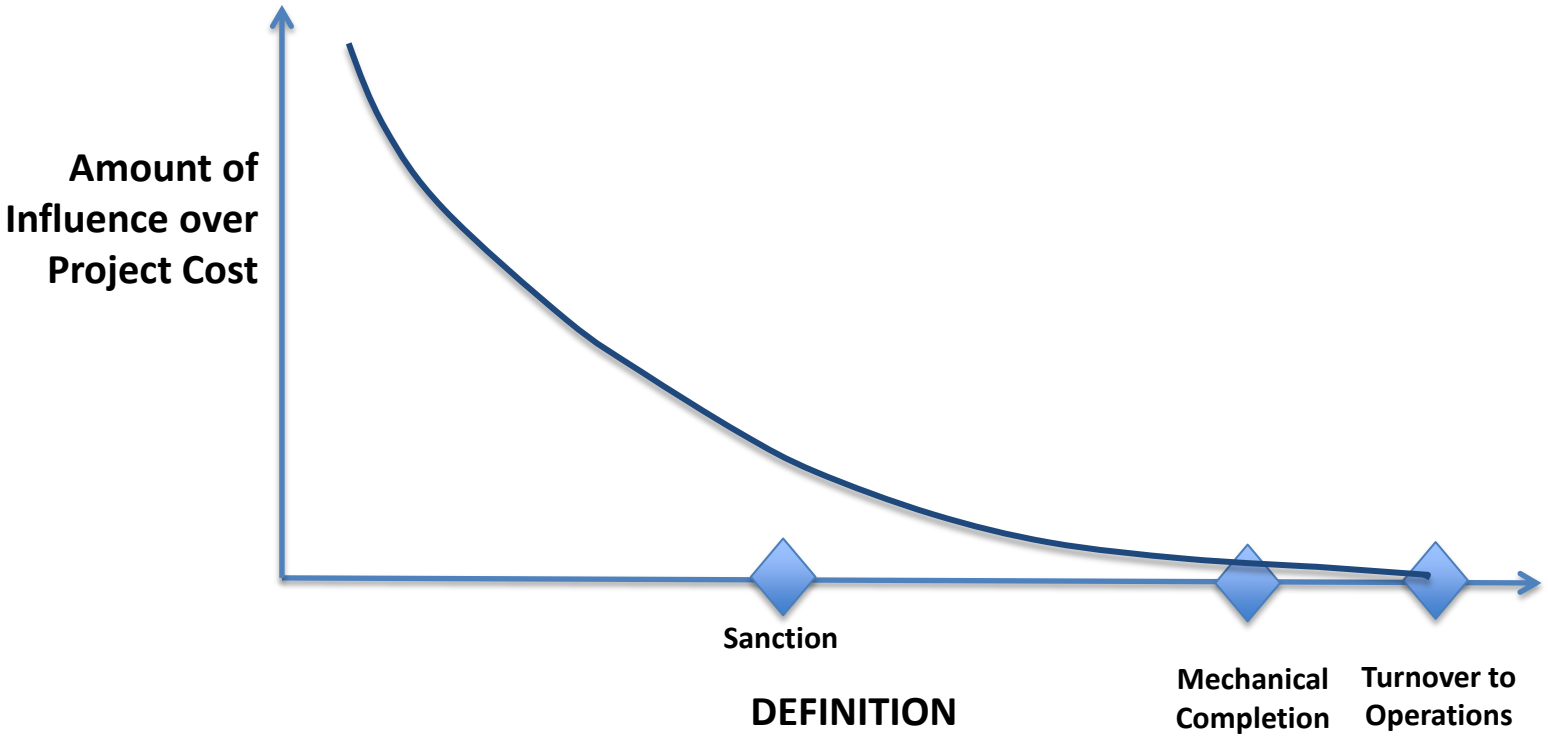
- ***over 80%*** *of (benchmarked) companies have unpredictable and/or poor performing projects.* [3]

- ***only 2.5% of projects could be defined as successful*** *when assessed across the four critical dimensions of scope, cost, schedule, and business benefits.* [1]

So what is going on here?
- *Best practices not followed effectively?*
- *Not enough best practices?*
- *Best practices out of date?*

Source:
1. *Need to know: Delivering capital project value in the downturn*, PriceWaterhouseCoopers 2009
2. *Industrial Megaprojects*, Edward W. Merrow
3. Independent Project Analysis Newsletter: Volume 3, Issue 3, October 2011

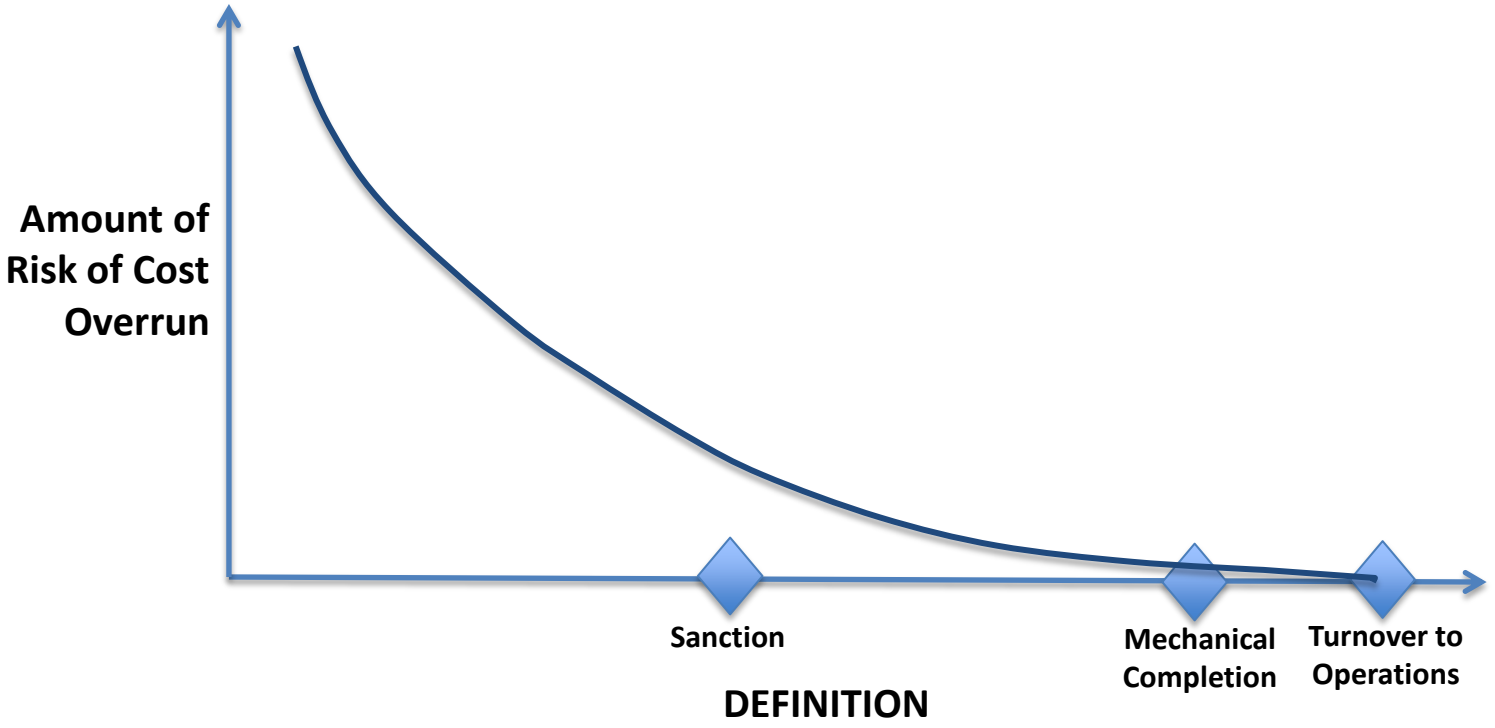
The Influence Curve is the basis for the most important of all project management best practices: *Front-End Loading*



