

Hillel Glazer

Introduction to CMMI Instructor

Father, Husband, Brother, Son, ... Goof-off

High Maturity Lead Appraiser, B&C Team Leader



A Simple, Scalable Process
Architecture for CMMI in Agile and
Small Settings

ASSUMPTIONS & APPROACH



- ▲ You're already successful.
 - ▼ Your people know how to deliver working products.
 - ▼ You're doing *something* right!
- ▲ *Each CMMI practice seeks to avoid some risk.*
 - ▼ *Successful companies know how to avoid those risks.*
 - ▼ If we seek what your people are doing to avoid the same risks, we can map what they're doing to CMMI.
- ▲ Identify your working practices.
 - ▼ If there are gaps, you probably could use the improvement.

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SOME CONTEXT



- ▲ CMMI is a Model FRAMEWORK for building process improvement systems...
 - ▼ Not a standard
 - ▼ Not a life-cycle
- ▲ Improvement vs. Compliance
 - ▼ Description vs. Prescription
- ▲ A *model* for business process improvement for the *management* of development processes
- ▲ Appraisal looks for evidence that a model has been followed.

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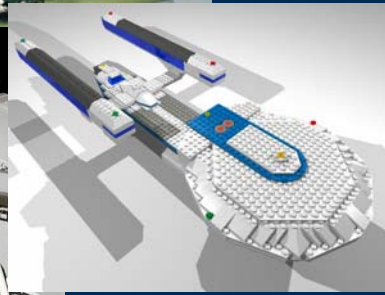
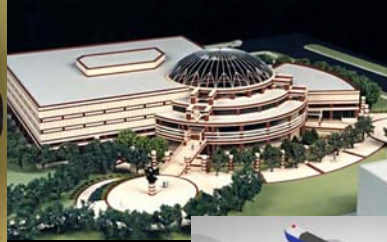
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A FEW WORDS ABOUT MODELS



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NOT "ENTERPRISE" MODEL



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MODEL PRACTICES VS. YOUR PRACTICES



- ▲ Practices are necessary to deliver products.
- ▲ Are they being used to improve your processes?
- ▲ Are they acculturated (*a.k.a. institutionalized*)?
- ▲ Are you avoiding as many risks as you can?
- ▲ Model practices, done properly, are a good idea and if not, how are you avoiding risks they avoid?
- ▲ **If** it's a good idea to perform a practice, **then** there is a value-added way of doing it that will be OK with CMMI and SCAMPI.

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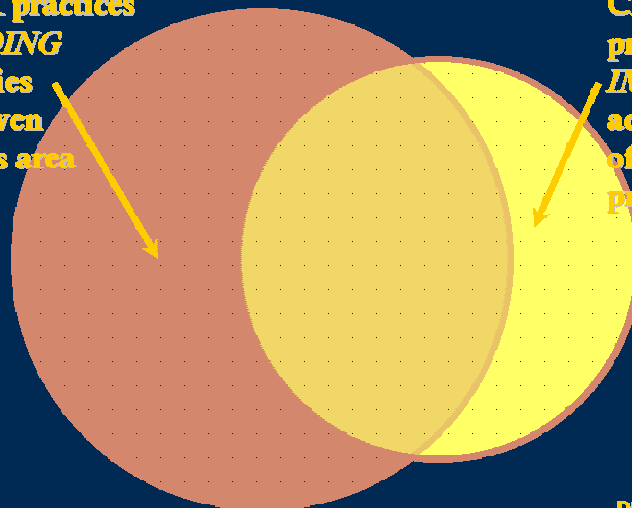
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GOT MODEL?



**YOUR practices
for *DOING*
activities
of a given
process area**



**CMMI's
practices for
IMPROVING
activities
of a given
process area**

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IT OFTEN SEEMS LIKE THIS...



Your organization/
Practices.



