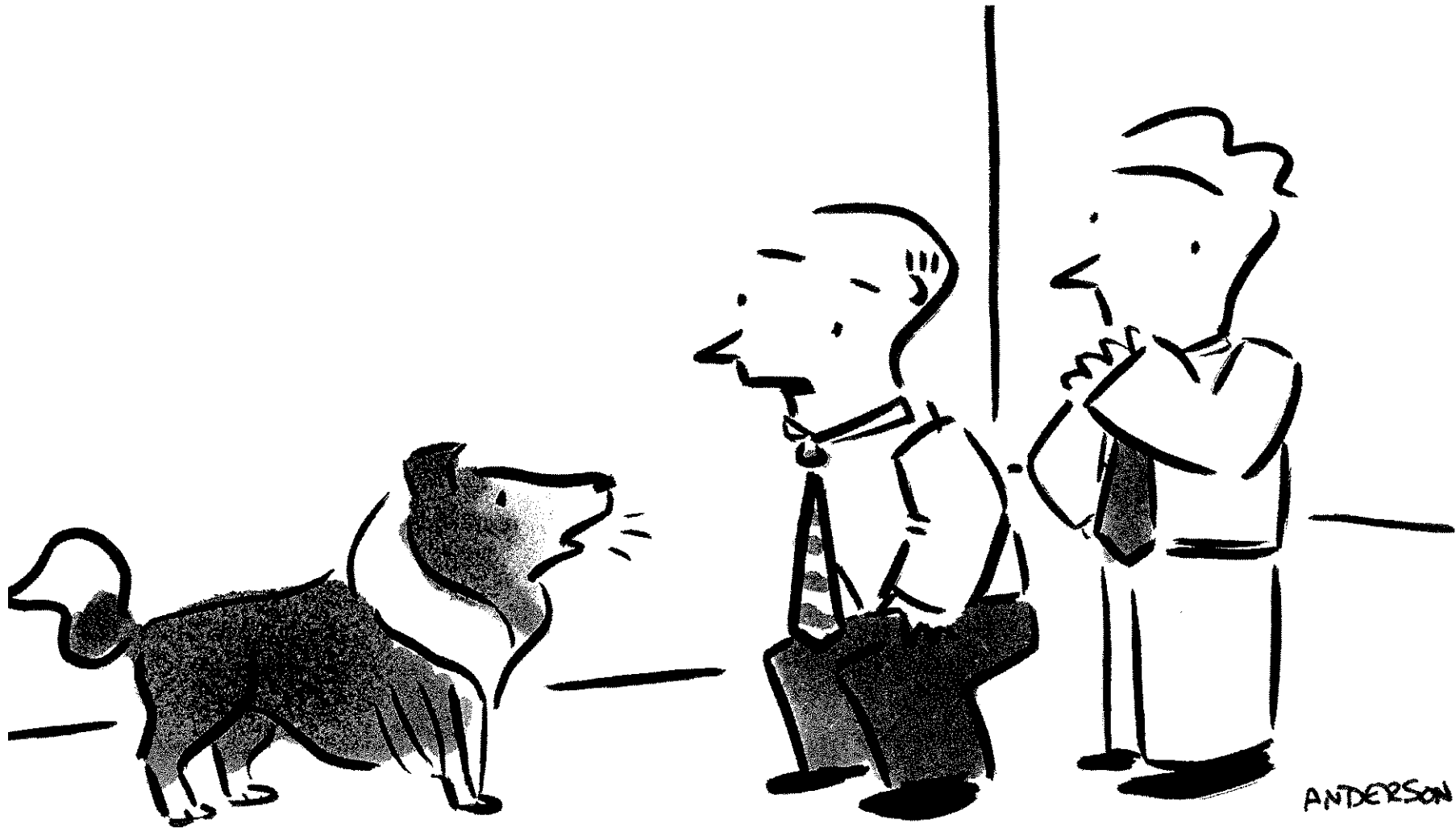




Improving Megaproject Performance

30 January 2006

Westney[™]