The Influence Curve suggests that, since the ability to influence a project's final cost is greatest in the "front-end" period, the likelihood of success is enhanced by investing a considerable amount of time and effort in identifying and defining the optimal scope and execution plan.

The level of project definition is the primary measure of the degree of Front-End Loading which is used to infer the probability of cost overruns. According to best practice, typically 20 - 25% of engineering should be complete when the sanction estimate is prepared.

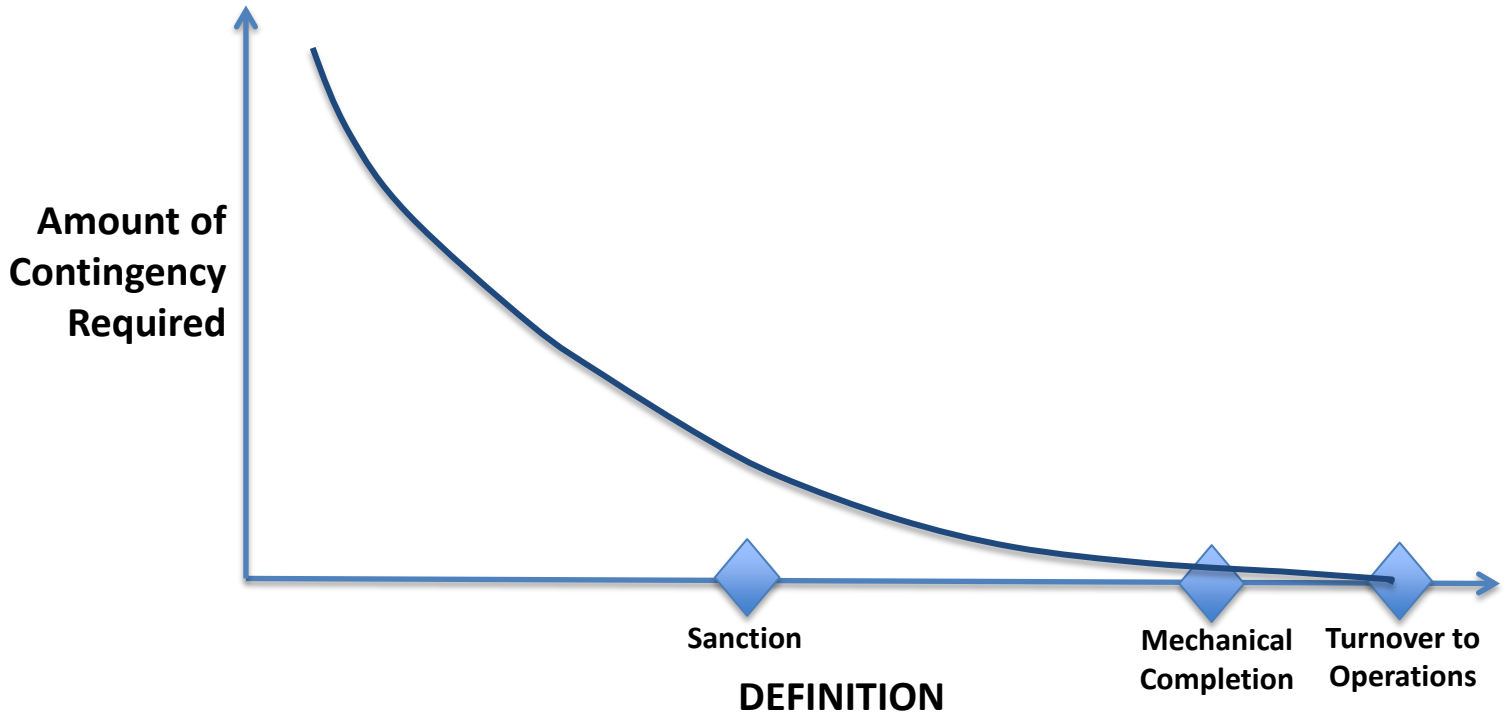
Front-End Loading provides the basis for the best practice of *Estimate Classification Systems* to express accuracy



AACE Int'l. (The Association for the Advancement of Cost Engineering) has a widely-used Recommended Practice for an Estimate Classification System that provides an expected accuracy range for each class of estimate. Many owners have developed their own, similar classification systems.

The level of project definition determines the estimate class which, in turn, defines the expected estimate accuracy.

