



EMEA
Biennial Workshop
10-11 October 2019
Utrecht, The Netherlands

Strategic Technical Planning

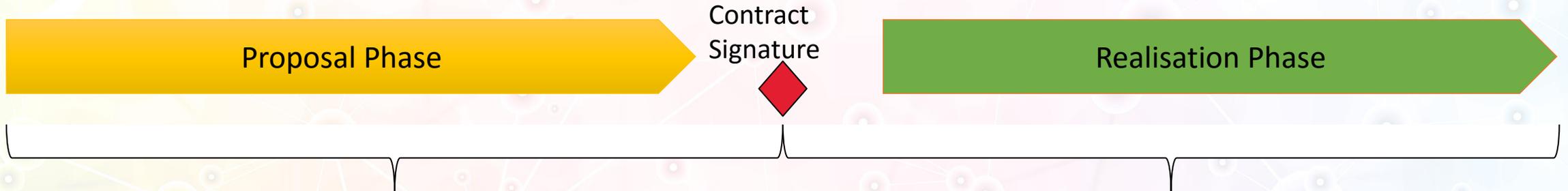
PM-SE Integration WG Initiative



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Strategic Technical Planning

- A common experience



Responsibility: under SALES/MARKETING

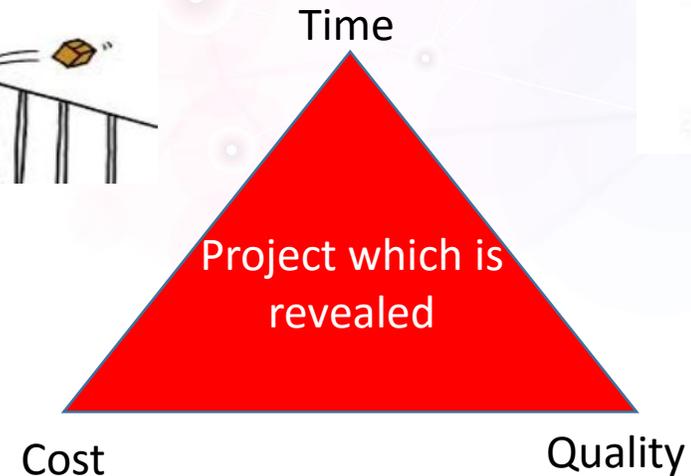
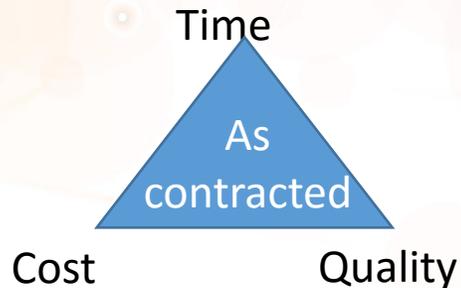
Mission Accomplished

surprise

Responsibility: under PROJECT MANAGEMENT

Target: Order Intake

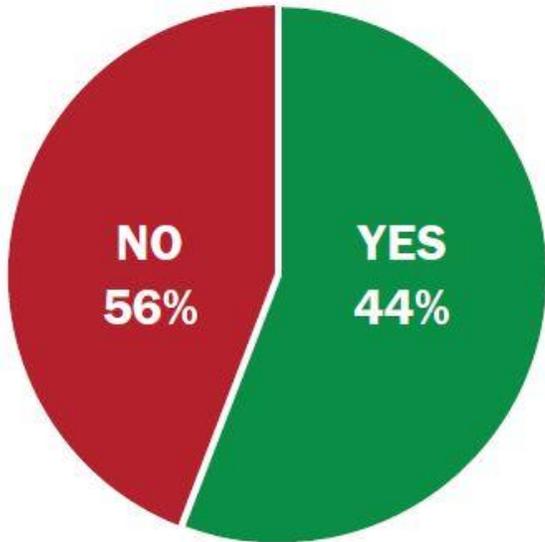
Target: achieve project goal in time – cost – quality





