



Using the Agile Methodology to Mitigate the Risks of Highly Adaptive Projects

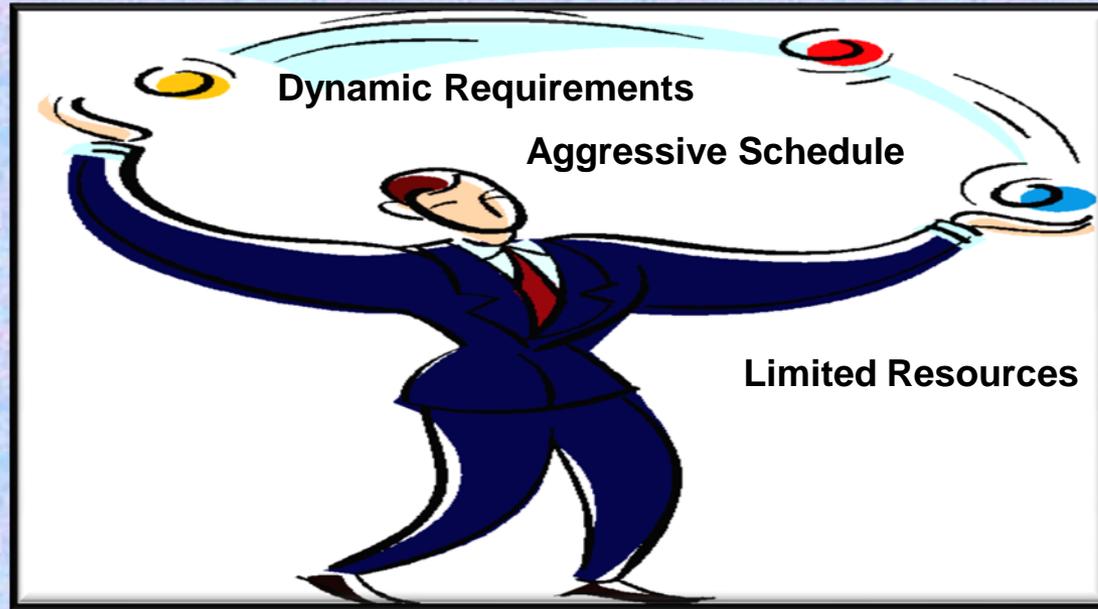
Dana Roberson
Quality Software Engineer
NSA Service Center

And
Dr. Mary Anne Herndon
Transdyne Corporation



- Risks in Highly Adaptive Projects
- Typical Management Scenarios
- Agile Software Development Methodology
- Steps for Implementing CMMI-DEV Practices in Agile Projects
- Strategy Map for Using Agile Practices
- Benefits
- Lessons Learned

Today



Using the Agile Methodology to Manage Risks of Highly Adaptive Projects

Dynamic Requirements

Impact of customer co-location on requirements management & tasking

Aggressive Schedule



Immediate effect of changing customer priorities & direction

Limited Resources

Typical work performed on a fixed LOE or time & material basis



The requirements are ALWAYS changing.

Time and schedules are ALWAYS aggressive.

Resources will ALWAYS be tight.

To mitigate these risks you need processes that address these risks to allow rapid adaptation.



Small businesses often function in focused markets as:

- Suppliers of specialized on-site technical services, key personnel, applications or products
- Domain specialists
- Staff augmentation

These focused markets may not provide needed revenue or market share growth to readily prosper in today's economy.



Costs of improving project and risk management practices are considered key investments in these vulnerable cash flow environments.

Both near and long term cash flow analysis typically includes factors such as:

- Customer base stability & revenue cycles
- Projected revenue growth
- Costs of acquiring appropriate resources to improve management practices, such as training, process engineers and collaborative software and hardware.



Understanding and improving project management and risk management practices is a key factor in revenue growth.

Planning improvements typically includes assessment of critical factors such as:

- Required resources (available staff, feasible schedule, platforms, facilities, collaborative tools)
- Past performance data (costs, schedules, lessons learned)
- Training in the domain and software development method (Agile)
- Risk identification and impact assessment
- Risk mitigation



A practical knowledge base useful for improving management practices can be provided by process models, such as CMMI and ISO 9000. Obtaining CMMI benchmarks and ISO 9000 certifications are often stepping stones to expand government and commercial customers.

Selecting and implementing any process and life cycle models is both costly and can be risky as there are no guarantees of success on-site with the customer.



Planning a process improvement strategy typically includes identifying problematic projects with typical issues such as:

- **Limited resources and ambitious schedules**
- **Lack of experience and staff training**
- **Excessive staff turnover rate**
- **Stability of current customer base**
- **Projection of market growth**
- **Over commitment of key staff**
- **Inaccurate planning data for costs and schedule**



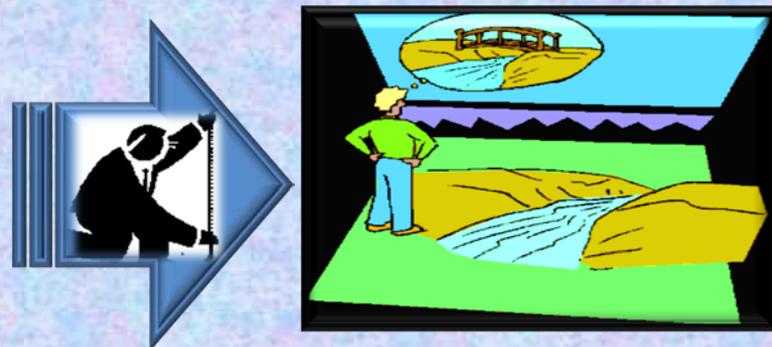
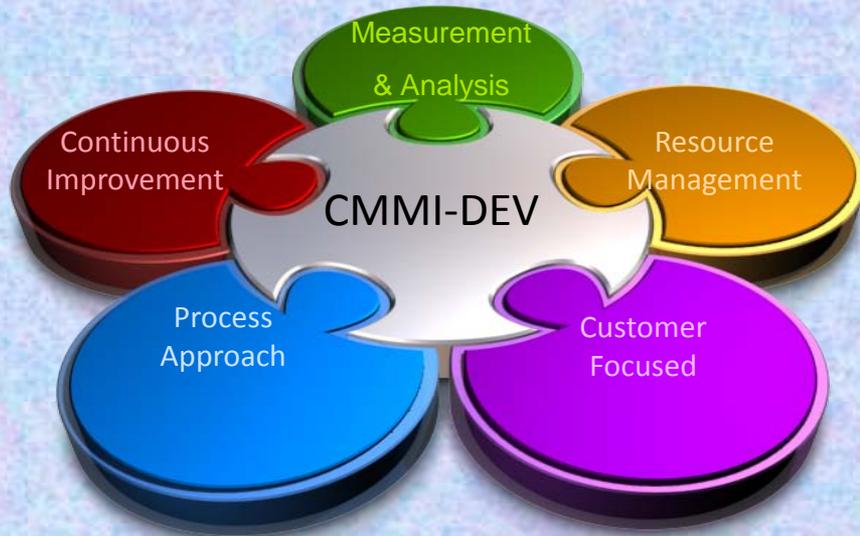
Implementing a process improvement strategy, small businesses should customize a path of small, adjustable steps.

An example of a path of small steps is a hybrid approach of improving project and risk management practices in CMMI-DEV first.



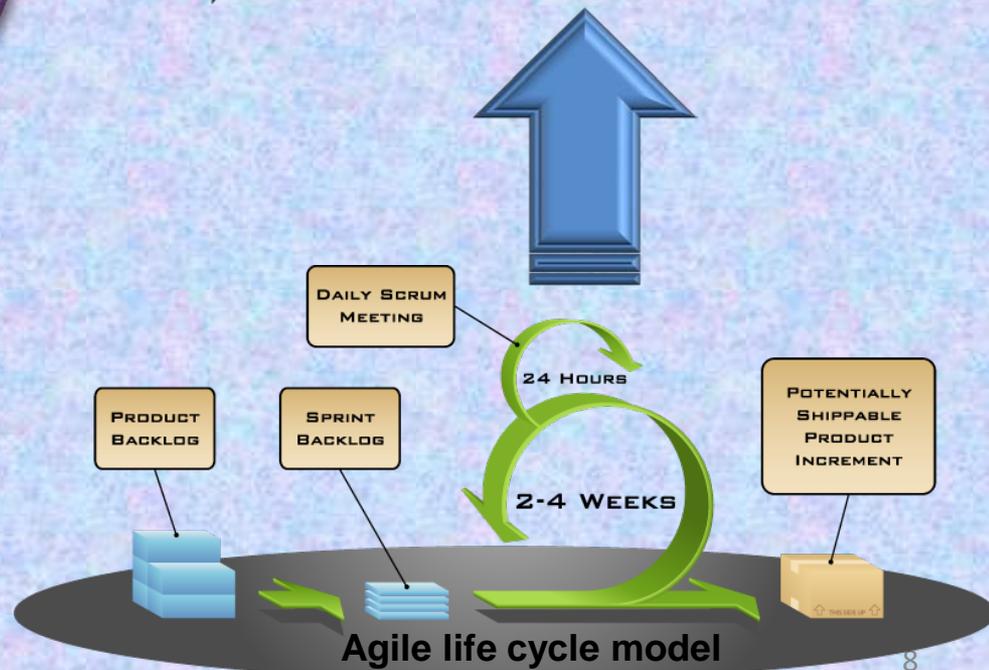
The next step is a selection of a life cycle model that is suitable for the work requirements, location and level of customer participation.