Estimate classification systems provide the basis for expectations regarding *contingency requirements*

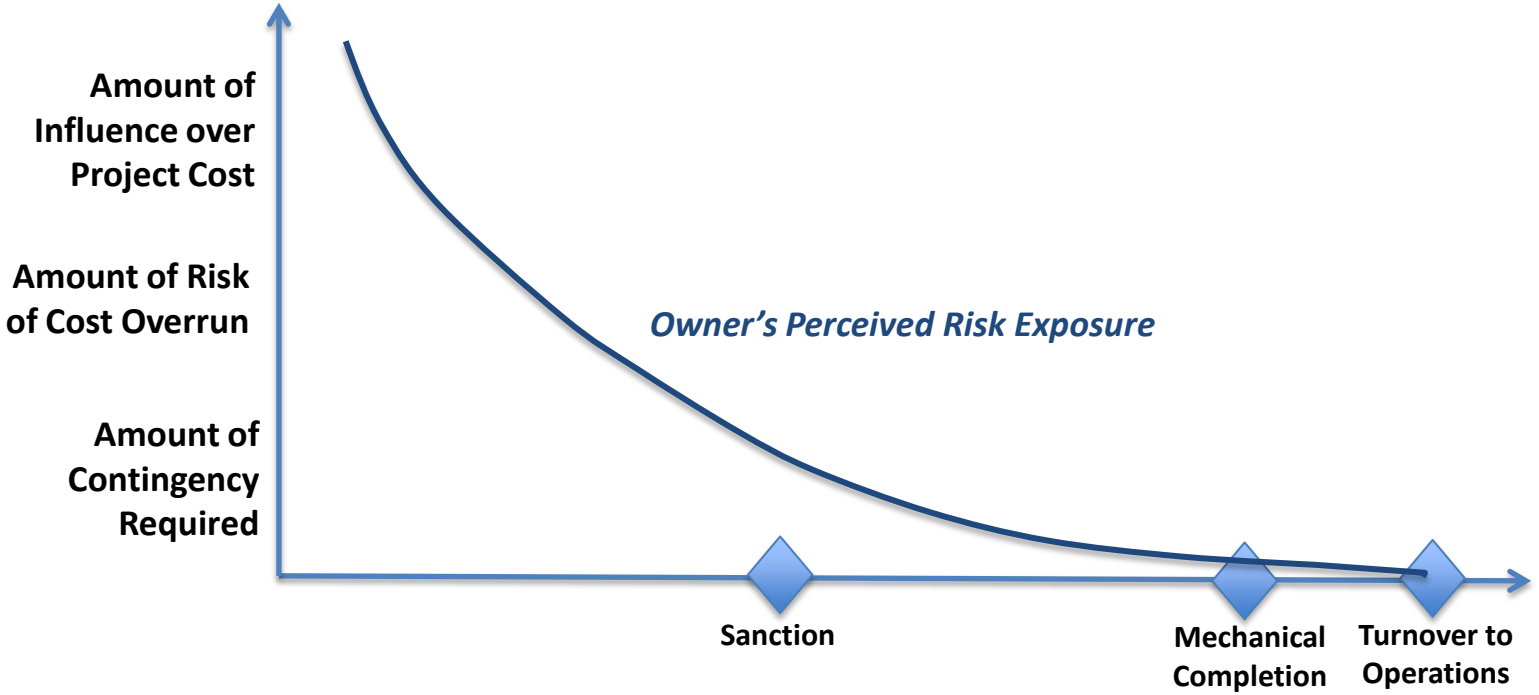


Contingency levels are set in accordance with the perceived level of risk and uncertainty, and typically are reduced over time as definition and performance become better defined.

Contingency, by definition, covers:

- *Design development changes (but NOT scope changes)*
- *Execution variations (but NOT significant changes to execution strategy)*
- *Estimating quantity and pricing variations (but NOT extraordinary changes in economic or market conditions)*

The Influence Curve, Estimate Classifications, and Contingency Requirements provide the basis for *considering project risk*



These best practice principles cause us to assume that most risks are:

1. *Associated with project definition and execution planning*
2. *Managed during the front-end stages*
3. *At an acceptably low level at sanction (if FEL best practices have been applied)*
4. *Covered by normal levels of contingency*

Therefore, owners seek to transfer as many execution risks as possible and, since they are seen as largely associated with performance, think it reasonable that contractors should be able to accept them at a reasonable cost.

