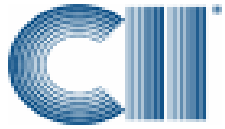


Capital Project Execution Risk and Mitigating Strategies

Executive Leadership Course

Richard Westney Keith Dodson

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Wall Street Journal July 15 2005



As of Friday, July 15, 2005

EUROPEAN BUSINESS NEWS

Shell's Costs Soar For Russia Project

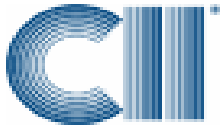
Price Tag of Sakhalin II
May Double to \$20 Billion;
Half-Year Delay Expected

By **BHUSHAN BAHREE** and **BENOÎT FAUCON**
Staff Reporters of THE WALL STREET JOURNAL

July 15, 2005; Page B2

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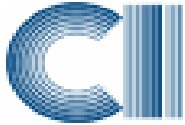
Wall Street Journal

July 15 2005

“Yesterday, Shell said it had previously changed its management team at Sakhalin II, which this week advised the company’s leaders that earlier cost estimates – leading to approval of the project in 2003 – vastly understated the spending needed to complete the project”

“...project costs are rising sharply amid a growing backlog of orders at construction and service companies and because of spiraling costs of commodities such as steel.”

“...some of the cost increases were specific to the Sakhalin project , arising from a clutch of issues, including environmental concerns and difficulties in laying pipelines.”



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington D.C.

20549

FORM 6-K

REPORT OF FOREIGN ISSUER

Pursuant to Rule 13a-16 or 15d-16 of

The Securities Exchange Act of 1934

For the month of July 2005

**N.V. Koninklijke Nederlandsche
Petroleum Maatschappij**

(Exact name of registrant as specified in its charter)

Royal Dutch Petroleum Company
(Translation of registrar's name into English)

The Netherlands
(Jurisdiction of incorporation or organisation)

30, Carel van Bylandtlaan, 2596 HR The Hague

The Netherlands
Tel No: (011 31 70) 377 9111
(Address of principal executive officers)

The "Shell" Transport and Trading Company,

Public Limited Company
(Exact name of registrant as specified in its charter)

England
(Jurisdiction of incorporation or organisation)

**Shell Centre, London SE1 7NA,
England**

Tel No: (011 44 20) 7934 1234
(Address of principal executive officers)

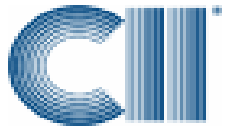
This Report on Form 6-K is incorporated by reference into the Registration Statement on Form F-4 of Royal Dutch Shell plc filed with the Securities and Exchange Commission on May 18, 2005 and the related U.S. prospectus dated May 19, 2005 filed with the Securities and Exchange Commission on such date by Royal Dutch Shell plc in connection with the exchange offer by Royal Dutch Shell plc for the outstanding ordinary shares of Royal Dutch Petroleum Company .

N.V. Koninklijke Nederlandsche Petroleum Maatschappij

Royal Dutch Petroleum Company

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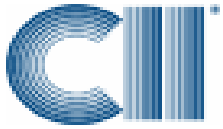
Shell Form 6K July 2005

Sarbanes Oxley disclosure?

“The ...revised estimates means a project development cost of some \$5 to \$6 per barrel of oil equivalent and includes the LNG plant.”

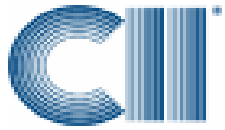
“The project is midway through construction....”

“The cost and schedule estimates are still under review by SEIC and SEIC shareholders, who are focused on aggressively pursuing mitigation actions.”

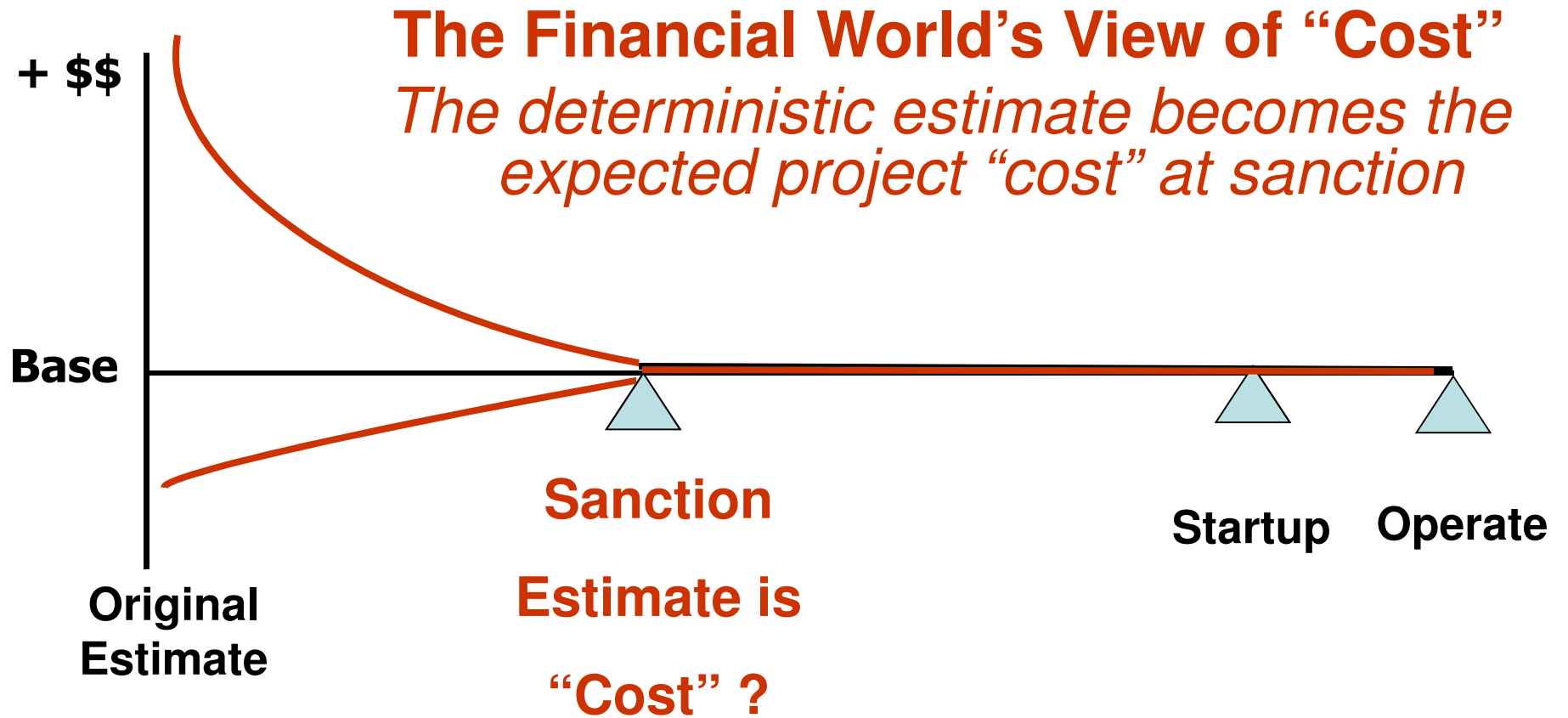


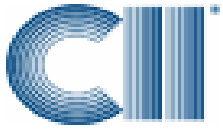
Industry History

- **IPA: 50% chance of “mega-wrecks”**
 - Insufficient Front End Loading
 - Highly schedule – driven
 - Wholly inappropriate contract strategy
 - All caught up in company politics
 - Ignored what the company knew were Best Practices
- **Infrastructure – similar experience:**
 - Typically underestimated
 - **“Delusion” often necessary for projects to proceed**



Expectations

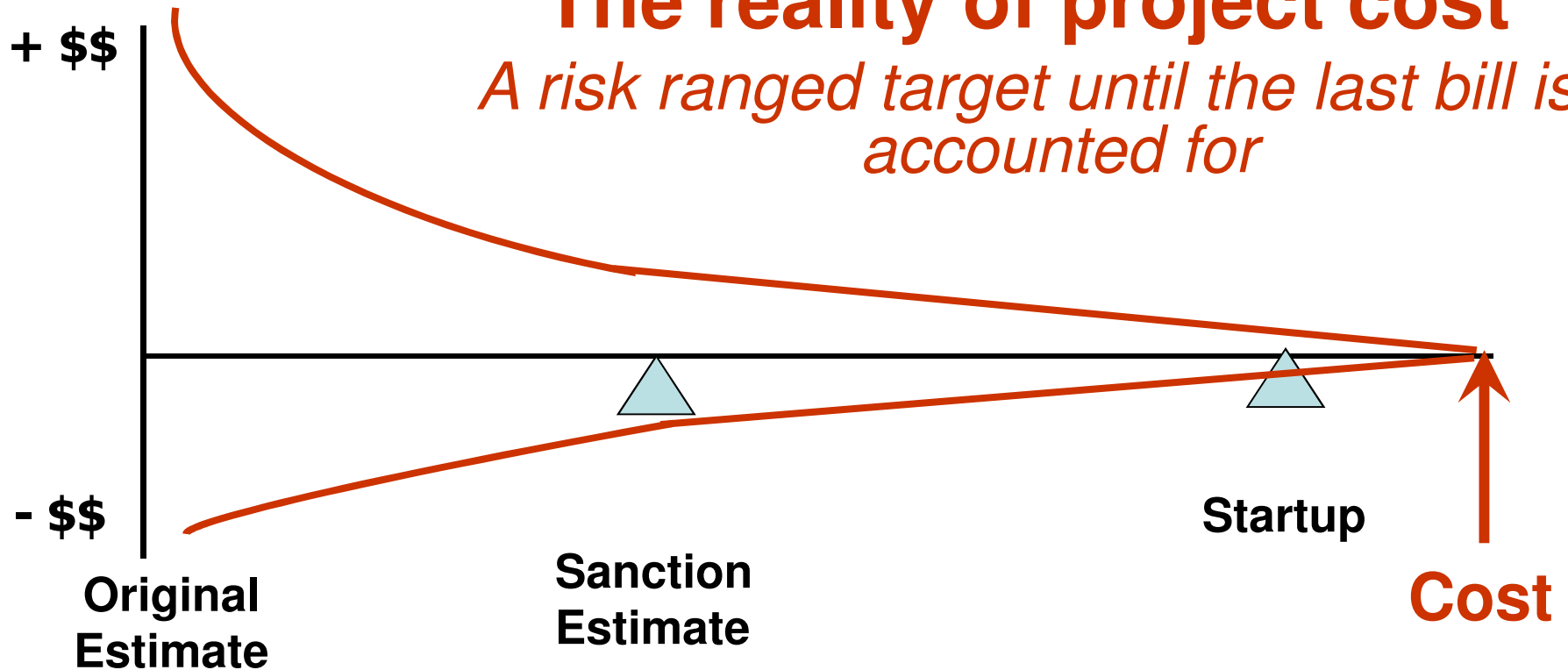


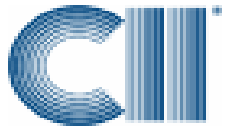


What has to be managed

The reality of project cost

A risk ranged target until the last bill is accounted for

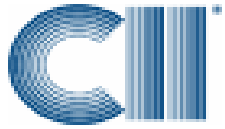




Identifying Risks

Understanding the Outcomes of Megaprojects, Rand Corporation, March 1988, Edward W. Merrow