Building Bridges Using CMMI-DEV and Agile to Manage Risk



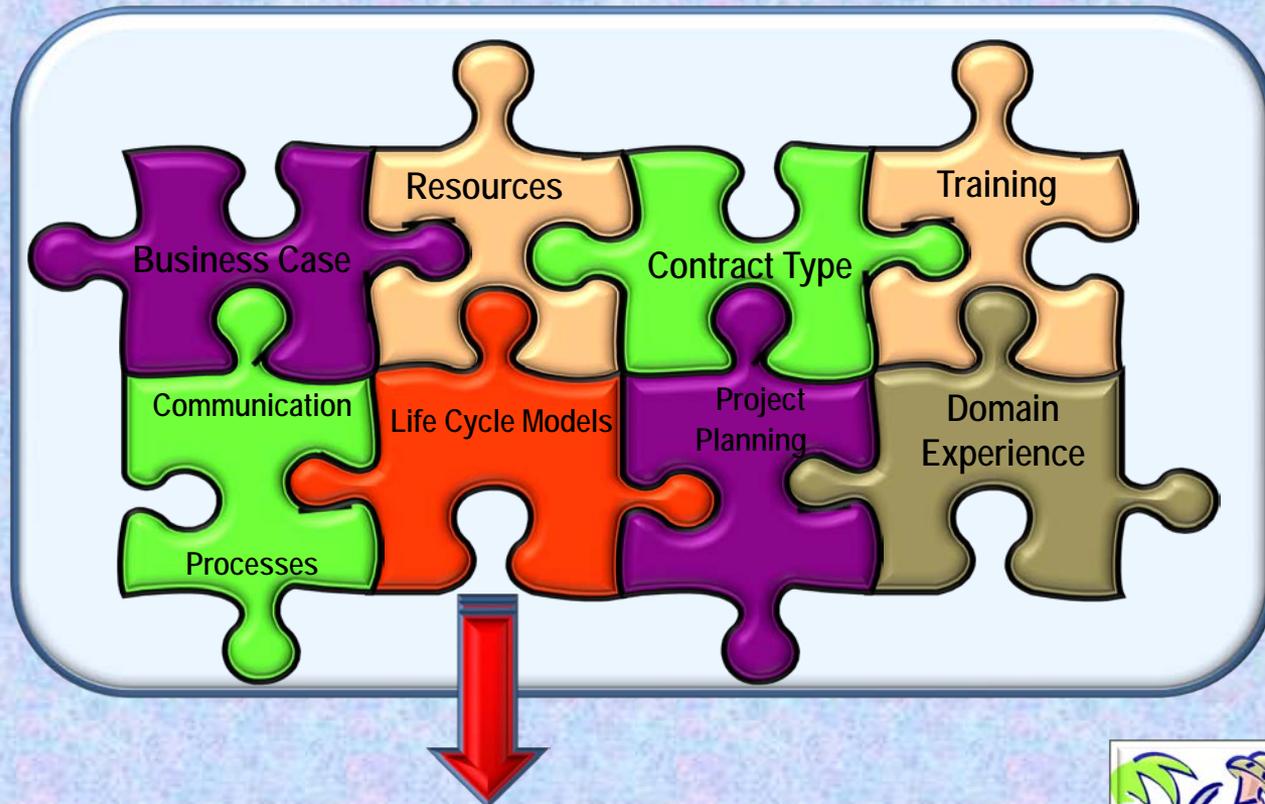
CMMI Is Designed to Be Tailored to Your Business Environment.

- ✓ Fully align process improvement with your business goals
- ✓ Look at what you are actually doing,
- ✓ If a “good fit” – document and follow
- ✓ Leverage off existing activities – e.g. Agile
- ✓ Promote maximum flexibility and efficiency in your process improvement approach
- ✓ Emphasize measurement and analysis





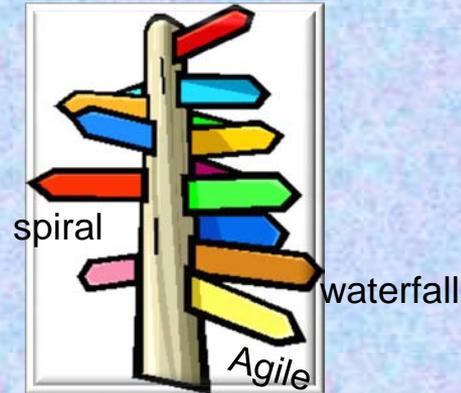
All KEY process improvement factors introduce sources of risks to developers!



Choosing an incompatible life cycle development model impacts all other key process improvement factors.



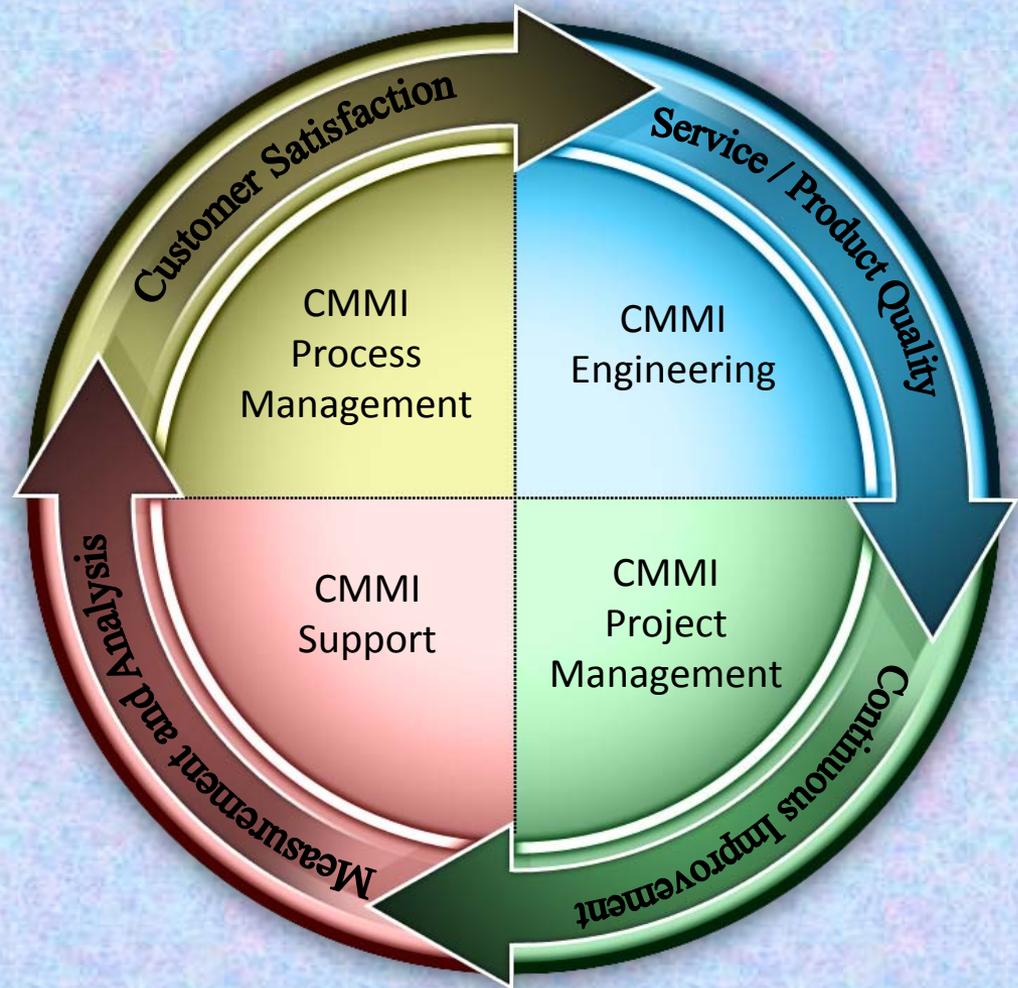
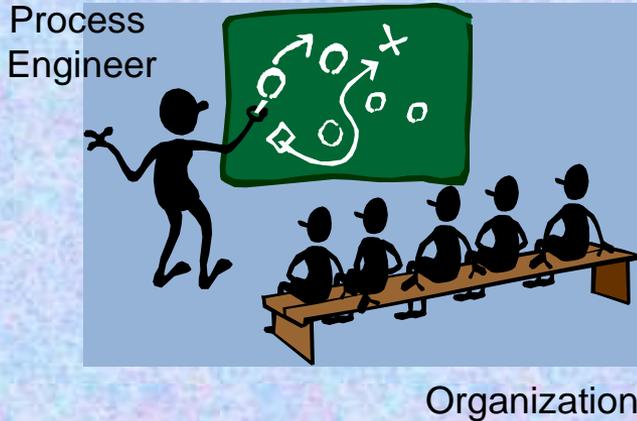
Sources of Risks in Life Cycle Models



- Waterfall
- cycle times
- impact of changing requirements
- direct end user involvement

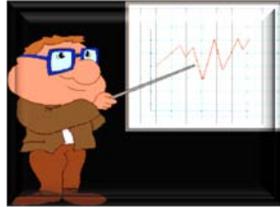
- Spiral
- cycle times
- impact of changing requirements
- direct end user involvement

- Agile
- inadequate training
- customer awareness
- management advocacy



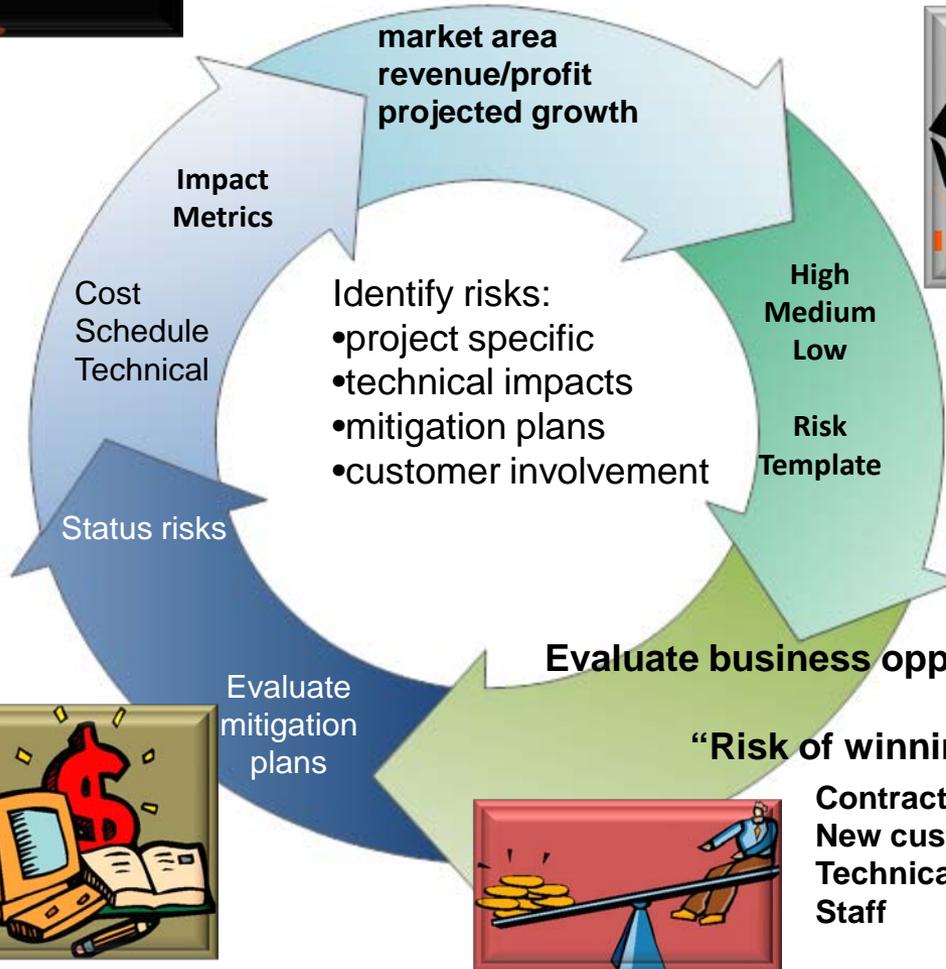
Framework of the CMMI-DEV model provides:

1. Increases in implementation efficiency due to redundancy in model functions, such as Project Management & Support Process Areas and generic practices.
2. Minimal opportunities for conflicts with customer, staff and resources with **adequate** model understanding



