

Untethered Activities – the Real Reason for Schedule Slips

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Schedule Mismanagement Statistics

- The average project runs 189% over budget and overshoots its schedule by 222%¹
- More than 72% of IT projects fail to deliver expected results¹
- The completion rate of IT projects lasting a year or more is only 51%²

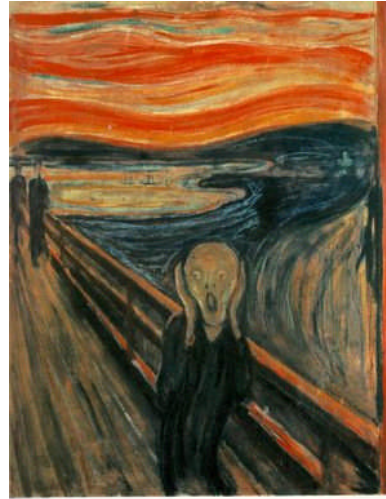


1: The CHAOS Studies, The Standish Group International, Inc., Dennis, MA, 1994-2002

2: The Hackett Group, Atlanta, GA, 2002

What Causes Schedule Misses?

- Senior Management Mandate?
- Scope Changes?
- Poor Estimation?
- Poor Planning/Untethered Activities?



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Senior Management Mandate?

- In the absence of credible planning data and schedules, management will set targets for teams to meet
- There are some managers that believe that stretch goals are a good way to motivate teams
- Other times, mandates reflect other business problems
 - Competitors have announced a competing product launch, therefore we have to match them
 - Executives making commitments to customers for delivery dates – ***the Bat Phone!***

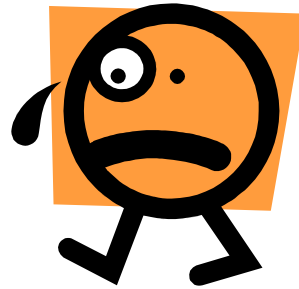
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Scope Changes?

- Too often, projects are asked to “suck up” unplanned scope changes
 - “Our competitor just announced this feature – we have to have it in the next release!”
 - “I know I didn’t tell you about this critical piece of functionality, but I need it anyway!”
- “Death by a thousand cuts”
 - Numerous “small” requirements/scope changes eventually add up to real work



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Poor Estimation?

- To help themselves, project teams attempt to adopt elaborate estimation techniques and tools to improve their project planning and management performance.
 - COCOMO
 - Wide Band Delphi
 - Parametric Tools
- But, this typically doesn’t help!!!??!!!
- ***How can you estimate activities that aren’t in your plan?***

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CMMI Improves Estimation Techniques

- CMMI Specific Practices
 - Project Planning
 - SP 1.1 – Establish a top-level work breakdown structure (WBS) to estimate the scope of the project
 - SP 1.2 – Establish and maintain estimates of the attributes of the work products and tasks
 - SP 1.3 – Define the project life-cycle phases upon which to scope the planning effort
 - SP 1.4 – Estimate the project effort and cost for the work products and tasks based on estimation rationale
 - Integrated Project Management
 - SP 1.2 – Use the organizational process assets and measurement repository for estimating and planning the project's activities

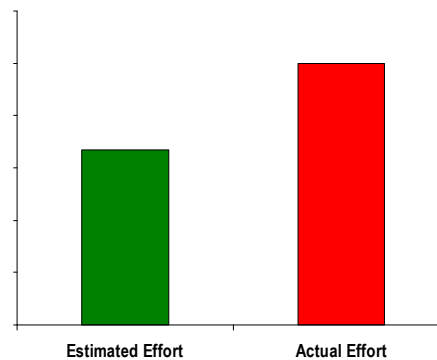
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Actual versus Estimated Effort

- If we add up the effort for many software projects, we'd find that more actual effort is expended than estimated
- Where is this extra effort coming from?
 - Poor estimation?
 - Scope changes?
 - Unplanned activities?
- **Are you even estimating and tracking all the effort associated with the project???**



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Are Better Estimation Techniques Really The Answer?

