



ConsMa The 3rd CM Seoul Forum

“The Changing Environment of the Construction Industry and Suggested Action Plans”

by

President, ICPMU

Managing Director, Centre for Excellence in PM

16 April, 2008

Environment

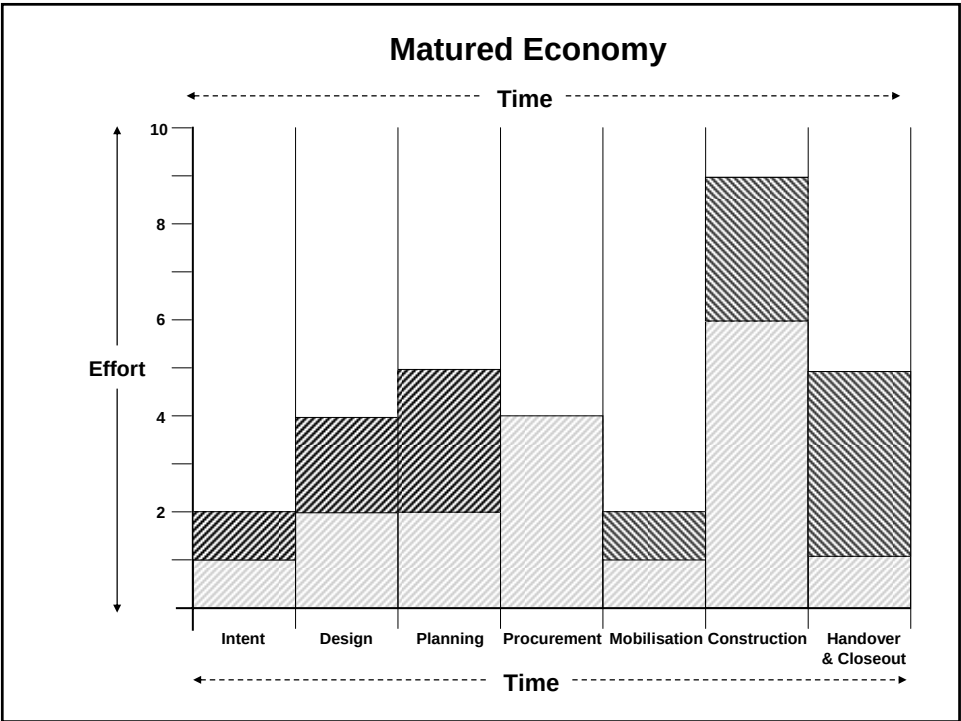
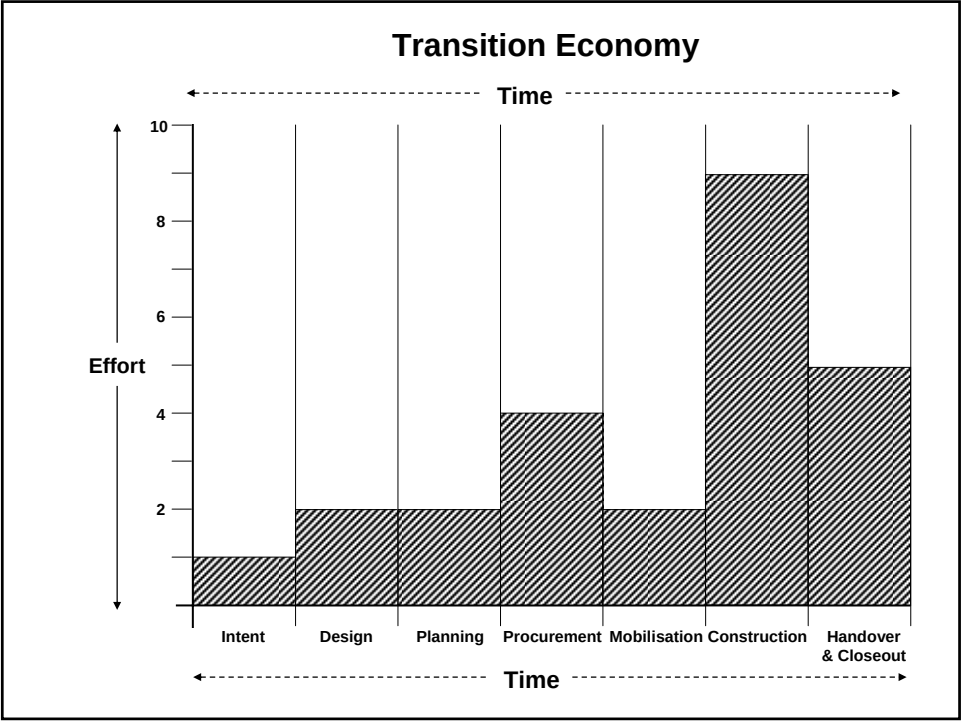
- **One market place, many suppliers**
- **Only Delivery counts**
- **Race against Time (ROTI more important than ROI)**
- **Globalization - irreversible**