Understand the Risks

Key growth Investments:
 Process & Agile training
 Collaborative H/W & S/W
 Process engineer support



Lessons Learned

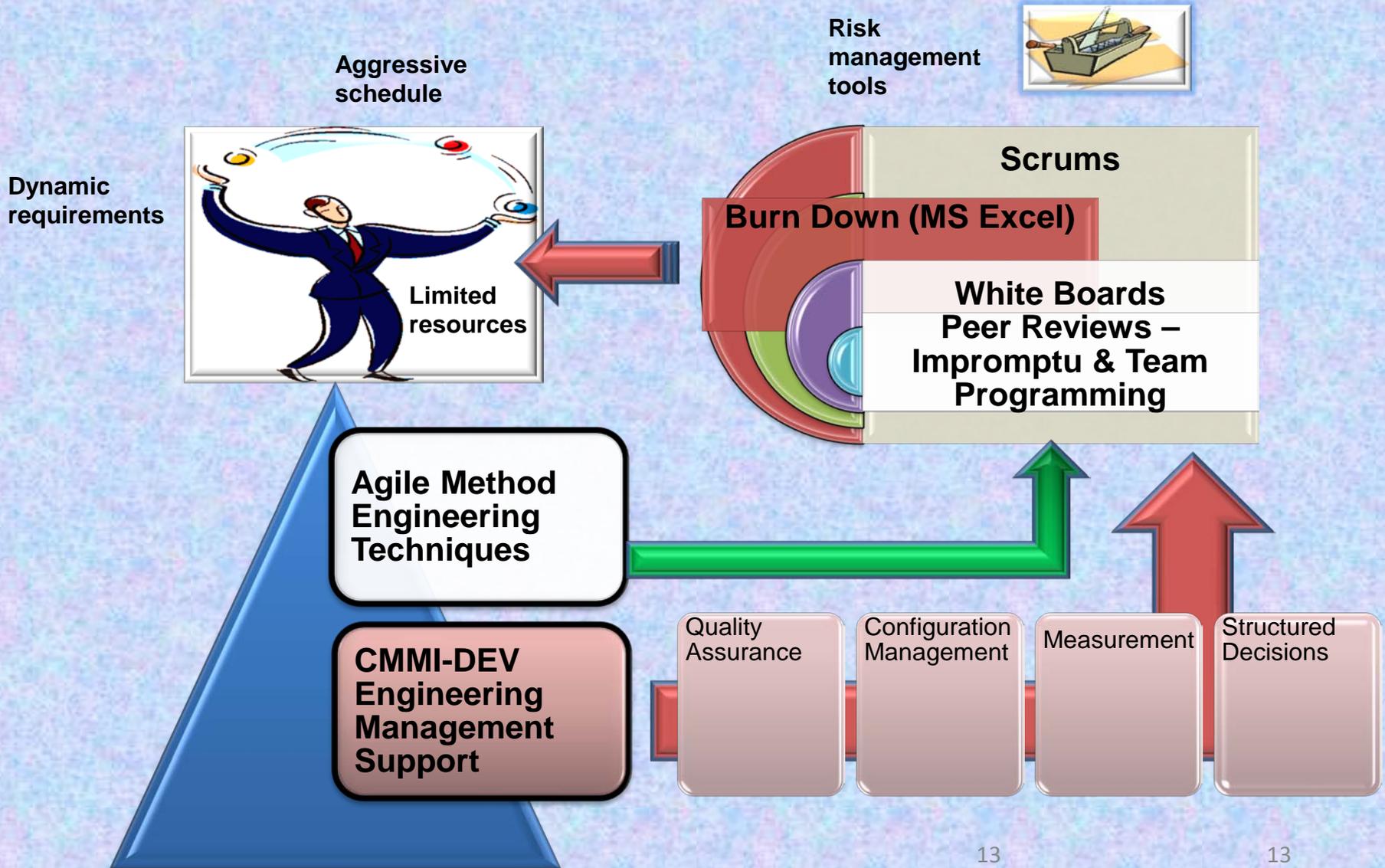
- ✓What did we do well?
- ✓Where were we lucky?
- ✓What do we need to improve?



Develop Agile project plan

Contract type
 New customer
 Technical complexity
 Staff

Strategy Map for Implementing Risk Management Using Agile and CMMI-DEV



Risk Reduction Solution - Process Improvement

Risk reduction is NOT fighting fires or “just in time solutions.”

- It is simply a way of looking at how we can do our work better.
- A series of actions taken to identify, analyze and improve existing processes.
- These actions often follow a specific methodology or strategy to create successful results.

Reduce variation.

- Remove activities that have no value to the organization.
- Improve customer satisfaction.
- Process improvement is important as it has often been said that process accounts for 80% of all problems while people account for the remaining 20%.

Recognize and document best practices.

- Provide lessons learned.
- Encourage staff members to contribute!



What are Best Practices and Benefits?



Best practices are effective, high-leverage technical and management PROCESSES that have been implemented and proven on successful projects.

Examples of Best Practices	Benefits
<p>Proven Models – i.e. CMMI-DEV, ISO 9001</p> <p>Project Planning</p> <p>Measurement and Control</p> <p>Peer Reviews</p> <p>Risk Management</p> <p>Quality Assurance</p> <p>Status Reporting</p> <p>Configuration Management</p> <p>Agile Software Development</p>	<p>Risks are reduced & mitigated</p> <p>Repeatability is achieved</p> <p>Clarity and understanding are increased</p> <p>Common terminologies and consistent styles are developed and followed</p>

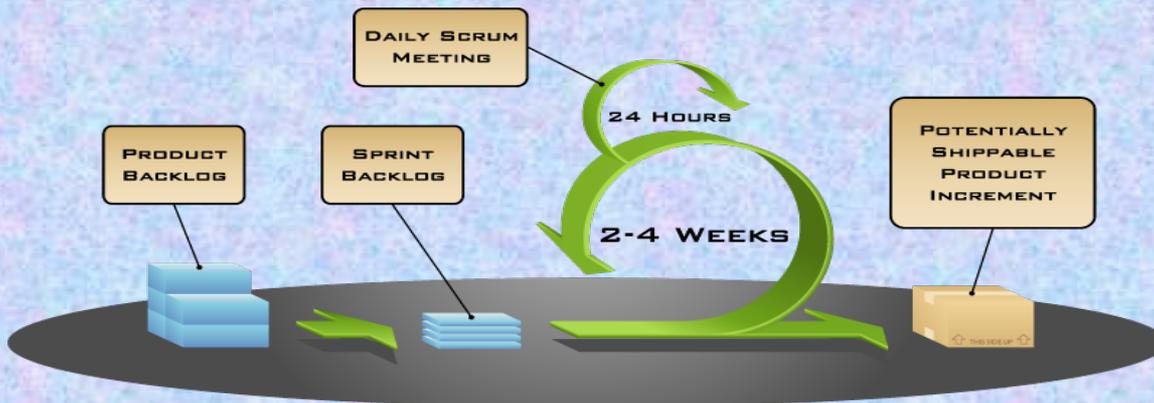
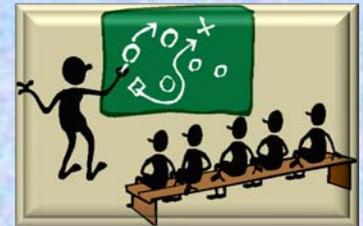


Typical “Roadblocks and Hurdles” to Process Improvement

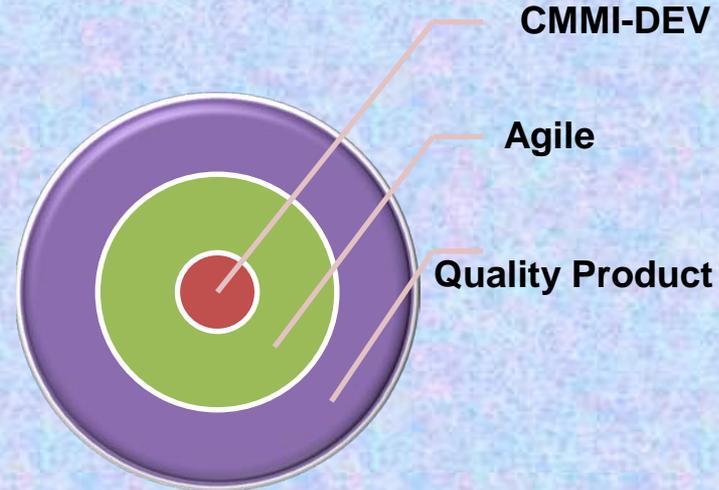
Resistance to Change	Lack of Commitment and Resources
<p>“We tried process improvement before, and it didn’t buy us anything.”</p> <p>“CMMI /TQM/Agile/Lean Six Sigma/ and best practices are just another fad.”</p> 	<p>“Who’s paying for it? If it isn’t paid for, we’re not doing it.”</p> <p>“I’m retiring/transferring from this job soon, I don’t have to get involved.”</p> <p>Developers don’t have the time because there is so much rework.</p> 

AGILE Software Development Methodology

- ✓ Activities are known as 'timeboxes'.
- ✓ Each iteration passes through a full **software development cycle**, including:
 - planning,
 - [requirements analysis](#),
 - design,
 - [unit tests](#), Quality Assurance testing,
 - coding until the unit tests pass and a working product is finally demonstrated to stakeholders.
- ✓ "Documentation is no different than software design and coding for assuring repeatability and re-generation.
- ✓ **Strong team discipline is required to code for agility.**
- ✓ At the end of each iteration, stakeholders re-evaluate project priorities with a view to optimizing their [return on investment](#).
- ✓ **Agile emphasizes face to face communication with all stakeholders!**



Agile – Navigating Class IV Rapids (AKA Risk Reduction)



- ❑ Agile development methods minimize risk by developing software in multiple 'iterations' of short time frames
- ❑ Each iteration passes through a full software development cycle
- ❑ In our Agile projects, SCRUM Boards, Burndown charts and other project and working artifacts were defined and identified as “CMMI artifacts”.
- ❑ Face to face communication & EA reviews ensure peer review.
- ❑ At the end of each iteration, stakeholders re-evaluate project priorities and risks.



Agilizing CMMI – SCRUM and CMMI

✓ **Incorporating CMMI Processes**

Tailoring processes to incorporate Agile iterations

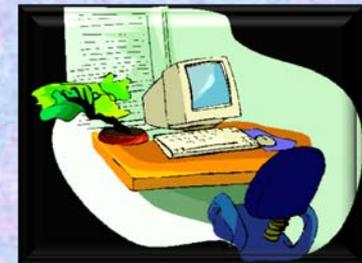
Mapping CMMI SPs to Agile iterations and artifacts

Monitoring and controlling projects
 requirements and changes
 testing
 defects

✓ **Using Agile at our shop**



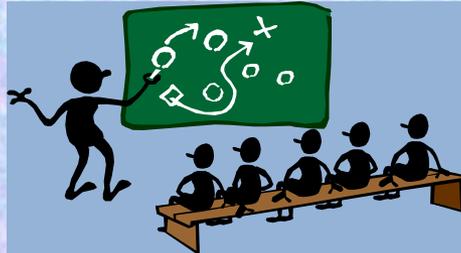
Software Tools 	Agile & CMMI-DEV Processes (Process Asset Library)
Visual Source Safe Configuration Management Source Control Visual Studio Development Environment SQL Management Studio Development environment Enterprise Architect Requirements management Requirements traceability Axosoft OnTime Defect Management	Defined processes Scrums Scrum Boards Sprints Burn Down – (MS Excel) White Boards Peer Reviews Team programming Performance metrics



Where to Start?