- The project team needs to present management with credible schedules and data-driven plans
- Need the right “recipe” for developing systems
 - How much of the estimated effort should you allocate to:
 - Requirements Development?
 - Configuration Management?
 - Process & Product Quality Assurance?
 - Etc.?
 - Are you even thinking about your projects in this fashion?
- Once you know all the activities (the process) that go into building your systems, you can implement better estimation

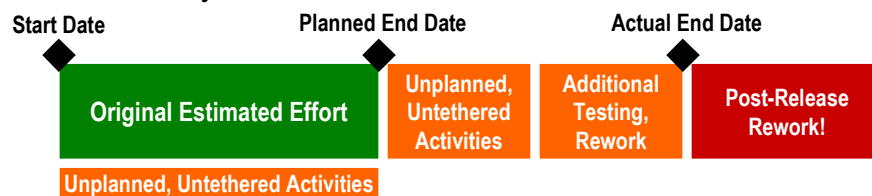
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Poor Planning/Untethered Activities?

- **Untethered activities are those that must be performed, but are never planned or scheduled**
- Since these untethered activities must be completed, others are short-sheeted or delayed to get the job done
- The end result is a delayed schedule, or worse, a poor quality system that required expensive rework and thus, more delay

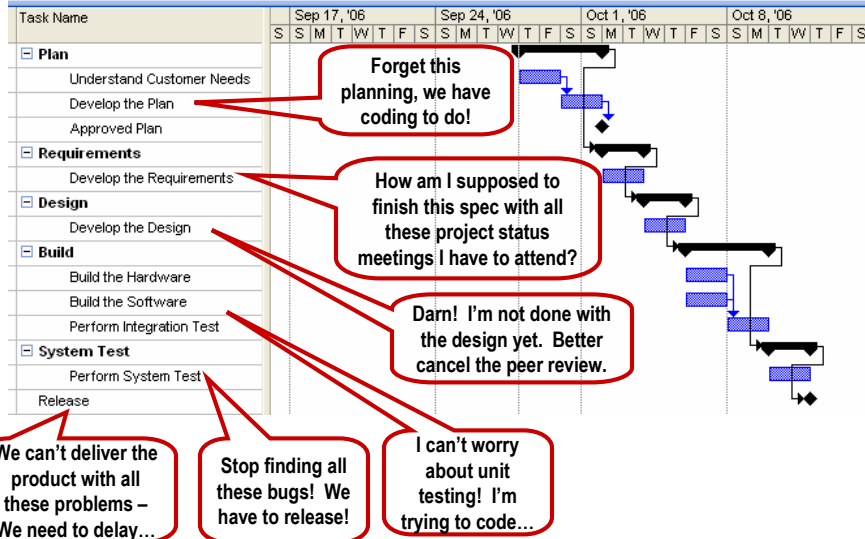


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Typical (somewhat simplified) CMMI ML 1 WBS



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Example

- A project utilizing iterative/agile techniques used story cards to plan and scope the work for a 2 month iteration
 - Cards were to represent 1 day of effort and a specific deliverable
 - Employees were instructed that they could not perform work without a card
- By the end of the iteration, the card count “exploded” by 50% and the schedule slipped by 1 month, although no new functionality was authorized
- Much of the card explosion was due to necessary but untethered activities such as configuration management, builds, system administration, test computer installation/configuration, etc.
- **Very little was due to poor estimation of the product development work!**

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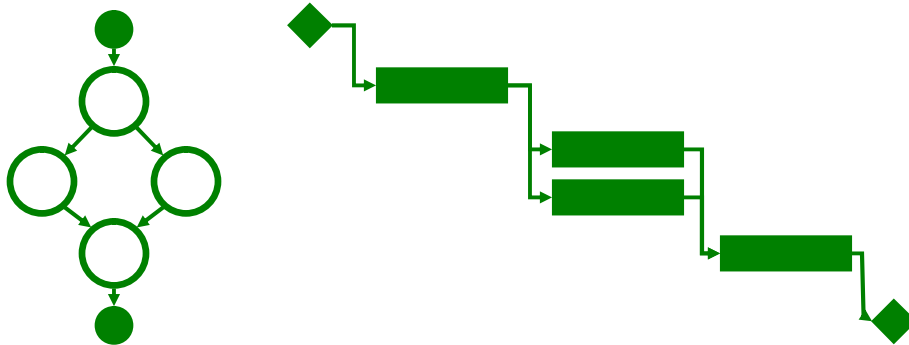
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How Can You Tell?

- Look at schedules
- Ask people if everything they do shows up on a schedule and whether they track time against it
- Do schedules map to processes?