Consulting Group
www.westney.com

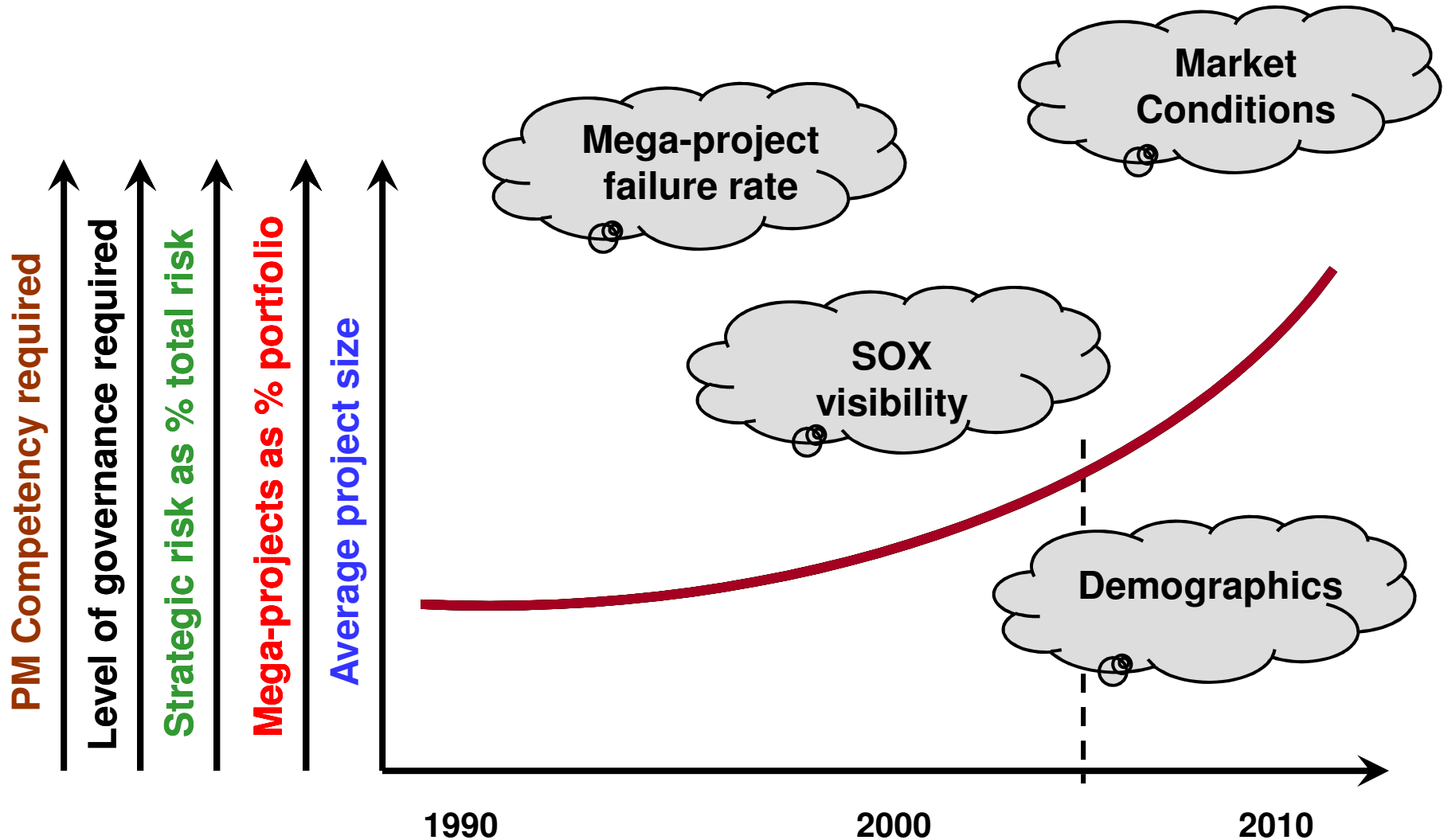


"What's that boy?! A paradigm shift?!"

