

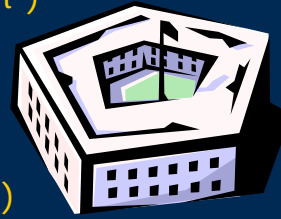


An overview of what CMMI really is in plain language.



Well... it sounded like a good idea.

- ▲ Software Engineering Institute
- ▲ DOD Funded
- ▲ Standish Group Study ("Chaos Report")
- ▲ Carnegie Mellon University
- ▲ Beat U of MD in a Competition (GQM)



SEI'S PURPOSE

- ▲ STOP THIS:
 - ▼ ~80% software projects fail
 - ▼ ½ cancelled
 - ▼ ½ are over budget and schedule by 2x and deliver <60% expected functionality
 - ▼ ~20% succeed:
 - <20% over budget and schedule and deliver >75% of expected functionality



BRASS TACKS



- ▲ Software customers
 - ▼ Paid *twice* as much
 - ▼ Waited *twice* as long
 - ▼ And Got *half* of what they expected
- ▲ And the DoD was **TIRED** of it!

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Definitions and Misconceptions

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CMMI IS A FRAMEWORK



- ▲ Not a standard
- ▲ Not a prescription
- ▲ IS a description
- ▲ CANNOT be cookie cutter (and still work well)
- ▲ Does not require purchase of software or tools
- ▲ Meant for process **improvement**, not process **compliance**.



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IMPROVEMENT VS. COMPLIANCE



- ▲ Process Compliance =

Do the process this way.

- ▲ Process Improvement =

Do things that will make a difference to your company.

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IT IS WHAT IT IS



▲ CMMI is:

A model

for *creating process improvement systems*

for the **management** of

development processes.

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IT'S NOT WHAT IT'S NOT'



▲ CMMI is NOT:

A life cycle

or a standard

for **developing products**

or development processes.

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Model Structure, Terminology and Actual Requirements

IMPROVEMENT NOT DEFINITION

- ▲ The *model* is not the *process*!
- ▲ CMMI is full of practices to **IMPROVE** your processes, not to **DEFINE** your processes.
- ▲ You likely have practices of your own in most/all process areas.
 - ▼ Probably by other names.
 - ▼ Likely generating their own appropriate work products.
- ▲ CMMI's practices are meant to improve *those* activities.
- ▲ If you're not doing an activity, it's probably a good idea to do it, so you could do worse than consider it.



In Plain Business Language

REQUIREMENTS MANAGEMENT



- ▲ Eliminate unpaid scope creep and manage customer expectations.
 - ▼ Getting better at managing requirements will keep you more profitable, your projects on schedule and your clients happier. Your products will likely be higher quality as well.

PROJECT PLANNING



- ▲ Foster communication and involvement of project participants including the project team and its customers.
 - ▼ Getting buy-in from your customers is only half the work, get buy-in from the folks doing the work.
 - ▼ If they push back, there's probably a good reason. Listen to them and don't commit to deliver on a budget or a schedule until you negotiate thumbs-up all around the table.

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PROJECT MONITORING & CONTROL



- ▲ Keep project performance on management's radar with information they can use.
 - ▼ Project status reports can be very useful or very wasteful, disruptive to progress and without value.
 - ▼ Work with project leaders to find out when you'll get the most out of status reporting and incorporate whether projects have everything they need to get the job done and what are the barriers to progress.

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SUPPLIER AGREEMENT MANAGEMENT



- ▲ Minimize the risks inherent with supplier dealings.
 - ▼ Contracting work out to a supplier adds risk to your business.
 - ▼ Be clear about your expectations. Don't assume suppliers understand you even when you speak the same language.
 - ▼ A formal agreement helps identify possible snags.
 - ▼ Be specific from the start about how you will evaluate deliverables and review progress throughout.
 - ▼ Understanding their processes for creating the product before selecting can save you from choosing the wrong supplier.

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MEASUREMENT & ANALYSIS



- ▲ Strategically align business goals with business metrics.
 - ▼ Connect what's measured to the things that are important to the business.
 - ▼ Before you choose measures, understand how you will analyze and use them.
 - ▼ Don't collect a number if you don't know how you will benefit from knowing it or you can't figure out how to help projects with it.
 - ▼ If you plan to beat up projects with numbers, fire yourself – your projects will abandon you anyway.
 - ▼ Dig beyond the superficial (budget, schedule, billability, and utilization). They mask the really meaningful stuff which lead to more power over business operations.