CMMI



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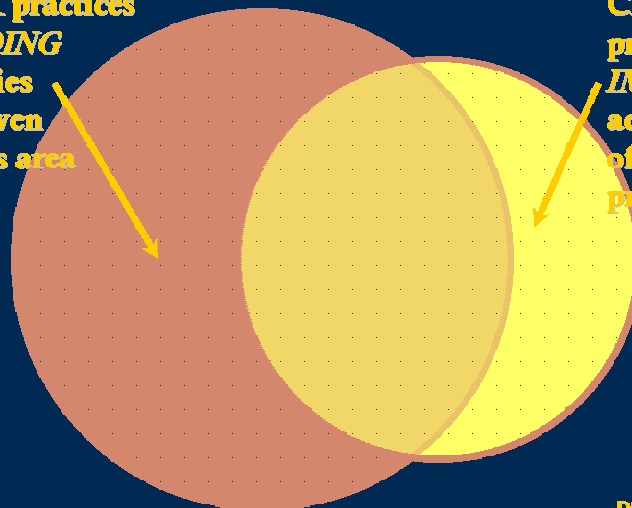
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GOT MODEL?



YOUR practices
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Diagrams not to scale.

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CMMI STRUCTURE (FOCUS)



▲ Process Areas



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Reality-Based, Scalable, Agile,
Adaptive, Responsive...

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KEY CONCEPTS



- ▲ Processes produce *outcomes*.
- ▲ Procedures produce *outputs*.
- ▲ Model *practices* are NOT the process!
- ▲ Practices improve the efforts of activities related to an area of effort.
- ▲ Practices are not necessarily in any order, and are not confined to take place within a single, easily "identifiable" activity.
- ▲ Model "process areas" are collective activities spanning any number of activities at any point in an effort.
- ▲ Process Area Practices are meant to improve the results of efforts wherever those efforts happen.
- ▲ Each organization must supply its own procedures. The model supplies NONE.

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ELEMENTS OF THE AGILE PROCESS ARCHITECTURE, 1



- ▲ Define/Recognize your development "reality".
- ▲ "Reality" looks like classes of nested management life cycle containers super-imposed w/a project/product life cycle.
- ▲ Process Flow.
- ▲ Process Area Descriptions as pointers/links to reality.

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ELEMENTS OF THE AGILE PROCESS ARCHITECTURE, 2



- ▲ Real work *does not* result from process area descriptions.
- ▲ Real work results from activities on the project/product.
- ▲ Activities on the project/product are *real*, and
- ▲ Follow *some* form of procedure or method.

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WHAT MAKES *THIS* AGILE?



- ▲ Focus is on adding value:
 - ▼ Customer
 - ▼ Product
 - ▼ Company
 - In that order.
- ▲ Focus is *not* on the process.
- ▲ Views process as a solution.
- ▲ Empowers development team to define/refine the process.
 - ▼ Scalable, Adaptive, Reflect Priorities.
- ▲ Clarifies where practices happen.
- ▲ Practices are "just enough" and "just in time".

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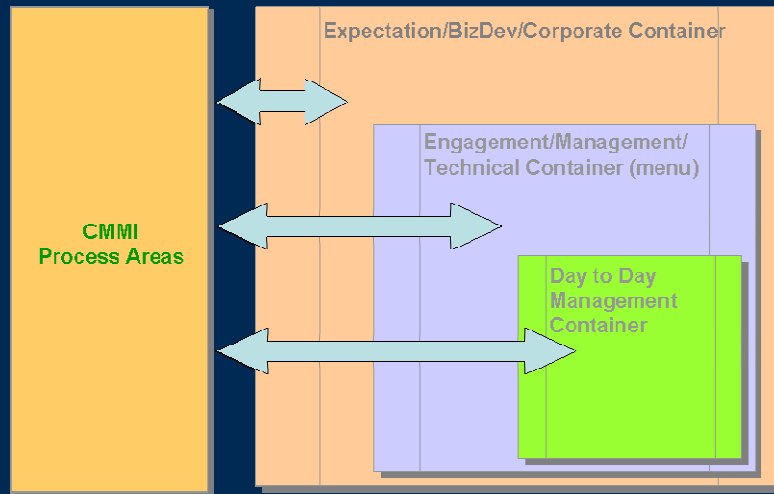
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HIGH ALTITUDE