HARVARD BUSINESS REVIEW

The Industry's Challenge Today

The CAPEX Management Challenge



Result: Loss of Predictability & Performance

Need to Expand the CAPEX Envelope



Introducing: The Sakhalin II Project



1858: first exile arrives

1991: Feasibility Study

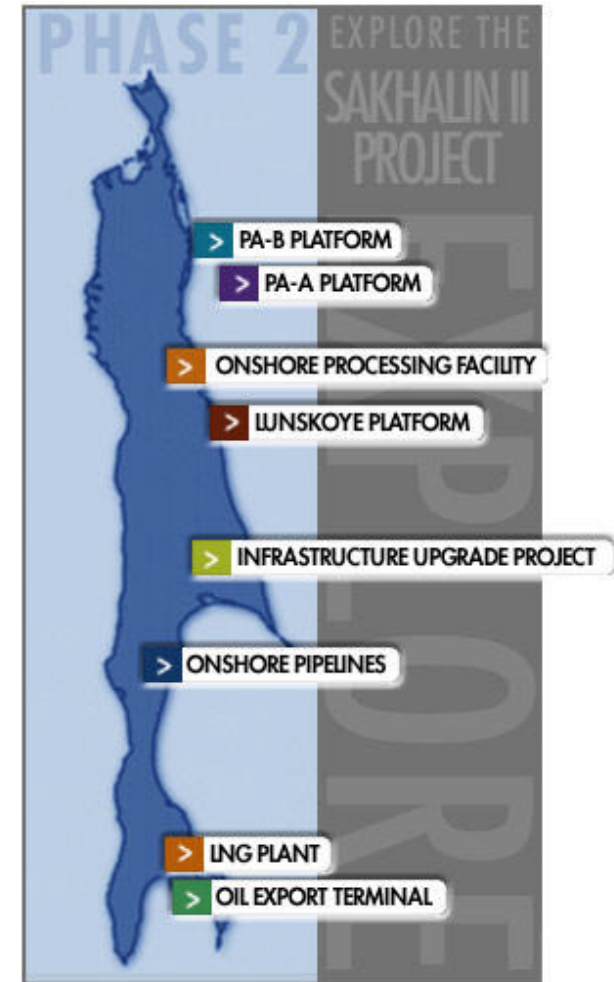
1992: Shell joins SEIC

1994: PSA signed

2000: Shell becomes operator, owns 55% “Shell standards apply”

May 2003: Final Investment Decision \$10billion –req’d.:

- PSA assurance
- TEOC approval
- LNG sales contracts





THE WALL STREET JOURNAL.
O N L I N E

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

According to the WSJ:

“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.”

According to the “6K” report

- **“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.”**

Questions:

- **How could this have happened?** Consider:
 - This project had good FEL
 - Shell has a strong Project Delivery System
 - Sakhalin construction issues are well understood
- **Why did Shell report this on the 6K?**
- **What lessons can we learn from Sakhalin?**

Let's "Ask the Audience"

- **How would you rate industry's current capability to predictably plan and execute major capital projects?**
 - **Excellent = 5**
 - **Very Good = 4**
 - **Good = 3**
 - **Fair = 2**
 - **Poor = 1**

We Are Not Doing Very Well

- **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**

Top Reasons Projects Fail

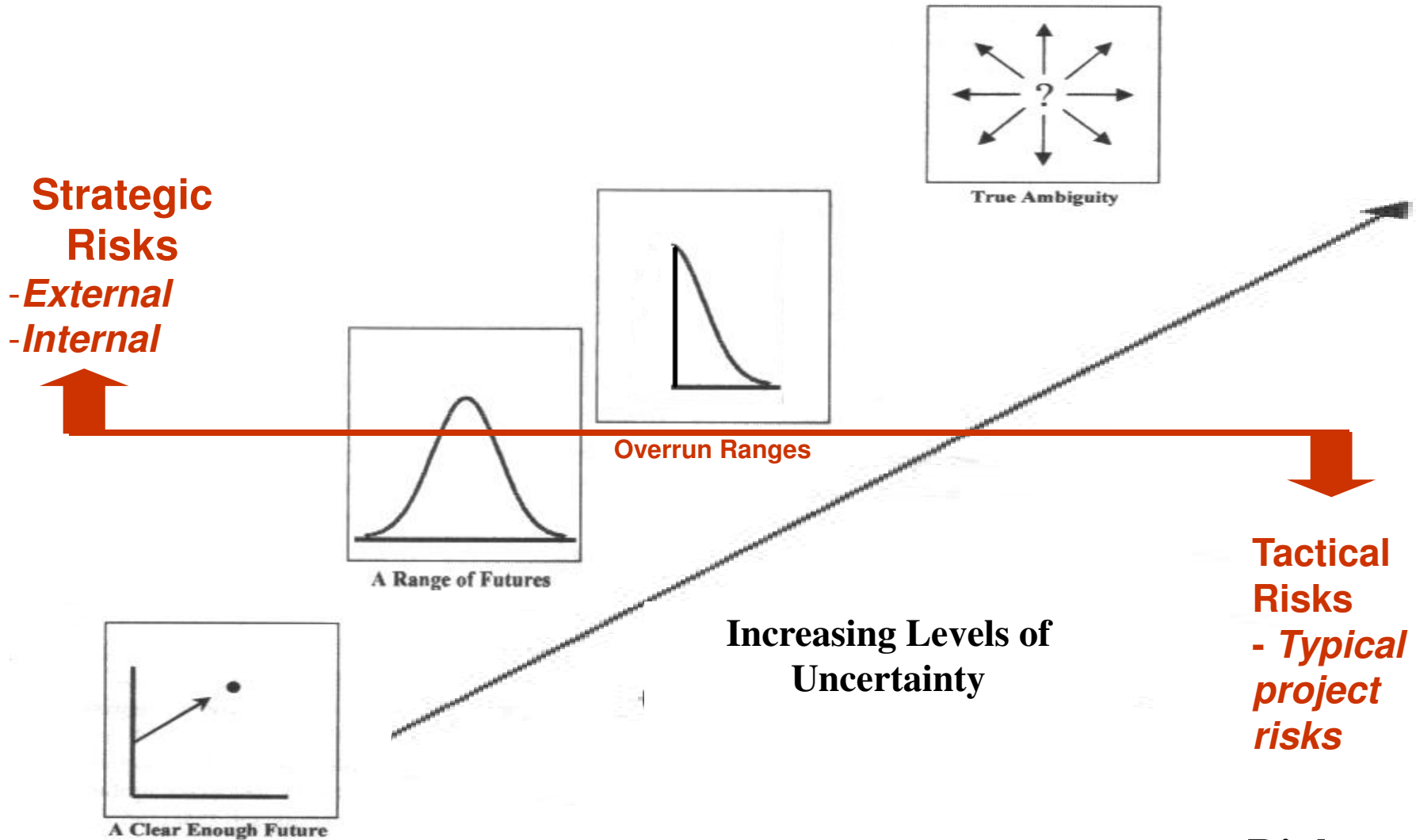
- **Unrealistic schedule expectations**
- **Optimistic cost estimates**
- **Incorrect contract strategy**
- **Poor project execution plan**
- **Ineffective organization plan**
- **Failure to follow PM Best Practices**
- **Lack of resources**
- **Incomplete “Front End Loading” (i.e., scope definition, planning, site investigation etc.)**
- **Lack of alignment (at all levels)**
- **Failure to recognize and mitigate risks**