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PROCESS & PRODUCT QUALITY ASSURANCE



- ▲ Assure important corporate processes are followed.
 - ▼ Your products rely on the processes that produce them so you want to know what those processes are and whether or not they're working.
 - ▼ You also want to know if/when the processes didn't achieve expected results and/or what the impact (good or bad) was for not following the processes.
 - ▼ Adding assurances that your processes and products are meeting expectations can go a long way towards revealing your true value stream.

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CONFIGURATION MANAGEMENT



- ▲ Prevent unauthorized changes from entering into products and being delivered to customers.
 - ▼ The Skype incident over the summer is a good example of what can happen when a business can't "roll back" to a previous version quickly.
 - ▼ Having a robust system for making changes to and releasing new products means that you know what's supposed to be in the product at any point in your production process.
 - ▼ You also know if/when the control system isn't working.

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REQUIREMENTS DEFINITION



- ▲ Create requirements specifications validated to meet customer needs and uses.
 - ▼ Don't just take your customer's word for it when they agree with what you parrot back to them about their requirements.
 - ▼ Take the time to diagram and/or narrate how they will use the product based on your understanding.
 - ▼ Developing requirements this way will pay for itself in both yours and their actual understanding.

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TECHNICAL SOLUTION



- ▲ Evolve solutions to match customer specifications.
 - ▼ "Beauty is in the eye of the beholder."
 - ▼ "He who has the gold rules."
 - ▼ "Don't mess with Mother Nature."
 - ▼ In other words, the right solution has many contributors. Good solutions reflect a rationale that balances alternatives with all contributors' expectations, follow criteria and standards for performance and account for interfaces within and without the product system itself.

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PRODUCT INTEGRATION



- ▲ Avoid mistakes common to the necessary sequencing of product assembly.
 - ▼ Planning how products come together can be tricky regardless of the product's complexity.
 - ▼ Ever see a web site where the picture is squeezed or stretched? No big deal if it's your teenager's blog but pretty embarrassing if it's your company site. Worse if it's the GUI for your client's project. Worse, still, if it's the O-ring on a shuttle.
 - ▼ Controlling how the product comes together isn't trivial. Think it through.

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VERIFICATION



- ▲ Extract product mistakes stemming from misinterpreted requirements.
- ▲ Did you build the product correctly?
 - ▼ How do you know?
 - ▼ What's the right product anyway?
- ▲ How do you verify what the right product is?
 - ▼ Testing? Is that all?
- ▲ What's the test for whether you've got the right requirements?
- ▲ What's the test for whether the tests test the right things?
- ▲ What's the test for whether the product meets specifications, good engineering practices and technical standards?
- ▲ Tired of these questions? So are your customers! A proactive method to verify these questions will keep them happy.

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VALIDATION



- ▲ Ensure products will work when put to use by the customer.
 - ▼ What's the difference between the Fisher Space Pen and a common Bic ballpoint pen?
 - The Space Pen works in places without gravity, without air, and won't leak ink. It also doesn't burn easily, doesn't break easily and doesn't freeze easily.
 - In other words, it works in the environment in which it was designed to be used.
 - ▼ Ever buy an object and wonder if the manufacturer validated that knew they were building the product thing before they bothered to build it?
 - ▼ Deliberate forethought is all it takes.

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ORGANIZATIONAL PROCESS FOCUS



- ▲ Determine whether company processes are necessary, sufficient, operational or need updating.
 - ▼ When your organization:
 - Adds new products or services,
 - Product lines,
 - Grows,
 - Shrinks,
 - Buys another organization... etc.
 - ▼ Will the processes you had before the change still meet your needs?
 - How do you know?
 - What will you do?

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ORGANIZATIONAL PROCESS DEFINITION



- ▲ Establish company norms, project structures, and corporate archives.
 - ▼ Taking notes helps us remember what we see and hear.
 - ▼ Referring to our notes helps us recall how we got here, what we did, and why.
 - ▼ Having a place for our notes and accomplishments makes it easier to find them when we need them.
 - ▼ Making everything routine makes us more efficient and effective.
 - ▼ Not having these assets simply makes business harder.

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ORGANIZATIONAL TRAINING



- ▲ Align strategic needs with tactical execution.
 - ▼ Cliché: "Our people are our most important asset."
 - ▼ Honesty: "Our people are our most important asset."
 - "And we have a strategic plan that connects our people's know-how to our corporate growth."
 - "And a tactical plan to get our people the training they need to facilitate their know-how."
 - "Without training we're doomed."

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INTEGRATED PROJECT MANAGEMENT



- ▲ Provide projects with tailored processes.
 - ▼ Whether projects are complex or not, creating an integrated approach to pulling everything together is often a key to success.
 - ▼ An integrated approach looks like thinking about plans, processes and stakeholders all at the same time.
 - ▼ Even a basic e-commerce site has several moving parts that need to come together such as credit card processing, order management and product inventory.
 - ▼ These aren't technical issues, they're project planning issues and projects are let down when they lack stakeholder coordination, experience unclear dependencies and coordination issues.