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PROCESS FLOW-DOWN



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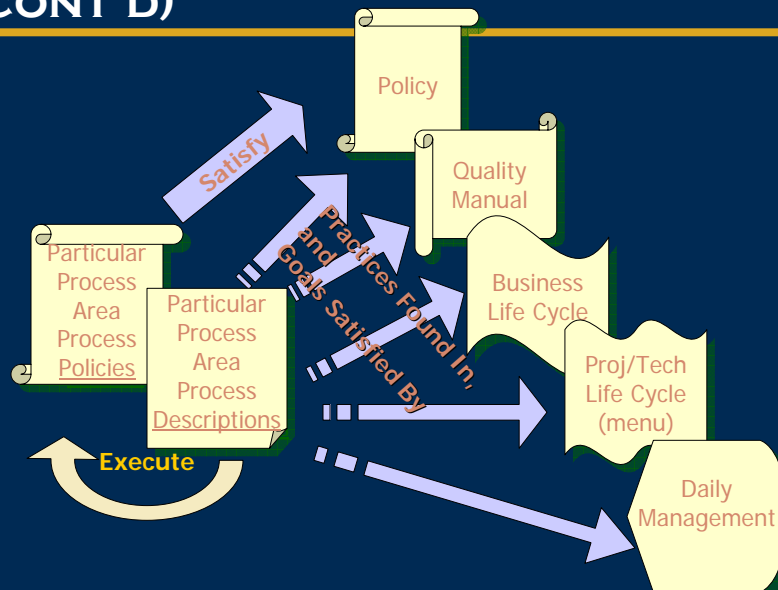
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PROCESS FLOW-DOWN (CONT'D)



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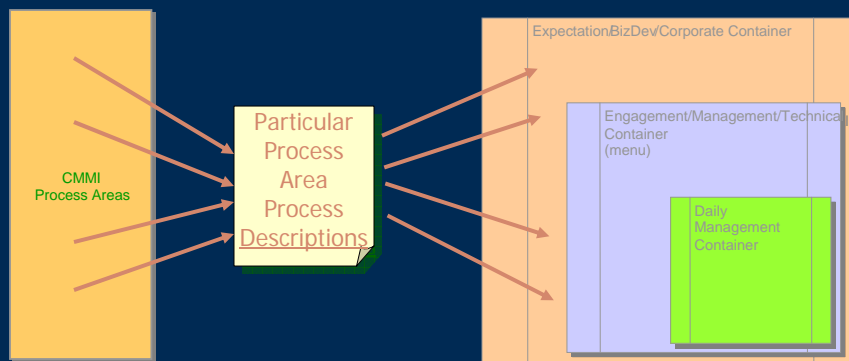
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KEY FEATURE



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- ▲ Process definition/description documents define where in YOUR reality practices take place.



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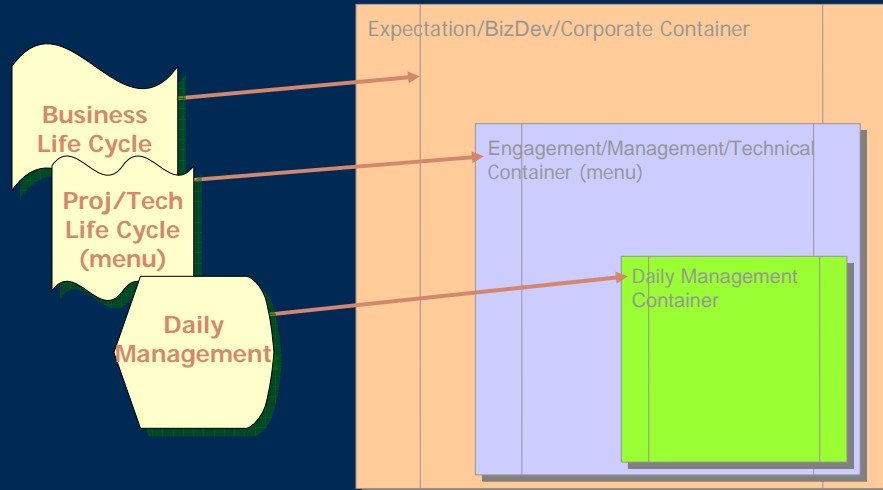
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LIFE CYCLE DOCUMENTS