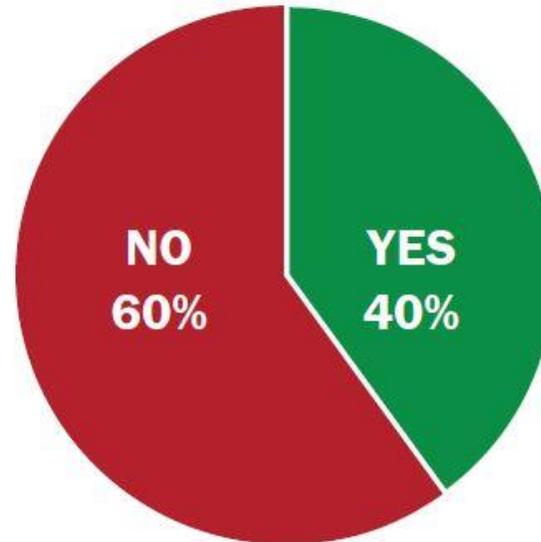
Strategic Technical Planning - CHAOSReport

ONBUDGET



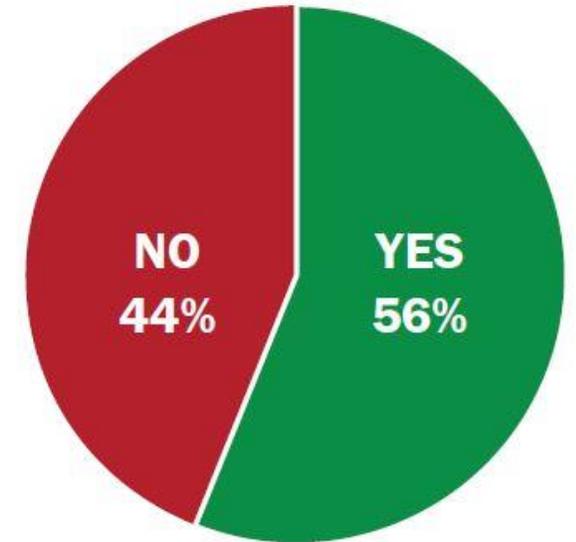
The percentage of projects that were OnBudget from FY2011-2015 within the new CHAOS database.

ONTIME



The percentage of projects that were OnTime from FY2011-2015 within the new CHAOS database.

ONTARGET



The percentage of projects that were OnTarget from FY2011-2015 within the new CHAOS database.



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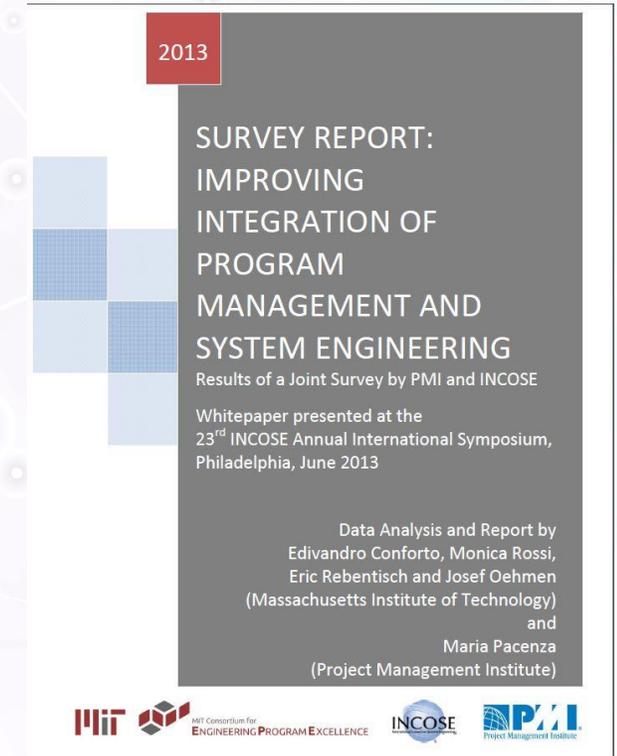
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Strategic Technical Planning

