INCOSE EMEA Biennial Workshop
10-11 October 2019
Utrecht, The Netherland

Strategic Technical Planning

PM-SE Integration WG

STP Initiative

Exercise 1.0 – Maturity based SE-EV curve

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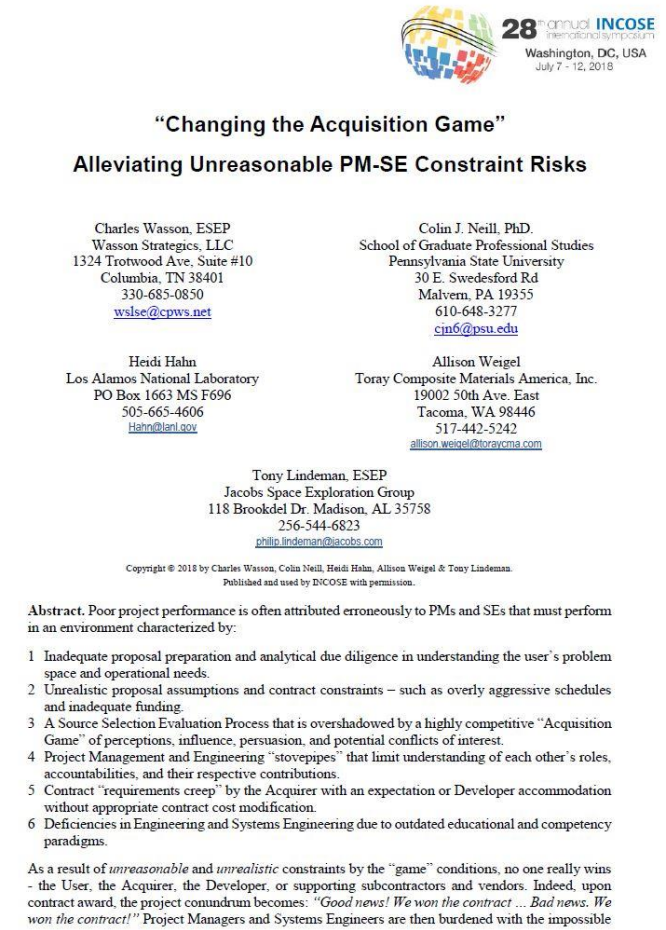
- Exercise based on changing the game paper – Issue no.11 – page 14.



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"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6 Deficiencies in Engineering and Systems Engineering due to outdated educational and competency paradigms.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

Institutional Metrics do not support the Value of SE

-There is no SE analogy to Earned Value Management

- SEs lack the ability to articulate and deliver on the value proposition for SE...

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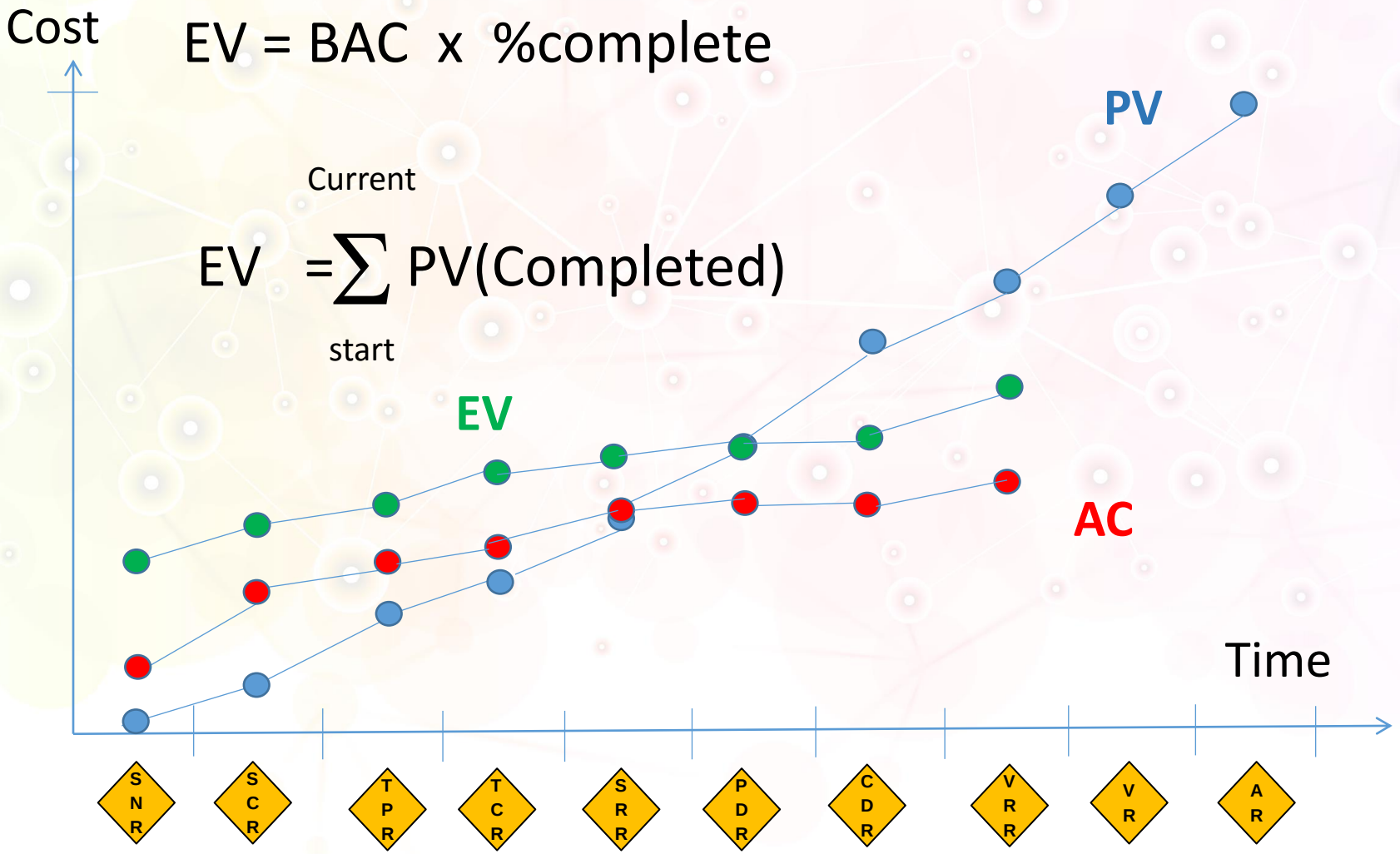
- Exercise – Maturity based SE-EV curve based on the following Project Gates and EVM Reminder