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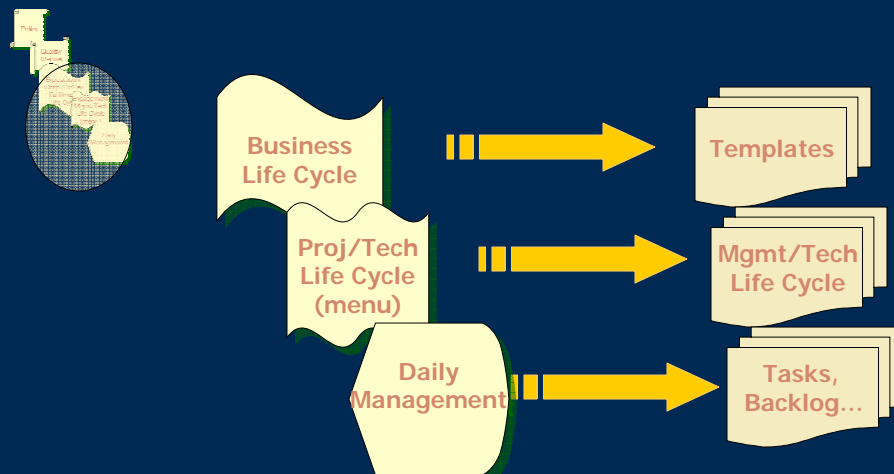
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WORK-PRODUCT GENERATION



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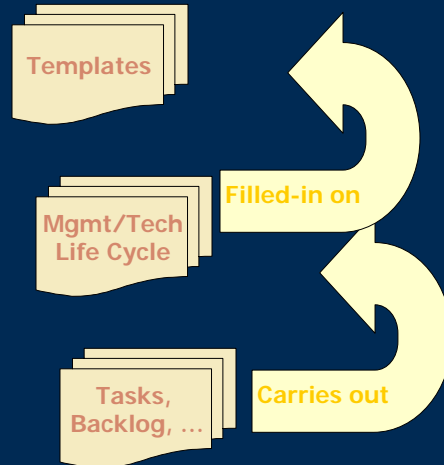
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WORK-PRODUCT INTERACTIONS



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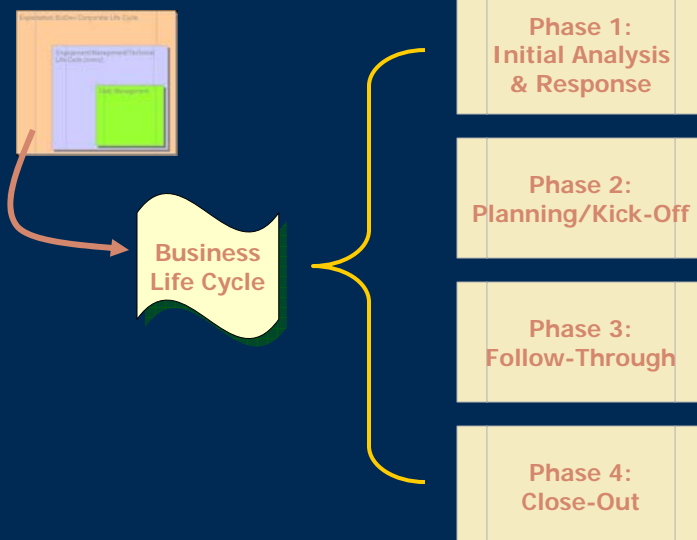
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COMPANY'S PRODUCT DEVELOPMENT LIFE CYCLE



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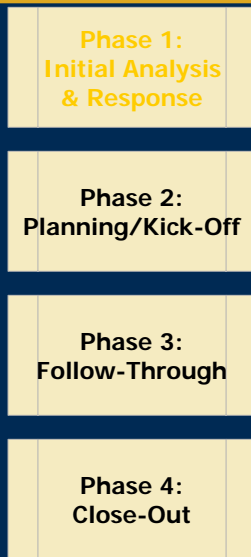
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PHASE 1 CONCEPTS



- ▲ Get from RFP to Award and/or from Award to Start
- ▲ Provides a business basis for going forward
- ▲ Provides requirements against which to manage the initial activities
- ▲ Scopes the project before details are known
- ▲ Breaks out of the Catch-22 of "when does the project start?"
- ▲ Allows for minimal mock-ups or prototyping/engineering analysis to obtain project requirements agreement.