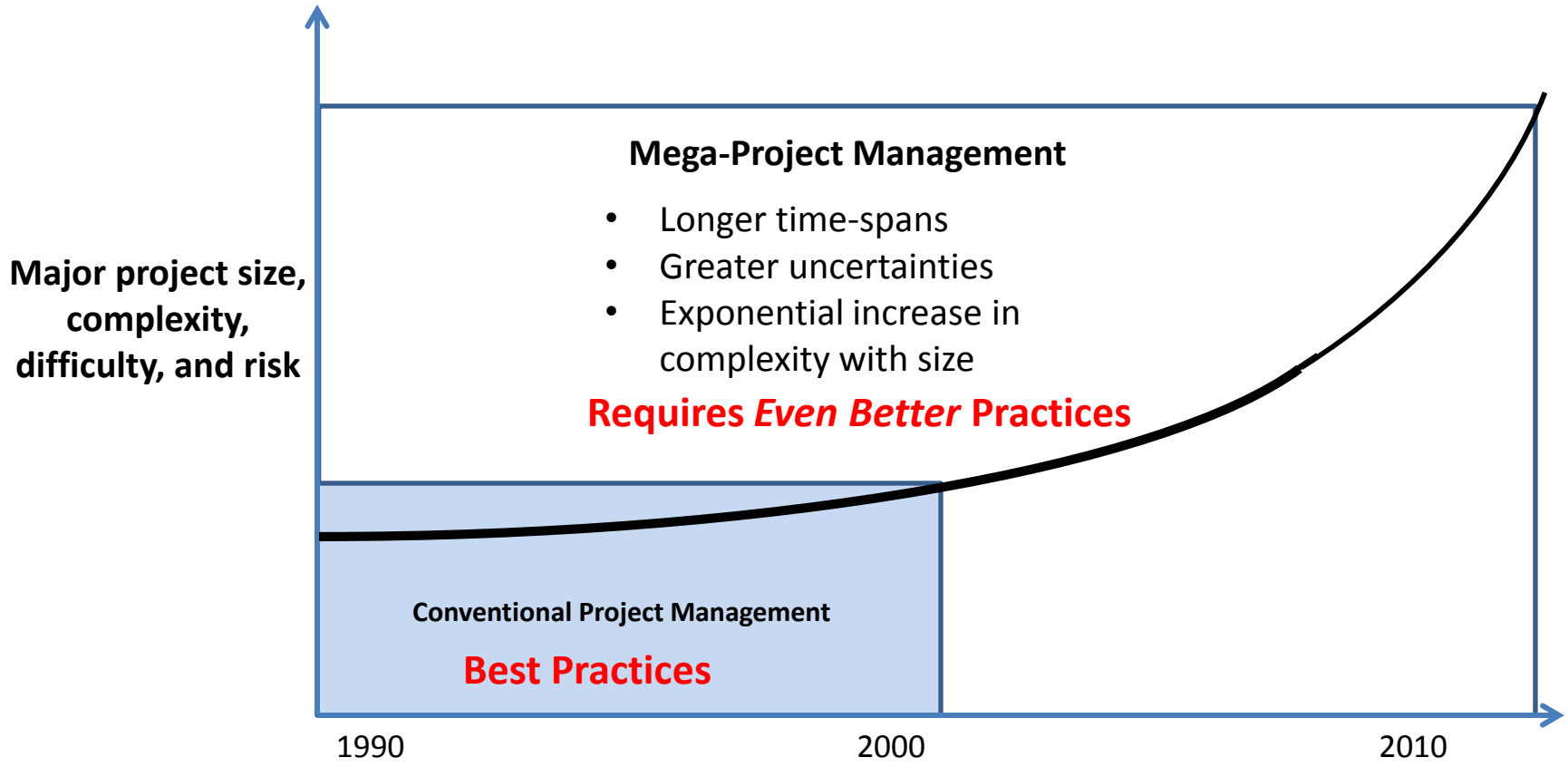
Topics

- What do we mean by “best practices”?
- How do we apply best practices to projects?
- Taking aim at best practice malpractice
- Moving from best to even better practices

Topics

- What do we mean by “best practices”?
- How do we apply best practices to projects?
- Taking aim at best practice malpractice
- Moving from best to **even better** practices

Conventional PM best practices were not developed with mega-projects in mind



An even better practice is to focus on RISK EXPOSURE

***Best Practice**: the Amount of Risk is the potential loss if the risk should occur, multiplied by the probability of occurrence,. This is the Expected Value which assumes that no effective corrective actions are taken to reduce the potential loss, and/or the probability of occurrence.*

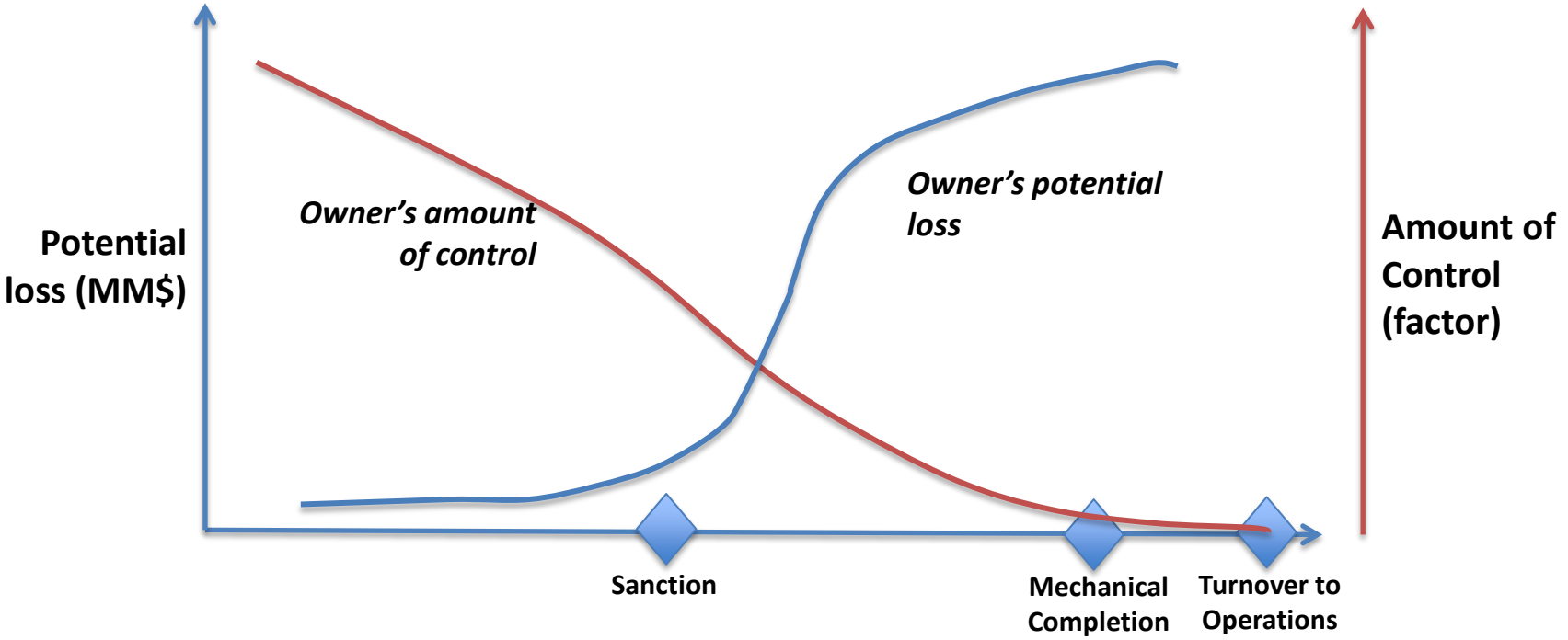
Amount of Risk = Potential Loss ($) x Probability of Occurrence (%)

***Even Better Practice**: Consider also the Amount of Control: the extent to which the parties can influence the potential loss and/or the probability of occurrence.*