- Look at what you have in place
 - What are you doing well - right now
- Establish your SEPG
- Tailor the CMMI process descriptions to map to current processes
 - “By-in” by Software Engineering and Management
 - PAL
- Develop processes for things you are not doing now
- Discuss with Software Engineering Team
- **Train the Team !**



- Follow up on how processes are being implemented and
- **Modify if necessary to get a “best fit” !**





SEI Partner

Process Asset Library – Processes and Standards



Process Asset Library (PAL) - Microsoft Internet Explorer provided by DOECO

File Favorites Tools Help



Applications/Process%20Asset%20Library%20PAL/Forms/AllItems.aspx

Applications Team Web Site

Welcome Rob

Applications Team Web Site

This List

CIIRN Expansion eIJP ePegasus FY Initiatives FCDS HR Maintenance Middle Tier NCSO NSO Mission Migration P3 SMRE PAMS2 TQP WSU CMMI ML 3

Applications Team Web Site > Process Asset Library (PAL)

Process Asset Library (PAL)

Library of project plans, process descriptions, forms, and templates.

New Upload Actions Settings

View: All

Type	Name	Modified	Modified By
Folder	Agile References	2/9/2009 12:02 PM	Young, Mic
Folder	Developer Standards	2/2/2010 2:43 PM	Young, Mic
Folder	External Documents	8/11/2008 9:26 AM	Young, Mic
Folder	Forms and Templates	8/11/2008 9:14 AM	Young, Mic
Folder	In Work	8/26/2008 8:25 AM	Young, Mic
Folder	Lifecycle Diagrams	7/8/2009 1:52 PM	Young, Mic
Folder	Plans	8/11/2008 9:13 AM	Young, Mic
Folder	Process Descriptions	8/11/2008 9:14 AM	Young, Mic
Folder	Training Materials	12/29/2008 11:52 AM	Young, Mic
Word Document	NNSA SC Organizational Process Definition and Tailoring Guidelines	9/10/2009 4:38 PM	Roberson,
Word Document	NNSA SC SDLC Procedure2	11/4/2008 11:11 AM	Young, Mic
Word Document	PAL Description	12/17/2008 3:14 PM	Roberson,
Word Document	Work Environment Standards Description	11/18/2008 4:16 PM	Young, Mic

	PD_2.4_Sprint Review Meeting		6/29/2009 11:53 AM	Young, Michael
	PD_3.0_Requirements Development		6/29/2009 10:42 AM	Young, Michael
	PD_3.3_Manage Requirements		6/29/2009 10:53 AM	Young, Michael
	PD_4.0_Peer Review		7/1/2009 4:26 PM	Young, Michael
	PD_5.0_Project Support		8/10/2009 3:28 PM	Young, Michael
	PD_5.1_CM Capability		8/10/2009 1:31 PM	Young, Michael
	PD_5.3_Track Change Requests		8/10/2009 1:31 PM	Young, Michael
	PD_5.4_Manage Baselines		8/10/2009 1:32 PM	Young, Michael
	PD_5.5_Configuration Audits		8/10/2009 1:32 PM	Young, Michael
	PD_Deployment		5/11/2009 2:23 PM	Young, Michael
	PD_PM_Lifecycle		5/26/2009 3:13 PM	Young, Michael
	PD_Release Management		10/26/2009 8:54 AM	Young, Michael

I Enterprise Information Technology Services Applications Development Process

General Information			
Process Area: RQDM (Requirements Development and Management) (REQM/RD)		Specific Goal: (All SGs)	
Summary: This process outlines how the department elicits, develops, documents, manages, and validates requirements for a software development project. The department utilizes Customer Requirement Meetings, and the Enterprise Architect tool in an interactive manner integrated with the project sprint cycle to accomplish these objectives.			
Process Area POC: Joseph Robinson		Approval: _____	
		Date: _____	
Revision History:			
Revision Level	Date	Description	Change Summary
PD_RDQM_2.1.2_Requirements Development	5/26/09	Initial document	N/A
PD_3.0 Requirements Development	6/29/09	Revised names and numbers to fit new model.	
Process Area Overview			
Scope: <Change as needed.>			
This process area applies to all software development projects under the responsibility of the Information Technology Department (ITD) Applications Development group.			



Standards – Developed by TWG within the SEPG available to all developers on SharePoint Site

- ✓ Work Environment Standards
- ✓ Web Design and Usability Guidelines
- ✓ Coding Standards



Development
Initial Planning Cycle
Project Backlog
EA
Management –
Tracked in EA through testing

Development
Initial Planning Cycle
Project Backlog
EA
Management –
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1 Executive Summary

This Quality Assurance Assessment Report documents the details of an onsite Process Area quality audit. The audit was performed by Software Quality from April 9, 2009, through April 15, 2009.

An analysis of the ITD software and project processes, documentation, and work products was performed. This included review of documentation, overarching procedures, Sprint retrospectives and burn down charts, notes, meeting minutes, and interviews. The analysis was based on a tailored mini-appraisal or "gap analysis," as described in the CMMI SCAMPI B model.

The overall rating of this assessment indicated that the processes chosen to be audited were partially to largely implemented. However, several process areas were rated and not yet as they are ML 3 and are still in the implementation stage. Assessment results will be reported to the associated project leaders, team leaders, and selected management.

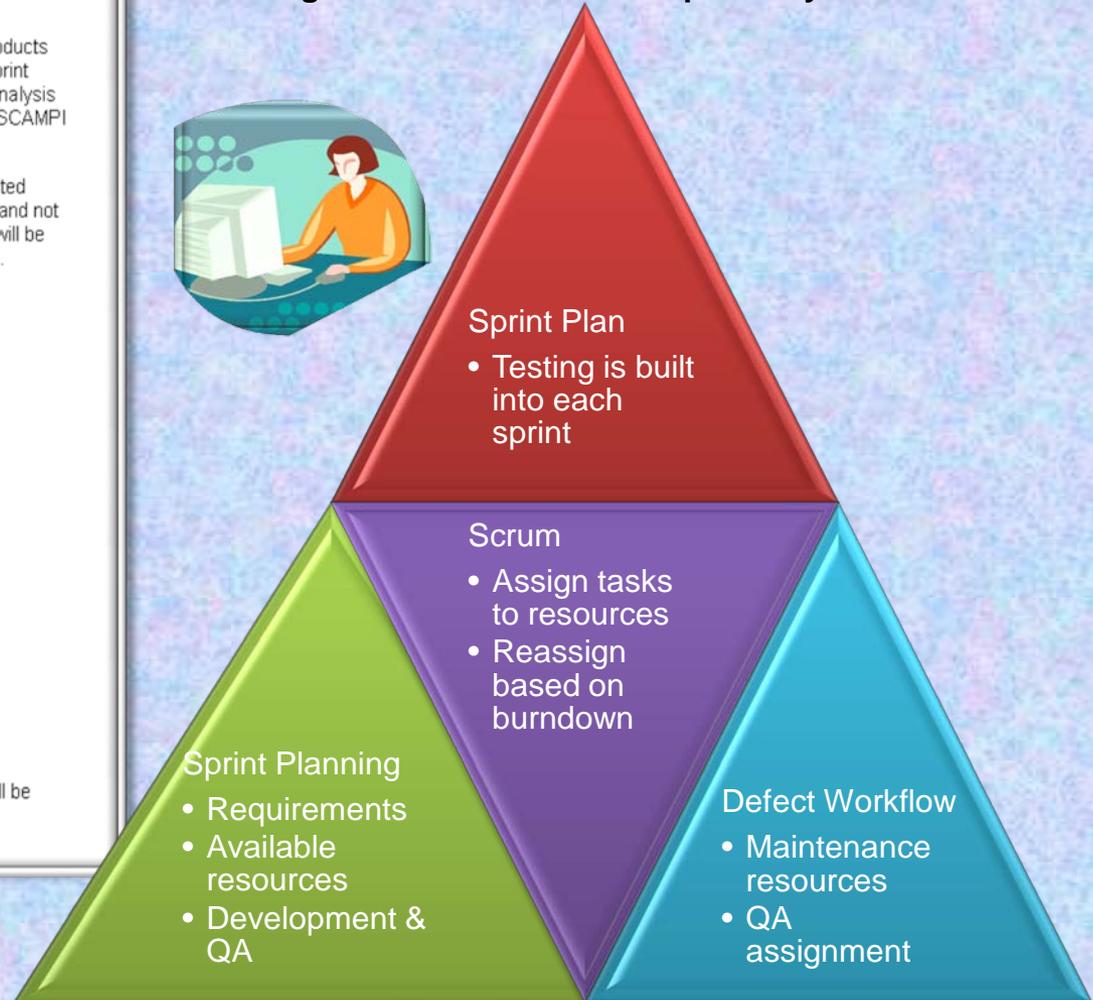
Assessment Summary – July 2009

Process Area	Ranking
Measurement and Analysis	9 FI
Process and Product Quality Assurance	7.5 LI
Configuration Management	NY
Decision Analysis and Resolution	9 FI
Project Planning	9 FI
Project Monitoring and Control	8.4 LI
Integrated Project Management	8.3 LI
Risk Management	8.2 LI
Requirements Management	6.4 LI
Requirements Development	NY
Technical Solutions	NY
Product Integration	8.6 LI
Verification and Validation	8.8 LI
	OVER ALL 8.3 LI

Assessor: Dana Roberson
 Updated for:
 Factual Accuracy: Rebecca Dickens

Corrective actions and process improvements, based on the assessment results, will be documented and monitored. A follow-up on the corrective actions derived from the assessment results will take place within three months of acceptance of this report.