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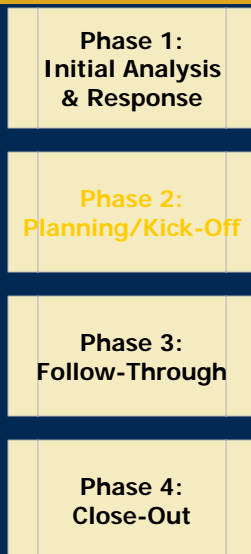
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PHASE 2 CONCEPTS



- ▲ Identifies the project's:
 - ▼ Type
 - ▼ Management or Technical Life Cycle
 - ▼ Major Product and Document Deliverables
 - ▼ Major Tasks
 - ▼ Assignments, Roles and Stakeholders
 - ▼ Resources, Tools and Assets
 - ▼ Plans
 - ▼ Project Monitoring Events
 - ▼ Milestones
 - ▼ Required Training
 - ▼ Measures & Analyses

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PHASE 3 CONCEPTS



**Phase 1:
Initial Analysis
& Response**

**Phase 2:
Planning/Kick-Off**

**Phase 3:
Follow-Through**

**Phase 4:
Close-Out**

- ▲ All detailed engineering and provisioning of the solutions and products
- ▲ Execution of the entire Management or Technical Life Cycle
- ▲ From Design through Delivery and Installation
- ▲ Can be iterative with Phase 2
- ▲ All phases of the daily process through Closure

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PHASE 4 CONCEPTS



**Phase 1:
Initial Analysis
& Response**

**Phase 2:
Planning/Kick-Off**

**Phase 3:
Follow-Through**

**Phase 4:
Close-Out**

- ▲ Opportunity for Lessons Learned
- ▲ Final Administrative Checks
- ▲ Customer Feedback
- ▲ Final PPQA Checks & Audits
- ▲ Final CM Audits
- ▲ Transitions to other "life" (i.e., maintenance, operations)

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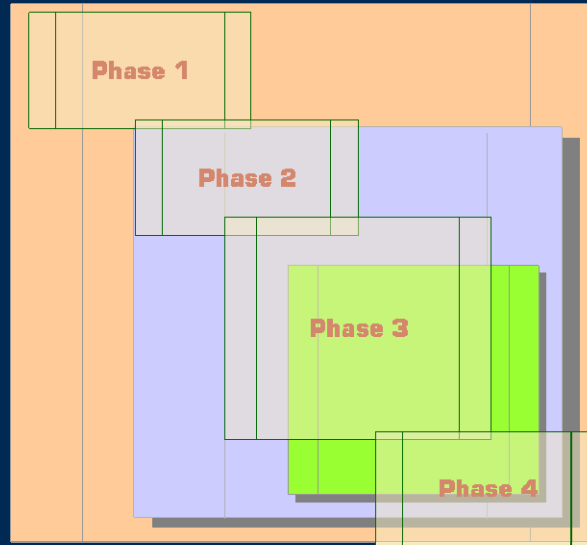
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LIFE CYCLE IN OPERATION



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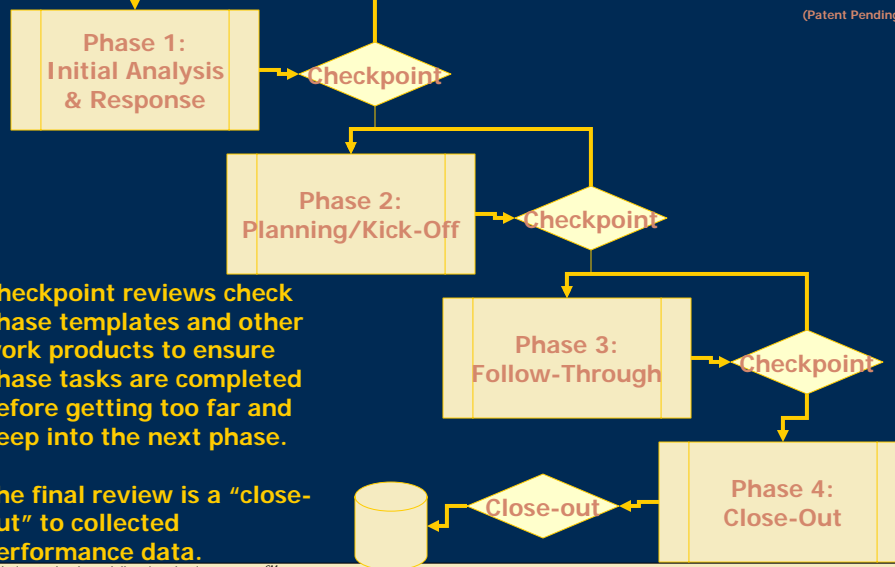
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PPQA CONCEPTS IN COMPANY PRODUCT DEV LIFE CYCLE