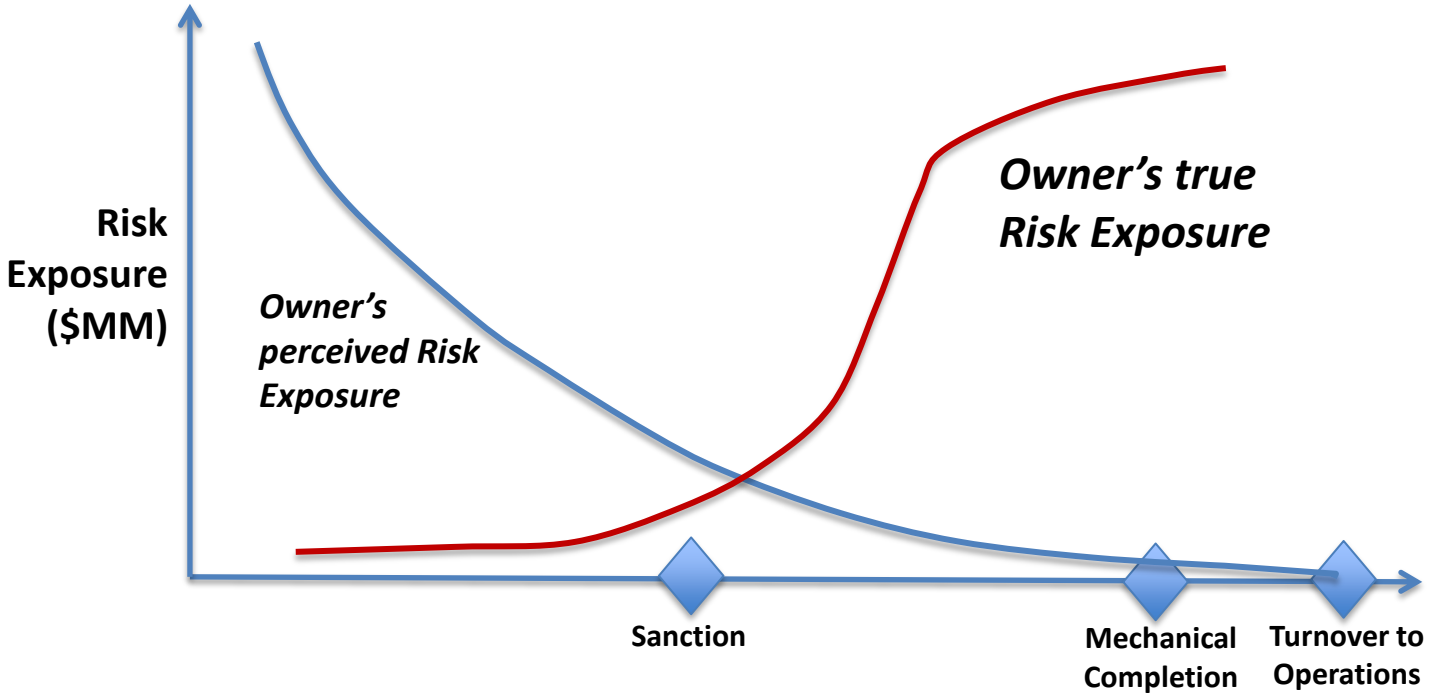
- *Risk Exposure is then the Amount of Risk adjusted for the Amount of Control*
- *Risk Exposure decreases as the amount of control increases*

RISK EXPOSURE = Potential Loss ($) x Probability of Occurrence (%) x 1/Control Factor

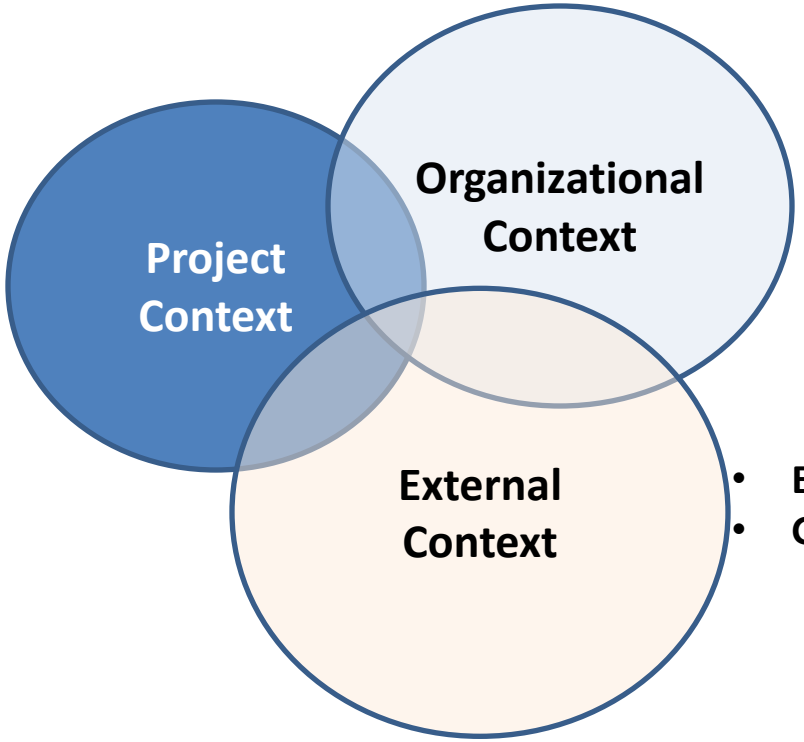
An Owner's amount of control decreases as commitments are made … while potential loss goes up rapidly



Rethinking risk in terms of *Risk Exposure* produces a dramatic change in perspective



Managing Risk Exposure requires consideration of the three primary sources of project risk