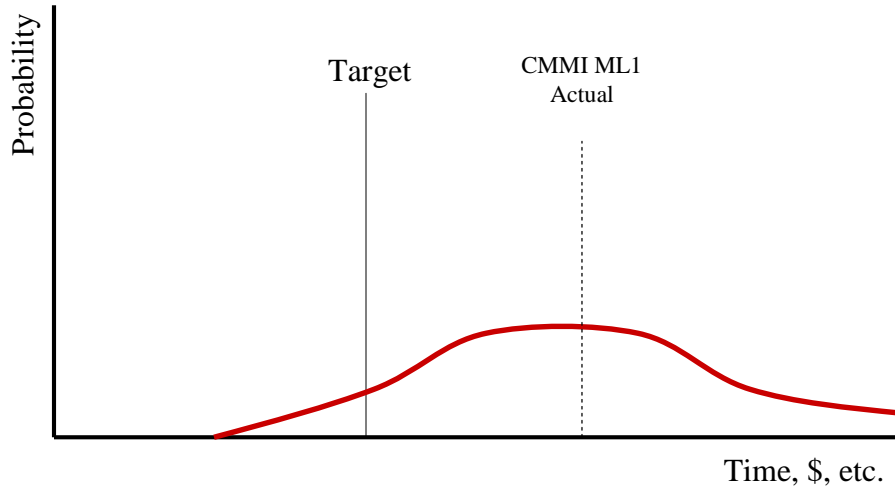


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Benefits of Using the CMMI – Maturity Level 1



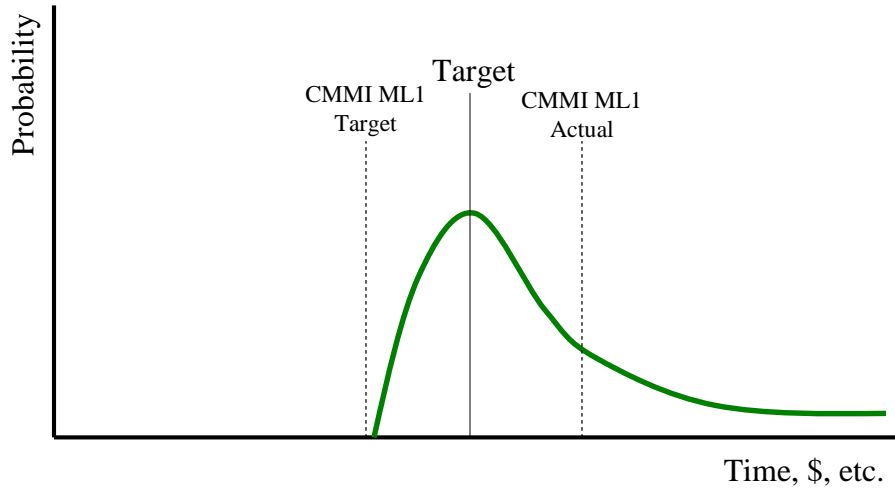
Source: The Capability Maturity Model – Guidelines for Improving the Software Process

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Benefits of Using the CMMI – Maturity Level 3



Source: The Capability Maturity Model – Guidelines for Improving the Software Process

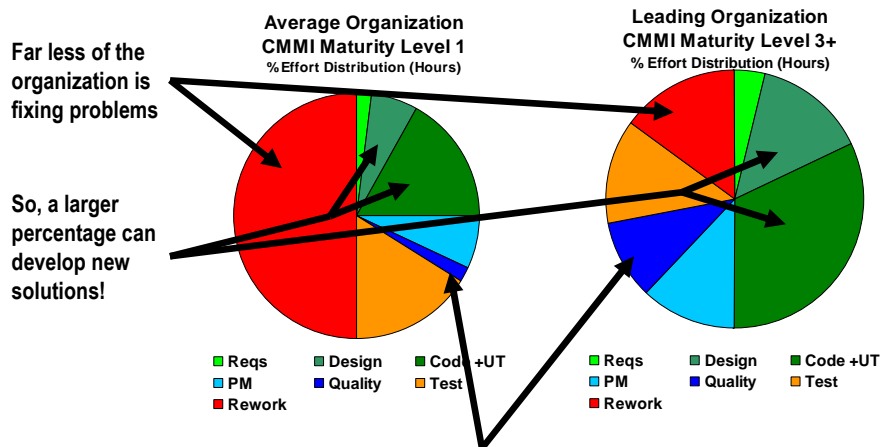
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Making the Transition



- ✓ Organizations with mature development process infrastructures **plan** for more requirements, design, code reviews and other quality activities (PPQA) to reduce testing/rework later
- ✓ Resources focused where they need to be – new releases/innovation!