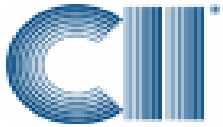
“Cost estimates tend to be optimistic primarily because it is difficult to estimate aspects that are not apparent when using the “bottom-up” cost and schedule estimating approach usually practiced in the engineering and construction industry. In the absence of specific information, such estimating methods usually fix at zero costs and time requirements for things that are not readily apparent. Contingency allowances are not designed to adjust for the major sources of bias and therefore rarely do.”



Schedules

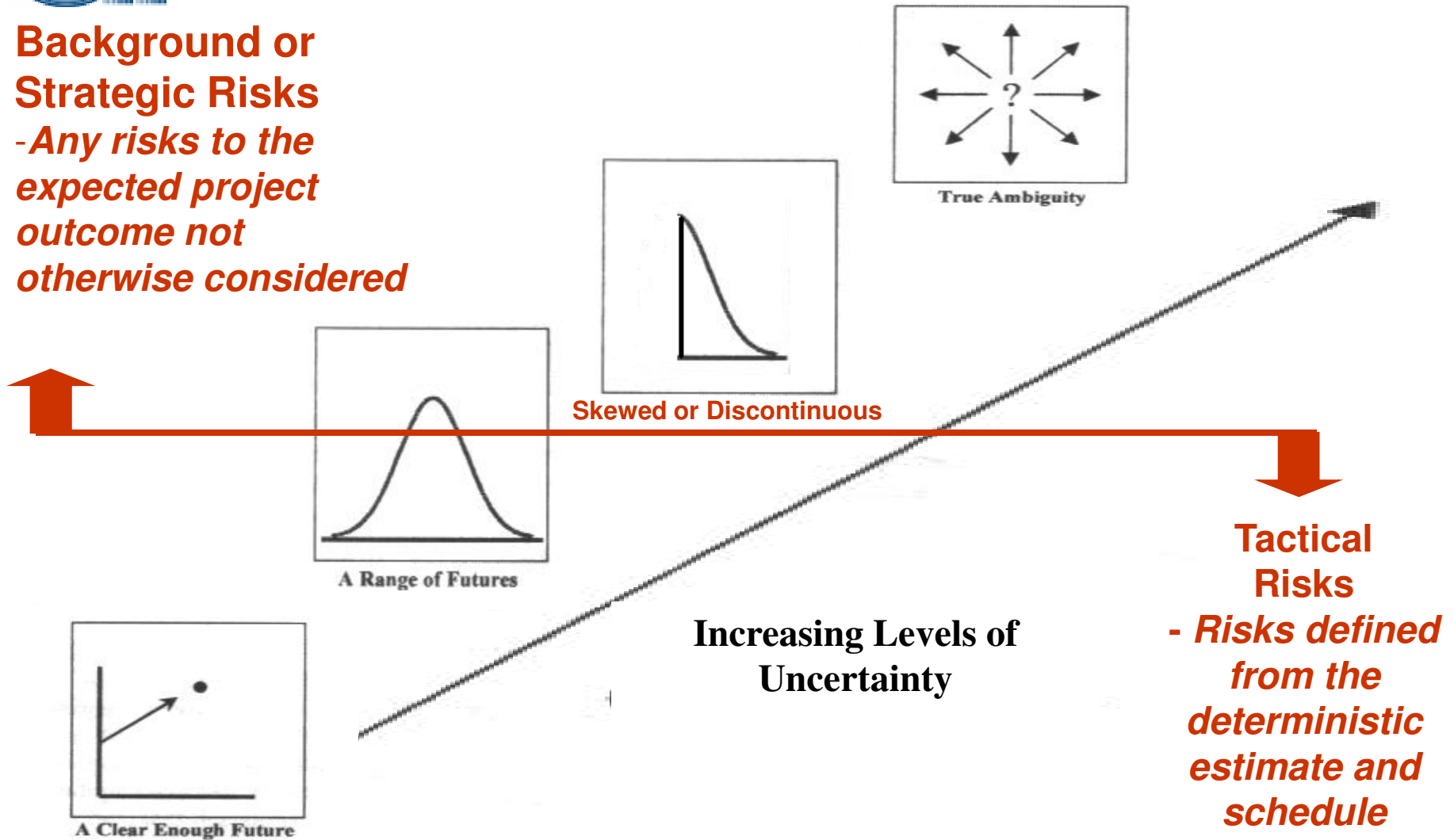
Ed Merrow in his statement about estimates excluding any true uncertainties mentions that schedules have the same issues. History would indicate the problem is likely 2X in scheduling

Schedules in general are based on the assumption that everything goes according to plan.



Background or Strategic Risks

- Any risks to the expected project outcome not otherwise considered



Source: Courtney, H., J., and Viguierie, P.: McKinsey and Co.,
"Strategy Under Uncertainty," Harvard Business Review,
Nov.-1977

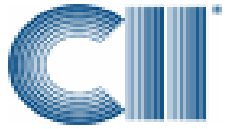
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Defining Project Risks

Tactical Risks are the uncertainties identified by a detailed evaluation of the current project estimate values and schedule durations.

Background or Strategic Risks are any other uncertainties that might affect project costs that may not be addressed or fully considered in the current project estimate or schedule. Some of these risks may have been ignored, limited by assumptions, or excluded in the current estimate. These risks are categorized as outside the project team and the estimator's "vision"



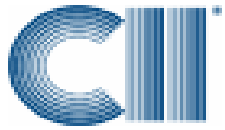
Leadership Roles for Risk Management

Background or Strategic Risks

The Potential Risk Exposure Gap

Management
Lacks Awareness

Project Team
Lacks Authority



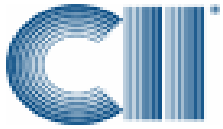
Leadership Roles for Risk Management

Bridging the Risk Gap

Management
Awareness

Clear
Definition of
Risks and
Accountability

Project Team
Authority



Leadership Roles for Risk Management

Authority / Accountability ↑

Management

PMT

<p>e.g.:</p> <ul style="list-style-type: none">• Management intervention in PMT tactics leads to internally driven risks	<p>e.g.:</p> <ul style="list-style-type: none">• Political risks• Global economic trends• Company Performance
<p>e.g.:</p> <ul style="list-style-type: none">• Scope• Team performance• Pricing• Logistics	<p>e.g.:</p> <ul style="list-style-type: none">• Unmitigated strategic risks become tactical problems for PMT

Tactical

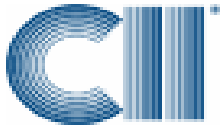
Strategic

Risk

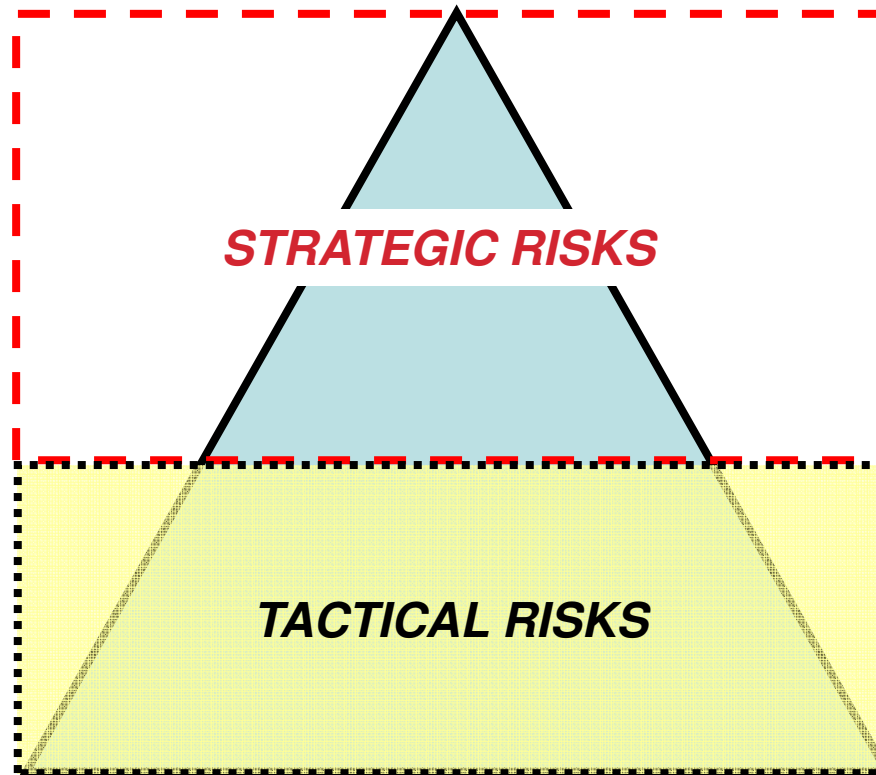


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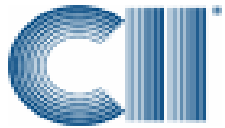
Managing Project Risk