SNR = Stakeholders Needs Review
SCR = Solution Concept Review
TPR = Technical Proposal Review
TCR = Technical Contract Review
SRR = System Requirements Review
PDR = Preliminary Design Review
CDR = Critical Design Review
VRR = Verification Readiness Review
VR = Verification Review
AR = Acceptance Review

BAC= Budget At Completion
PV = Planned Value
EV = Earned Value
AC = Actual Cost

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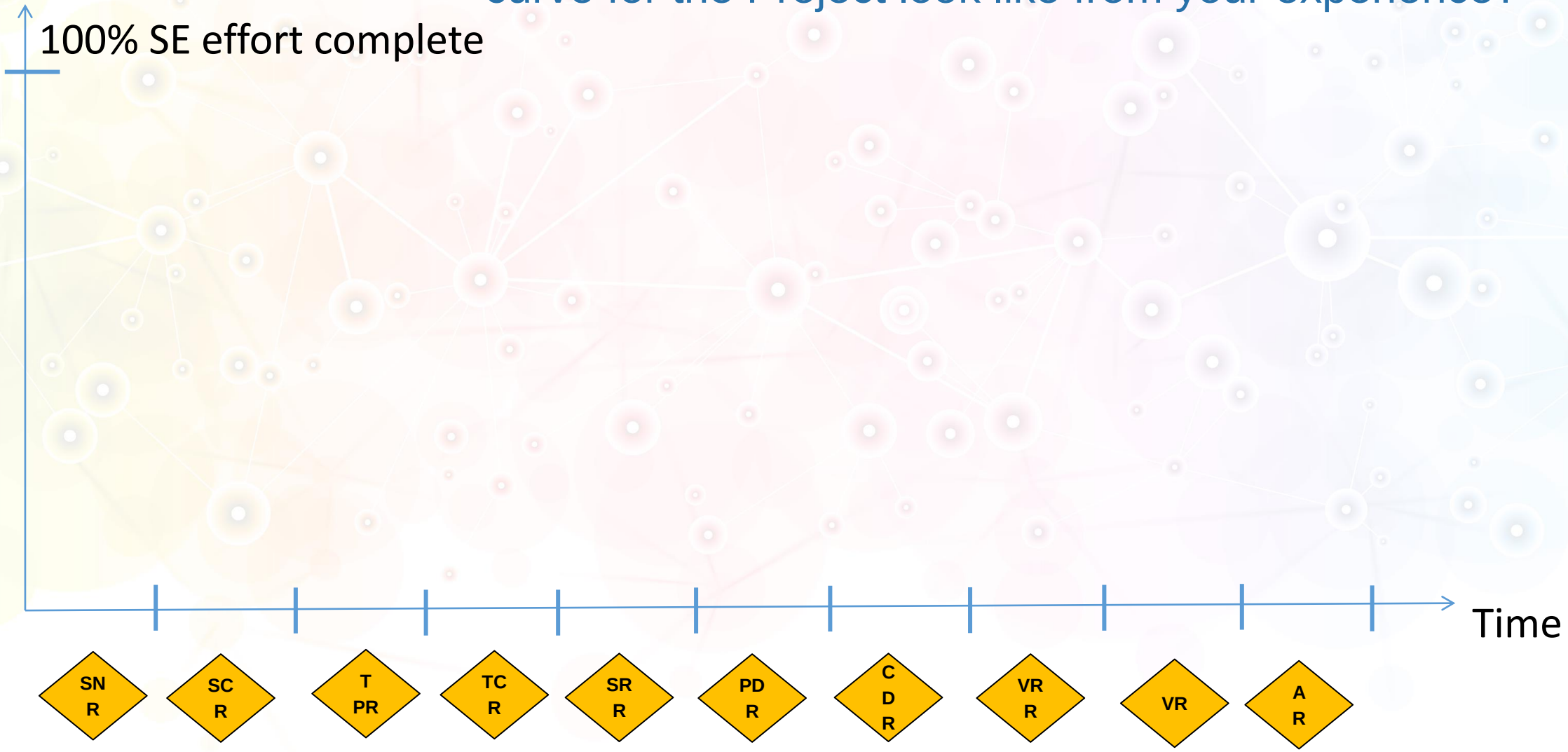
- Question Part 1: What would a maturity based SE – EV curve for the Project look like from your experience?