Agile Resources to Develop Quality Products

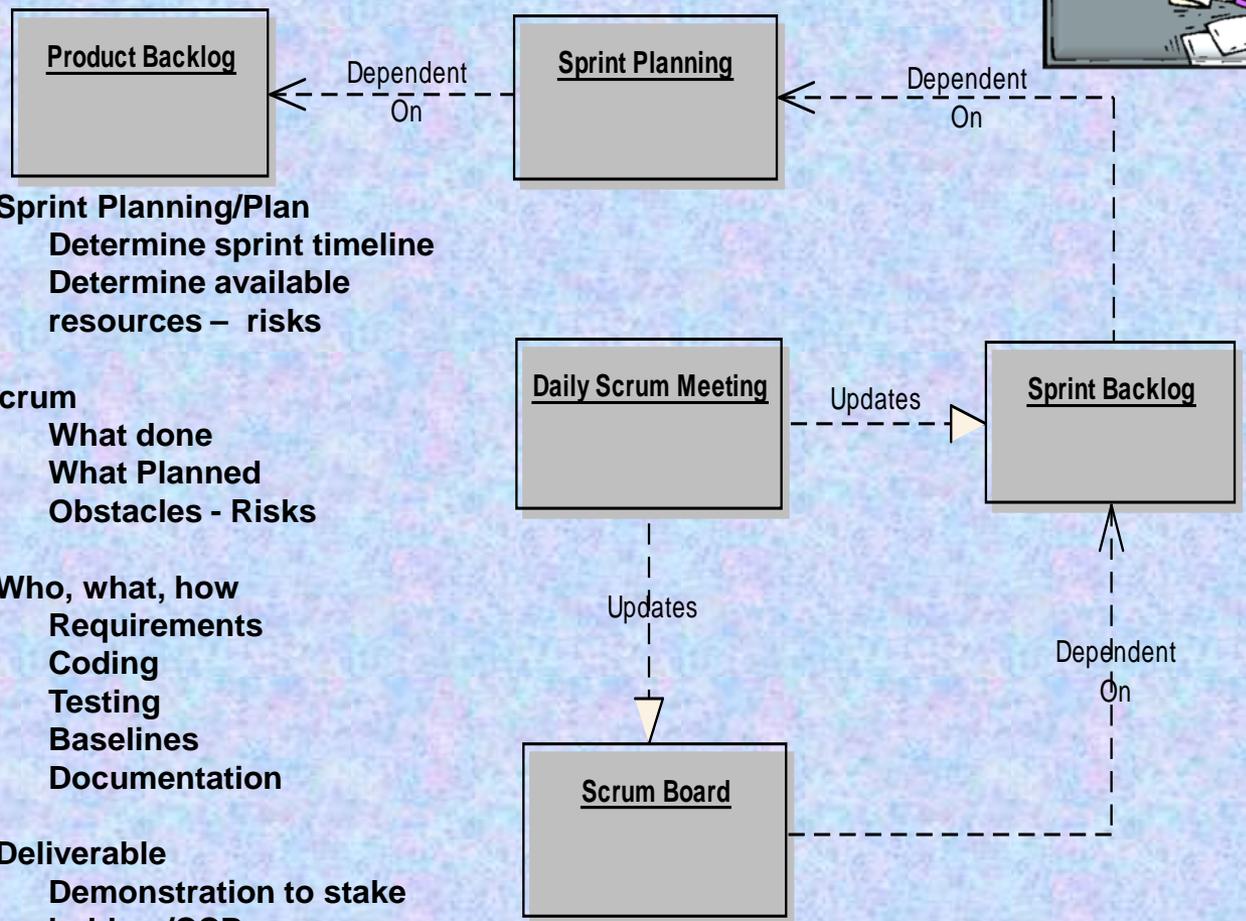


Sprint Planning/Scrum

class Scrum Process - Logical View



Scrum Lifecycle (Iterative)



- ✓ **Sprint Planning/Plan**
 Determine sprint timeline
 Determine available resources – risks

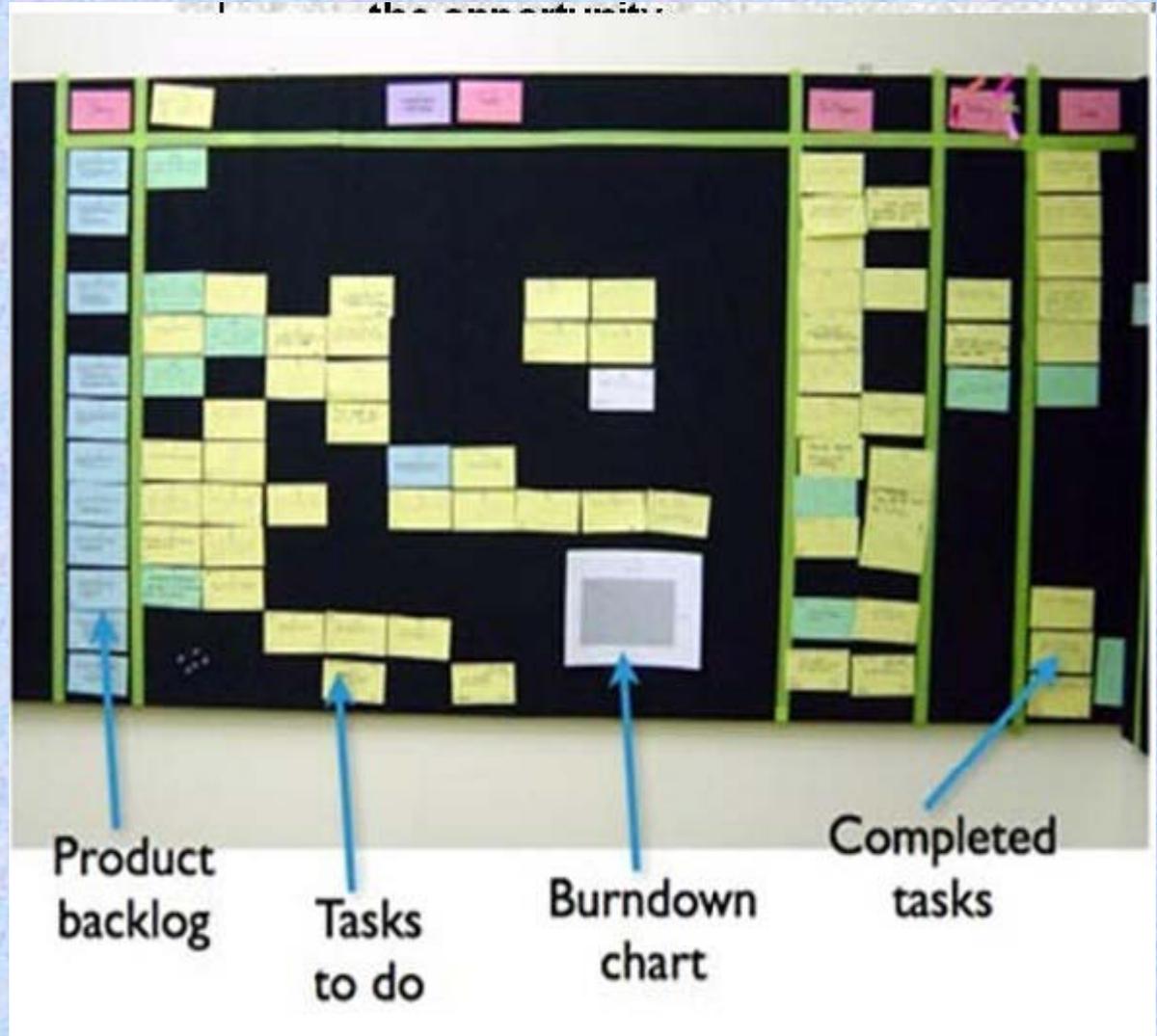
- ✓ **Scrum**
 What done
 What Planned
 Obstacles - Risks

- ✓ **Who, what, how**
 Requirements
 Coding
 Testing
 Baselines
 Documentation

- ✓ **Deliverable**
 Demonstration to stake holders/CCB
 Deployment to User
 Acceptance Testing

- **Sprint Planning/Plan**
 - Determine sprint timeline
 - Determine available resources -
- **Who, what how**
 - Requirements
 - Coding
 - Testing
 - Baselines
 - Documentation
- **Deliverable**
 - Demonstration to stake holders/CCB
 - Deployment to User Acceptance Testing





- Project Plan
 - Overall Design
- Sprint Planning
- Daily Scrum
 - Developer review (Peer)

Enterprise Architect



**Requirements
Definition (Enterprise
Architect)**

**Requirements Review
(EA export to web
interface)**

- Peer Review
- Developer review
- CCB review

**Requirements tied to
activities and tests for
traceability**

Gathering and Managing Requirements - BA & QA



The screenshot displays a software development lifecycle tool interface. On the left, a process diagram shows a flow starting with an external activity 'Consult with HR Liaison' leading to '1.01 Requestor Fills out SF-52', which then leads to '1.02 Requestor Fills out Recruitment CheckList'. Other activities include '1.03 Superv and Ap' and 'Manager Appro'. A central window titled 'Activity : 1.01 Requestor Fills out SF-52' is open, showing tabs for 'General', 'Behavior', 'Require', 'Constraints', 'Links', 'Scenario', 'Files', and 'Tagged Values'. The 'Require' tab is active, displaying a requirement editor with fields for Status (Proposed), Difficulty (Medium), Priority (Medium), and Stability (Moderate). Below the editor is a list of defined requirements:

Requirement	Type
1.01-1 Automate the entry of the SF-52 (see data model).	Functional
1.01-2 Provide a web-based form for entry of the SF-52 accessible internet.	Functional
1.01-3 Provide the capability to track and capture metrics for the SF-52 approval process.	Functional
1.01-4 Allow the capability to capture authenticated electronic or digital signatures for the approval of the SF-52.	Functional
1.01-5 Provide alerts when an SF-52 submitted for approval has not been approved within a specified time frame.	Bus Rule
1.01-6 Allow the capability to re-assign the SF-52 for approval when the assigned Supervisor or Manager is unavail...	Bus Rule
1.01-7 Implement the proper security and access control for the electronic SF-52 form.	Bus Rule

At the bottom, a 'Testing' window is open, showing a table of test cases:

Test	Status
1.01-2 Provid...	Not Run
1.01-3 Provid...	
1.01-4 Allow t...	

The 'Test' window also displays details for a specific test case:

Test: 1.01-2 Provide a web-based form for entry of the SF-52 accessible by internet.
 Status: Not Run | Type: Standard
 Run By: Dana Roberson | Checked By: | Last Run: 2/10/2010

The description field contains the text: 'Build web based SF-52 form accessubke by NNSA SC, HQ and site offices.'