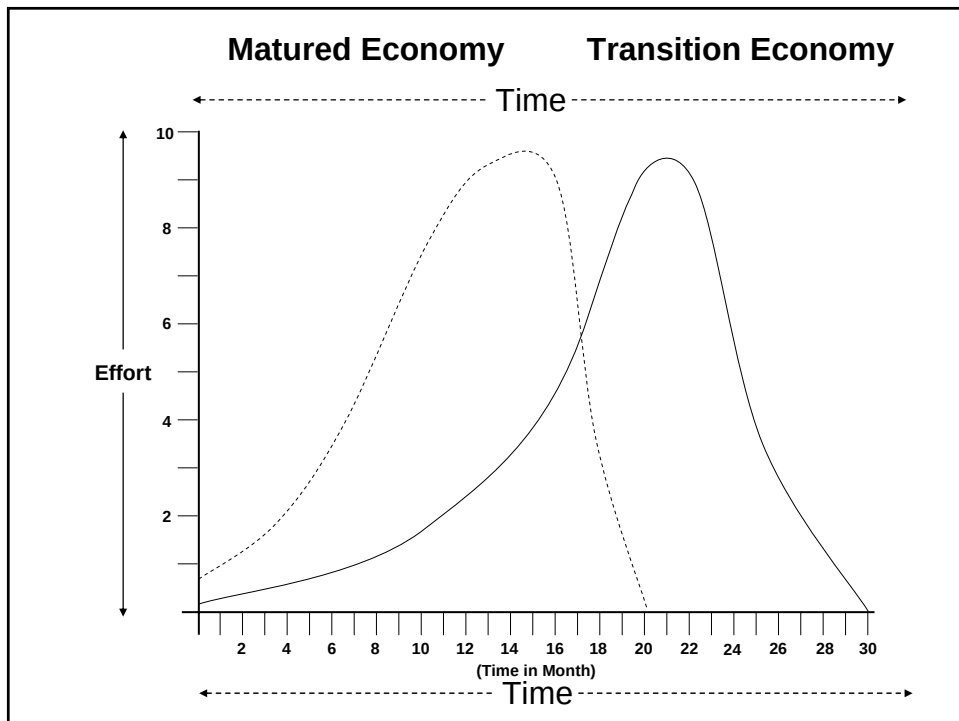
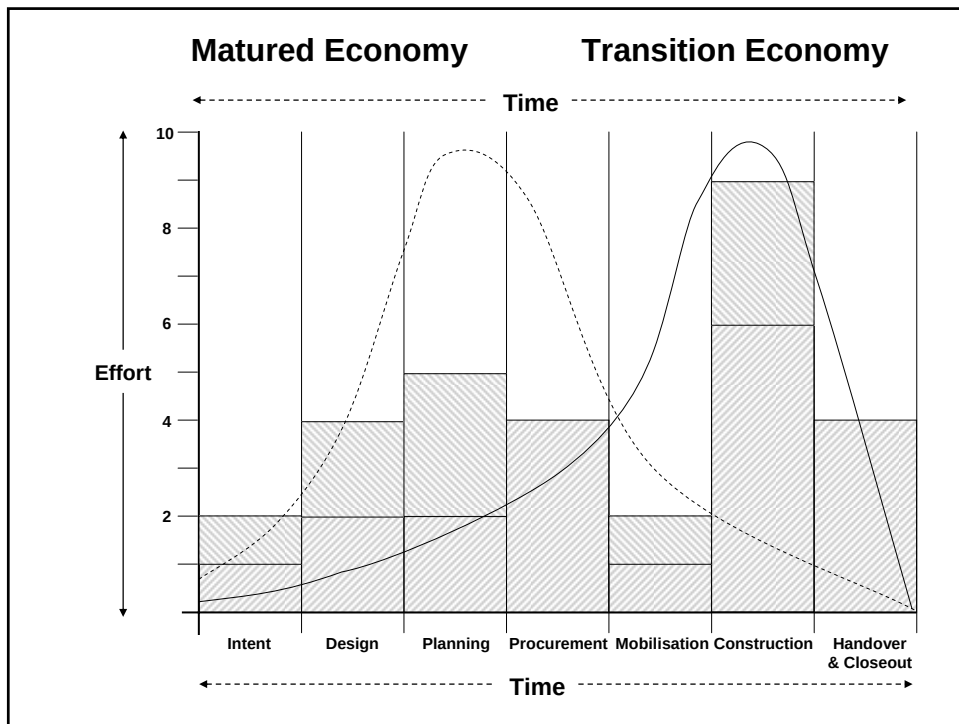
Environment