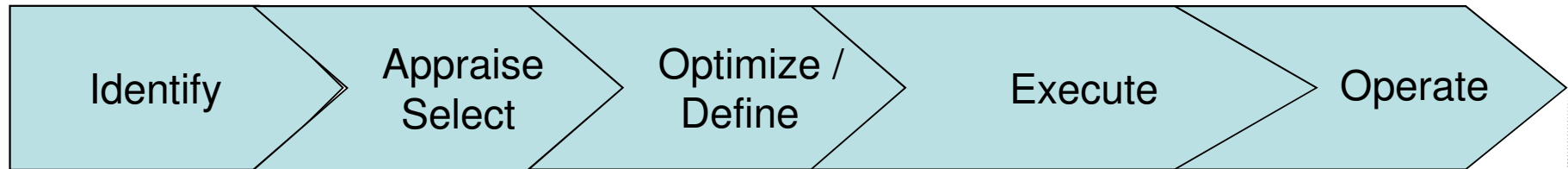
BU / Regional &
Executive
Management

Project Executive
Project Manager

Project Team



Effective Risk Management is Continuous



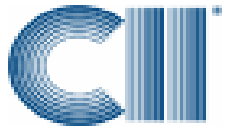
Risk Scenarios

Strategic Risk Framing Workshop

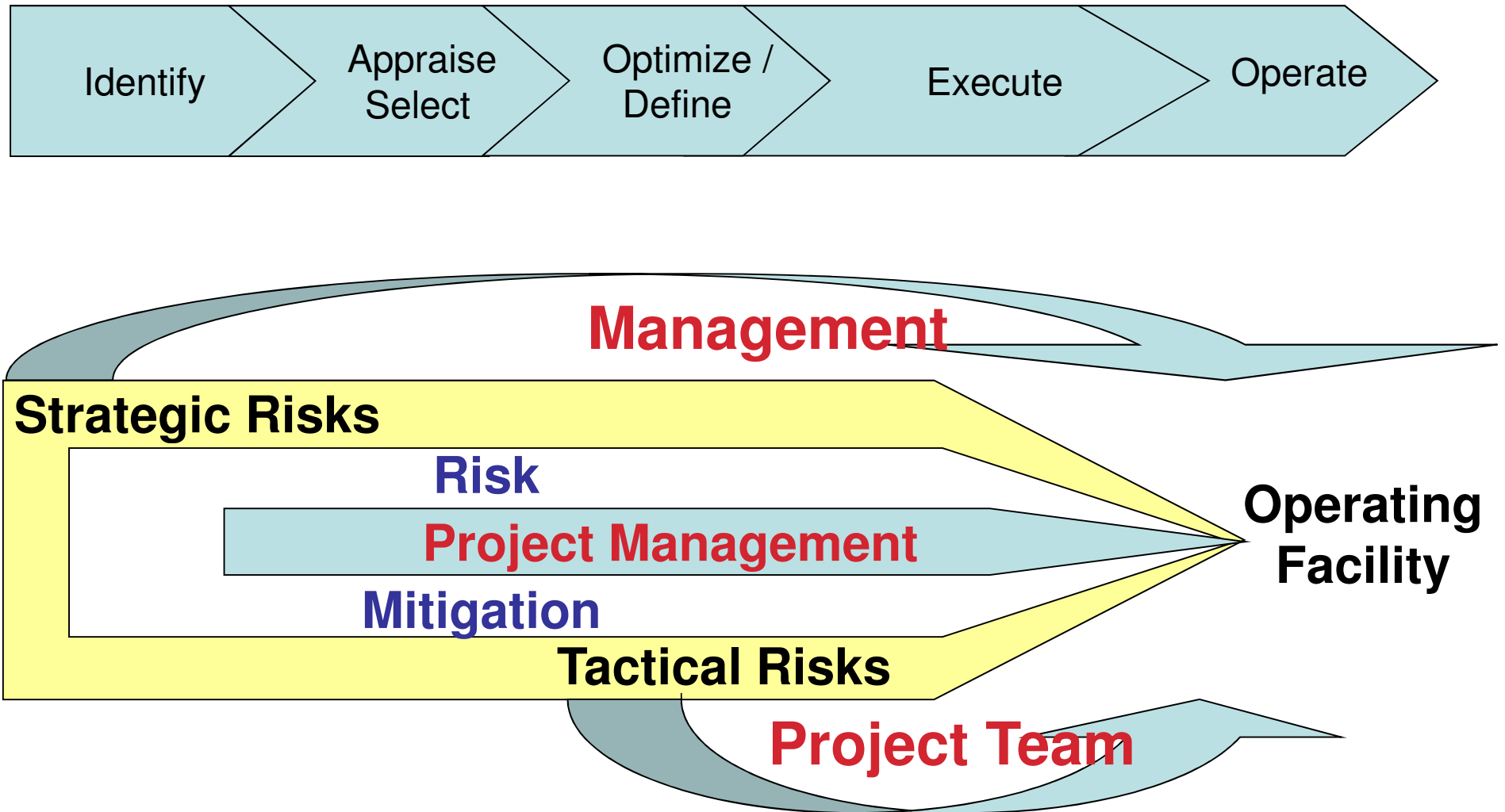
Management

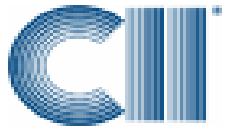
Risk Assessment
Tactical
Schedule
Strategic

Project Team



Leadership for Effective Risk Management



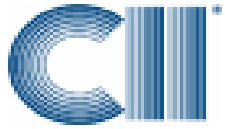


Defining Project Risks

Tactical Project Risks

Examples:

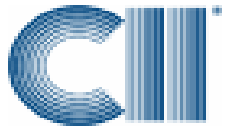
- **Contracting**
- **Quantification**
- **Compliance with local government laws / requirements**
- **Materials identification and management**
- **Logistics risks**
- **Procurement (pricing) risks**
- **Engineering Productivity and schedule adherence**
- **Construction Productivity and schedule adherence**



Defining Project Risks

Global Strategic Risk Examples

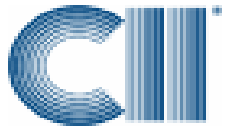
- ✓ **Geo / Political Risks**
- ✓ **Partner / Stakeholders**
- ✓ **Market Risks for project components**
- ✓ **Resources**
- ✓ **Broad economic issues affecting project viability**



Defining Project Risks

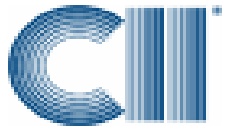
Enterprise Strategic Risk Examples

- ✓ Quality of Project Delivery System- (Governance, People and Systems)
- ✓ General business deal provisions that limit choice or action
- ✓ Assumptions given project team
- ✓ Organizational alignment on project requirements
- ✓ **Over zealous expectations**



Decision Making and Risk Assessment Traps

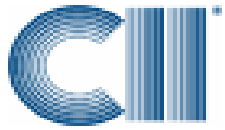
- **Bias**
- **Anchoring**
- **Listening**
- **Group Think**



Decision Making and Risk Assessment Traps

Bias

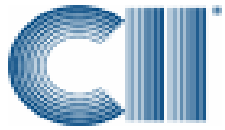
- Proximity Bias
- Expectation Bias
- Exclusion Bias
- Optimism Bias
- Pessimism Bias



Decision Making and Risk Assessment Traps

Anchoring

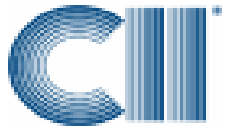
- The last project
- The estimate and schedule
- Experience
 - Size and Types of Projects
 - Location



Decision Making and Risk Assessment Traps

Listening

- The Market
- The Economy
- Public Opinion
- Changes in Government / Regulation
- Stakeholder interest

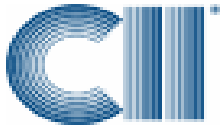


Decision Making and Risk Assessment Traps

Group Think

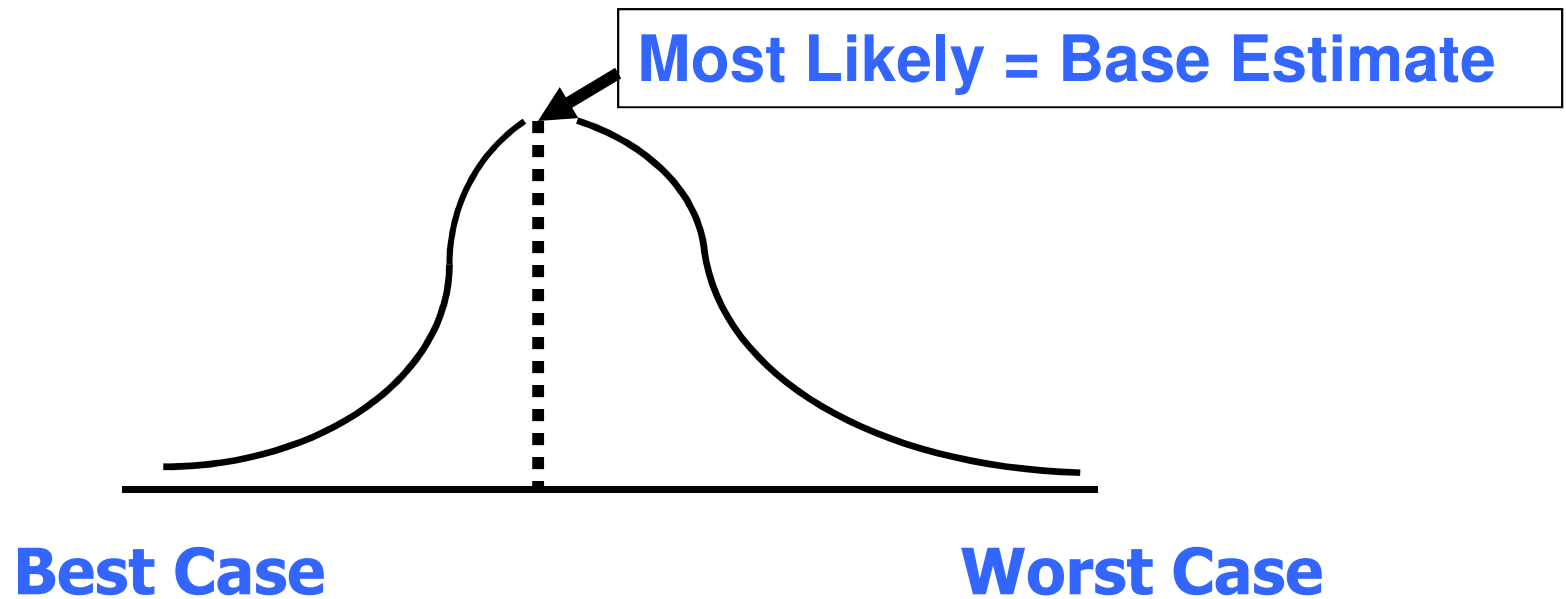
A phenomenon wherein people seek unanimous agreement in spite of contrary facts pointing to another conclusion