SEI Partner Requirements Management and Tracking – SE and Customer

- Assessing/Certifying/Selecting
- eHR Requirements
 - «Functional» 1.01-1 Automate the entry of the SF-52 (see data mo
 - «Functional» 1.01-2 Provide a web-based form for entry of the SF-5
 - «Functional» 1.01-3 Provide the capability to track and capture me
 - «Functional» 1.01-4 Allow the capability to capture authenticated
 - «Bus Rule» 1.01-5 Provide alerts when an SF-52 submitted for app
 - «Bus Rule» 1.01-6 Allow the capability to re-assign the SF-52 for ap
 - «Bus Rule» 1.01-7 Implement the proper security and access contr
 - «Functional» 1.02-1 Automate the entry of the Recruitment List (se
 - «Functional» 1.02-2 Provide a web-based form for entry of the Rec
 - «Bus Rule» 1.02-3 Implement the proper security and access contr
 - «Functional» 1.03-1 Provide the capability for the Approving Offici
 - «Bus Rule» 1.03-2 The SF-52 must be approved by a Approving O
 - «Functional» 1.04-1 The system should allow tthe requestor to esta
 - «Bus Rule» 1.04-2 Allow the Manager to override the Supervisor a
 - «Bus Rule» 1.04-3 The SF-52 must follow an established line of ap
 - «Functional» 1.05-1 Enforce business rule that the Pay Pool Admir
 - «Functional» 1.06 -1 Allow the SF-52 to be submitted to HR when
 - «Functional» 2.1.1 Provide Notification or Queing Process for the r
 - «Functional» 2.1.2 Allow Full Text Searching for Identifying exis
 - «Functional» 2.1.3 Allow use of existing PD template if available.
 - «Functional» 2.1.4 Allow the entry of Position Description addend
 - «Functional» 2.1.5 Allow Series to be selected from a defined sele
 - «Functional» 2.1.6 Allow Title to be selected from a defined selec
 - «Functional» 2.1.7 Allow Grade to be selected for a defined select

modified: 11/16/2005 9:30:21 PM

- Project:
- Advanced:

Flow To	Flow From	Custom Properties	Test Cases	Other Links									
<table border="1"> <thead> <tr> <th>Element</th> <th>Name</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td></td> <td>1.02 Requestor Fills out Recruitment CheckList</td> <td>Activity</td> </tr> <tr> <td></td> <td>Manager Request</td> <td>Decision</td> </tr> </tbody> </table>					Element	Name	Details		1.02 Requestor Fills out Recruitment CheckList	Activity		Manager Request	Decision
Element	Name	Details											
	1.02 Requestor Fills out Recruitment CheckList	Activity											
	Manager Request	Decision											



- **Development**
 - Development of Functional unit on DEV environment
 - Get latest of all code, unit test
 - Check in Code to Visual Source Safe
 - At prescribed interval, build full project, deploy to internal testing environment
 - Automated Baseline Capture developed by team

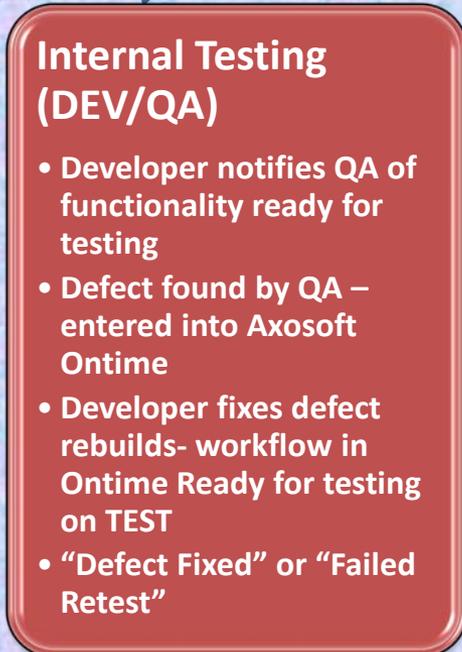
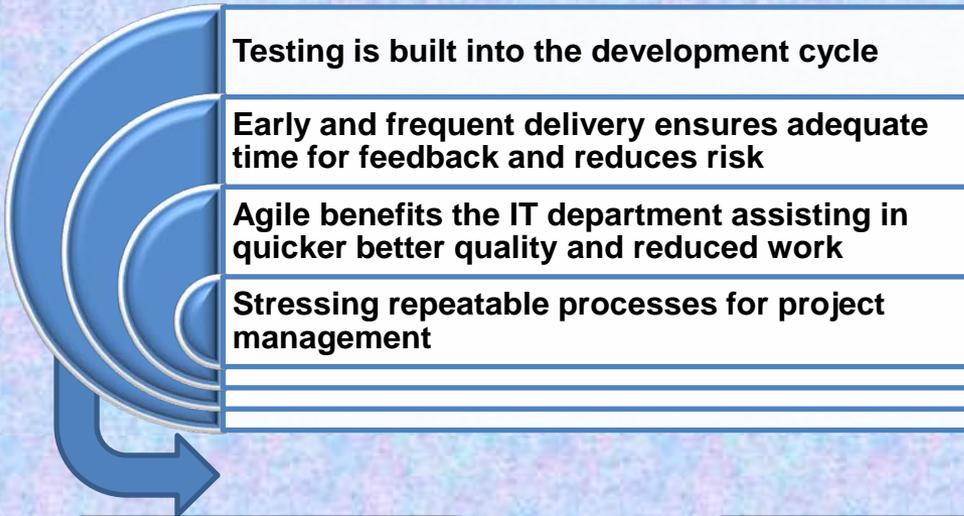


- Well commented code
- Document changes to other developers code
- Context sensitive help in development environment and customer environment
- Notes and resolutions in Axosoft OnTime

```

GO
/***** Object: StoredProcedure [dbo].[rsARHearing]    Script
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
-- =====
-- Author: Shane Seery
-- Create date: June 2, 2009
-- Modified date: August 11, 2009
-- Description: Retrieve data for the AR Hearing Report
-- added hearing request and deny dates dsr
-- =====
ALTER PROCEDURE [dbo].[rsARHearing]
    @StartDate datetime,
    @EndDate datetime
AS
BEGIN
    SET NOCOUNT ON;

```





Projects Search
Search for: [Input]

- All Projects
 - CATS SE
 - eHR2
 - eJIP
 - ePegasus
 - FCDS
 - General Defect Queue
 - ITD
 - Maintenance
 - Middle Tier
 - OnTime Setup
 - OTAC
 - P3
 - PAMS
 - PAMS Appraisal Module
 - PAMS Phase 1
 - Task Tracker
 - TQP
 - VS Report Server
 - WSU

Defect Id	Defect Name	Workflow Step	Priority	Assi...	Add to Release...	Date Fixed
2538	Rating Level on a Perf Log	Defect Verified	Low	Dan...	False	
1837	Unable to do concurrent processing of two years (appraisal FY09 and P...	Defect Ready for Testing on DEV		Aaron...	False	
1310	4.7.1.1 Pay Pool manager certifies Pay Pool	Defect Ready for Testing on DEV		Aaron...	False	
1311	4.7.1.2 Alter Pay Pool Manager certifies payroll no changes can be m...	Defect Ready for Testing on DEV		Aaron...	False	
1296	4.14.1.1 If employee is on Military Leave or DWCP the ratings boxes in...	Defect Ready for Testing on DEV		Aaron...	False	
1297	4.14.1.2 If employee is on Military Leave or DWCP they shall receive ...	Defect Ready for Testing on DEV		Aaron...	False	
1294	4.10.1.3 System must allow printout of Year end review	Defect Fixed - Ready for Build on STAGE		Aaron...	False	
1340	Allow edit of assessment	Defect Fixed - Ready for Build o...		Dan...	False	
2529	Supv to Subordinate Supv Filter	Defect Fixed - Ready for Build o...	Medi...	Dan...	False	
2537	Establish a process for closing out/establishing an advisory rating and a...	Defect Fixed - Ready for Build on STAGE	High	Aaron...	False	
2671	Changing End of Year Screen	Defect Fixed - Ready for Build o...	High	Dan...	False	
1303	4.4.1.1 Reviewing Official reviews recommended ratings submitted in P...	Defect Ready for Testing on STAGE		Aaron...	False	
1307	4.6.1.2 Pay Pool Manager/Panel and can look at assessments	Defect Ready for Testing on STAGE		Aaron...	False	
1308	4.6.1.3 Pay Pool Manager / Panel can change ratings	Defect Ready for Testing on STAGE		Aaron...	False	
1556	Fix Individual PayPool certification of excepted service	Defect Failed Retest		Aaron...	False	
1859	Recovery Act on WORD version of Plan	Defect Failed Retest		Aaron...	False	
1856	Email Notifications					
1857	Mid-Year/End of Year welc					
2209	User can not access PAMS					
2210	All data entered in Performe					
2213	Assistance inputing an addi					
2216	System allows me to enter S					
2223	PAMS access problem - kin					
2389	When application time's out					
1861	Supv SPD #1					
1862	Supv SPD #2					
1863	Editing a Perf Plan after a s					
1872	Signature transfer to WORD					
1873	Supv SPD in WORD Versio					
1875	Refusing to Sign a Plan					
1876	Auto-filling WORD version o					
1877	Contributing Factors in Perf					
1878	Assessment Boxes					
1879	Signing an Assessment					
1880	Empl view of Personal SPD					
1882	Language in Empl/Supv Si					
1883	Missing Part of a SPD					
1896	Single Sign On PWD reset					
1915	Make the sequence status					
1916	Change appraisal status to					
1917	Make sure we don't display					
2528	Time Out Alert					
2531	Transposing SPD's					

Defects By Status

Filters | Options

Status	Count
Open	15
Assigned	24
In Progress	2
On Hold	3
Waiting	2
Closed	102

Edit Defect #1340

Average Vote: 0.00 (0 votes)

Defect Information

Defect Name:

Workflow Step: Defect Fixed - Ready for Build on STAGE

Project: PAMS Appraisal Module

Date Found: 6/12/2009

Due Date: 9/13/2010

Build Number Of Fix:

Severity:

Build Number:

Date Fixed: 9/13/2010

Priority:

Status:

Save & Close

Save

Save & New

Cancel

Details

Notification List
Related Items
Customer Portal
Work Log
Emails
Alerts
History

Description
Replication Procedures
Resolution
Notes
Attachments

New Box—If a change was made to an employee's rating during the pay pool panel process a manager should be allowed to go in and edit their assessment of the employee to reflect/justify the new **final** rating.

Edited by Dana Roberson on Friday, September 03, 2010 at 12:01 PM
verified comments box

<< Stamp

Additional Defect Info For Selected Item

Work Log

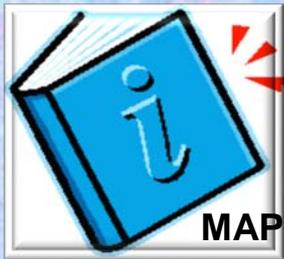


Acceptance Tests



Name	Object	Current Status	Description	Input	Acceptance Criteria
PAMS 1.1.1.2 Supervisor can initiate Performance Plan for employee	1.1.1 Create Employee Performance Plan - SPOs	Not Run	If employee is absent, supervisor can create performance plan for them.	Supervisor logs into PAMS Supervisor selects Employee Supervisor selects Plan Supervisor selects SPO from Library for edit or Supervisor creates SPO Supervisor saves SPO	employee plan created
PAMS 1.1.1.3 An employee can have no more than two Open and Active Performance Plans	1.1.1 Create Employee Performance Plan - SPOs	Not Run	Employee has Active and Detail plan -	employee logs into PAMS employee selects Plan Employee selects SPO from Library for edit or Employee creates SPO Employee saves SPO Employee tries to do this three times	No more than two Performance Plan(S) created
PAMS 1.1.1.5 An Employee can only have two Supervisors (one of Record and one of Detail)	1.1.1 Create Employee Performance Plan - SPOs	Not Run	An Employee may have a supervisor of record and if necessary a Detail Supervisor	Attempt to assign two supervisors to one employee	Can assign Detail Supervisor, if Active Performance Plan is in-activated
PAMS 1.1.1.6 Only Performance Plans with reporting period of 90 days or more can be evaluated and assessed for Final Rating.	1.1.1 Create Employee Performance Plan - SPOs	Not Run	Performance Plans must have a reporting period of 90 days or more before they	Attempt to rate Performance Plan of employee with less than 90 days on job	System will give warning that employee has not worked at least 90 days

Monitoring and Controlling by Establishing Measurement Objectives



The NNSA SC ITD Apps Team maintains the Measurement and Analysis Plan (MAP).