- INCOSE-PMI-MIT Alliance

- In January 2011, International Council on Systems Engineering (INCOSE) and Project Management Institute (PMI®) formed a strategic alliance to advance the integration of the systems engineering and program management disciplines.
- In October 2012, the organizations conducted a joint survey to better understand the roles of the Program Manager and Chief systems Engineer and to gauge their current level of integration.
- Massachusetts Institute of Technology (MIT) provided strategic support in analyzing, reviewing and finalizing the survey results with INCOSE and PMI



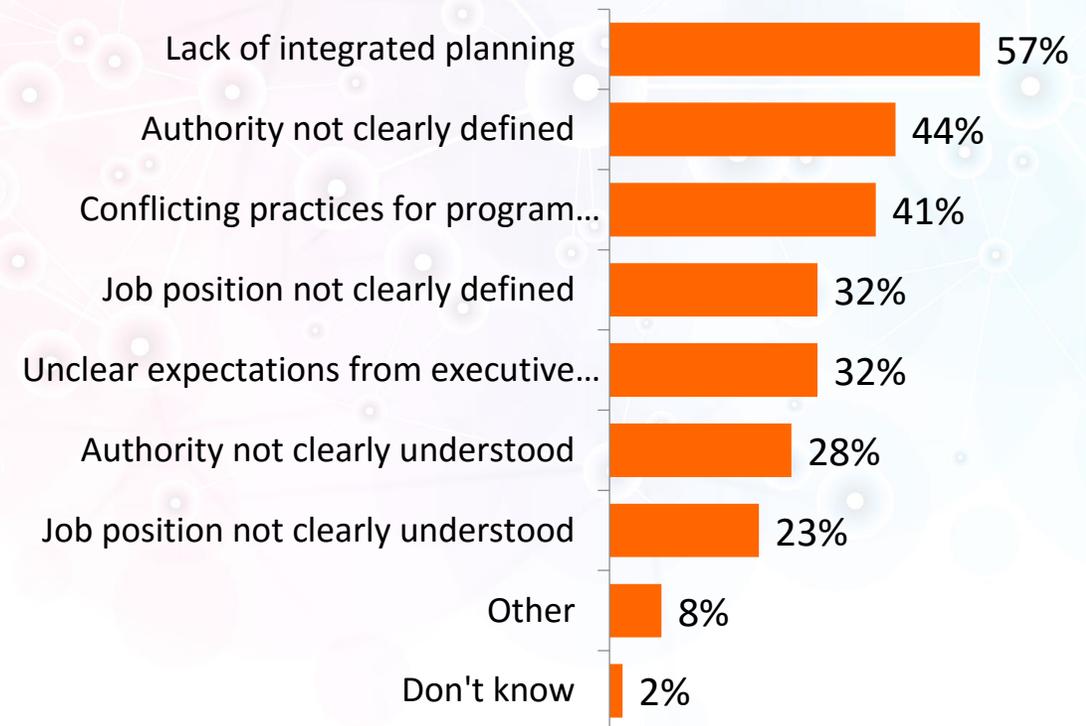


Strategic Technical Planning

- Survey Report - Results

- Survey of 177 programme/project managers and chief engineers
- About three out of ten found that there is some (26%) or significant (3%) unproductive tension between program management and systems engineering.
- Chief Systems Engineers are significantly more likely to feel that there is unproductive tension between the roles at their organizations than program managers.

Q23. You identified that there is unproductive tension that affects team or program performance. Please describe the applicable source of the tension.