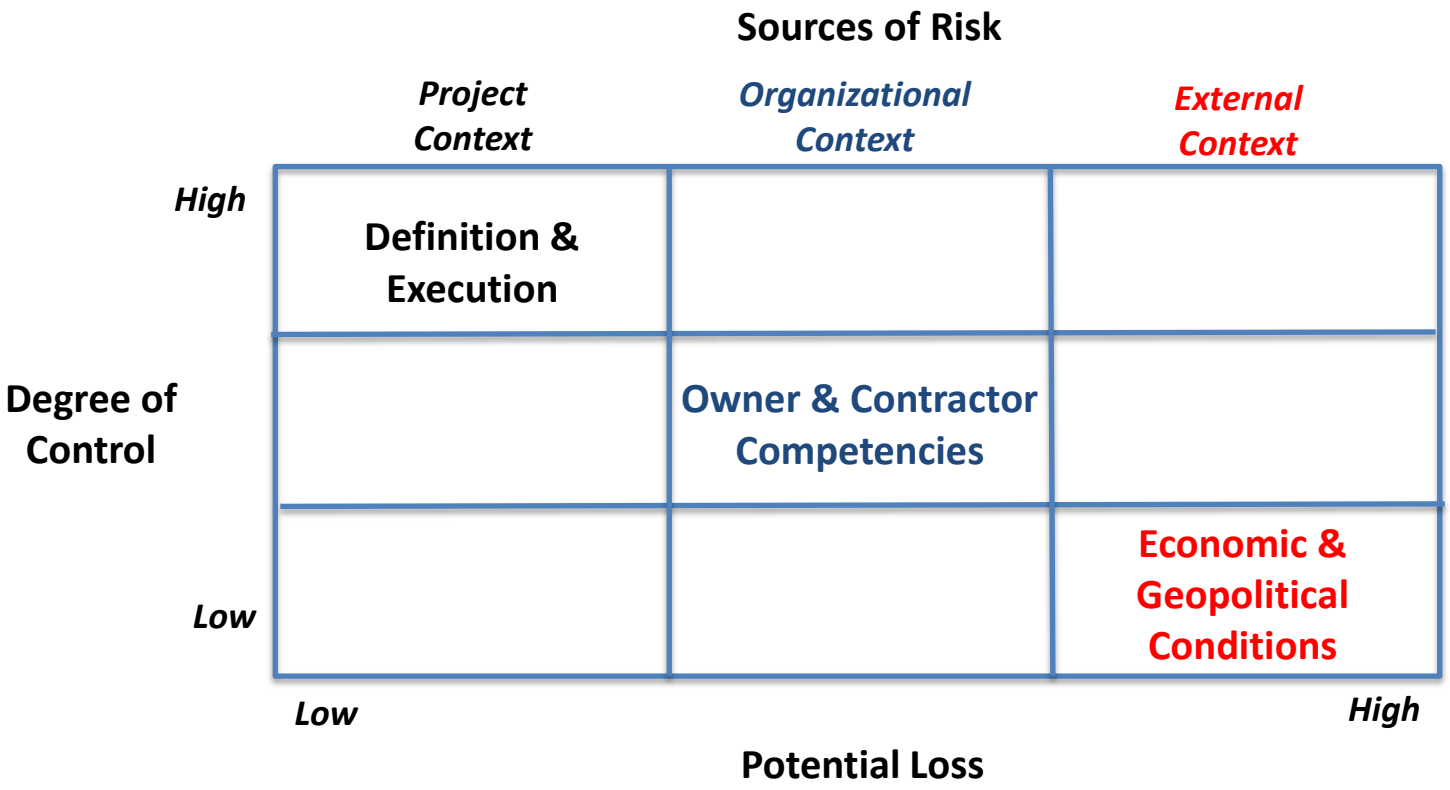


- Project Definition
- Project Execution

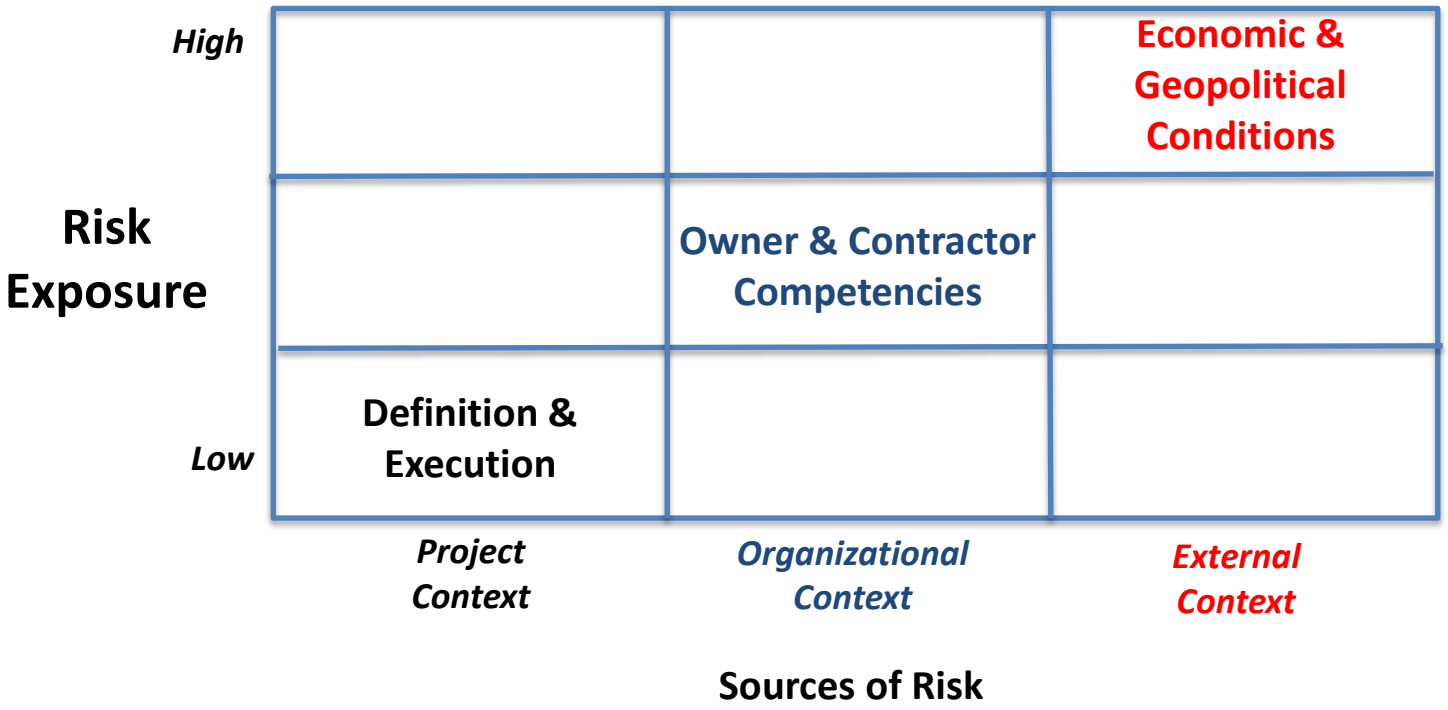
- Owner/Operator Competencies
- Contractor Competencies