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- Question Part 2: What % of SE vs PM effort is applied before TCR to the curve you plotted in Part 1 from your experience?

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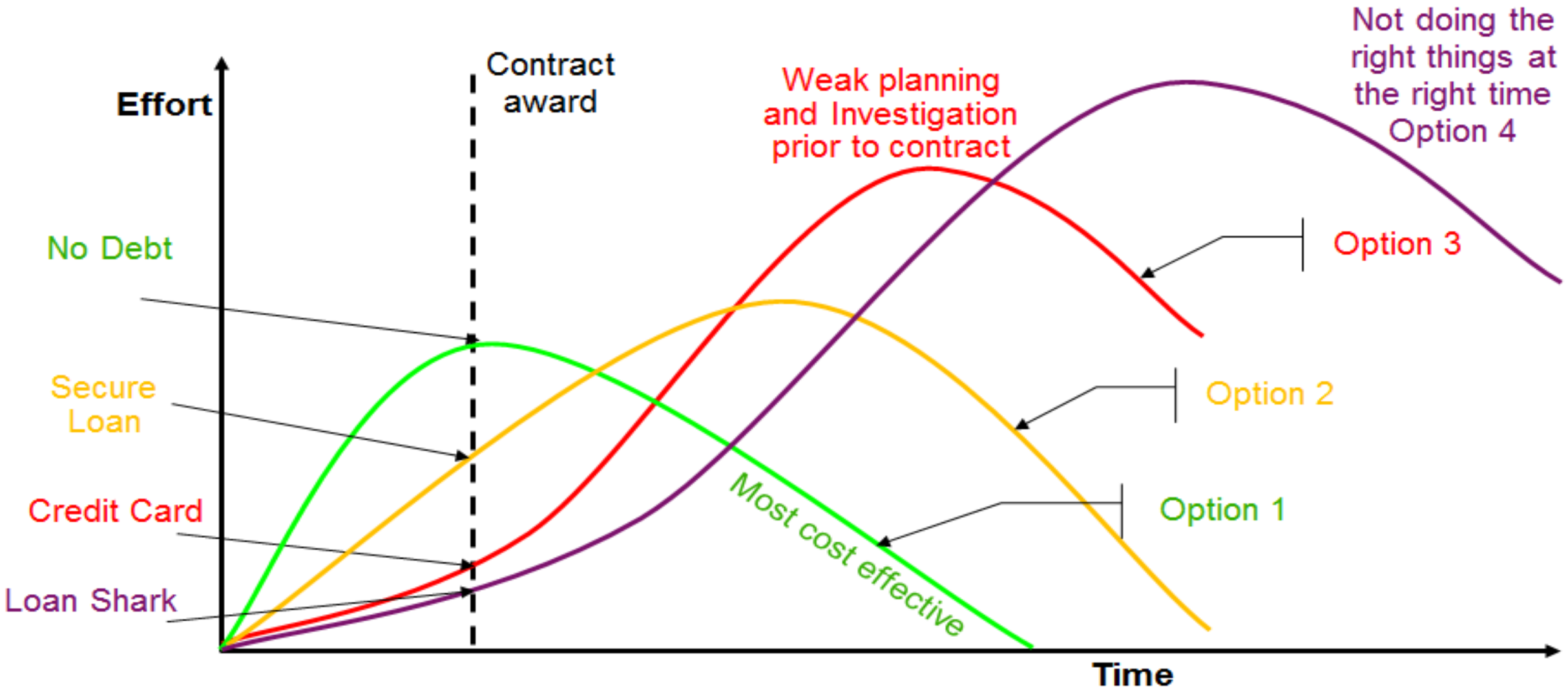
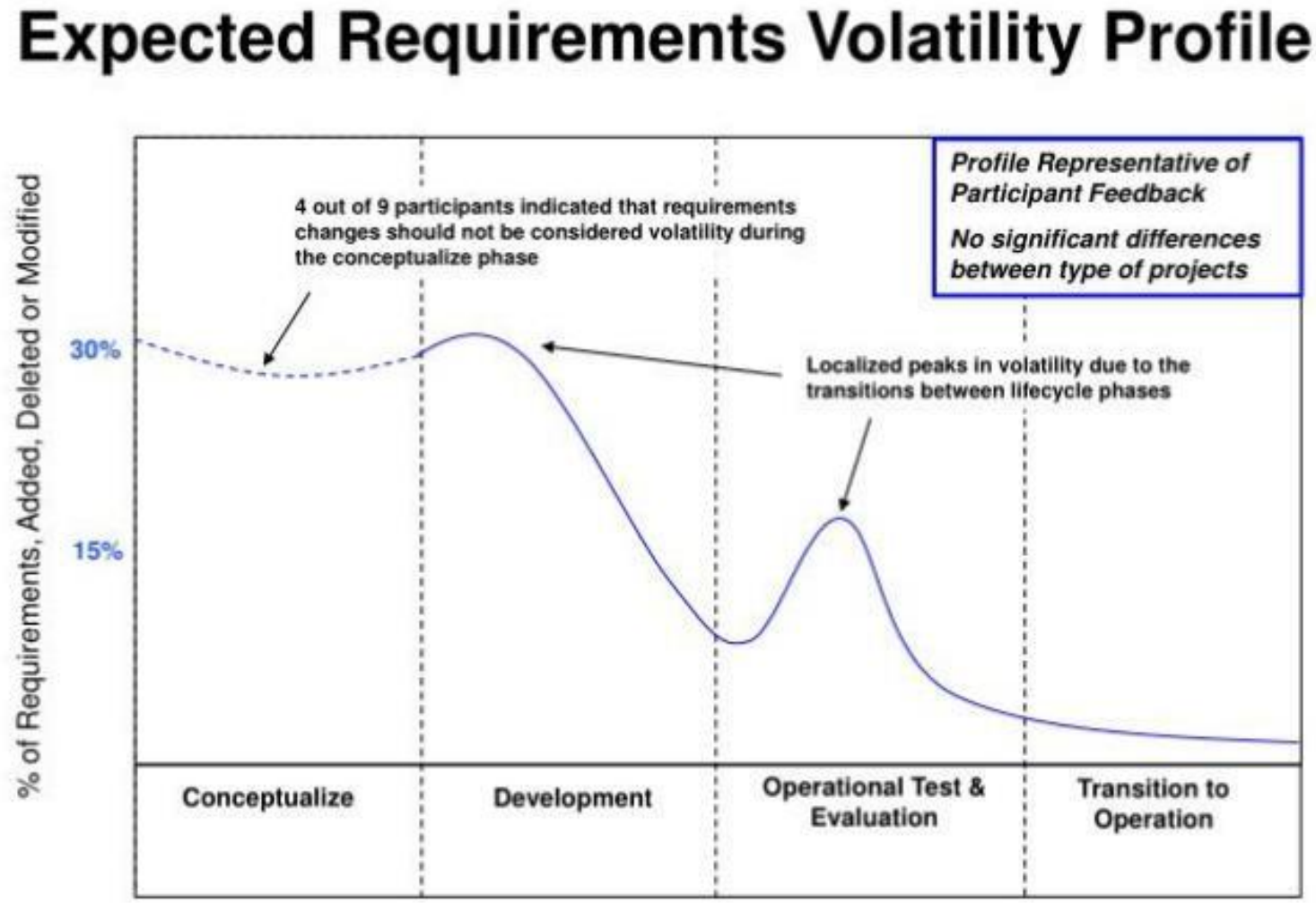
- REMINDER : Weak Planning



Strategic Technical Planning
- REMINDER: COSYSMO



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- REMINDER : PM vs SE

Attributes	PM	SE
Activities/ Viewpoints	Tasks Gates Task dependencies, sequence Critical paths Physical+ software baselines Risks Work load balancing …	Systems thinking Visualisation / modelling System load balancing Specialty engineering Structure/behaviour dependencies Complexity / interfaces Knowledge baselines Tools Risks …