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CMMI/SCAMPI Helps

	Project Management					Engineering					Process Management			Support			
	PP	PMC	SAM	IPM	RSKM	REQM	RD	TS	PI	Ver	Val	OPF	OPD	OT	M&A	CM	DAR
Specific Goal 1																	
SP 1.1	M	H	H	M	M	L	L	M	L	L	L	M	M	H	L	H	L
SP 1.2	H	L	L	L	L	L	L	L	L	L	L	H	M	M	L	L	M
SP 1.3	L	M	M	M	M	L	L	L	L	L	L	L	M	M	L	L	L
SP 1.4	L	M	M	M	M	L	L	L	L	L	L	L	M	M	L	L	L
SP 1.5																	
SP 1.6																	
SP 1.7																	
Specific Goal 2																	
SP 2.1	L	L	L	L	L	L	L	M	L	L	L	L	L	L	L	L	L
SP 2.2	L	L	M	L	M	L	L	M	L	L	L	L	L	L	L	L	L
SP 2.3	M	M	M	L	M	L	L	M	M	L	L	L	L	L	L	L	L
SP 2.4	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
SP 2.5	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
SP 2.6	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
SP 2.7	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Specific Goal 3																	
SP 3.1	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
SP 3.2	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
SP 3.3	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
SP 3.4	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
SP 3.5	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Generic Goal 2																	
GP 2.1	M	M	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
GP 2.2	M	M	M	M	L	M	M	M	M	M	M	H	H	H	H	H	M
GP 2.3	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
GP 2.4	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
GP 2.5	M	M	H	M	M	M	M	M	M	M	M	M	M	H	M	H	M
GP 2.6	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M
GP 2.7	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M
GP 2.8	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
GP 2.9	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
GP 2.10	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Generic Goal 3																	
GP 3.1	M	M	M	M	M	M	M	M	M	M	M	H	H	H	H	H	H
GP 3.2	L	L	H	L	M	M	M	M	M	M	L	H	M	H	M	H	M

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CMMI Focuses on Project Management First

- Maturity Level 2
 - Project Management Process Area
 - Project Monitoring & Control
 - Supplier Agreement Management
 - Measurement & Analysis
 - Requirements Management
 - *Although M&A and RM are not PM process areas, some would argue managing scope and measuring are project management responsibilities*
- Clearly, the CMMI believes better Project Management is a key enabler to better performance!
- So, is better estimation **really** the key?

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How Does CMMI Address Untethered Activities?

- Generic Practices
 - GP 2.2 - Establish and maintain the plan for performing the process
 - GP 2.3 - Provide adequate resources for performing the process, developing the work products, and providing the services of the process
 - GP 2.4 - Assign responsibility and authority for performing the process, developing the work products, and providing the services of the process
 - GP 2.7 - Identify and involve the relevant stakeholders of the process as planned
 - GP 2.8 - Monitor and control the process against the plan for performing the process and take appropriate corrective action
- Only four specific practices at ML 2 related to estimation, and one more at ML 3
- **There are 45 generic practices at ML 3 related to planning and addressing untethered activities, and another 30 related to tracking!**

How Can We Eliminate Untethered Activities?

- Stop senior management mandates and allow project teams to develop, defend, and negotiate schedules
- Develop standard WBS templates based on organizational processes that account for all the activities projects should undertake
- Ensure project schedules/plans account for all activities
 - No untethered activities!
 - Ensure quality activities are clearly called out – reviews, audits, CM, etc.
 - Provide placeholders for requirements changes, risk management activities
- Implement an activity-based time reporting/cost accounting system

Summary

- Many people attempt to establish elaborate estimation techniques to fix schedule problems
- The real issue (initially) is not the estimation technique
- Rather, incorporating all the activities that will be executed in plans and schedules is key – **eliminate untethered activities!**
- Better planning also helps to combat senior management mandates and unplanned scope changes

If you aren't estimating and tracking all effort associated with a project, you're shooting in the dark