



Case Studies Using Agile Methods & the CMMI Framework Together

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Topics



- ◆ The “perceived conflict” between Agile & CMMI: A “High Process” Perspective
 - ✓ How agile methods can help
 - ✓ Case studies included

- ◆ Selling Agile To Management

- ◆ Impact of Agile on Program Management
 - *Some views expressed may be controversial*
 - *Opportunity to think “out-of-box”*

Terminology

- ◆ “High Process” ??
- ◆ “A focus on process provides the infrastructure necessary to deal with an ever-changing world, and to maximize the productivity of people...to be more competitive”*
- ◆ Process: “Activities that can be recognized as implementations of practices in a CMMI model”
- ◆ Activity: “State of Action; Doing”**
- ◆ Activities: “How people spend their days”***

**CMMI Guidelines, 2nd Edition, pg 4, glossary*

*** American College Dictionary*

****Agile Software Development, 2nd Edition, Alistair Cockburn, pg 151*

Terminology (continued)

- ◆ A slightly modified CMMI definition of Process:
 - ✓ “How people spend their days doing things that can be recognized as implementations of practices in a CMMI model”

Process Improvement & More Terminology



- ◆ Process Improvement long history in manufacturing*
 - ✓ Moved to software in 80's
 - ✓ Focus shifted from “get fat out” to “incorporating discipline”
- ◆ Discipline*: “Compliance” or “Strong guidance”, pg 9
- ◆ Sense of “process” & “discipline” given to us from “outside”

**CMMI Survival Guide, Garcia, Turner*

Agile Expert* & More Terminology



- ◆ “One should not confuse process for discipline”
 - ✓ “Discipline involves a person choosing to work in a way that requires consistency”
 - ✓ “Process” involves “following instructions”

 - ✓ Again, sense of:
 - Process “given-to-us” from outside
 - Agile community distancing from term process
 - “Choosing” has “far better effect” (Highsmith)

***Jim Highsmith**

Ref. Agile Software Development, page 188

Another View From A Different Agile Expert

- ◆ “As much as I love to trust people, a weakness of people is being careless ...sometimes it is important to simply trust people, but sometimes it is important to install a mechanism to find out whether people can be trusted on a particular topic...”
- ✓ Many agile proponents favor the “inside” view, also recognition of value of “outside” perspective

**Alistair Cockburn, Agile Software Development, 2nd Edition*

Back to Our Slightly Modified CMMI Definition of Process



- ◆ “How people spend their days doing things that can be recognized as implementations of practices in a CMMI model”
 - ✓ Already established tendency to associate CMMI related processes with “outside” view
 - Do you see in definition where it says process can't come from the inside?
 - Does it say it can't be something chosen by those who perform it?
 - Does it say those who must “recognize it...” must be on the outside?

Views of CMMI Related Processes & Where We Are Going



- ◆ Common view of CMMI related Processes:
 - ✓ “Checklists”
 - ✓ Levied upon us from “outside”
 - ✓ Don’t reflect well how actually spend days
- ◆ My view:
 - ✓ Not due to anything inherent in CMMI model
 - ✓ Rather is due to how model often applied

Note: Case Studies Provided

**Where Are We Going:
9 Non-Agile-Friendly Approaches To Using CMMI Model &
How Agile Techniques Can Help**

Value of Outside Perspective

- ◆ Lead CMMI Appraisers need level of independence (e.g. outside perspective)
- ◆ Similarly appraisal teams should have balanced perspective
 - ✓ More important with agile approaches
- ◆ However, good lead appraisers also need to spend time getting to know organization they are appraising
 - ✓ All organizations not the same
 - ✓ CMMI Model not “checklist”
 - ✓ Need to recognize “**business**” situation
 - Unfortunately, “inside view” hasn’t always received deserved attention

Note: “High Process” :

Volume of Activities Versus Perception of “Non-Value-Added” Activities

9 Non-Agile-Friendly Approaches

1. Packaging & Defining Processes
2. Deploying Processes
3. Producing Evidence
4. Training
5. Terminology & Order
6. Placing effort
7. Exit & Entry Criteria
8. Organizational Process Assets
9. Tailoring

Abbreviated Titles

1. Packaging & Defining Processes that look like the CMMI Model Rather than How People Actually “Spend Their Days”



Consultant

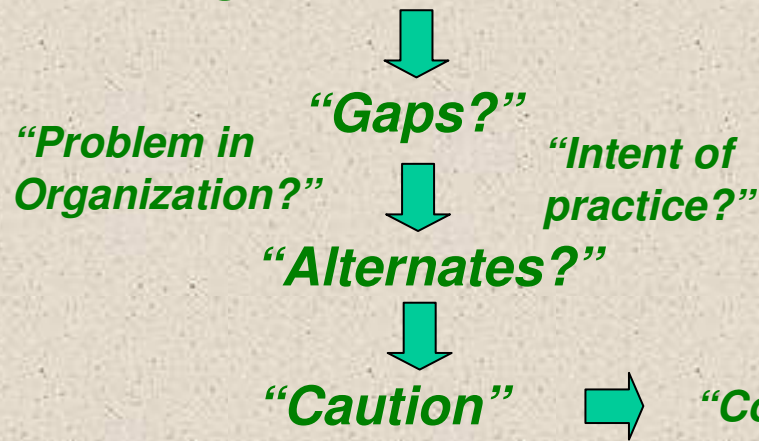


“Successful?”
“Satisfied Customers?”
“Growing?”