I. Strategic Risk Management

“Megaprojects & Risk”

- **Infrastructure – Overruns of 50% - 100% are common**
- **Research shows root cause:**
 - **Typically underestimated**
 - **“Delusion” often necessary for projects to proceed!?**

1. Strategic Risk Management



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

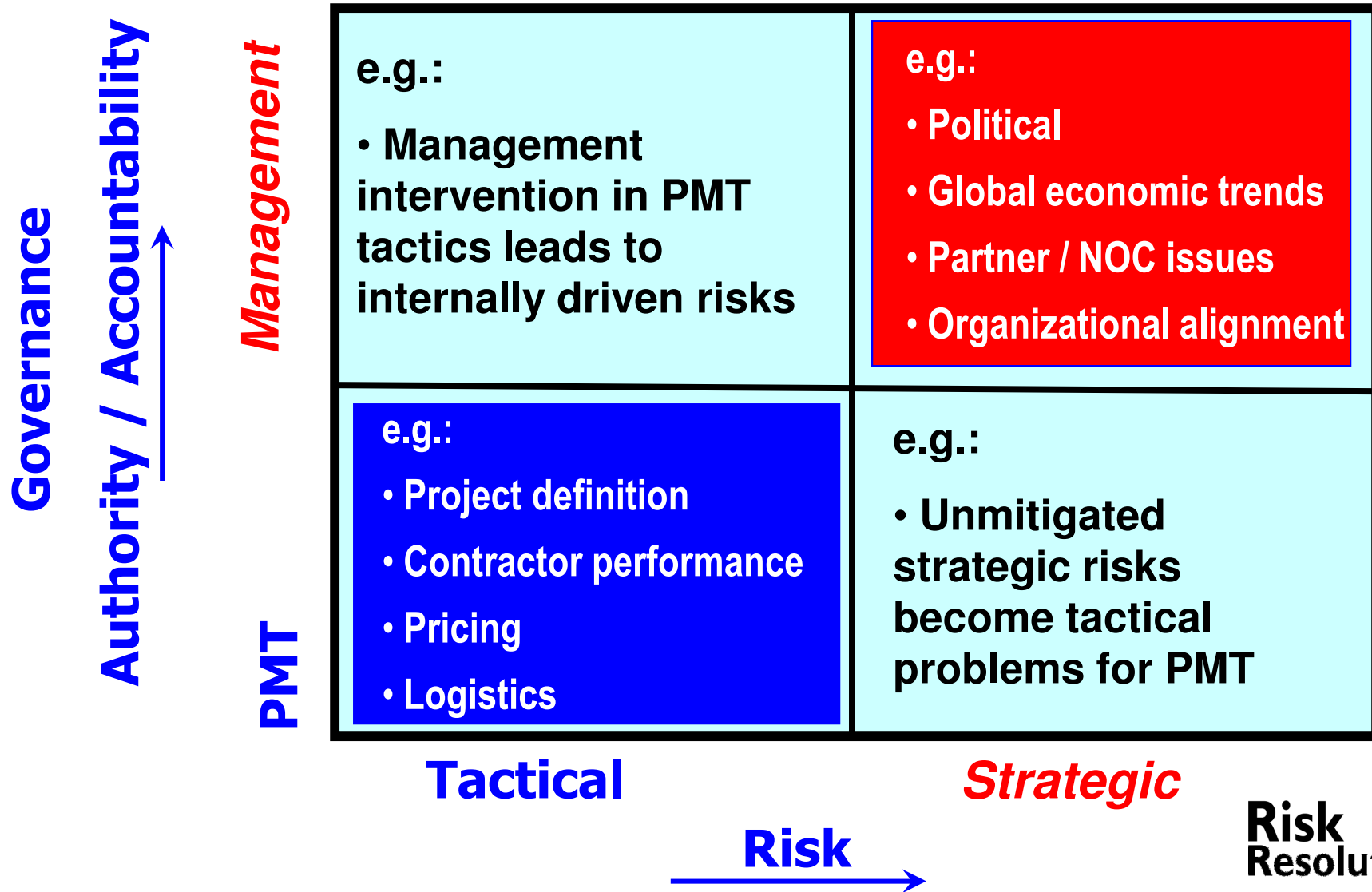
Examples of Strategic Risks

- External / Global Risks?
- Internal / Enterprise Risks?
- How funded?

Examples of Tactical Risks

- Scope / Design
- Execution
- Estimating
- How funded?