- The dominate personality
- Expectation
- Desire to “get along”



Tactical Risk

(Risks *around* the Estimate)



Commercial “Monte Carlo” Risk Programs are applicable here

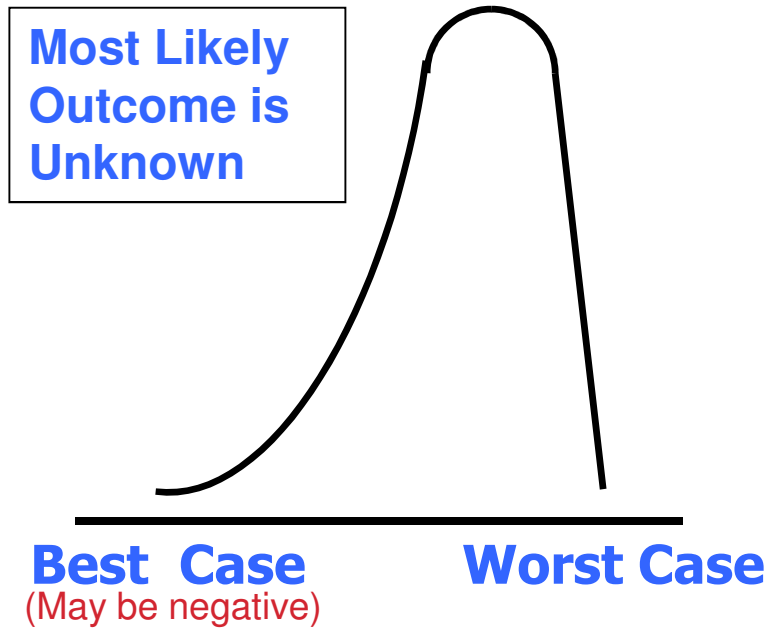


Strategic Risk

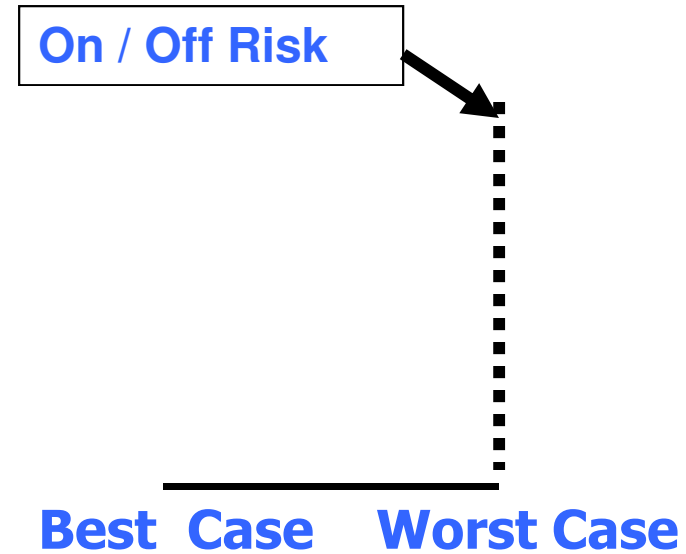
(Risks *outside* the Estimate)

Examples

Highly Skewed



Discontinuous



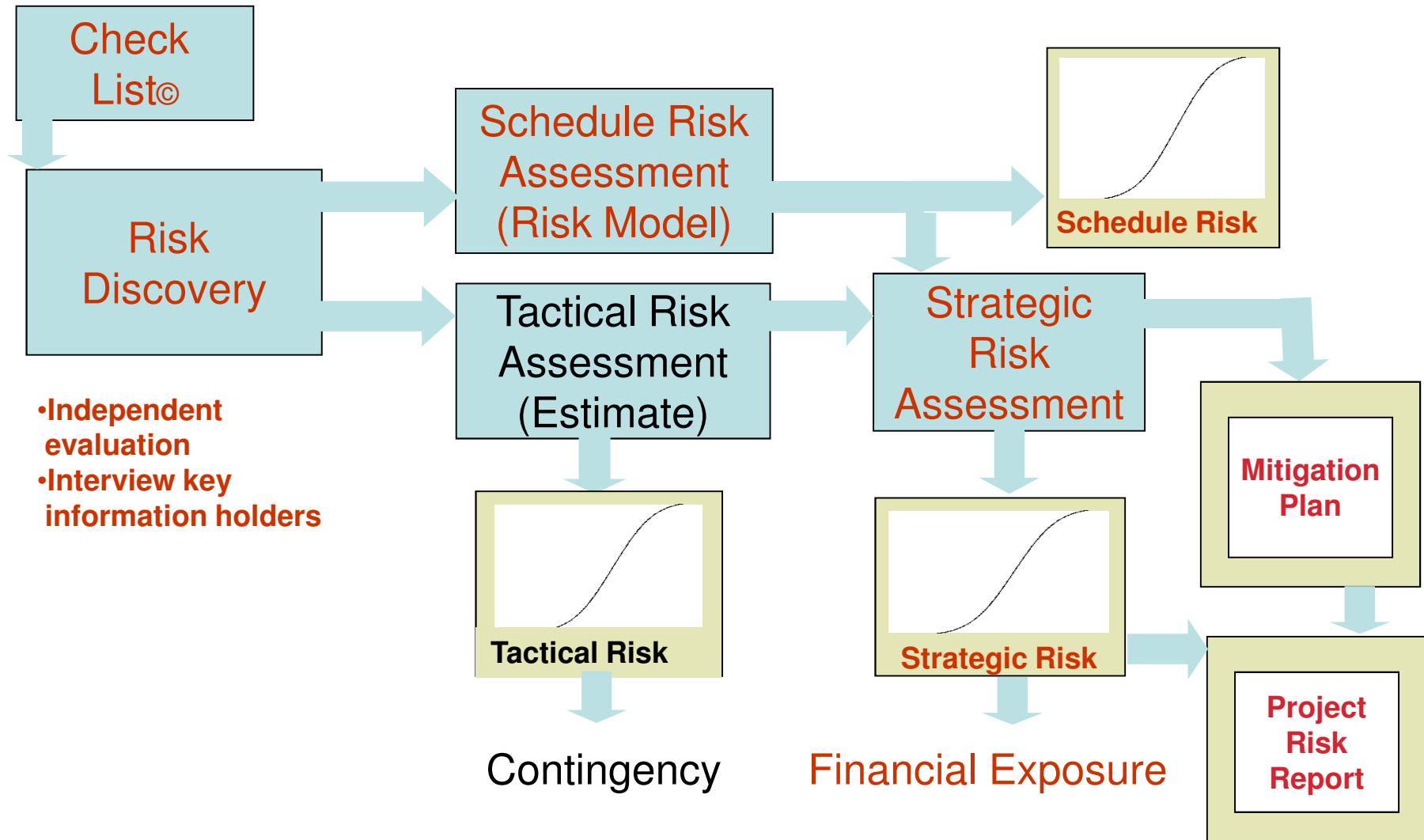
Different risk assessment techniques required here

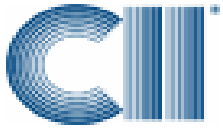
“Improving Project Predictability with Effective Risk Management”

- **Holistic process and new tools for the identification and assessment of project risks**
- **Leadership practices for successful risk mitigation**



The Westney Risk ResolutionSM Process

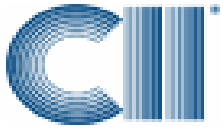




Typical Risk Discovery Check List[©]

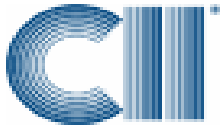
Framing Inquiries

- **Assumptions in the deterministic estimate**
- **Additional facilities that might be required to make the project “work”**
- **Potential optimization and preference changes**
- **Impact of inadequate company resources and processes**
- **Impact of organizational alignment issues**
- **Abnormal market risks that have not been considered**
- **Contracting Strategy and Credit risk of Contractors**
- **Potential for schedule acceleration impacts**
- **Impacts of the business deal and partners**
- **Political Risks**
- **Taxes and Duties not considered**
- **Abnormal weather**



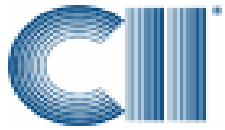
Background or Strategic Risk

- **Provides for:**
 - Any risks outside the determined estimate or schedule that can affect the ultimate cost
- **Management and accountability:**
 - At a level above the Project Team. The process provides a individual identification such that each risk can be managed. When a risk is funded and released to the project team, accountability shifts to the project team.
- **Characterized by:**
 - Project Scenario Type Analysis to identify risks not identified
 - A developed list of Best and Worst outcomes for identified risks including the financial impact of schedule risks
 - Valuation of identified risks for project
 - Weighted range funding selection
 - Probability distribution from Risk Resolution model
- **Financial Exposure:**
 - Funding or Reserve is a management decision
 - If funded, managed with respect to specific risks (not a “pot of \$”)



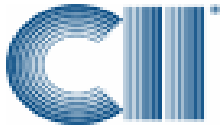
Tactical Risk Assessment

- Independent evaluation of project estimate and schedule for understanding
- Interview knowledge holders for owner and contractor – Normally these are the discipline leaders, but occasionally are those individuals responsible for specific knowledge used for estimating decisions
- Interview Project Team relative to risk based on collected data
- Conduct a session with project team and team selected others to assess the range of the risks around the elements of the work break down structure of the estimate and / or schedule
- Simulate a probabilistic outcome of the range distributions using @Risk or Crystal Ball