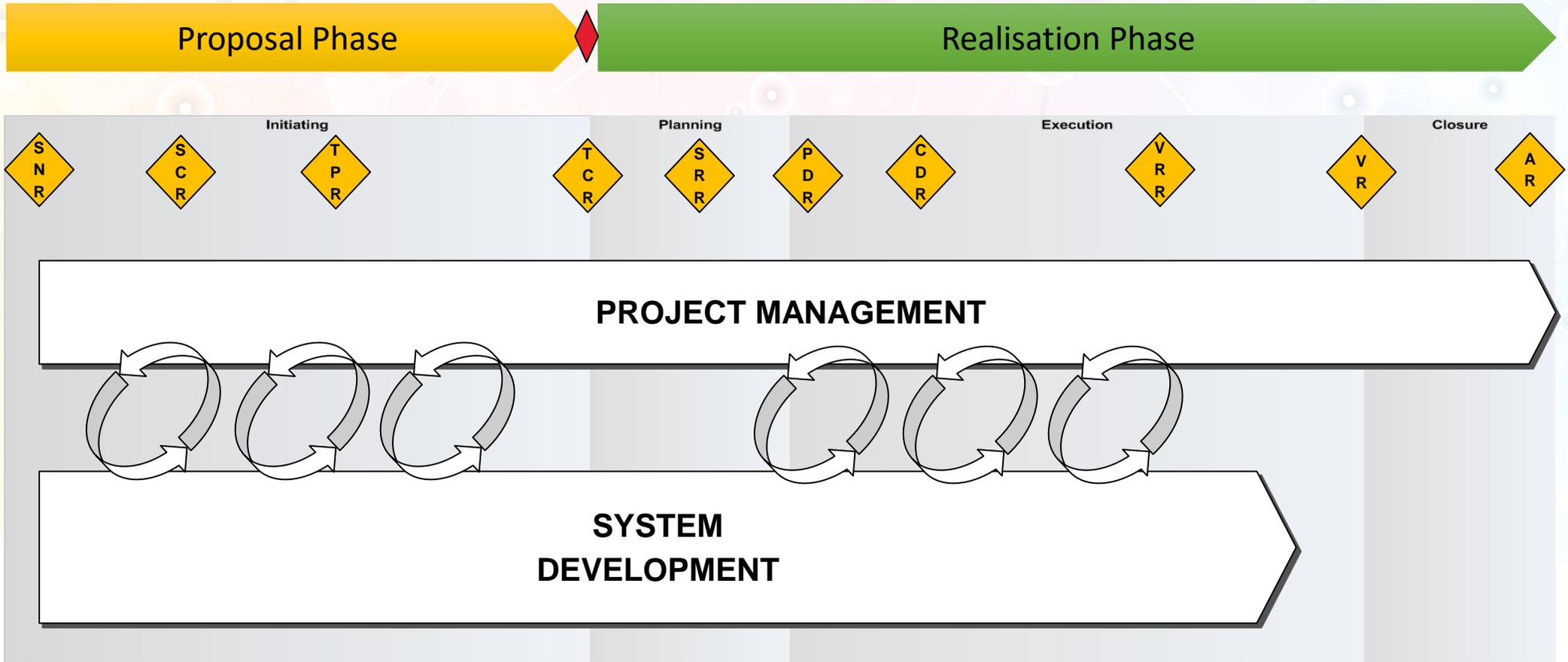
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Strategic Technical Planning

- Strategic Technical Planning Initiative based on the lack of Integrated Planning

Business Gates





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Strategic Technical Planning

- Some findings from the group..



"Changing the Acquisition Game"

Alleviating Unreasonable PM-SE Constraint Risks

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Abstract. Poor project performance is often attributed erroneously to PMs and SEs that must perform in an environment characterized by:

1. Inadequate proposal preparation and analytical due diligence in understanding the user's problem space and operational needs.
2. Unrealistic proposal assumptions and contract constraints – such as overly aggressive schedules and inadequate funding.
3. A Source Selection Evaluation Process that is overshadowed by a highly competitive "Acquisition Game" of perceptions, influence, persuasion, and potential conflicts of interest.
4. Project Management and Engineering "stovepipes" that limit understanding of each other's roles, accountabilities, and their respective contributions.
5. Contract "requirements creep" by the Acquirer with an expectation or Developer accommodation without appropriate contract cost modification.
6. Deficiencies in Engineering and Systems Engineering due to outdated educational and competency paradigms.