MAP defines the process performance measurement foundation established by applying the Goal Question Metrics (GQM) to the Applications Mission Statement

The Apps Team leverages higher maturity level process performance management tools to:



Build process performance databases using statistical process control (SPC).

Track variance analyses (control charts with standard deviations)

Analyze defects, accuracy of resource estimation, development and maintenance productivity and customer satisfaction

Low-cost of high-quality software applications and services, delivered rapidly, which supports high levels of customer satisfaction.
(Mission Statement)

Mission Statement

Low-cost and high-quality software applications services delivered rapidly, supporting high levels of customer satisfaction



Performance Objectives/ Goals

Low-Cost



High Quality

Rapid Delivery

Customer Satisfaction

Measures

% Budget Performance

Actual vs. Planned Budget Performance

Pre-Deployment Defect Performance

Post-Deployment Defect Performance



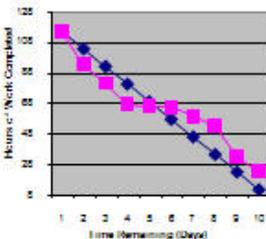
Sprint Burndown Variance

Maintenance Productivity

Maintenance Responsiveness

Area	Req ID	Requirement Description	Item Status	Hours (Est)	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	3-Aug	4-Aug	5-Aug	6-Aug	7-Aug
					115	93	81	67	66	65	59	53	33	23
	20	Put Axosoft button in PAMS	Complete	1	1	1	1	0	0	0	0	0	0	0
	30	Rework Appraisal status report	Pending	3	3	3	3	3	3	3	3	3	3	3
	40	Create report notification for signature status	Pending	8	8	8	8	8	8	8	8	8	8	8
	50	Make report framework work	Pending	8	8	8	8	8	8	8	8	8	8	8
	60	1222 - Add 'Recovery Act' checkbox to SPO	Complete	4	4	0	0	0	0	0	0	0	0	0
	70	1345 - Make red and green buttons readable by the color blind	Pending	3	3	3	3	3	3	3	3	3	3	3
	80	1221 - Remove 'Check if Supervisor SPO is applicable' checkbox	Pending	1	1	1	1	1	1	1	1	1	1	1
	90	1296 - If employee on Military Leave/OWCP the ratings boxes greyed out.	Complete	2	2	2	2	2	2	2	2	2	0	0
	100	Check and set up interface items	Complete	12	12	12	6	6	6	6	6	6	0	0
	110	Rework	Complete	33	33	27	27	24	23	23	23	17	8	0
	120	Misc	Complete	10	10	10	6	6	6	6	0	0	0	0
	130	Requirements	Complete	12	12	5	1	1	1	1	1	1	0	0
	140	Testing	Complete	12	12	4	4	4	4	4	4	4	2	0
	150	Write Test Scripts	Complete	6	6	1	1	1	1	0	0	0	0	0

PAMS2 Burndown (Sprint 12)

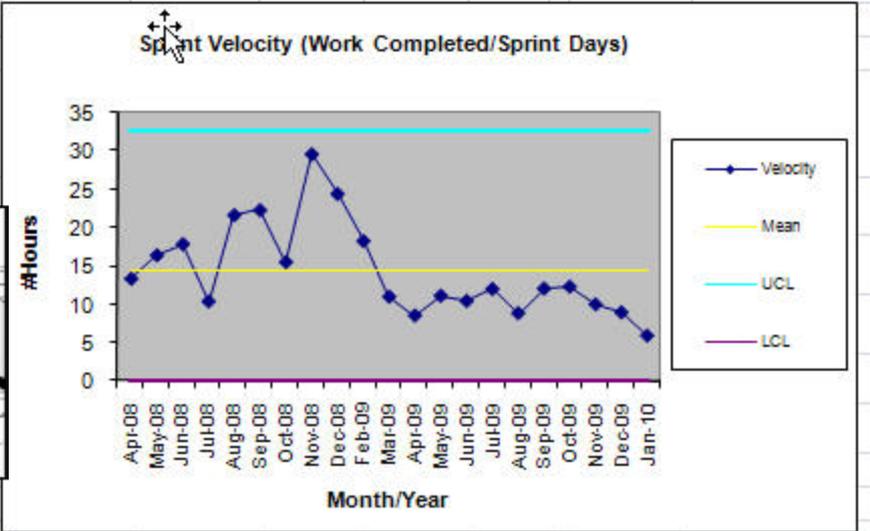
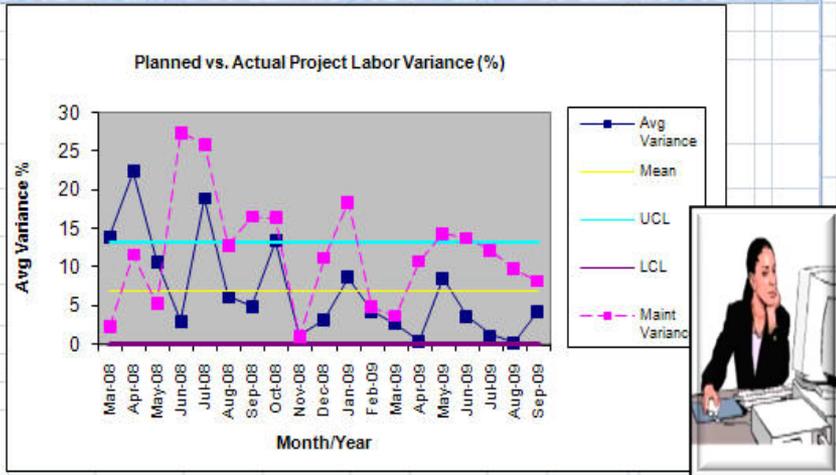


Legend:
—●— Burndown Baseline
—■— Burndown Actual

Burndown Calc	115	103.5	92	80.5	69	57.5	46	34.5	23	11.5
Hrs/Day Baseline	11.5									
Labor Hours Available	112									
Hours Not Used	-3									
% Work Completed										71.304348
Sprint Velocity										9.2

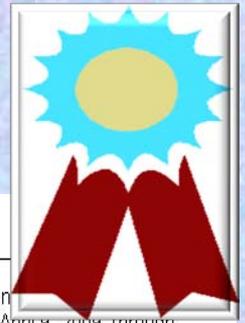


Tracking Progress Across Sprints



Month/Year	Planned Project Hours	Actual Hours	Variance %	Mean (Avg)	UCL	LCL	Maint % Variance	Monthly Status (RYG)
Mar-08	2880.00	2477.60	13.97	6.98	13.32	0	2.42	G
Apr-08	2250.00	1745.00	22.44	6.98	13.32	0	11.72	Y
May-08	2784.00	2484.00	10.78	6.98	13.32	0	5.41	G
Jun-08	2596.00	2517.50	3.02	6.98	13.32	0	27.49	G
Jul-08	3204.00	2598.00	18.91	6.98	13.32	0	26.00	G
Aug-08	2047.00	1920.00	6.20	6.98	13.32	0	12.92	G
Sep-08	1824.70	1916.00	5.00	6.98	13.32	0	16.62	G
Oct-08	2693.00	2332.00	13.41	6.98	13.32	0	16.49	G
Nov-08	2370.00	2346.00	1.01	6.98	13.32	0	1.04	G
Dec-08	2239.00	2166.00	3.26	6.98	13.32	0	11.24	G
Jan-09	2583.00	2557.00	8.75	6.98	13.32	0	18.50	G
Feb-09	2753.00	2872.00	4.32	6.98	13.32	0	4.90	G
Mar-09	2321.00	2258.00	2.71	6.98	13.32	0	3.75	G
Apr-09	2857.00	2842.00	0.53	6.98	13.32	0	10.80	G
May-09	2708.00	2555.80	5.66	6.98	13.32	0	14.44	G

Month/Year	Sprint Velocity	Mean (Avg)	UCL	LCL	Monthly Status (RYG)
Apr-08	13.32	14.33	32.66	0.00	G
May-08	16.42	14.33	32.66	0.00	G
Jun-08	17.89	14.33	32.66	0.00	G
Jul-08	10.34	14.33	32.66	0.00	G
Aug-08	21.69	14.33	32.66	0.00	G
Sep-08	22.36	14.33	32.66	0.00	G
Oct-08	15.53	14.33	32.66	0.00	G
Nov-08	29.71	14.33	32.66	0.00	G
Dec-08	24.50	14.33	32.66	0.00	G
Jan-09	18.30	14.33	32.66	0.00	G
Feb-09	10.97	14.33	32.66	0.00	G
Mar-09	10.97	14.33	32.66	0.00	G



ePegasus SAF
8/31/2009

FOCUS AREA: Software Configuration Management	
Objective:	Ensure that effective controls are in place for the coordination and implementation of changes to software and its components.
Requirements:	Shall include: A set of activities for defect and enhancement identification, prioritization and selection; document and code version tracking and control; and software installation tracking.
Approach:	Determine the existence of a Software Configuration Management Plan (SCMP), either as a standalone document or embedded in another document, and ensure that it specifies, as applicable, the following: <ul style="list-style-type: none"> • Change control • Version control • Configuration item identification and classification • Issues management
Criteria:	Rank
1. All software components and products to be managed have been identified.	9
2. Authority for change is defined.	9
3. Baselines for all identified work products are established and the integrity is maintained.	9
4. Changes to work products are tracked and controlled.	9
5. Process for reporting, tracking, and resolving issues is defined.	9
6. Changes to the source code can be linked to an associated issue.	9
7. Issues associated with the software product are tracked and maintained.	9
8. Releases of the software product are tracked and maintained and a listing of the different versions is available such that a previous release of the product can be made available.	9
9. Processes are followed.	9
10. Periodic configuration assessments and reviews are conducted and documented.	9
SCORE: 9 (FI)	
Tailoring:	<i>Discuss here any tailoring of the assessment was allowed in this focus area for the application under review.</i>
Records Reviewed:	List all the records that were reviewed. VSS history Project Log CMP Sprint - Backlog
Interviews Conducted:	List all interviews that were conducted (do not include the names of individuals, but instead titles). Management Developers

1 Executive Summary

This Quality Assurance Assessment Report documents the details of an Area quality audit. The audit was performed by Software Quality from April 9, 2009 through April 15, 2009.