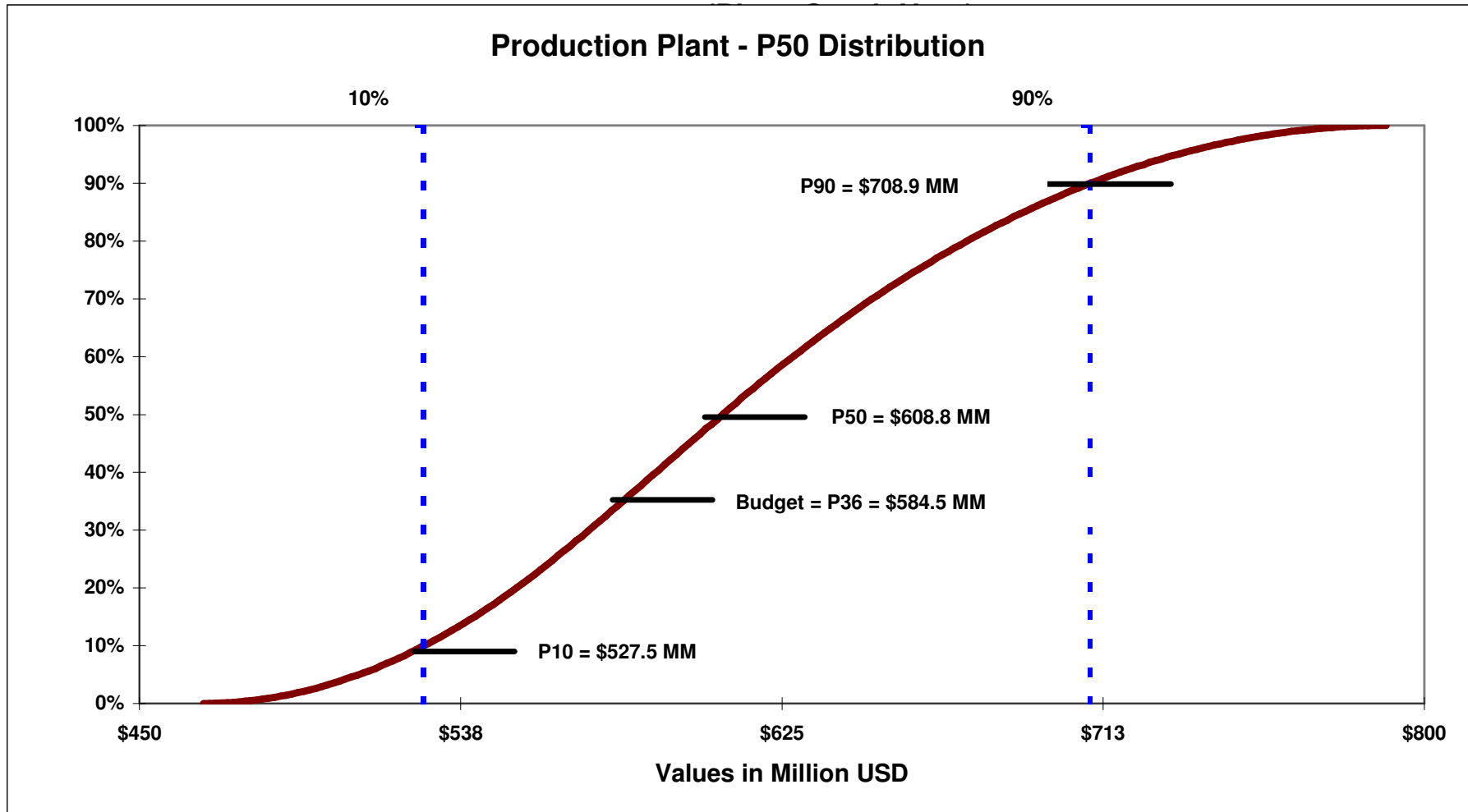


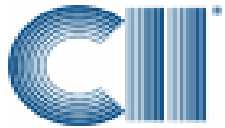
Typical Tactical Risk Categories

- **Definition Risks, e.g.:**
 - Site Information (Utilities, geotech, transportation, etc)
 - Technology
 - Degree of design / quantification
 - Degree of specification
- **Performance Risks e.g.:**
 - Productivity
 - Planning / logistics
 - Procurement
 - Pricing



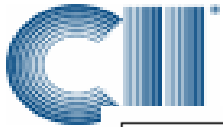
Tactical Risk Assessment



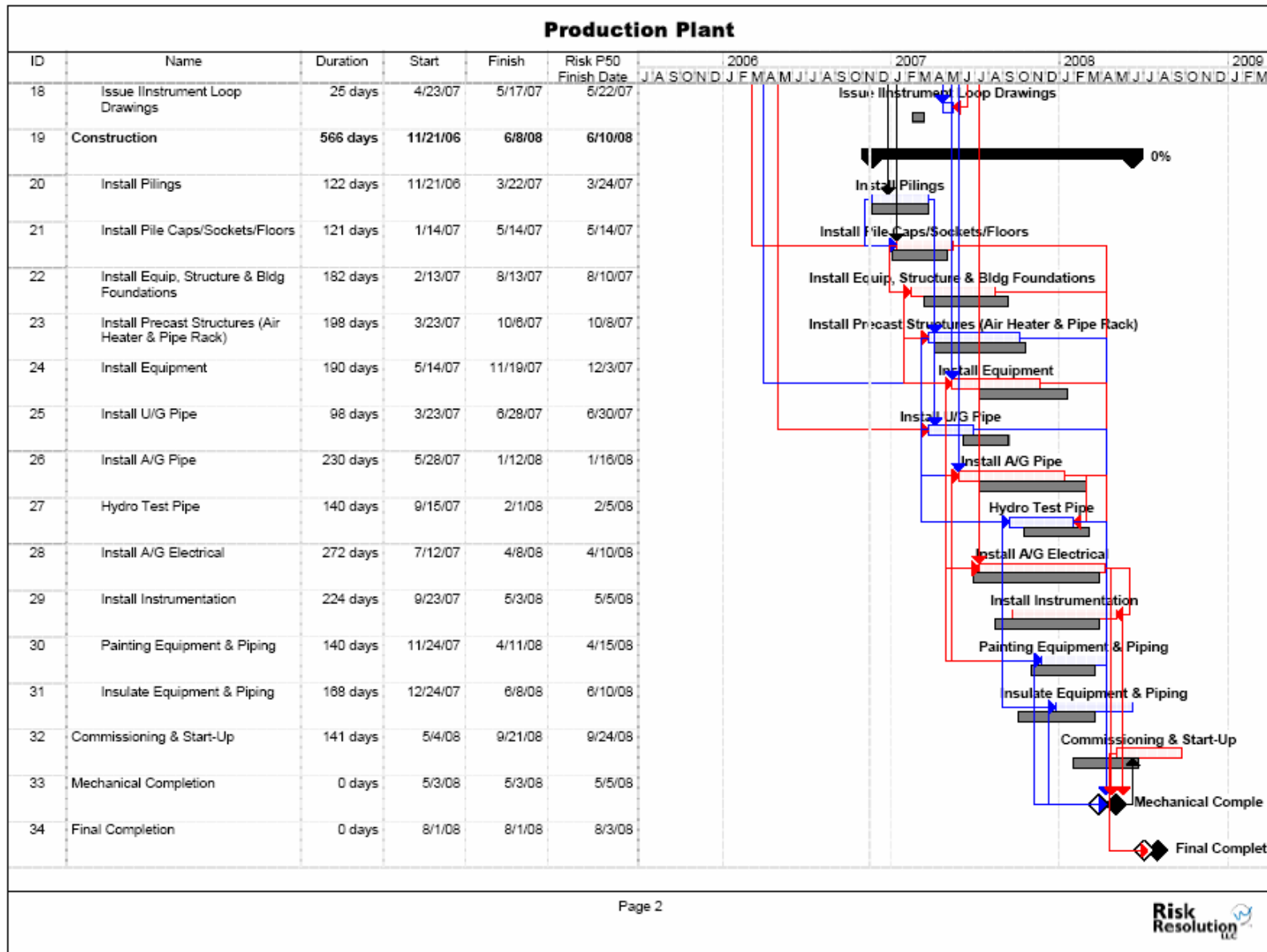


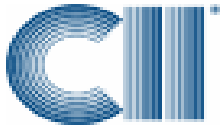
Schedule Risk Model / Assessment

- Using the current schedule information, develop a special purpose risk model in Microsoft Project. The model will be developed inclusive of all project schedule activities that have the potential for becoming critical and the direct logic of the schedule.
- The developed model will ideally be in the range of 100 to 150 activities
- Range around the Finish Dates in the developed schedule