Client Team



“Capture what you do”
“Your terms”



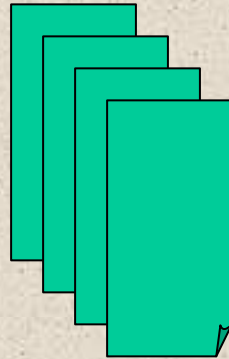
CMMI Model not a set of dictated Practices
Reference Model Used to help “Reason” about Your Processes

2. Deploying New Processes Using a Waterfall Approach that Fails to Adequately Engage the Customer



Complete set of new integrated processes

8 months from formal appraisal, not deployed yet



Process Improvement Team

“We tried to talk to project personnel, but they’re all very busy...”



Consultant



“What is basis?”

Not Uncommon



Incremental to engage Projects/Customer

But won't an incremental approach bother the project teams more?

3. Driving Personnel to Produce Artifacts Based on the CMMI Model, Instead of “How They Spend Their Days”



Consultant



“Do you do Peer Reviews?”

“Problem in Organization?”



“How do you ensure you find defects early?”



“Continuous Peer Reviews”



“Caution”



Culture/Customer Dependent

Client Project Personnel



“We don’t do formal Peer Reviews?”

Not suggesting appraisals return to “discovery”

4. Training Too Many & the Wrong People in the CMMI Model

- ◆ “It is important to keep all stakeholders focused on the fact that SCAMPI A is intended as a benchmark appraisal. This method is not well suited for organizations that have limited understanding of CMMI.”*



Small team analyze as described previously understanding model intent & business context



Project Personnel



*Train people in your processes”
“Your terms”*

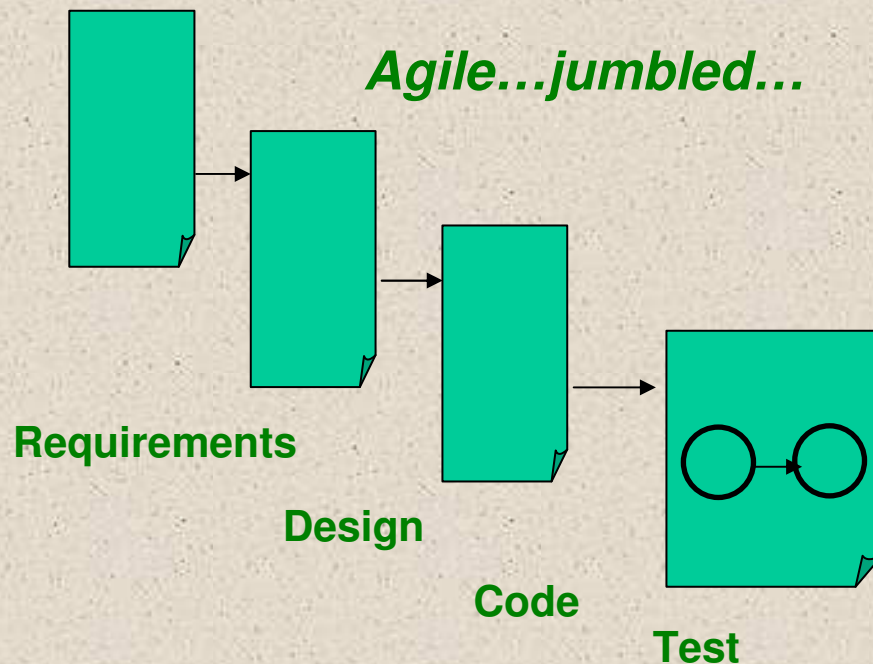


Process Improvement Personnel’s Job

Some have argued not easy, but what would you prefer...?

**SCAMPI A Method Definition Document (MDD), V1.2, page II-51*

5. Forcing the Use of CMMI Specific Terms & Processes With Sequential Steps



CMMI Model Doesn't Dictate Order



So how do you figure out what makes sense for your business?

Ken Schwaber has argued against the notion of defined process for software...not inconsistent with CMMI "defined"

Learning from agile...longer you wait...further from the truth...

6. Employing Too Much Effort on Process Definition, And Too Little Effort on Process Deploy & Feedback



Consultant



*I have asked Process Improvement personnel in organizations:
“How do you spend your Days?”*



- *Defining processes?*
- *In trenches helping project personnel?*
- *Setting priorities based on “customer” feedback?*



Process Improvement Team

“Not my job to do their job...”

