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The Secret to Successfully Managing Product Development Projects

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All Projects Are Challenging

- ***Every project requires***
 - Clearly defined objectives
 - Knowledge of constraints and dependencies
 - Access to resources
 - Ability to direct and status effort
 - Change management
 - Risk management skills
- ***Product development requires all of these, but adds a substantial dynamic component***

How Substantial is that Difference?

Like shooting a rifle at a stationary target...



...versus engaging in
air to air combat!

Why Such a Big Difference?

- ***It's all about the target***
- ***If the target stays in one place***
 - You own all the variables
 - Just identify them, control them, and fire away
- ***If the target is unclear or moving***
 - Critical variables are out of your control
 - An additional task to gain control is introduced
 - Tracking and periodic update will be needed
 - Find, close, lock-on, and only then fire

Not One, But Many Targets

- ***You actually have many targets to hit***
 - Only a few are defined at the start
 - All are hard to see clearly from a distance
 - They move at different rates, in different directions
- ***Targets usually interact with each other***
 - Must be engaged in a particular order
 - Complicates planning, reduces planning horizon
- ***Any one of them can shoot you down!***

Product Development Involves Many “Moving Targets”

- *Market needs*
- *Stakeholder value perception*
- *Competitive products*
- *Solution architectures*
- *Technology alternatives*
- *Primary and derived requirements*
- *Detailed design*

Plus a Lot of Things You Need To Hold Constant

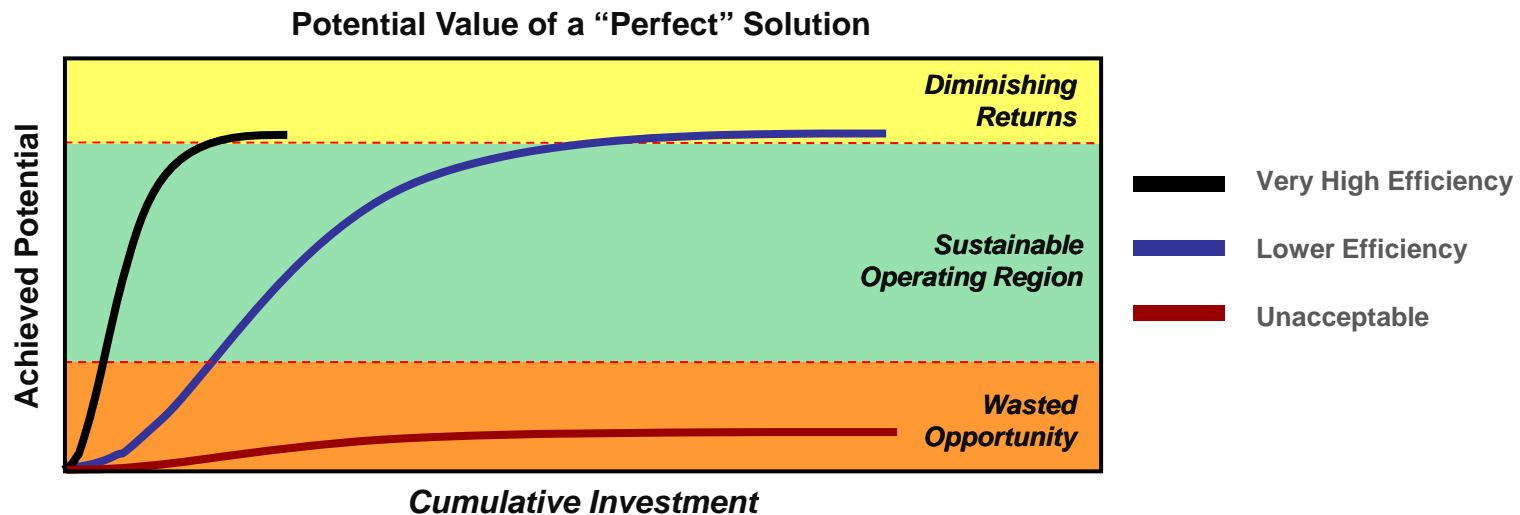
- *Brand image*
- *Manufacturability*
- *Cost and schedule promises*
- *Effective reuse of existing solutions*
- *Safety, legal, regulatory compliance*
- *Industry standards and precedents*

The Real Development Challenge

- *Such projects are neither developmental nor defined*
- *Instead they are a little of both*
 - Not merged, but simply interspersed
 - Retaining their individual natures at all levels
- *Each part has very different needs*
 - Fundamentally conflicting objectives
 - Different execution and management solutions

The Overall Need for Design Efficiency

- *Every opportunity has potential value*
- *Achieved potential drives actual value*
- *Design Efficiency determines overall ROI*



Manufacturing-Derived Process Controls are Not the Solution!

- *Very effective in a pure Manufacturing context, where the target is fully defined*
- *Very effective for any subset of tasks that have prior definition and are stable*
- *At best unhelpful, usually damaging, to task subsets that lack this prior definition*
- *Forcing “out of context” compliance is a profoundly harmful management error*

Manufacturing is a Special Case, Not a General Model to Follow

- ***Manufacturing strives to eliminate variance***
 - 100% defined at the start
 - Variance equals cost and quality issues
- ***Innovation strives to create / apply variance***
 - 0% defined at the start
 - Variance equals improvement over past solutions
- ***Both are essential parts of success, but opposite in nature***

You Need A Different Type of Metric

- *Variance is a meaningless concept until the comparison reference is known*
- *Comparing a rough measure against a formalized guess is dangerous:*
 - Offers only the illusion of confidence
 - Distorts view of real development risks
- *Requirements Maturity is a far better measure of development progress*

Requirements Maturity

- *Of what is currently knowable, what fraction is identified and captured?*
- *Of what has already been captured, what fraction is free of re-work risk?*
- *Is the unknown fraction clearly bounded and being tracked?*
- *Is development effort focused on filling in the unknown as rapidly as possible?*

Confirm or Establish Comprehensive Requirements

- *Strive to expose the true task objectives*
- *Build a common definition of done*
- *Breadth first*
 - All stakeholders / market success drivers identified
 - Considered over full project life cycle
- *Depth second*
 - Critical design drivers / performance thresholds
 - Dependencies, trade-offs, and interactions

Create Realistic Expectations

- *Development projects are different*
- *At the start*
 - More time on planning and set up
 - Significant up-front resource loading
 - No “visible progress” by traditional measures
- *At the end*
 - Far better match to market and competitive needs
 - Fewer problems and headaches
 - Much greater return on investment

Plan for Sequential, but Overlapping Effort

- *Sequential due to serial dependencies and imposed review structures*
- *Overlapping due to the dynamics of complex requirement definition*
 - Iteration and conditional branching
 - Initial lack of clear start / end points
- *Overlap is a controlled property used to tailor the project to specific situations*

Caution: Most PM Tools Are Not Well Matched to Development Needs

- *Lack conditional branching provisions*
- *Unable to handle iteration loops*
 - Forces you to “unwind” the spiral
 - Overlays arbitrary stage or phase descriptions
 - Requires guessing the exit points
- *Don't clearly show requirement maturity driven task dependencies*
- *Hard to implement continuous change*

Understanding and Experience Remain Essential to Success

- ***Needed to honor the nature of the task itself***
 - Emerging definition during execution
 - Many simultaneous variables
 - Need a useable “definition of done” to proceed
- ***And to manage the expectations of others***
 - Project participants
 - Upper management and client organizations



**Thanks for listening -
any questions?**