- **Innovation in managing uncertainties**
- **Quality – not for negotiation**
- **Risk – the key in managing change**
- **Global teams and suppliers**

Challenges

- **Standardization**
- **Technology Infusion**
- **Modularity**
- **IC3 Philosophy**
- **Integration of Risk in management of change**
- **Optimization of 'whole' and not 'parts'**







BRIEF COMPARISON - TIME SPENT*

	Economy	
	Matured	Transition
INITIAL PLANNING	50#	20
▪ Making Up of Mind ▪ Information Gathering ▪ Refinements in Objectives ▪ Feasibility		

BRIEF COMPARISON - TIME SPENT*

	Economy	
	Matured	Transition
EXECUTION	25	80
▪ Transition Nonalignment		
▪ Detailed Planning		
▪ Interfacing		
CONTROL OF UNFORSEEN PARAMETERS	10	45

BRIEF COMPARISON - TIME SPENT*

	Economy	
	Matured	Transition
MID COURSE CORRECTION	15	35
	<u>100</u>	<u>180</u>

- Based on Limited Survey and on Informal Meetings.

BRIEF COMPARISON - TIME SPENT*

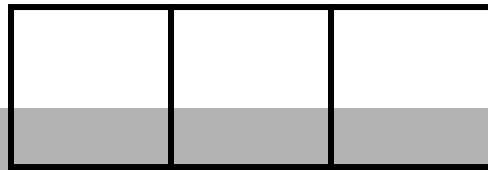
	Economy Matured	Transition	Strategy Step 1
INITIAL PLANNING	50#	20	30
EXECUTION	25	80	60
CONTROL OF UNFORSEEN PARAMETERS	10	45	30
MID COURSE CORRECTION	15	35	20
	<u>100</u>	<u>180</u>	<u>140</u>

Philosophy

(Real world is Multiplicative)

- $1 \times 1 \times 1$ alone is 1
- $1 \times 1/2 \times 1/2$ is only $1/4$
- $\text{Speed}1 \times \text{Speed}2 \times \text{Speed}3 \gg \gg$ Effective SPEED
- $\text{Quality}1 \times \text{Quality}2 \times \text{Quality}3 \gg \gg$ Effective QUALITY
- $\text{Wisdom } 1 + \text{Wisdom } 2 + \text{Wisdom } 3 \gg \gg$ Total WISDOM

PART - II



“Strategic Risk Management for Capital Construction”

Panel: R.L. “Rick” Rye, Bob Prieto, Francisco Anzola, Shawn Kildare, Michael O’Conner

Some of the following slides are taken from the Presentation of the authors from various presentations - Courtesy of Bob Prieto, Senior VP, Flour

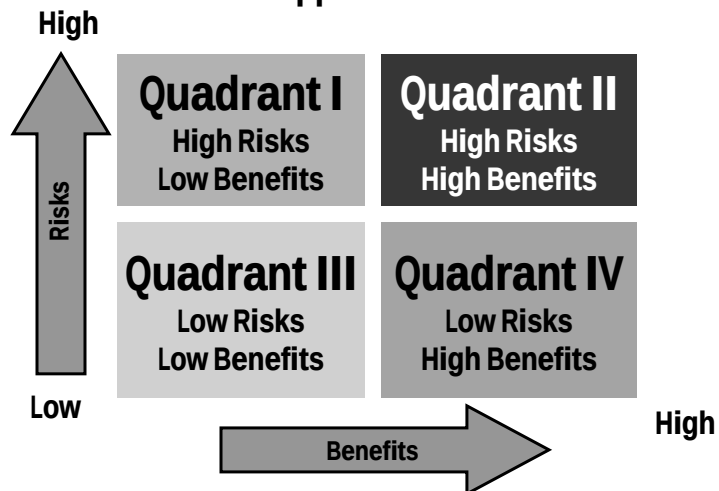
Overview

- **Inherent risk to capital construction projects**
 - the degree of risk consequences
- **Changing project conditions**
- **Potential for impact on the plan and initially defined objectives**
- **Impacting the opportunity for a successful project**