As a result of *unreasonable* and *unrealistic* constraints by the "game" conditions, no one really wins - the User, the Acquirer, the Developer, or supporting subcontractors and vendors. Indeed, upon contract award, the project conundrum becomes: "Good news! We won the contract ... Bad news. We won the contract!" Project Managers and Systems Engineers are then burdened with the impossible

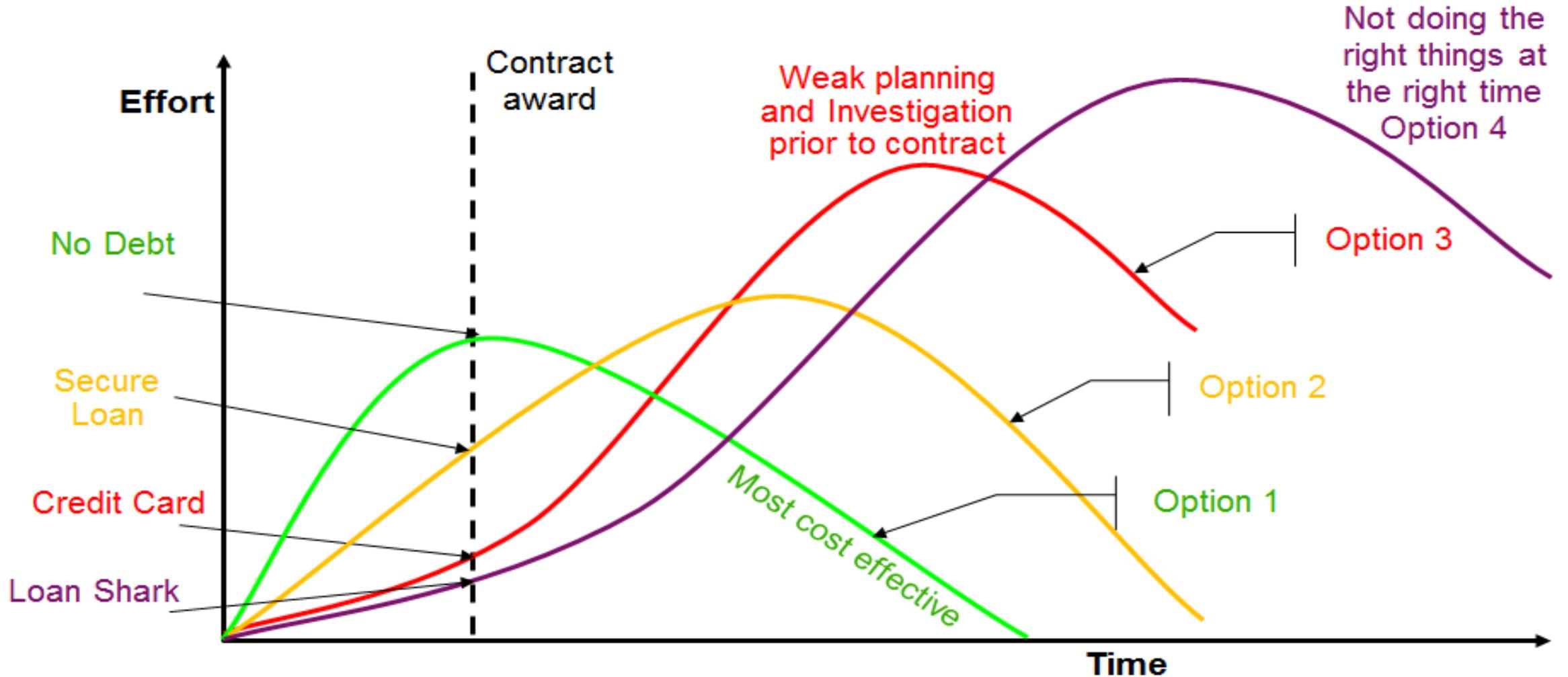
Poor project performance is often attributed **erroneously** to PMs and SEs that must perform in an **environment** characterized by:

1. A Source Selection Evaluation Process that is overshadowed by a highly competitive "Acquisition Game" of perceptions, influence, persuasion, and potential conflicts of interest.
2. Inadequate proposal preparation and analytical due diligence in understanding the User's problem space and operational needs.
3. Unrealistic proposal assumptions and contract constraints – such as overly aggressive schedules and inadequate funding.
4. Project Management and System Engineering Silos that limit understanding of each other's roles, accountabilities, and their respective contributions.
5. Changing Contract requirements by the Acquirer with an expectation of Developer accommodation without appropriate contract cost modification and Developer willingness to accept new requirements to offset late delivery schedules.