- Economic and Market Conditions
- Geo-political trends and events

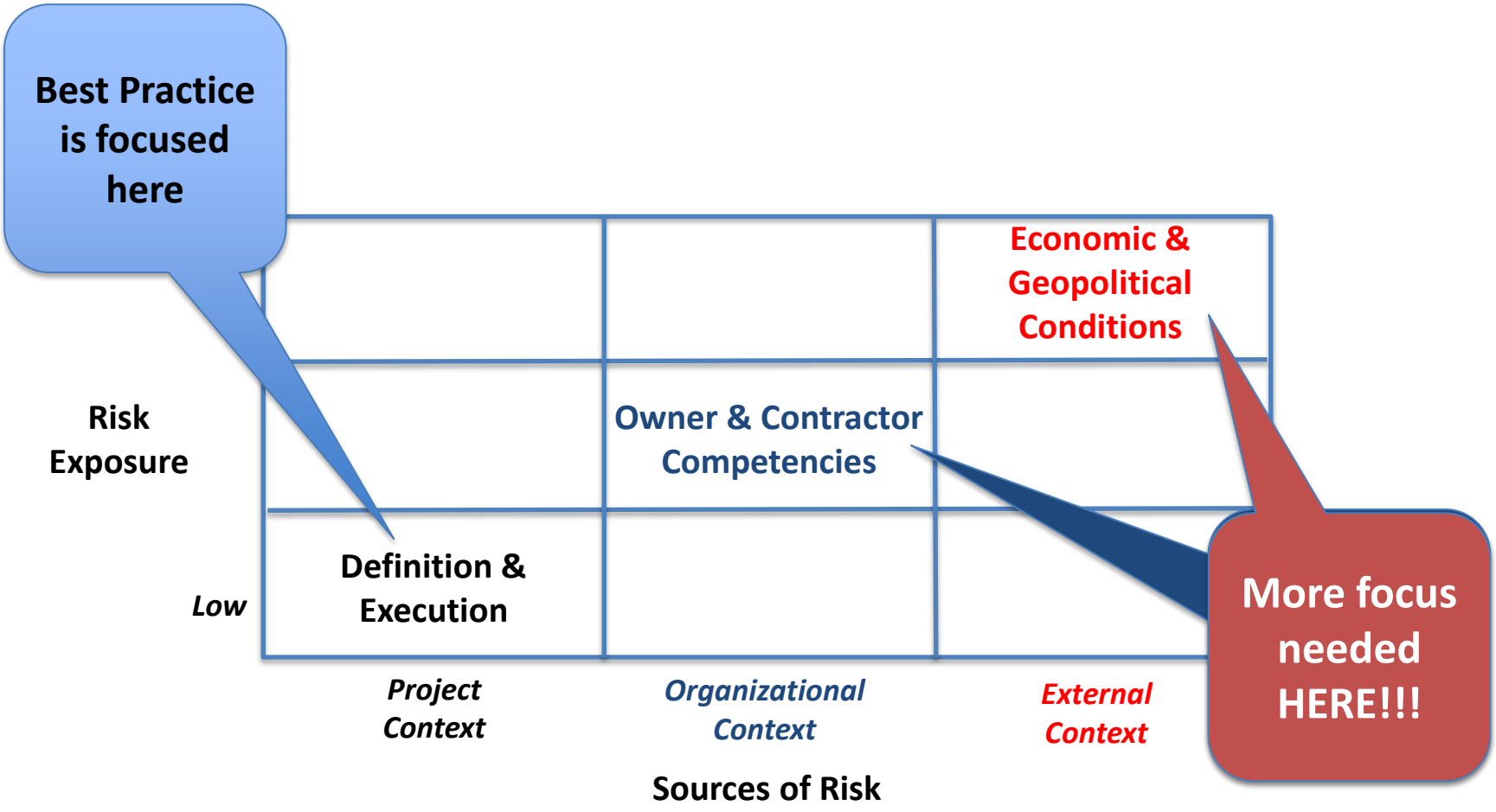
Each source of risk has an associated level of risk exposure (1)



Each source of risk has an associated level of risk exposure (2)

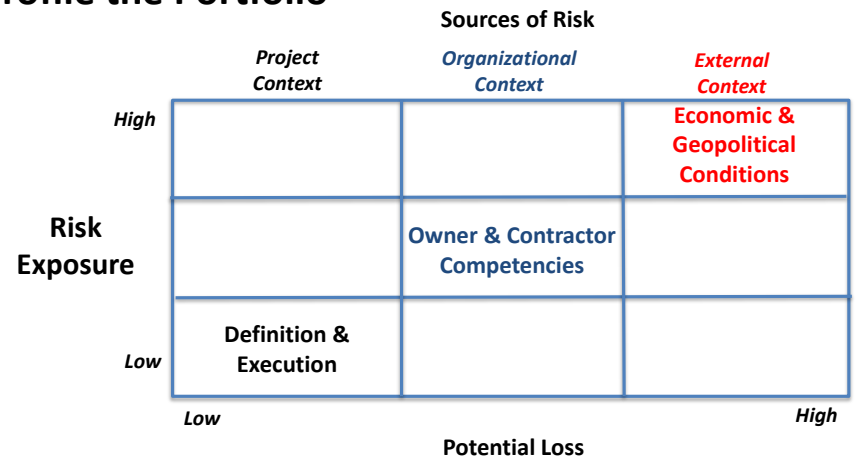


Each source of risk has an associated level of risk exposure (2)