- ✓ time
- ✓ cost
- ✓ scope definition

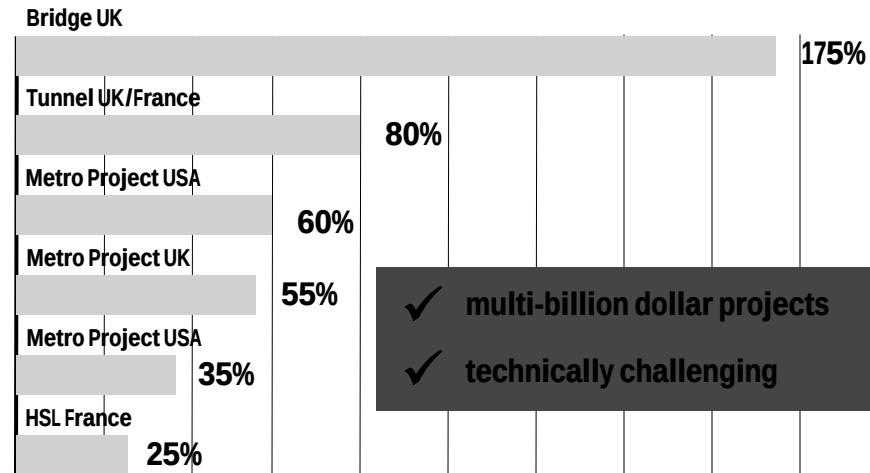
Overview

Risk and benefits opportunities assessment matrix



Overview

Capital construction budget overruns for mega-projects



Percent (%) of construction cost overrun above the original baseline budget.

Overview

Processes for successful strategic risk management

- Planning for risk
- Being realistic in project assumptions
- Gathering expert judgment
- Understanding risk elements and impacts
- Assessing and analyzing risks impacts
- Complete mitigation and contingency plans
- Synthesizing the risks
- Integrating the risk management process
- Clear and reliable project metrics
- Implementing a continuous risk process

Planning for risks

- **Projects contain uncertainty**
 - what is the magnitude of uncertainty
 - where there is uncertainty, there is risk
 - implement a risk management process
- **Integrated with other key management processes**
- **Manage and control risks as a process requirement**

- ✓ should not be arbitrary
- ✓ should be integrated

Planning for risks

Overall strategy of the risk management program

Strategic Risk Process

Successful Project

- Maximize Opportunities
- Minimize Risk Impacts

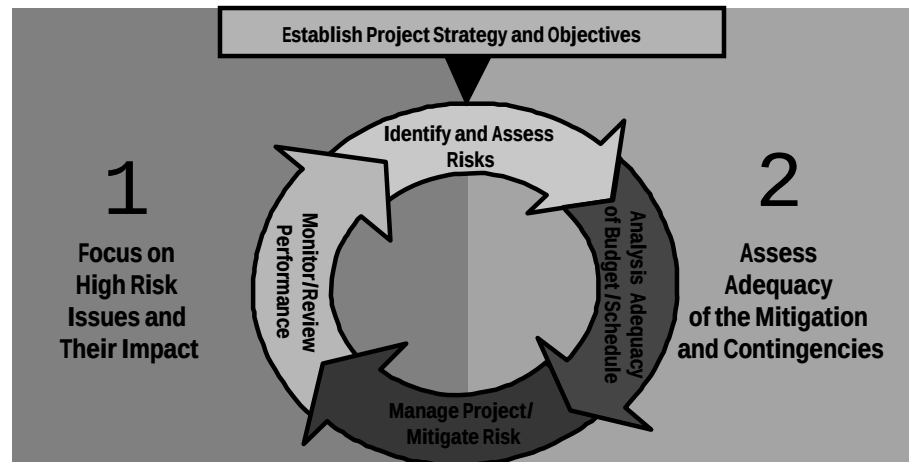
Added Benefits

- Cost Effectiveness
- Schedule Control
- Contingency Management

Employing risk management processes to help attain success and meet expectations.