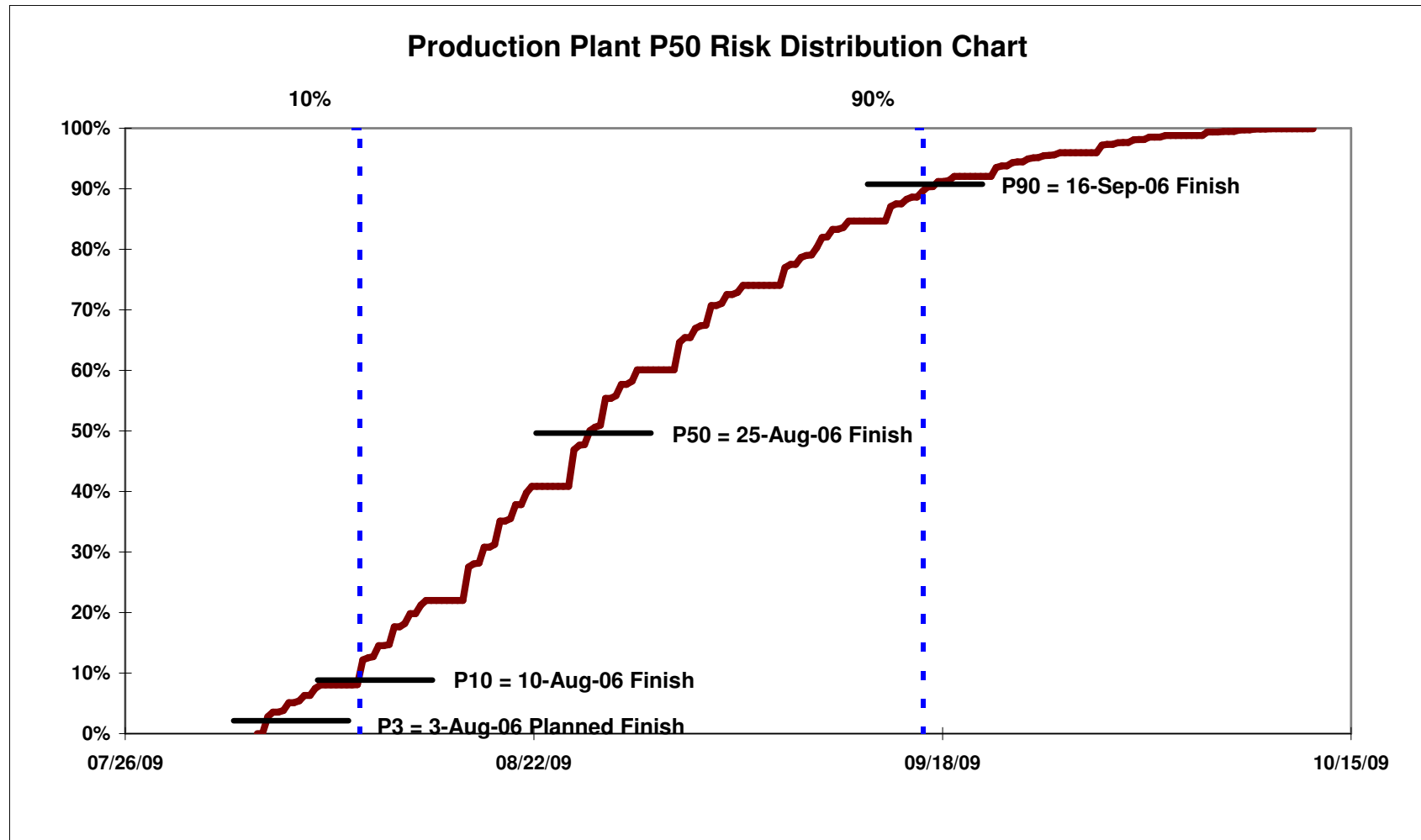


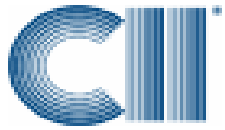
Schedule Risk Model





Schedule Risk Model





Strategic Risks

An example of calculating Strategic Risk will be demonstrated using the



A Westney Company

Strategic Risk Scenario Valuation Process

Executive Leadership Course

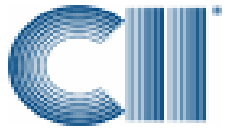
Richard Westney Keith Dodson

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Background or Strategic Risks

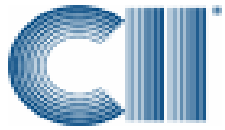
- **Strategic risks are skewed or discontinuous and do not fit the risk models available in the commercial Monte Carlo risk programs.**
- **The extremes of risks in the estimate or schedule that are not considered in the Tactical Risk Assessment are Strategic Risks**
- **The P50 Contingency provided for the Tactical Risks is considered project cost in the Strategic Risk Assessment**
- **The estimate or schedule may be used to calculate risk values, but the valuation of strategic risks are not “anchored” to estimate values.**
- **The estimate and schedule are not necessarily assumed to be the “likely” case.**



Strategic Risk Evaluation Process

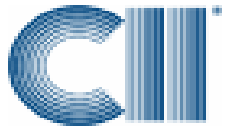
Steps (Interview / Workshop)

1. Frame risk scenarios and identify project Strategic / Background Risks
2. Gather Information and Intelligence
3. Categorize risks and range values on each risk selected
 - Base Best and Worst Values
4. Model Project Risk
 - Probability of occurrence assessment
 - Monte Carlo Type Simulation



Strategic Risk Categories

- **Scope** (What might be required to make the plant to work that is not provided for or undervalued)
- **Company Performance Factors** (Correct People, Governance, and Process)
- **Execution** (The potential market issues that “might” affect the project)
- **Schedule** (Potential acceleration costs)
- **Guarantees/Penalties** (Conditions of the “Business Deal”)
- **Other** (Political, Taxation, Duties, Weather, etc.)




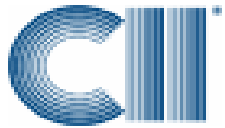
Risk Worksheet

A Risk Worksheet is prepared for each category of risk. The work sheet is used in conjunction with scenario type planning to identify and frame the Strategic Risks to the project.



Risk Worksheet Example

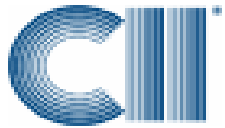
Strategic Risk Evaluation Worksheet - Execution		Risk Resolution LLC 	
Project: Production Plant		Date:	29-Aug-07
Risk Identification:	Valuation		
	Best Case	Worst Case	
XYZ Fabrications has an extremely high work load and new management -- It is very likely there will be claims due to their under pricing the order and the accelerated FEL scope issues	0	2,500	
Labor activity in the area of the project is expected to very heavy and recruiting to the area is expected to be difficult. To keep and attract people wages will go up dramatically			
Construction Productivity	0	5,000	
Construction Labor Escalation	0	7,500	
The non- module bulks are to be furnished by the installation contractors and award of contracts will not occur until 2009	0	1,000	
Risks Forward to Risk Assessment:	Valuation		
	Best Case	Worst Case	
1. XYZ Contract Increase	0	2,500	
2. Construcion Productivity	0	5,000	
3. Construction Escalation	0	7,500	
4. Non-module materials escalation	0	1,000	
Comments:			



Strategic Risk Assessment

Frame and value risks as Best and Worst Cases

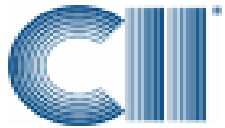
Strategic Risk Assessment		
Project: Production Plant		
Risk Description	Best Case Millions US\$	Worst Case Millions US\$
Scope		
Company Performance Factors	1000	5000
Execution		
1. XYZ contract increase	0	2500
2. Construction Productivity	0	5000
3. Construction labor escalation	0	7500
4. Non-module materials escalation	0	1000
Schedule		
Guarantees	0	1000
Other		
Project Risk Range	\$1,000	\$22,000



Strategic Risk Assessment

Add Probability of Occurrence for Best and Worst Cases

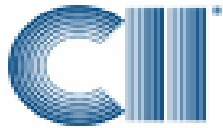
Strategic Risk Assessment				
Project: Production Plant				
Risk Description	Best Case Millions US\$	Worst Case Millions US\$	Risk Factor Best Case %	Risk Factor Worst Case %
Scope				
Company Performance Factors	1000	5000	10%	50%
Execution				
1. XYZ contract increase	0	2500	0%	50%
2. Construction Productivity	0	5000	0%	50%
3. Construction labor escalation	0	7500	0%	50%
4. Non-module materials escalation	0	1000	0%	90%
Schedule				
Guarantees	0	1000	0%	25%
Other				



Strategic Risk Assessment

Calculate Weighted Range for Best and Worst Cases

Strategic Risk Assessment					Risk Resolution	
Project: Production Plant					Date:	
Risk Description	Best Case Millions US\$	Worst Case Millions US\$	Risk Factor Best Case %	Risk Factor Worst Case %	Weighted Best Millions US\$	Weighted Worst Millions US\$
Scope						
Company Performance Factors	1000	5000	10%	50%	100	2500
Execution						
1. XYZ contract increase	0	2500	0%	50%	0	1250
2. Construction Productivity	0	5000	0%	50%	0	2500
3. Construction labor escalation	0	7500	0%	50%	0	3750
4. Non-module materials escalation	0	1000	0%	90%	0	900
Schedule						
Guarantees	0	1000	0%	25%	0	250
Other						
Project Risk Range	\$ 1,000	\$ 22,000			\$ 100	\$ 11,150



Strategic Risk Assessment

Select Value for Risk

Strategic Risk Assessment						Risk Resolution LLC		
Project: Production Plant						Date:		29-Aug-07
Risk Description	Best Case Millions US\$	Worst Case Millions US\$	Risk Factor Best Case %	Risk Factor Worst Case %	Weighted Best Millions US\$	Weighted Worst Millions US\$	Selected Risk Value	
Scope								
Company Performance Factors	1000	5000	10%	50%	100	2500	2500	
Execution								
1. XYZ contract increase	0	2500	0%	50%	0	1250	1000	
2. Construction Productivity	0	5000	0%	50%	0	2500	2500	
3. Construction labor escalation	0	7500	0%	50%	0	3750	2000	
4. Non-module materials escalation	0	1000	0%	90%	0	900	900	
Schedule								
Guarantees	0	1000	0%	25%	0	250	250	
Other								
Project Risk Range	\$ 1,000 \$ 22,000				\$ 100 \$ 11,150			
Selected Project Risk Value					Recommend Project Risk:		\$ 9,150	

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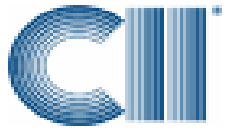
Strategic Risk Assessment

Unmitigated Strategic Risk \$9.1 Million

Strategic Risk Assessment						Risk Resolution LLC	
Project: Production Plant						Date:	29-Aug-07
Risk Description	Best Case Millions US\$	Worst Case Millions US\$	Risk Factor Best Case %	Risk Factor Worst Case %	Weighted Best Millions US\$	Weighted Worst Millions US\$	Selected Risk Value
Scope							
Company Performance Factors	1000	5000	10%	50%	100	2500	2500
Execution							
1. XYZ contract increase	0	2500	0%	50%	0	1250	1000
2. Construction Productivity	0	5000	0%	50%	0	2500	2500
3. Construction labor escalation	0	7500	0%	50%	0	3750	2000
4. Non-module materials escalation	0	1000	0%	90%	0	900	900
Schedule							
Guarantees	0	1000	0%	25%	0	250	250
Other							
Project Risk Range	\$ 1,000	\$ 22,000			\$ 100	\$ 11,150	
Selected Project Risk Value	Recommend Project Risk:						\$ 9,150