Managing Risks at the Right Level



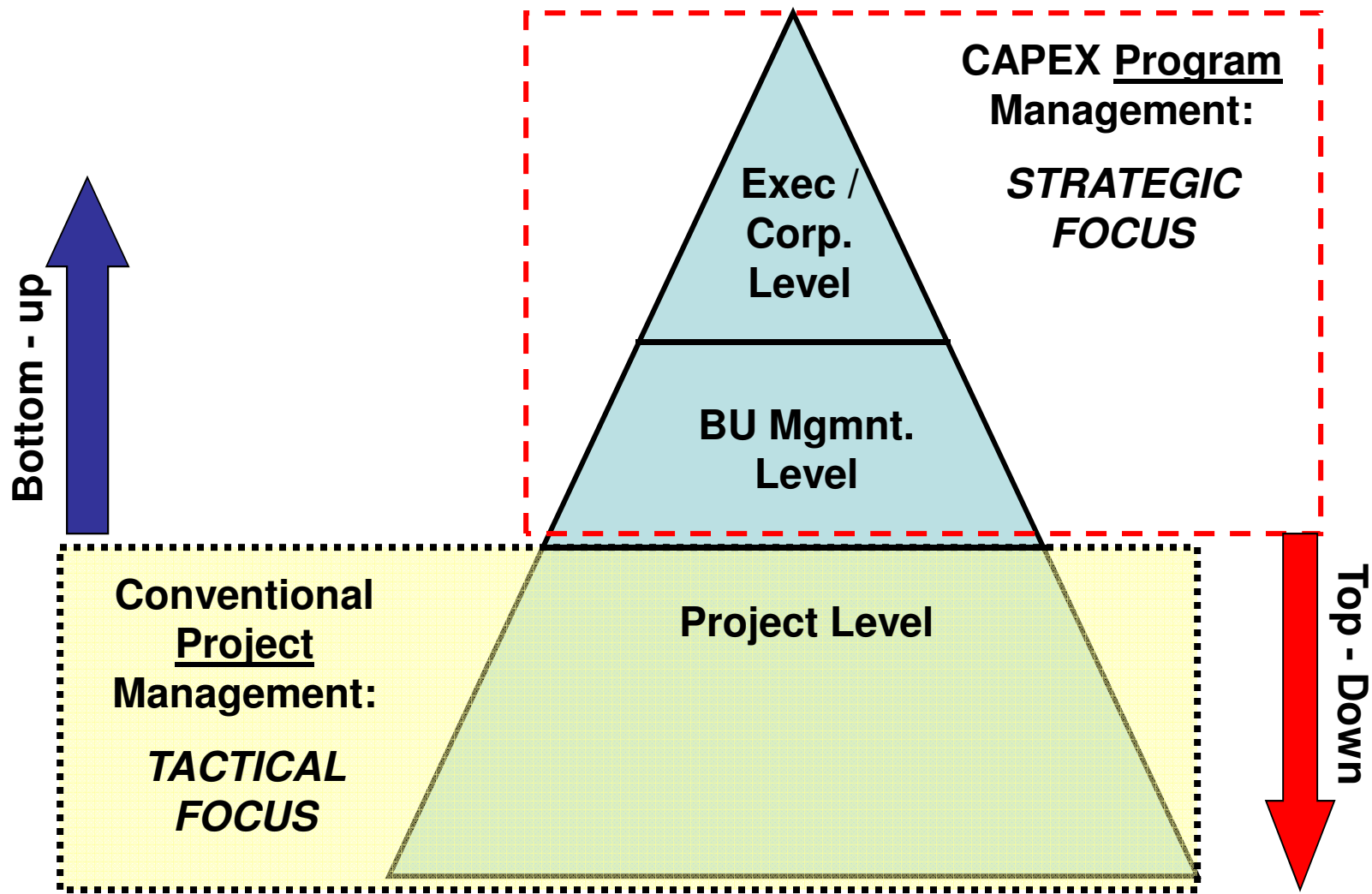
IH Case

DISCUSSION – Risk Management

- 1. Was delusion necessary for this project to proceed?**
- 2. Strategic Risks**
 - a. What strategic risks existed for this project?**
 - b. Which of these risks could have been identified at or before sanction?**
 - c. What steps could have been taken to mitigate these risks?**
 - d. How could IH management have provided funding for these risks?**
- 3. Tactical Risks**
 - a. What tactical risks existed for this project?**
 - b. Did the project team do an adequate job of identifying and managing these risks?**
 - c. Should these risks have been covered by contingency?**
 - d. How could the project have an outstanding IPA score and still have such a poor result?**

II. Governance

Need to Elevate CAPEX Governance



IH Case DISCUSSION – Management & PMT Scorecard

- 1. IH Management**
- 2. IH PM Team**
- 3. Excellent Engineers Inc.**
- 4. Pipe Hangers Inc.**