Planning for risks

A continuous process for risk strategy and management



An iterative and continuous process for managing risk as it changes and shifts.

Being realistic in project assumptions

- Everything goes according to plan (EGAP)
- EGAP characteristically means
 - no changes in performance specs
 - no management problems
 - no contract problems
 - no geological, environmental or technological problems
 - no political or administrative commitments or promises are not kept

- ✓ managing risk v.s. taking risk
- ✓ EGAP – a fatal flaw

Being realistic in project assumptions

- **Major causes of known risks**
 - design and specification changes
 - geological, natural elements, problems, etc.
 - existing environmental or safety conditions
- **Major causes of unknown risks**
 - lack of realism in cost forecast
 - underestimated impact of delays
 - contingencies too low

- ✓ be viewed realistically
- ✓ be defined explicitly

Gathering Expert Input

- **Critical knowledge holders on project risks:**
 - designers
 - project management
 - construction management
 - funding partners
 - in-house or external service providers
 - oversight groups
 - experts with experience in special work and local conditions

- ✓ identify who has critical project knowledge

Understanding Risk Impacts

■ Some common risk items:

- scope changes
- unforeseen underground conditions
- undiscovered utilities
- environmental planning and cleanup (NEPA)
- new tighter security requirements
- unique technology/innovative design
- property acquisitions
- third party service agreements
- market conditions

Continuous Risk Process

- Identifying additional risks as the project progresses
- Continuously gathering risk information and conducting reviews as the project progresses
 - reevaluating risks periodically
 - evaluations at the end of each milestone phase
- Continuously assessing the probability of occurrence and potential impact

- ✓ increase budget confidence
- ✓ increase success confidence

Continuous Risk Process

- **Measurements control against risks managed project baselines**
- **Unknowns in projects with no preparation for measuring**
- **Continuous risk analysis with integrative applications re-baseline the impacts**

- ✓ **integrated coordination**
- ✓ **decision model assessments**
- ✓ **comparative analysis**

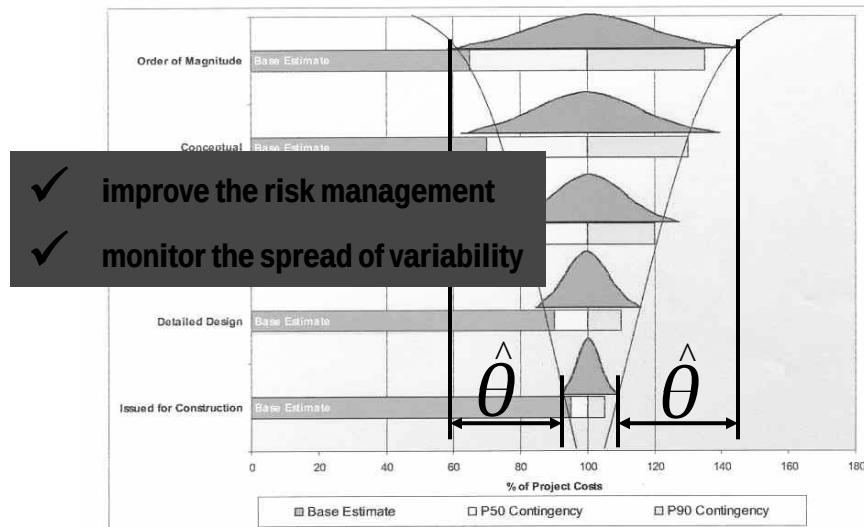
Lessons Learned

Assist the owner in analysis and management of capital construction risks

- **help to define the types and phases of risks**
- **identify unique risks to the specific project**
- **match the risks with the capabilities and resources**
- **help define the implementation strategy**
- **define methods and applications for monitoring**

