

Perceived Market Opportunity

1.

There is market demand for a FORMAL process method accelerating appraisal at CMMI Model Level 3 in Visual Studio Team System

BUT...

Q. How do we differentiate? Q. Can we be Agile? Q. Can we deliver high productivity, not just high quality?



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Daily Build

Project Planning (PP) 2.1 asks us to "identify task dependencies" and expects a "Critical Path Method (CPM) or Program Evaluation and eview Technique (PERT)" [Chrissis 2000 Deterministic

result.

PP 1.1 sub-practice 2 asks us to "Identify the work packages in sufficient detail as to specify estimates of project, tasks, responsibilities and schedule" and goes on with "The amount of detail in the WBS at this more detailed level helps in developing realistic schedules, there.

Microsoft Solutions Framework



Some text here that transitions methodology and VST into Work Items, the database, reports, etc.

Work Items

A work item is a database record which Visual tudio Team Foundation uses to clothe assignment and state work

Team System

Project Monitoring and Control (PMC) 1.1 asks us to compare "actual completion of activities and milestones against the schedule activities and project plan, identifying significant." Conformance To Plan the schedule estimates in the project plan.

And stiffer stil

Technical Solution (TS) 2.2 asks us to "establish a technical data package" and suggests artifacts ' ke "product architecture description, alloc Heavyweight requirements, product component des Documentation product characteristics, interface requirements of use"

400 doc types*, 1000 artifacts for an appraisal**

* Internal MSFT estimate 2004 ** CMMI SCAMPI Distilled, Ahern at al, AW 2005

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A work item is a database record which Visual Studio Team Foundation uses to track the assignment and state of work

need some text her describes flexibility the methodology ar

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SALT with your agile process?

MSF *Formal* – a hardened version of MSF Agile

TRUST BUT VERIFY

The Microsoft Solutions Framework (MSE) Team Model describes Microsoft a proposition atructuring people and their activities to enable project Nacest MSF Formal introduces elements to formally verify that work is done according to plan and process definition

Program

Microsoft Solutions Fra



Aetric Warehouse

Reports



Some text here that transitions T into Work reports, etc. T into Work reports, etc.



Would our \bigcirc customers actually thank us for this? Was there an ROI? Would there be too much resistance and consequently slow adoption? Did it really have \bigcirc to be this way? High quality == \circ

Work Items

tions Framework

High Cost

distant Studio

 CMM Levels are based on Crosby's Manufacturing Maturity Model
 But the underlying principles

of CMM are based in Deming's quality assurance method

Level 2 thru 4 for elimination of special cause variation

Level 5 for continuous improvement through reduction of common cause variation





Deming's 14 Point of a formations work terms demeter that transitions work terms demeter that transitions are the transitions

Pair Programming Collaborative Design Test-Driven Design Unit Testing Frameworks Acceptance Framework

3. Cease dependence on quality control to achieve quality, instead focus on quality assurance throughout the lifecycle.

Deming's 14 Points Nanagement

Customer collaboration ne over contract the negotiation **On-site Customer** Sounds prett) Tacit knowledge agile to us!

Processes

Frequent **D**

4. Build trust and loyalty with suppliers.

Mi

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As De

Agile Modeling Collaborative Design Frequent Peer Reviews Pair Programming Promiscuous Pairino

Deming's 14 Poles a Vor interventions Work Items Demonstrations

Mi

Agile manager trusts the team, doesn't supervise them, but creates a vision they can follow and an environment for the do great work Self-orga:

7. Leadership

Demings 14 Point Bat Area Straight State S

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No measurement against conformance to plan or specification No individual measurement Shared responand team an Self-organizati

8. Drive out fear

Demings 14 Poles as North Poles as North State of State o

Sounds prett) agile to us!

Mi

Collaborative working Fewer Job Descriptions Generalist workforce On-site customer

The Microwolt Solutions

Feam Model

9. Break down barriers between departments

Daily Build

Deming's 14 Points Tork Management

Generalist workforce Focus on initial quality the Craftsmanship Shared ownership of Sounds pretty

value delivery

12. Remove barriers to pride of workmanship, focus management on quality rather than production numbers

agile to us!

Mi

Daily Build

A better way!

If Deming thinking is truly agile then why can't a CMMI implementation be agile too?



And we decided to take our MSF for Agile Software Development template and stretch it to fit CMMI Level 3







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290		3 RSKM	1	1.2	Define Risk Parameters		Plan Project	Define Risk Parameters	Process Guidance	(Risk WI's)		
291 292		3 RSKM	1	1.3	Establish a Risk Management Strategy Identify and Analyze Risks		Plan Project	Establish Risk Management Strategy	Process Guidance, Process template and enactment	Process Guidance, Risk monitoring activity (Task WI's)		
										Risk Analysis activities		
293	-	3 RSKM	2	2.1	Identify Risks		Risk Management	Identify Risks	Risk VI's	(Task Wi's)		
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MSF for CMMI® Process Improvement

Grow market for CMMI Target new audience Agile CMMI solution Brings formal quality assurance to mass market



Understanding Variation

2.

Variation and Process Mat

Non-Conformant Quality 🗄 💆

On time,

On Budget

On time, On Budget, Agreed Function

Redu THRESHOLD

Process in contro

Some non-conforning quality

Must either Change (improve process) or, Relax standard for conformance

Control Limit Canse Canse

USe

Chance

Cause

CFAOS

Agile

Process out of control

Some non-conforming quality

Assignable causes dominate

 Random fluctuations due to assignable causes will eventually frustrate efforts at process improvement

Eliminate assignable causes first!