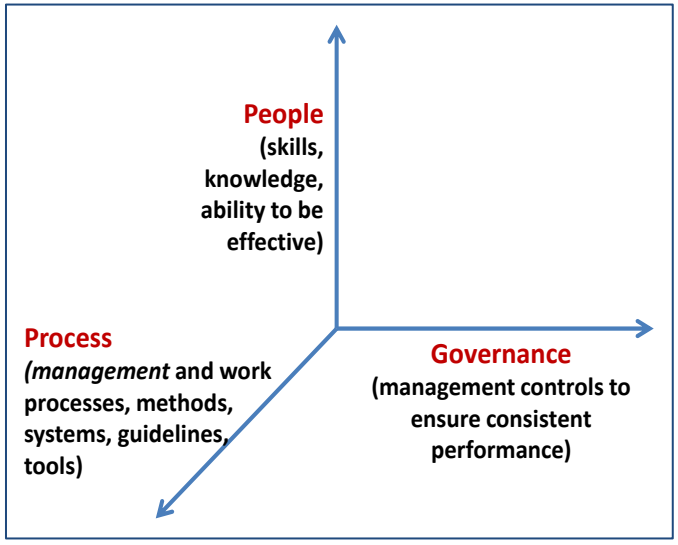


Managing risk exposure in the Organizational Context requires an assessment of Enterprise Readiness

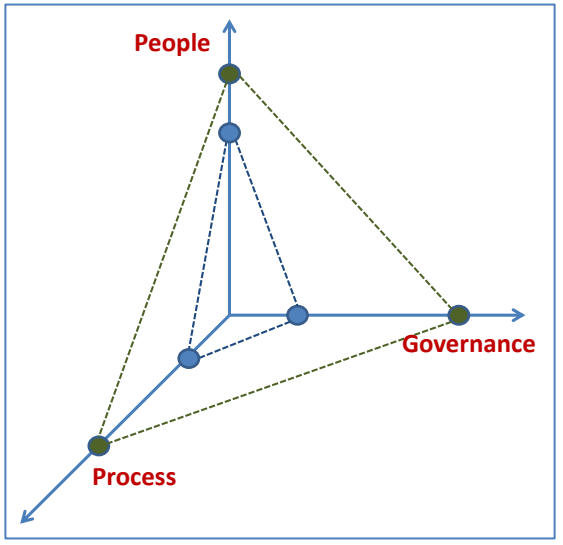
1. Profile the Portfolio



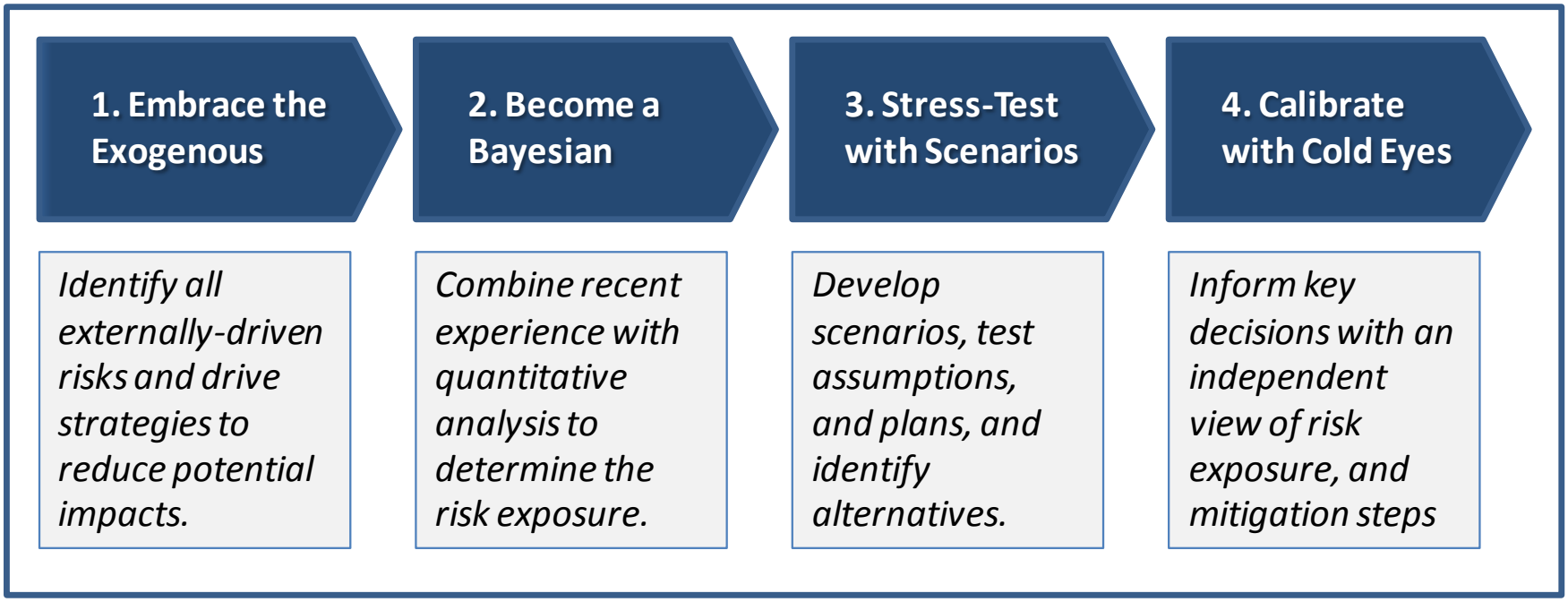
2. Identify required competencies



3. Assess and rectify gaps



Managing risk exposure in the External Context requires an assessment of uncertainties



Summary (1)

Best Practices :

- Are important and effective – when used to ensure predictable performance of complex , repetitive tasks
- Are not useful for management – level tasks involving strategy and complex decisions
- PM best practices can create a false sense of confidence
- In spite of long and widespread application, PM best practices such as front-end loading have not significantly improved project predictability.
- Today's very large and complex projects present considerable "white space" where conventional thinking is insufficient
- The Influence Curve, Front-End Loading, Estimate Classification Systems and Contingency provisions are largely based on the assumption that the degree of project definition is the primary driver of risk and uncertainty. For large, complex projects today, this is seldom the case.

Summary (2)

- **Even Better Practices**:
  - Consider risk exposure based on both the amount of risk and amount of control
  - Owner's true risk exposure is highest during execution
  - Risks must be viewed in all contexts:
    - ✓ Project (low risk, high control)
    - ✓ Organizational (moderate risk, moderate control)
    - ✓ External (high risk, low control)
  - Uncertainties have become increasingly important and require a different approach, e.g., using scenarios

Open Discussion

R_Westney@westney.com

Westney
Consulting Group
www.westney.com