- ✓ **help the owner to identify risks**
- ✓ **develop implementation strategy**

Improving project uncertainty and risks control measures

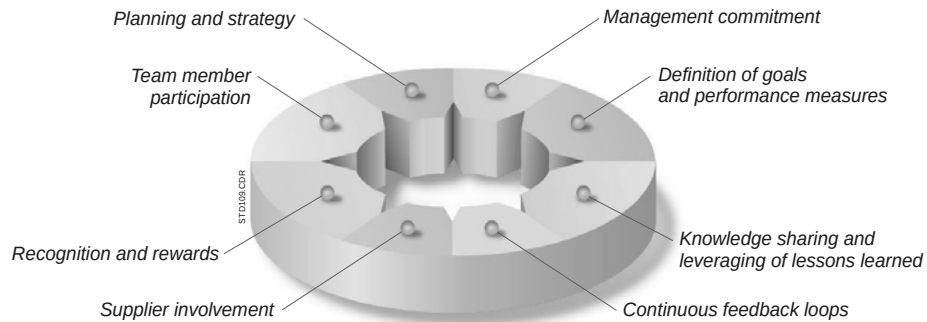


Benefits of the risk management process

- disciplined framework
- avoided/reduced large losses
- improved decision making
- improved allocation of resources
- increased project confidence

- ✓ owners interest protected
- ✓ risks balanced to adequate mitigation

Value Creation



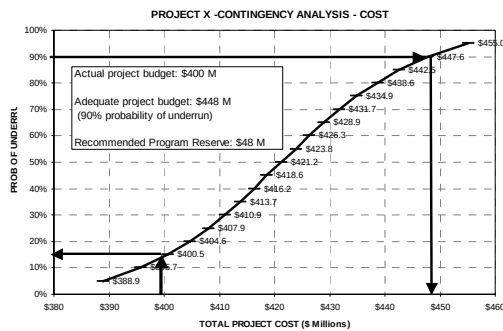
Today's Session is About Value Creation

Business Risk Management - A Few of the Lessons

- **Integrate schedule constraints that are external to the project control**
- **Cost estimates prepared in year-of-expenditure dollars with some allowance for schedule slippage taken into account**
 - **Reporting the costs in year-of-expenditure dollars will greatly reduce the media and public perception of “cost growth”**

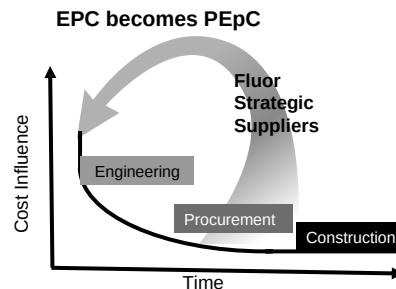
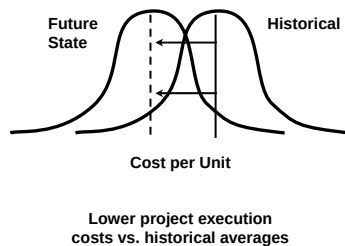
Business Risk Management – A Few of the Lessons

- Establish an integrated risk management program using risk analysis and identifying risk contingencies

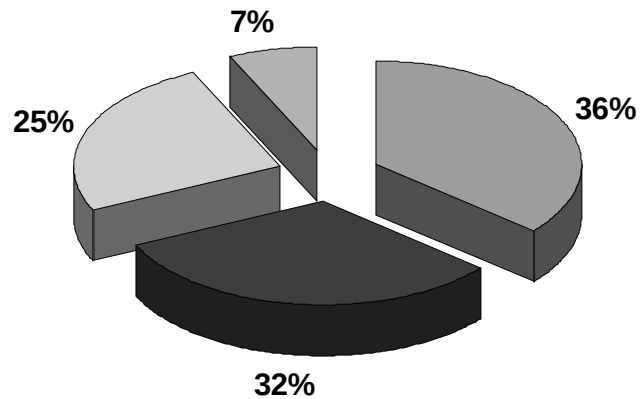


Business Risk Management – A Few of the Lessons

- Get supplier involvement and input as early as possible



Main Reasons for Non-Optimum Execution Performance



Shift in Risk Management Approach

FROM

- Fragmented
- Negative
- Reactive
- Ad hoc
- Historical-looking
- Narrowly-focused
- Functionally-driven

TO

- Integrated
- Positive
- Proactive
- Continuous
- Forward-looking
- Broadly-focused
- Process-driven

Processes for successful strategic risk management

- **Planning for risk**
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Key Problems before the Civil Engineering Industry

- **Absence of high priority, high profile industry dialogue on risk allocation, missing risk management tools (including statutes, insurance), required industry profitability levels for a sustainable industry, and risks created by contracting and contract form.**
- **Inadequate educations of owners, including non-technical decision makers (procurement & contracts), on available means & methods, associated costs and schedule, and inherent risks the contractor assumes with the use of various means & methods.**



It keeps on moving.

Thank You