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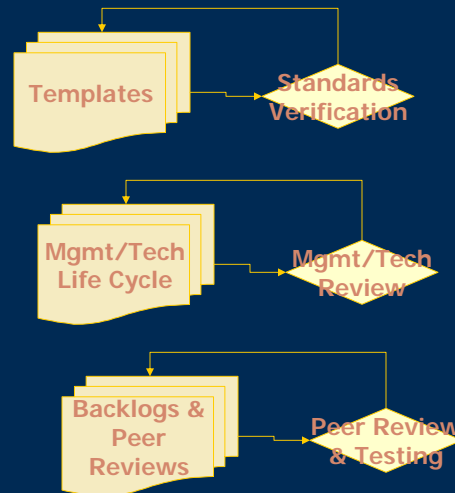
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PPQA CONCEPTS IN WORK PRODUCTS



- ▲ Standards Verification performs process checks against company's own standards
- ▲ Engineering Reviews perform integrity checks on designs, analyses, and solutions
- ▲ Peer Reviews & Testing perform product checks on code and code-based work



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ALL OTHER PROCESSES



- ▲ All other practices within process areas have been distributed into and made seamless with company planning and engineering activities.
- ▲ Some practices are performed once and passed through with each project review.
- ▲ Some practices are addressed by merely including an item on a meeting agenda.

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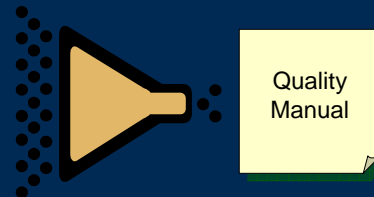
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WHAT'S IN THE QUALITY MANUAL?



(Patent Pending)

- ▲ Explains how on each project, all company Processes:
 - ▼ are planned-out and tailored from a single set of company processes
 - ▼ are assigned as someone's responsibility
 - ▼ are provided resources to be done
 - ▼ are assured of having people trained in them
 - ▼ have their work products configuration controlled
 - ▼ involve relevant stakeholders
 - ▼ are monitored & controlled
 - ▼ are objectively evaluated against applicable standards,
 - ▼ have performance reviewed with higher management, and
 - ▼ incorporate lessons learned for improvement



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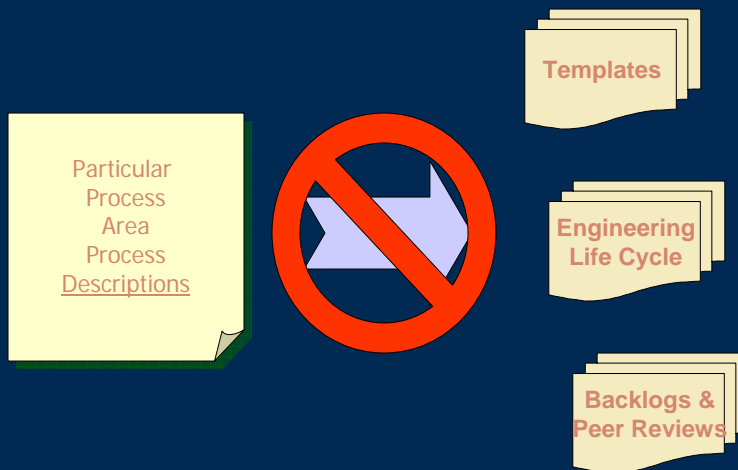
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WHAT DOESN'T WORK



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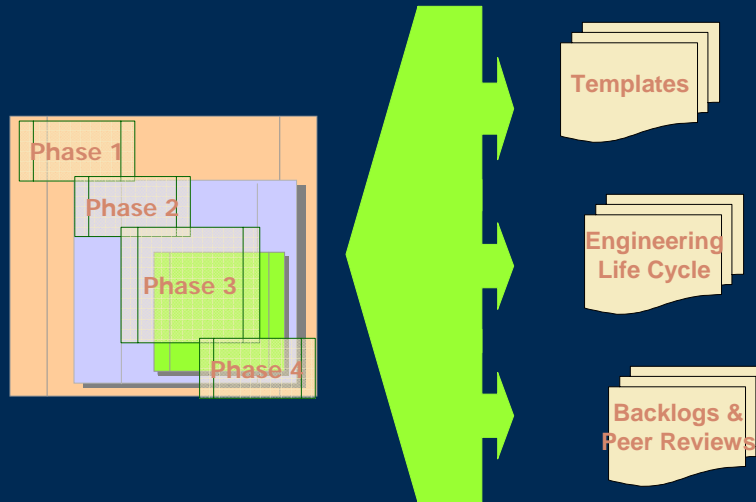
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REAL WORK *HAPPENS* IN REAL WORK PRODUCTS