- ***Grade?***
- ***Did What Well?***
- ***What Could Have Been Better?***

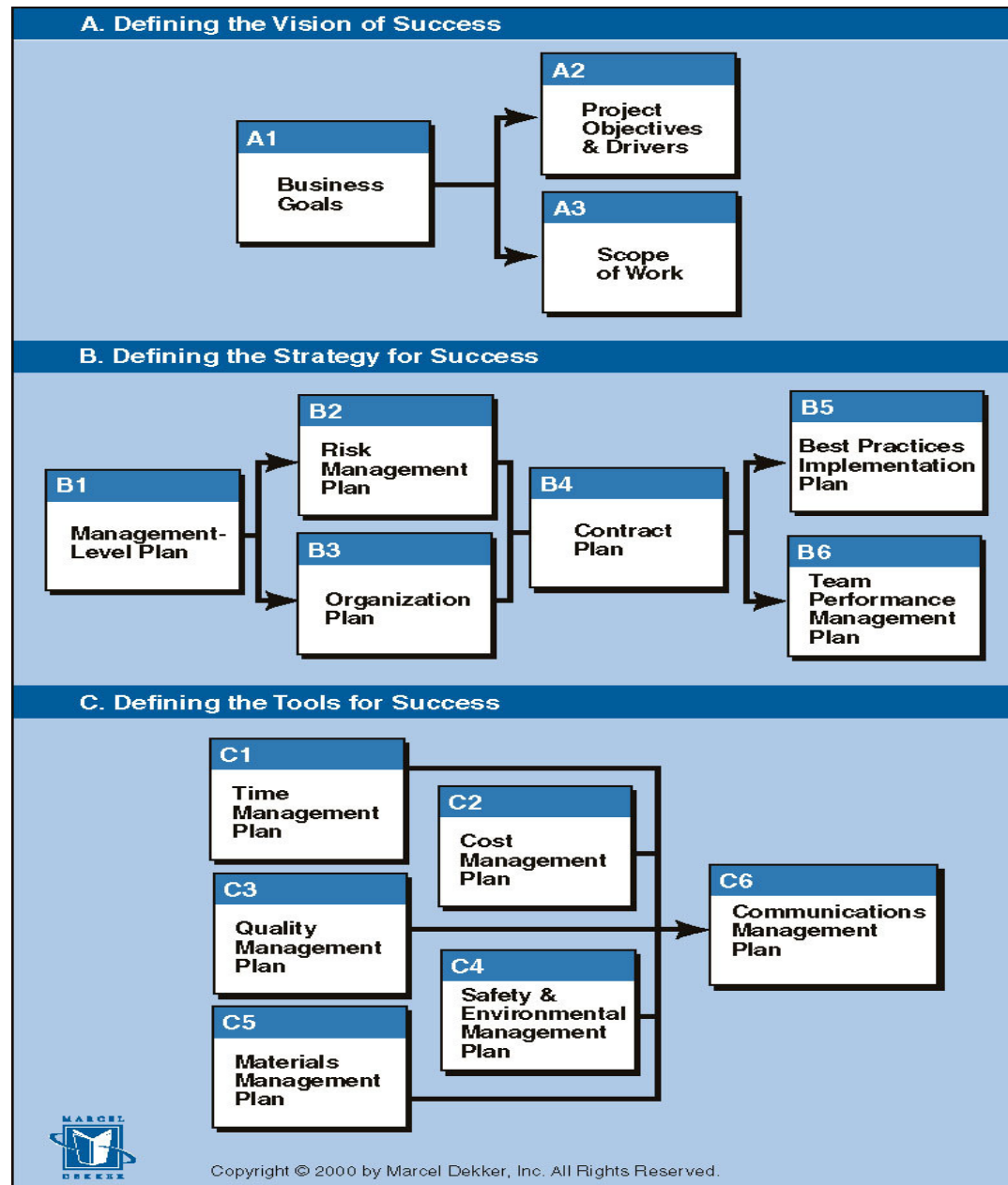
III. Project Execution Planning

What is Strategic Project Planning?

Strategic Project Planning is the process of defining how a project will be executed in order to achieve its business goals

The objective of Strategic Project Planning is to produce a Project Execution Plan, which is used to guide plans, decisions and actions throughout the project's life cycle.