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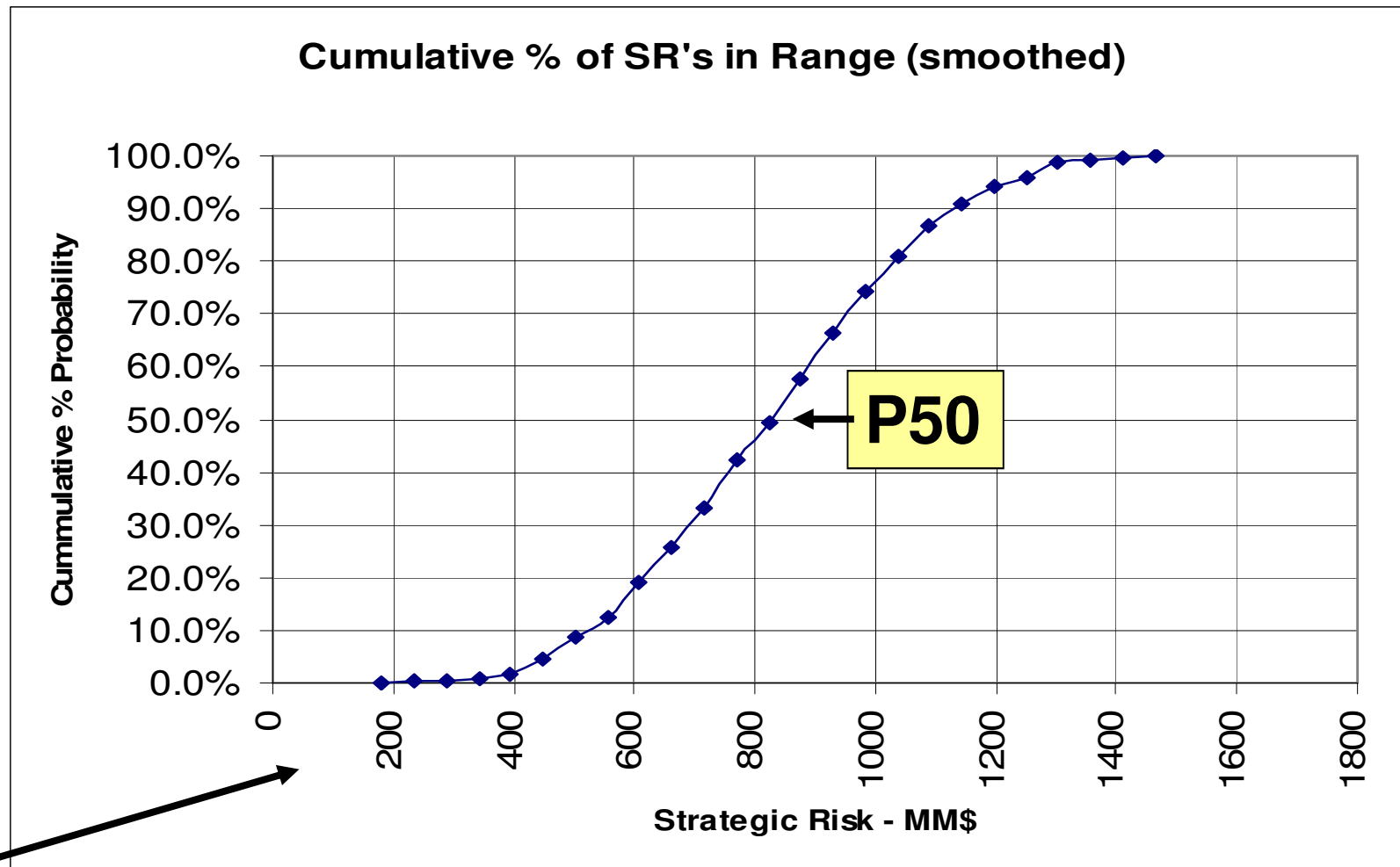


Strategic Risk Simulation

Westney Risk Resolutionsm has developed a random number generated simulation of the best and worst case of each identified risk such that a “Monte Carlo” type probability curve can be developed by the volume of model iterations. The curve is a good fit for the skewed distribution of the Strategic Risk. Most importantly, it is not “anchored” to the estimate as a likely case.



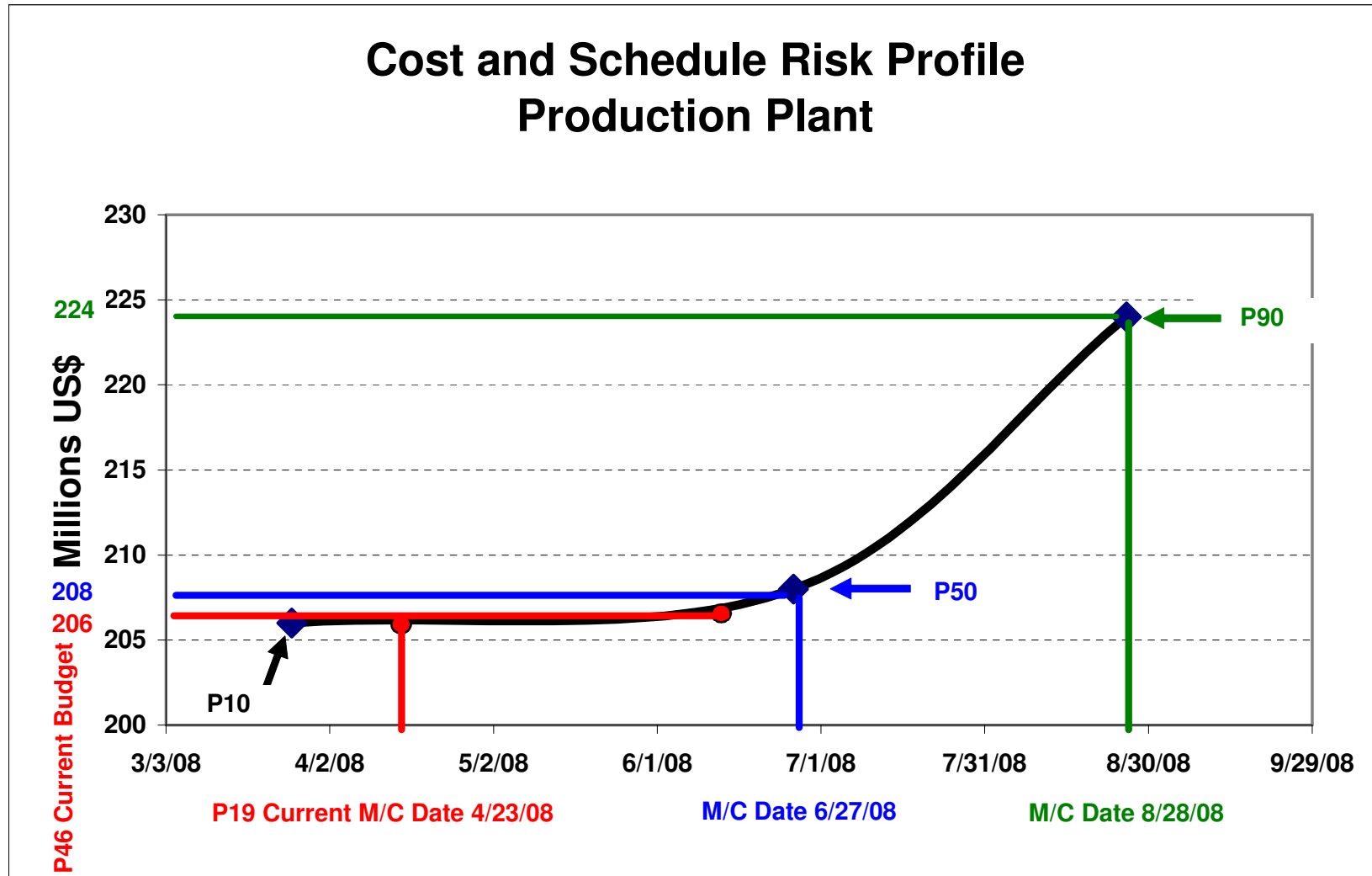
Strategic Risk Simulation

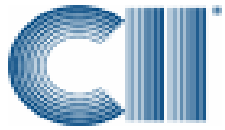


Strategic Risks (\$) above deterministic estimate plus contingency



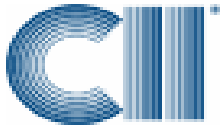
Cost and Schedule Risk Cumulative Probability Curve





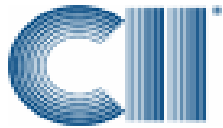
The Risk Resolutionsm Strategic Risk Process

- The Risk Resolution Process is focused on defining the Financial Exposure. Funding is a management decision based on the developed information
- The process has proven to be a great source for management or executive understanding of risk
 - Values in financial terms (currency) has proven to be a good communication tool about the project and risks
 - Executive participation is limited to critical events only maximizing understanding and minimizing time away from other duties.