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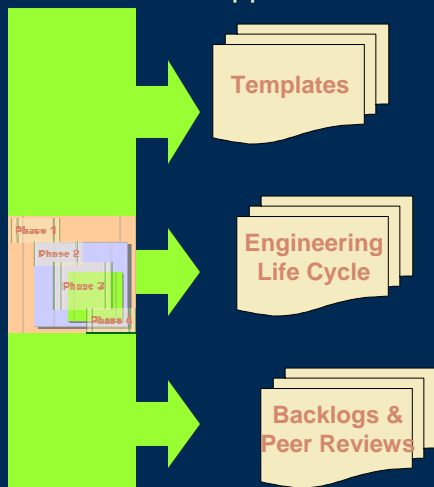
SUMMARY



CMMI



Happens Here:



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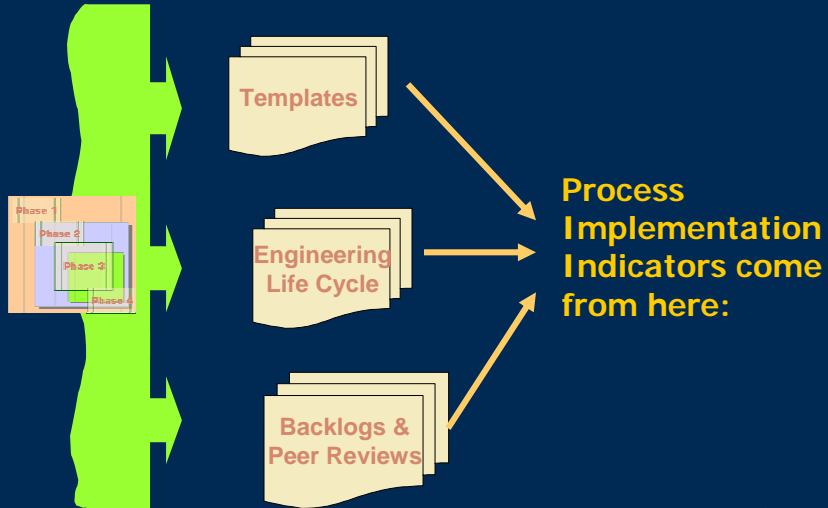
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AT THE APPRAISAL



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AGILE CONSIDERATIONS



- ▲ Empowered development teams.
- ▲ Allow agile methods to account for everything that takes time.
- ▲ Manage the processes, not the people.
- ▲ Bureaucracy doesn't work:
 - ▼ Are they incompetent?
 - ▼ Do they lack discipline?
 - ▼ Does Agile work w/either?

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KEYS TO MAKING CMMI "AGILE"



- ▲ Reality-Based Process Descriptions and Life Cycles
- ▲ Non-Sequential Process Flows
- ▲ Non-Prescriptive Process Management
- ▲ Getting "the right people on the bus."*
- ▲ Use "*risk-avoidance-speak*" not "*model-speak*"

*Jim Collins, *Good to Great*

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PARTING SHOTS



- ▲ Neither CMMI nor Agile work in every situation and shouldn't be forced to.
- ▲ Narrowing-down your reality takes work & time.
- ▲ CMMI can't be done *to* projects, it's done *by* projects and projects are done by *people*.
- ▲ People are the critical commonality...
- ▲ Agile and CMMI are after the same thing.
- ▲ How each org pursues that is unique and people-based.
- ▲ If CMMI sticks to managing processes and Agile incorporates practices as tasks, they get along.
- ▲ Reality trumps authority and bureaucracy EVERY TIME.

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QUESTIONS?



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The Capability and Maturity to Make It Happen.

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