RISK MANAGEMENT



- ▲ Proactively mitigate risk.
 - ▼ Risk is "badness" that has not yet happened but has some probability of happening and an impact to the project if it does.
 - ▼ Some risks are worth planning for even in the remote chance of happening (e.g., disaster recovery), and others aren't worth planning for even though their likelihood is high (e.g., "Joe" gets sick for a day).
 - ▼ How you plan for whenever "badness" escalates from "risk" to "event" spells the difference between a mildly annoying experience and a devastating one to your business.
 - ▼ Come up with a scheme for know which risks to spend energy on how you'll deal with those you can't avoid.

DECISION ANALYSIS & RESOLUTION



- ▲ Formalize decision-making when/where needed to preserve rationale.
 - ▼ “Why did we do that?” Not what any CEO wants to hear when faced with a difficult decision culminated from a string of previous difficult decisions.
 - ▼ Have a method to categorize which decisions should have a formal decision-making mechanism and how to go about making the really important decisions – especially those that will effect the business.
 - ▼ If nothing else, it will help you sleep at night knowing you called the shots based on more than just your gut.

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ORGANIZATIONAL PROCESS PERFORMANCE



- ▲ Focus process activities around corporate performance needs.
 - ▼ How do you know the reason for defects or failure are due to “normal” activities or “unusual” situations?
 - ▼ What would happen if you responded to something as though it was “unusual” yet it was actually “normal”?
 - ▼ When you know the reason for failures you can focus on keeping the baby while dumping the bath water.
 - ▼ When you can model your processes you can predict how they’ll do under certain circumstances, and, you can predict how they’ll change when you alter their inputs.

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QUANTITATIVE PROJECT MANAGEMENT



- ▲ Use data-rich dashboards to predict project outcomes, not just tell you what already happened.
 - ▼ Most projects are managed by looking at what's already happened.
 - Much like "driving by looking in the rear-view mirror".
 - Most projects predict what will happen using a "Magic 8-Ball".
 - ▼ You set performance targets;
 - How do you know you'll hit them?
 - How do you adjust when you're off track?
 - How do you know you're off track?
 - What do you adjust?
 - ▼ If can't measurably determine that your projects and processes are improving, how do you know they are?

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ORGANIZATIONAL INNOVATION AND DEPLOYMENT



- ▲ Deploy value-added processes with known ROI, not "feel good" mantras.
 - ▼ Are you a fad-follower or a trend-setter?
 - Untold sums of money have been spent implementing the latest business fads that never last.
 - ▼ Change can be expensive and even painful.
 - Pursue only those changes that you've tested will be successful and will pay-off.
 - ▼ Find the most valuable innovations based on your own organization's performance and needs.

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CAUSAL ANALYSIS & RESOLUTION



- ▲ Use advanced analytical techniques to resolve conflict and scalpel issues, not just oiling squeaky wheels or noisy whiners.
 - ▼ Not every "issue" is a "problem".
 - ▼ Not every "problem" requires immediate action.
 - ▼ What is the desired result of the action(s)?
 - ▼ What are the differences in investment?
 - ▼ Which actions should you invest in?
 - ▼ Do you know the difference between reacting and responding?
 - ▼ How do you prioritize your responses?

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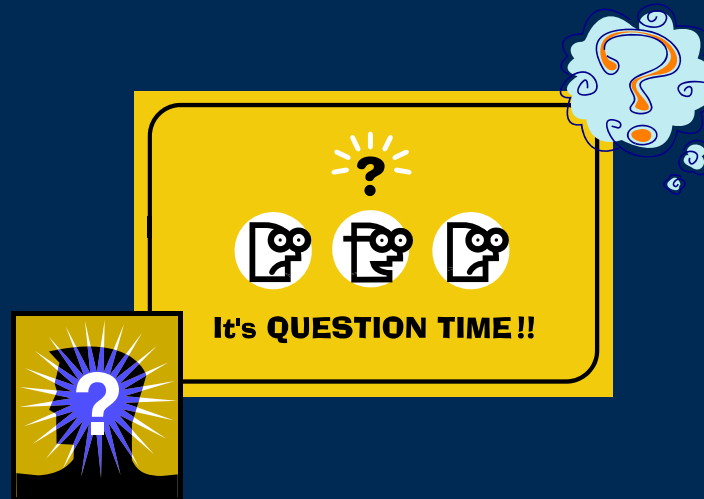
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QUESTIONS?



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DON'T FORGET TO WRITE!



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