Process in control

100% conforming quality

Conforma

iance

Control charts of work-in-process and productivity give timely warning of any roubles (but cannot diagnose deterioration in the system against special cause incident)

DEAL STATE

BRINK UF CHAOS

Process out of control 100% conforming quality All seems OK but assignable causes letermine success Things can change in a moment

Track Work Remaining

Iteration Cumulative Flow



Issues and Blocked Work Items

Issues and Blocked Work Items Report generated: 11/04/2004 11:25 AM by someone@example.com

Are issues causing work items to block?



Reducing Common Cause Variation



Over a series of iterations improve accuracy of planning through better analysis Requires a Kaizen or Six Sigma event (management

injection) to change the engineering method

Level 4 & Beyond



Using Control Charts with CFDs



Innovation:

Continuous Adoption Curve

MSF for Agile Software Development matures into MSF for CMMI Process Improvement (Level 3) leading to a Level 5 solution in 2007



A Risk is an Issue waiting to happen

Anallyze Risks

Identify a list of potential risks Revisit at start of each iteration and monitor daily Analyze for

- likelihood of occurrence
- Impact on schedule, budget, resources or quality
- Propose Mitigation Scheme(s)
 - Analyze and estimate
 - Indicate triggers for mitigation
 - Identify metrics and thresholds for mitigation trigger
- Propose contingency plan for recovery from occurrence
 - Analyze and estimate (if appropriate)

Create and track Risk Work Items in VSTS

Prioritize Risks

Based on impact, cost, likelihood, mitigation and contingency, prioritize risks for mitigation
Mitigation action will impact capacity for normal project work (i.e. uses resources and budget)
Balance value realization against risk of special cause variation impacting ability to deliver

Identifying Special Cause Variation

Issues and Blocked Work Items Report generated: 11/04/2004 11:25 AM by someone@example.com

Are issues causing work items to block?



Managing Issues

- Identify Issues at daily team meeting
- Log and track with Issue work item in VSTS
- Link to work items at risk of blocking
- Monitor with query showing blocked work items and potentially blocked work items
- Use evidence of impact to escalate issues for prompt resolution
- Unresolved issues directly relate to special cause variation and classification of maturity as Chaos or Brink of Chaos

Unhealthy Example #1



unresolved and as a result a set of work items is blocked indefinitely. This would be reflected in the Remaining Work report as a set of WIP work items and no progress towards completion

Unhealthy Example #2





Lots of issues initially. Lots of worked started but none moving forward to resolution or closure. Some issues get closed but not fast enough. A residual set of issues leaves some work items unresolved or resolved but unable to close.

Innovation:

Project Risks and Issues mapped to Deming/Shewhart Variation Model Risks map to potential special cause variations with a probability of occurrence. Issues track actual special cause variations.

You cannot control what you cannot measure

	> Project Some text here that transitions	
MSF for CMIV	Process Improvement	Visual Studio Team System
	Overview Roles Work Items Views CMMI Index	Glossary
Project Portal > Workstreams Activities Work Items Work Products Reports Queries How To's	Index Reports Project health charts aggregate metrics from work items, source control, test results, and builds. They answer questions about the actual state of your project at many scales: for the days within an iteration, within a project, or projects with in a program. The questions are also relevant for many kinds of work items such as scenarios, quality of service requirements, tasks, and bugs. Actual Quality versus Velocity Bug Rates Bugs by Priority Builds Open Issues and Blocked Work Items Trend Quality Indicators Regressions Related Work Items Requirements Test History Scenario Details Test Failure Without Active Bug Tost Passing With Active Bug Triage Unplanned Work Velocity Work Items Work Items by Owner Work Items by Owner	















Innovation:

Trustworthy Transparency VSTS lets everyone see exactly what is happening to all the customer valued work on a project. That transparency is trustworthy because it comes from the same tool that is used to do the work. It necessarily has to reflect the working reality of the project.



Some text here that transitions About David J. Athedology de Stinte Work

Work Items

Visual Studio Team System

David Anderson is a software engineering methodologist and Program Manager with Microsoft Corporation in Redmond WA. He has 23 years experience in the software development business starting with computer games in the early 1980's. As a pioneer in the agile software movement David has run around 20 software projects in the Fortune 100. describes flexibility He is currently creating the next generation of MSF the methodology an (Microsoft Solution Framework), a set of process guidance and development tooling which enables the latest thinking in working practices and management techniques for software engineering.

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David authored the popular and well received textbook, Agile Management for Software Engineering – Applying the Theory of Constraints for Business Results, published in 2003 by Prentice Hall, which introduced the concepts of Drum-Buffer-Rope, Critical Chain and Throughput Accounting for software engineering.

David has held management positions with Sprint PCS and Motorola before being attracted to Microsoft and the opportunity to bring his paradigm shifting thinking in software management to a wider audience.

He holds a degree in Computer Science & Electronics from the University of Strathclyde, Glasgow, Scotland where he specialized in control systems engineering.

Microsoft Solutions Framework



For More Information of the Work Work Items Iteration Main web site http://msdn.microsoft.com/msf MSF for CMMI Process Improvement workbench site http://lab.msdn.microsoft.com/teamsystem/wo rkshop/msfcmmi/default.aspx Participate in MSF forum http://forums.microsoft.com/msdn/ShowForum .aspx?ForumID=63 David Anderson's blog http://www.agilemanagement.net/Articles/Web log/blog.html Microsoft Solutions Framework Visual Studio Team System