Strategic Technical Planning

- Impacts of weak planning





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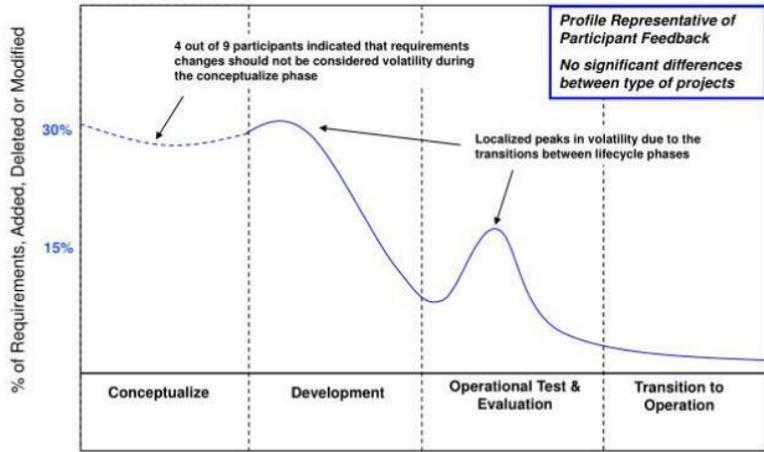
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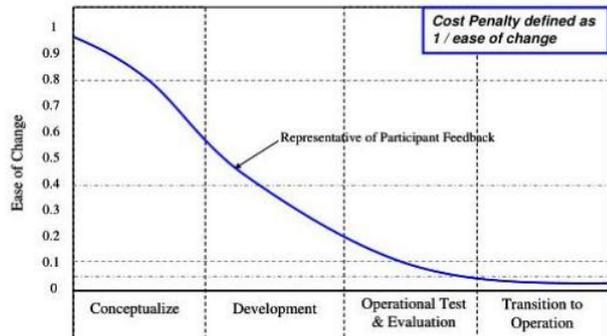
- COSYSMO studies fyj

$$PM_{NS} = A \cdot \left(\sum_k (w_{e,k} \Phi_{e,k} + w_{n,k} \Phi_{n,k} + w_{d,k} \Phi_{d,k}) \right)^E \cdot \prod_{j=1}^{14} EM_j$$