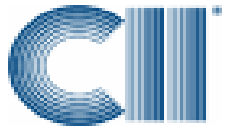
Mitigation

- Use project risk framing and financial valuation from the Strategic Assessment as a basis for mitigation
- Evaluate mitigation potential
- Develop mitigation plan and financial goal for each identified risk that can be mitigated
- Agree, budget, and action mitigations
- Periodically review progress of actions against financial goal for mitigation
- **Manage continuously!**



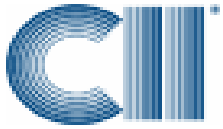
Risk Mitigation Chart

Risk Mitigation Chart		Date: 8/29/2007		Risk Resolution LLC			
Project: Production Plant		All values in US \$ Millions					
Risk to Project Success	Current Valuation			Mitigation	Mitigation		Action - Responsibility - Date
	Best	Worst	Selected		Mitigation Cost	Revised Expected Value	
Scope							
Company Performance Factors							
Project Management Staffing and additional vendor surveillance due to market	1,000	5,000	2500	Advise corroborate staff as to size of risk and develop a plan to address issue	250	1000	T. James VP HR to direct effort
Execution							
1. XYZ Contract Increase	0	2,500	1000	Place team in XYZ's office with engineering liason to get scope issues resolved, inspect all modules prior to	250	500	L. Jones VP Projects and D. Harris PM
2. Construction Productivity	0	5,000	2500	Provide additional field supervision and incentives for productivity	500	1500	J.Tones Corporate Construction Manager and B. Bones Construction Manager
3. Construction Labor Productivity	0	7,500	2000	Award construction contract in advance and based on fixed rates and labor resource guarantees	1000	500	J.Tones Corporate Construction Manager and B. Bones Construction Manager
4. Non-module material escalation	0	1000	900				
Schedule							
Guarantees							
1. Operability issues leading to redesign and changes after delivery to	0	1,000	250	Client and operation buy-in as early as possible. Ensure the design meets contract performance spec's.		250	A.J. Goes VP Production
Other							
Totals	1,000	22,000	9,150		2,000	3,750	Richard Westney Keith Dodson

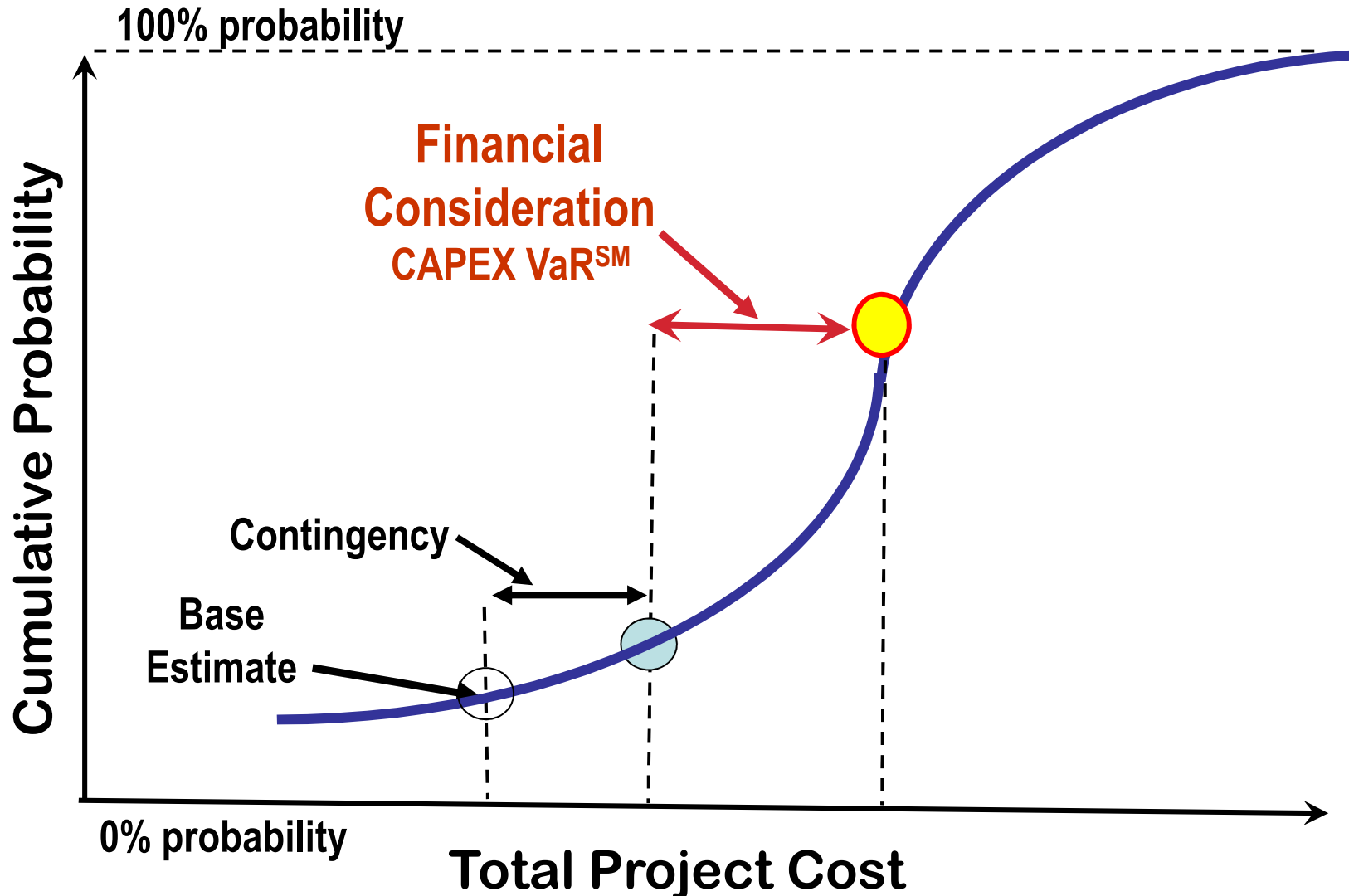


CAPEX VaRSM Financial Management

“CAPEX VaRSM” A probabilistic provision for the amount that the projects might financially exceed the sanction / estimate inclusive of “contingency” due to strategic or background risks.



CAPEX VaRSM Financial Management

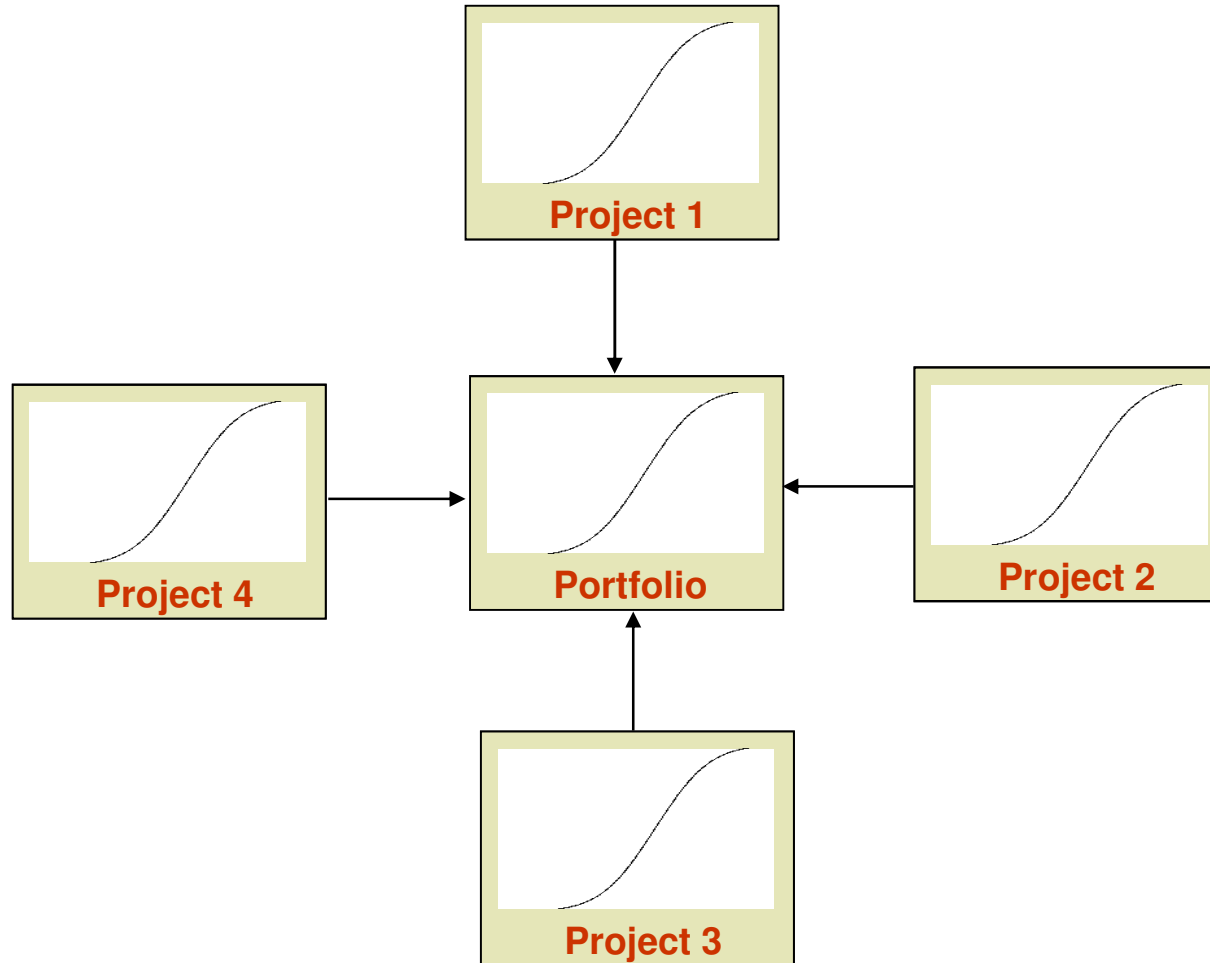


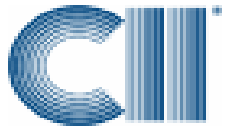
Total Project Cost
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Portfolio CAPEX VaRSM

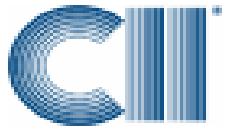




Portfolio Financial Management

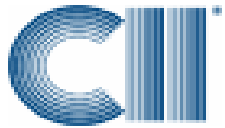
CAPEX VaRSM:

- Allows management to ensure that all risks that can reasonably be expected to occur, are considered in the financial process.
- Provides an Internal Control process for compliance with the “Disclosure Controls” requirements of the Sarbanes Oxley Legislation



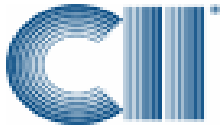
Risk Resolution

- **Traditional method of “laying the risk off” on others, will not work today**
- **New approach must:**
 - **Enable all parties to understand each other’s risks**
 - **Provide a means by which an equitable allocation of risks and costs can be made**
- **Cost and Risk to all parties are reduced**
- **Disputes are avoided**
- **This new approach is “Risk Resolution”**



Key Elements of Risk Resolution

- **Address Risks away from the negotiation table, with all parties equal**
- **Facilitate the Risk Resolution process**
 - Mutually agree risks, probabilities and impacts
 - Allocate each risk to the party best suited to assume it
 - Eliminate and/or mitigate risks by agreement on issues
 - Fund appropriate risks by agreement, using pricing or a risk pool



The Risk Resolution Process

Risk Resolutionsm is achieved when all parties are in agreement as to how project risks are to be allocated and mitigated; and how each party will fund the risks it bears.