An analysis of the ITD software and project processes, documentation, and work products was performed. This included review of documentation, overarching procedures, Sprint retrospectives and burn down charts, notes, meeting minutes, and interviews. The analysis was based on a tailored mini-appraisal or "gap analysis," as described in the CMMI SCAMP B model.

The overall rating of this assessment indicated that the processes chosen to be audited were ~~partially to largely implemented~~. However, several process areas were rated and not yet as they are ML 3 and are still in the implementation stage. Assessment results will be reported to the associated project leaders, team leaders, and selected management.

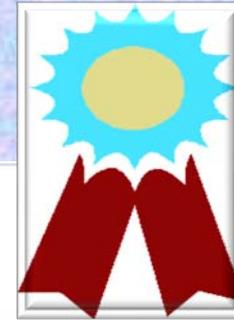
Process Area	Ranking
Measurement and Analysis	9 FI
Process and Product Quality Assurance	7.5 LI
Configuration Management	NY
Decision Analysis and Resolution	9 FI
Project Planning	9 FI
Project Monitoring and Control	8.4 LI
Integrated Project Management	8.3 LI
Risk Management	8.2 LI
Requirements Management	6.4 LI
Requirements Development	NY
Technical Solutions	NY
Product Integration	8.6 LI
Verification and Validation	8.8 LI
OVER ALL 8.3 LI	

Assessor: Dana Roberson
Updated for:
Factual Accuracy: Rebecca Dickens



Corrective actions and process improvements, based on the assessment results, will be documented and monitored. A follow-up on the corrective actions derived from the assessment results will take place within three months of acceptance of this report.

Tracking Quality Corrective Actions



 Process Area	# artifacts reviewed	Findings	# FI	# LI	# PI	# NY	# CAP	# CA completed	Date Completed	Re-Evaluation Date
Organizational Training	13	2	1				1 Need to show where relevant stakeholders have been involved training in OT 2 Need to show upper management and get responses		4/21/2009 OT – Training : held on 11/12/08 for the full team. Emails show training announcement and follow-up with Frank. Surveys, however, have been lost due to change in evaluation database. (This applies to OPD and OPF as well, as they were all handled together.)	Jun-09
Organizational Process Definition	8	1	1				1 Need to show upper management and get responses			Jun-09
Organizational Process Focus	8	1	1				1 Need to show upper management and get responses			Jun-09
Measurement and Analysis	5	1	1				1 Need to show upper management and get responses			Jun-09
Process and Product Quality Assurance	9	2	1				1 Need to show upper management and get responses 2 Need to have objective evaluation of all in house evaluations			Jun-09
Configuration Management										

Lessons Learned in Managing Risks Using CMMI-DEV and Agile



Management of complexity requires
process discipline **WHILE**

Management of change requires rapid
adaptability.



CMMI provides process discipline.

SCRUM (Agile) enhances adaptability
and commitment.

Lessons Learned in Managing Risks Using CMMI-DEV and Agile



Understand that all process improvement opportunities, as with all investments, have costs and risks. Introducing Agile, as with any new technology, needs the advocacy of all project stakeholders.

Participation of key staff members in planning practice implementation is needed to understand the continuity and costs and identify the key risks, such as customer culture.



The CMMI Risk Management Process Area practices are easily tailored and implemented via a suitable template for Agile based projects.

The Agile method emphasizes on-going requirements & design verification, daily SCRUMS with customer participation and team “esprit de corp”. The Agile emphasis on these activities provides engineering practices that reduce risks in software engineering tasks.

Remember



CMMI-DEV is a process model, **NOT** a process description.

CMMI-DEV only defines “**WHAT**” to do, not “**HOW**” to do it.



Plan the process implementation so that you are taking advantage of the CMMI-DEV practices **AND**

Use the Agile Methodology for rapid turn around for low cost quality product.





SEIPartner

The End



Transdyne Corporation
<http://transdyne.com>
CMMI Implementations in
Small & Medium Organizations



You have just seen key benefits of using CMMI-DEV and Agile to reduce risks in software engineering from the “30,000 feet” level.



Questions or Comments ?

Examples of Mapped CMMI Specific Practices to Agile Life Cycle Steps

1. Agile Life Cycle Start Project Pre-Work – Prior to initial iteration

Artifacts

Share Point Node
Project Repository

Enterprise Architect
Package
Requirements and Design
tool

Agile Artifact
Project Backlog including
hours and estimates

PP 2.2
PP 2.5
PP 3.1
PP 3.2
PP 3.3
REQM 1.2
MA SG 1

Project Status Report

CMMI SPs

PP 1.1;
PP 2.1;
PP 2.3;
PP 2.4

REQM 1.1
REQM 1.4
PP 1.2
RSKM 2.1

PP 1.2
PP 1.3
PP 1.4
PP 2.4
PP 2.5
PP 2.6

PP 1.2
PP 2.1
PP 2.2
PP 2.4
PP 2.7

PP 2.6

1.0 Develop Use Case Model including Use Case Point calculation to support effort estimation

1.1 Complete and present Project Overview to ITRB

1.2 Establish Project's PAL

1.5 Define Project timeline, scope, goals, and objectives, stakeholders (IPT) and major deliverables

1.7 Develop initial WBS, estimates and iteration and release plans

1.8 Plan, facilitate and document initial stakeholder meeting

1.3 Establish Project's requirements and design Structure in EA

1.4 Dev high-level understanding of software business context-

1.9 Obtain approval to proceed to next iteration

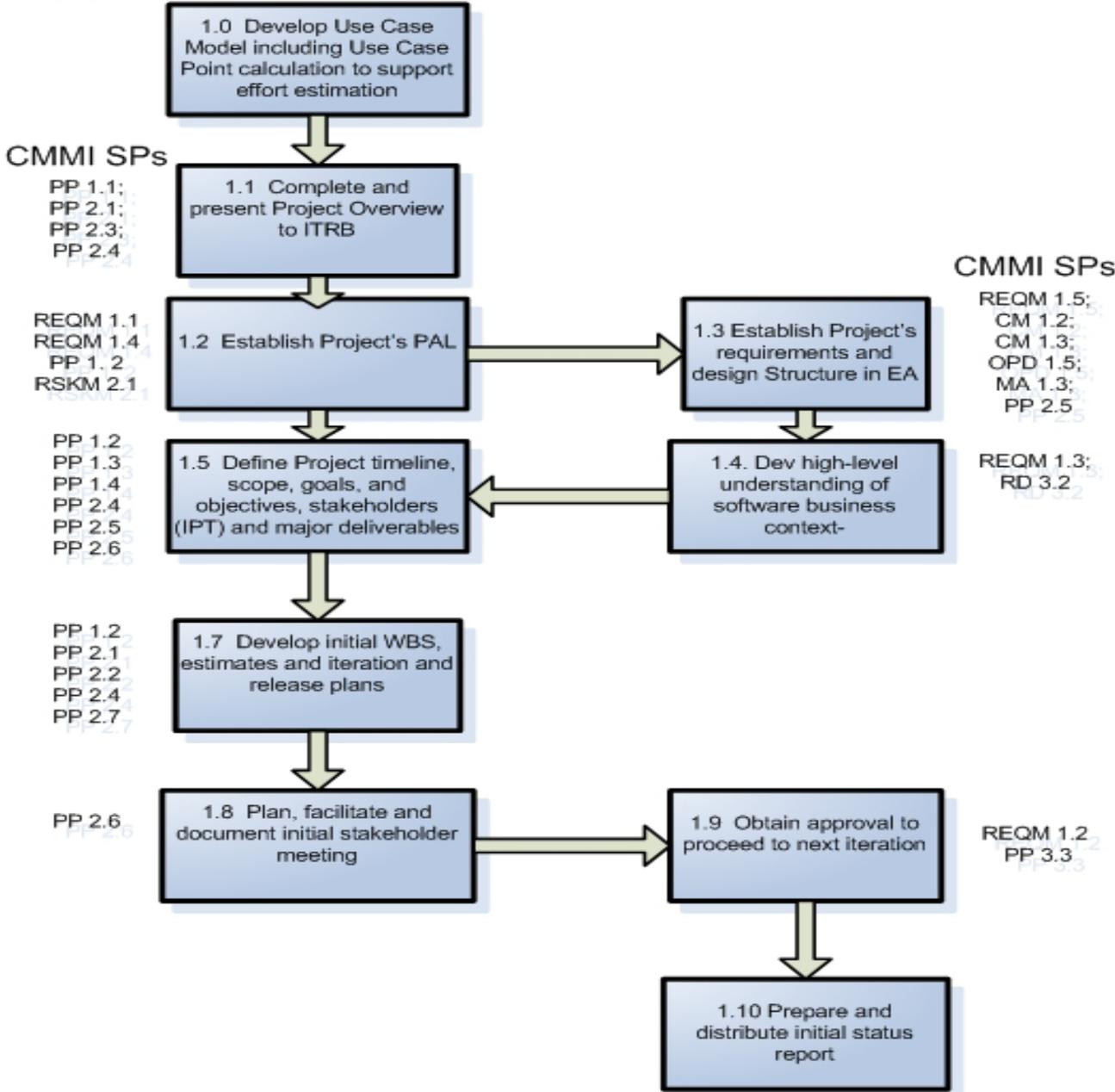
1.10 Prepare and distribute initial status report

CMMI SPs

REQM 1.5;
CM 1.2;
CM 1.3;
OPD 1.5;
MA 1.3;
PP 2.5

REQM 1.3;
RD 3.2

REQM 1.2
PP 3.3



1. Agile Life Cycle 2.0 Initial Iteration

Artifacts

Enterprise Architect
Package
Requirements and Design
tool
SRS Content

Agile Artifact
Project Backlog

Agile Artifact
Project Backlog

Project Status Report

CMMI SPs

REQM 1.3
VER 2.1
VER 2.2
VER 2.3

PMC SG 2
PP 2.4
PP 2.6
PP 2.7

REQM 1.2
REQM 1.3
PP 1.1
PP 1.2
PP 2.2

PP 2.6

PMC 1.6
PMC 1.7
GP 2.10

CMMI SPs

REQM 1.1
REQM 1.2
R
RD 2.1
RD 1.1
RD 1.2

PMC 2.1
PMC 2.2

REQM 1.3;
RD 3.2

2.1 Further define software business context and begin high level requirements development

2.2 Develop Initial application prototype

2.3 Organize, perform and document artifact and application peer reviews

2.4 Coordinate and facilitate software demo with stakeholders

2.5 Review and document demo findings including any new features/requirements

1.4. Dev high-level understanding of software business context-

2.6 Obtain approval to proceed to the next iteration

1.8 Plan, facilitate and document initial stakeholder meeting

1.9 Develop and document backlog for next iteration

1.10 Prepare and distribute Status Report