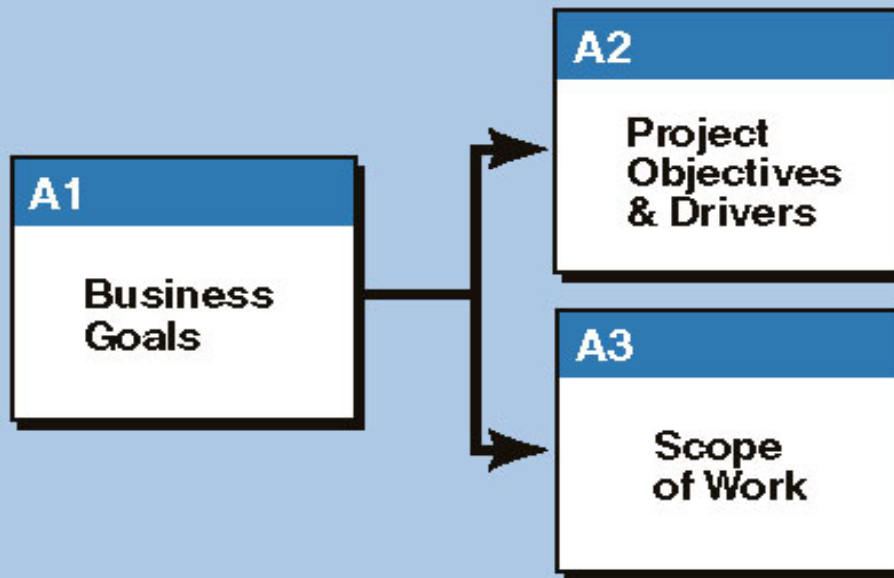
Project Execution Planning Process



Strategic Project Planning

Defining the business goals that will determine project success

A. Defining the Vision of Success



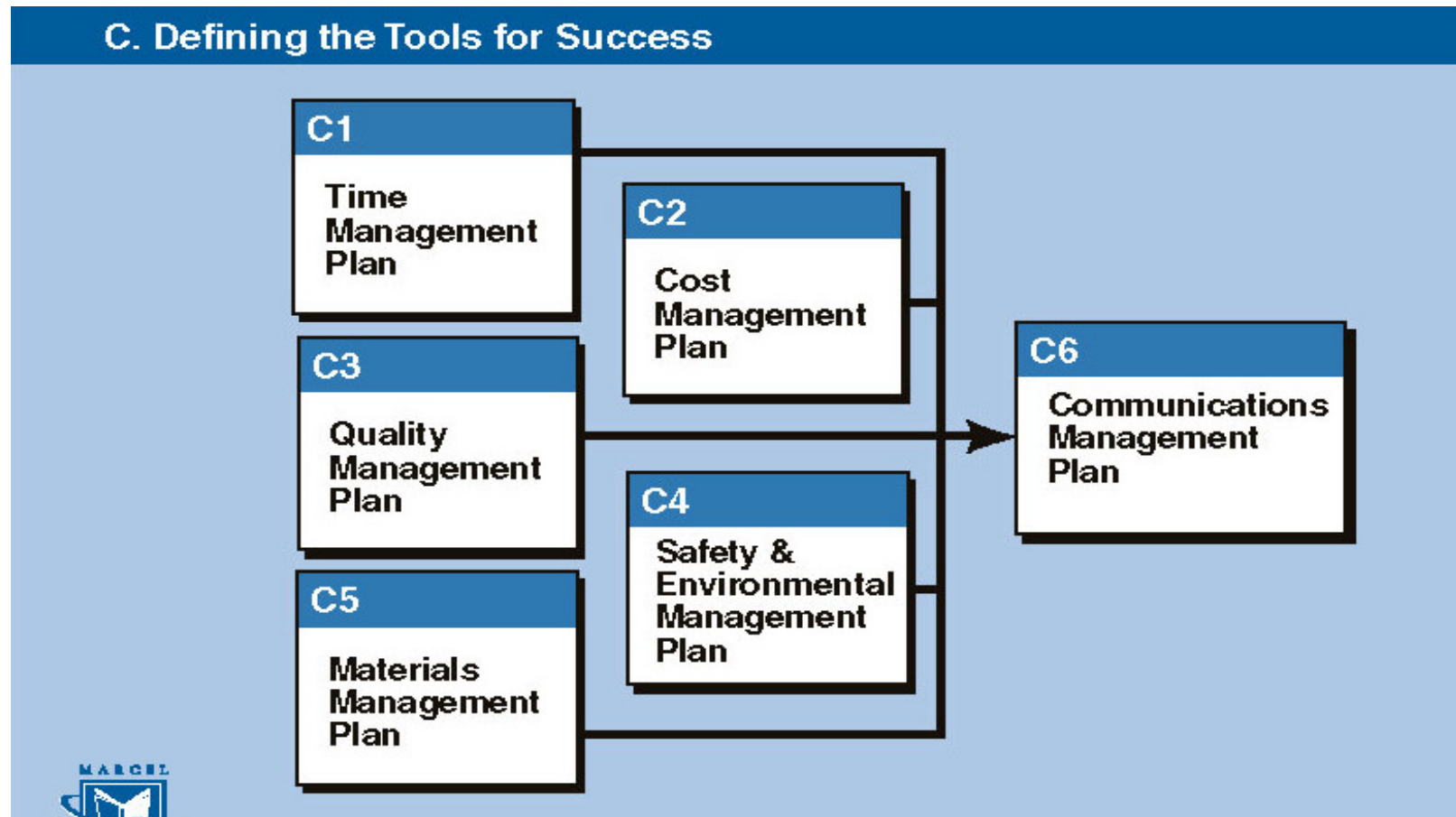
Strategic Project Planning

Defining major phases, milestones, risks, organization, staffing and best practices to be used



Strategic Project Planning

How time, cost, quality and resources will be managed



IH Case DISCUSSION – Project Execution Planning

- 1. Contract Plan**
- 2. Scope Management**
- 3. Cost & Schedule Management**
- 4. Communications Management**

- ***Grade?***
- ***Effective?***