Is your job to ensure process is right process for business context



Value of placing self in customer’s shoes”

7. Forcing Exit & Entry Criteria at the Wrong Level

Consultant



“Do you think Exit & Entry Criteria required on Processes?”



Senior Management

Can help in selling agile To management

- *Intent good*
- *Better visibility*
- *Learning through agile more effective “best practices”*



**Discussed Incremental
Motivated as method to involve the Organization**

Caution... “You’re Wasting My Time” ...there is value...

8. Placing the Wrong Process Assets at the Organizational Level

- *How well do you know your business?*
- *How well do you know what makes your business successful?*



*To achieve CMMI Level 3 requires “defined” process
...written, managed, tailored....*



*...agile focuses on the project....
...CMMI also focuses on the organization...
...Intent: Capture what you do to help new people...*



“What should be captured at the organization level?”

8. Placing the Wrong Process Assets at the Organizational Level (continued)

Consultant 1



Challenged

Does require:

- **Standard Processes**
- **Tailoring guidelines**

Miss business context intent



- Case 1: Product Oriented Client
- Case 2: Software Service Client

Consultant 2



Alistair

“...process superstructure required...”



Extensive:

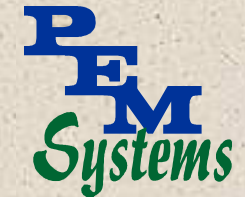
- **Policies,**
- **Processes**
- **Work instructions**
- **Tailoring rules**



CMMI Model Supports Both Clients...do you know your...?

..key is discovering what set of standard processes will accommodate the range of environments you encounter...Garcia & Turner

9. Failure to Clearly Define the Minimum "Must-Dos" at the Organization Level



Consultant



"Could you explain your tailoring process?"



"What is the minimum everyone must do?"



"??"



Small agile – first capture must dos



Simpler...but go along way...



*Motivate...
Senior Personnel..*



"How do you spend your days?"



"Helping less experienced people"



"Would documentation help?"

9. Failure to Clearly Define the
Minimum “Must-Dos” at the Organization Level (cont)



**If you want to know why management fears agile,
it is the fear of
loss of control**

9. Failure to Clearly Define the
Minimum “Must-Dos” at the Organization Level (cont)



**If you want to know how to sell agile to
management show them how it can
increase control**

“Why are the “minimum” must-dos important?”

9. Failure to Clearly Define the Minimum “Must-Dos” at the Organization Level (cont)



**“Heavyweight” Organizational “Superstructures”
provide camouflage for those who
choose not to comply**



“Strip away the Inessential”



“Make the boundaries clear”



“And you will increase— not lose— control”

Caution 1:
Don't Assume Agile-Friendly Processes Are
Easy To Write



Strategies lead to more selective organizational assets, & a simpler tailoring approach



“Harder to write crisp/agile processes because you cannot hide behind the bulk of your words”

Caution 2:
Be Aware Mentoring & Training Increases in
Importance As Agility Increases



**Past confusion between what belongs in
process & what belongs in training & mentoring
led to excessive organizational process assets**



*As we clarify what belongs in written processes, need
for training/mentoring increases*

Caution 3:
Be Aware of the Impact of Agile on Decision-Making

Leads to Impact on Project Management



Potential to move decision-making down within Projects



Potential to move decision-making from Organizational To Project level

**These decisions should not be made arbitrarily,
depends on your BUSINESS**



Questions to ask:

“How rapidly do decisions need to be made on the project?”

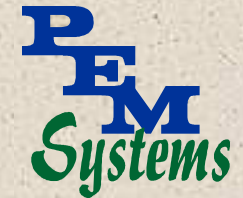


“Who needs to make them? Do they have skill/trained/assigned?”

Appropriate action lead to improved visibility/status

Note: Ties back to selling agile

...A Little More on Program Management Impact



Consultant 1



Consultant 2



Alistair

Liked it!

“Methodology = larger issues of coordinating people’s Activities on a team”, 1st Edition

Not to keep people from working together

Argues for separation of Methodology from Project Management, 2nd Edition

Clearly recognize what belongs to each domain

Past Successful project → Standard Processes → Consequences?

Standard Processes distinct Project Strategies

Increased attention required on training Project Management Planning

Final Thoughts

- ◆ CMMI model very good offline diagnostic tool
 - ✓ Not optimized for real-time execution
 - Analogy to a world class golfer

Contact Information & References



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◆ References:

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- ✓ SCAMPI A, V1.2: Method Definition Document, Aug 2006
- ✓ Cockburn, Alistair, Agile Software Development, Addison-Wesley, 2002, 2006, 1st & 2nd Editions
- ✓ Schwaber, Agile Project Management, 2003

Acronyms

- ◆ CMMI= Capability Maturity Model Integration
- ◆ SCAMPI = Standard CMMI Appraisal Method for Process Improvement