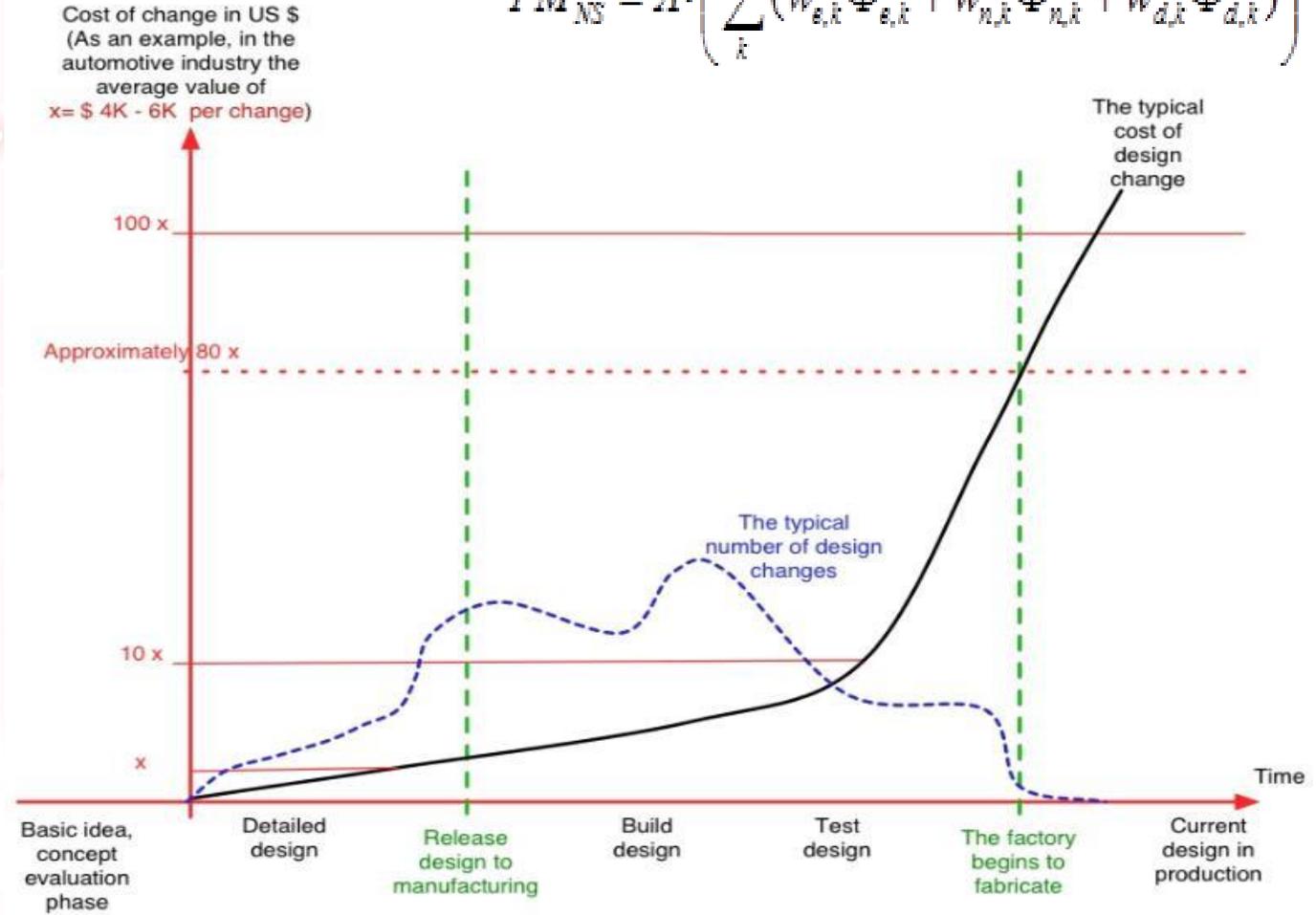
Expected Requirements Volatility Profile



Ease of Change Profile



Average Ease of Change Factor (Estimated)	0.8	0.4	0.1	0.05
Average Cost Penalty (Estimated)	1.25	2.5	10	20



It gives an estimate of the number of person-months it will take to staff systems engineering resources on hardware and software projects.



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Strategic Technical Planning

- Initiative details

Scope: Identify key Strategic Technical Planning factors that contribute to project technical, technology, cost, and schedule performance risk & success. Identify and prioritize PM-SE Integration performance risk issues within each factor.

Who is leading : John Lomax

Who is contributing/volunteering : Randy Iliff, John Coleman, Allison Weigel, Heidi Hahn, Karl Geist, ...

Timeframe: 2017- 202X - based on the publications/alignments with the INCOSE Hndbk, PMBoK, SEBoK etc.

Resources & References: <https://connect.incose.org/WorkingGroups/pm-se%20integration/SitePages/Home.aspx>

WG developments:

- IS2018 Paper Submitted - “Changing the Acquisition Game”: Alleviating Unreasonable PM-SE Constraint Risks
- IS2018 Panel Discussion Proposed – “Changing the Acquisition Game”

Expected Outcomes: PM-SE Integration best practices guidelines



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Strategic Technical Planning

- Initiative details contd...

Next Steps:

- Engage with Volunteers...
- Review current progress and assumptions...due to change of personnel/responsibilities/scope...
- Develop understandings/solutions to address the performance risks & issues by :
 - *Identifying Strategic Technical Planning Factors*
 - *Utilise existing material...*
 - *the 2018 Acquisition Game paper findings*
 - *the Integrating PM and SE book - Part IV - Calls to Action*
 - *Studies and Papers...*
 - *Utilise Your experience...*
- Attend the next STP Initiative webex by the end of the year tbd.
- Develop a workable plan and deliver PM-SE Integration best practices guidelines...

