

Lecture 6 - Dynamics of Project Performance

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1. What does Dynamic Mean?

- Changing (over time)
- Interaction between elements, co-dependency
- Energy - Conservation / momentum

2. What are some quantities can be measured in a project?

- Artifacts (results / documents / intermediate deliverables)
- Schedule
- Resources (staff, facilities)
- Requirements / Scope
- Risk / Opportunity
- Cost
- Quality / Productivity

All these measures evolve over time

3. Why do we still have these overruns in schedule and budget.

- Underestimate cost & schedule.
- Because of complexity of projects: Project behavior sometimes counter-intuitive (adding more people actually delays the project or doesn't have the anticipated accelerating effect).
- Pressure to be optimistic about a project in order to win a bid, receive internal funding. Not all the risks are considered up front.
- In a lot of projects who are (at least partially) recurring, the amount of leverage from prior projects is often overestimated.
- Probabilistic analysis isn't performed up front and uncertainties not considered.
- Initial conditions of a project can alter its evolution and results.
- Customer changes requirements without readjusting funding and / or schedule

- Number of iteration loops not estimated up front.
- Tendency to not devote time to "post mortem" analysis. Past mistakes are not leveraged. Even where postmortem analyses are done, they often don't represent honest appraisals.
- Tendency to underbid and subsequently make it up on changes.
- Poor understanding of how changes affect a project.
- Poorly written / misunderstood requirements or requirements creep.