- ***Could have been better?***

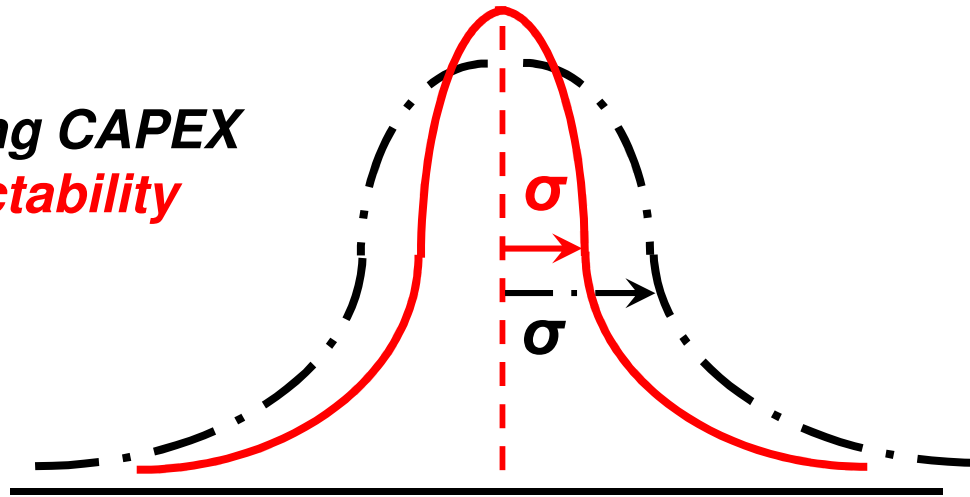
DISCUSSION – Top 3 Lessons Learned From IH Case

Epilogue: (A true story)

- **The IH Project Manager was fired and his team disgraced**
- **The head of Corporate Engineering survived**
- **EEl was sued for fraudulent misrepresentation**
- **EEl was sold to a competitor who settled the case for a few million as part of purchase accounting**
- **PHI performed some work without fee for IH to clear their name**
- **IH was sold to a competitor and management got healthy golden parachutes**

Summary

*Improving CAPEX
Predictability*



*Improving CAPEX
Performance*

