



ALM With VSTS at Large Agile Projects



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Avanade Overview

Avanade is recognized as a global leader in Microsoft Consulting, Technology and Integration industry and is supported by its highly skilled people and resources.



Our People:

+9.500 professionals in 22 countries dedicated to delivering value to our clients in the Microsoft practice.

Our Mission:

To create value for our customers by rapidly delivering mission-critical solutions that use Microsoft technologies.

Our Vision:

To be the premier global technology integrator for Microsoft solutions in the enterprise.

Company Information

Official Registered Name:	Avanade
FY2006 Gross Revenue:	\$483million
Number of Offices (worldwide):	44 in 22 countries
Number of Professionals:	9.500 (Global) ~350 (Nordic)
Copenhagen Address:	Arne Jacobsens Allé 15 Ørestad City, Postboks 1732 DK-2300 København S Denmark
Phone Number:	+45 7221 1070
Website:	www.avanade.dk



Avanade Solutions Portfolio

PLAN

IT Strategy

- ▶ Enterprise Architecture Planning
- ▶ Application Portfolio Planning

BUILD

Business Intelligence

- ▶ Enterprise Performance Management
- ▶ BI Applications
- ▶ Information Architecture

Microsoft Dynamics

- ▶ Customer Relationship Management
- ▶ Enterprise Resource Planning

Application Development

- ▶ Rich Internet Applications
- ▶ Service-Oriented Architecture
- ▶ Application Renewal
- ▶ Content and Collaboration
- ▶ Application Lifecycle Management

Workplace Infrastructure

- ▶ Collaboration Infrastructure
- ▶ Enterprise Communications
- ▶ Desktop Transformation
- ▶ Identity and Access Management
- ▶ Enterprise Search

Data Center Infrastructure

- ▶ Data Center Transformation
- ▶ Service Management

RUN

Managed Services

- ▶ Application Management
- ▶ Managed Infrastructure

Industry Solutions

- ▶ Avanade Offerings
- ▶ Accenture Solutions on Microsoft
- ▶ Microsoft Industry Products and Solutions



About Me

Professional Background

- 7 Years in Accenture as Developer, Tester, Team Lead and Technical Architect on Microsoft & JAVA
- Been with Avanade from we started in 2005
- Main roles in Avanade as Team Lead & Technical Architect
- Now Nordic Solution Manager for Application Development and Application Management

Relevant ALM Experience

- Participated in many projects in different roles at customers
- Been in management team on two large (+100 people) projects
- Responsible for certifying one large project to CMMI L3
- Have designed several TFS installations
- Worked with several off-shore teams
- MCPD EA certified

Your Typical IT Project



How the customer explained it



How the project leader understood it



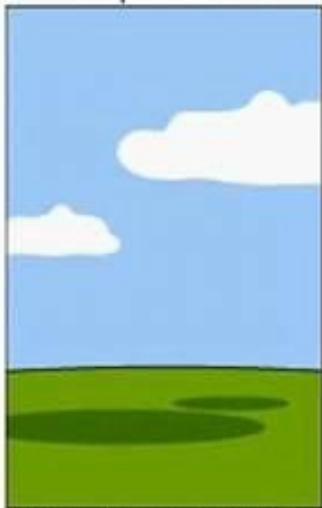
How the engineer designed it



How the programmer wrote it



How the sales executive described it



How the project was documented



What operations installed



How the helpdesk supported it



What the customer really needed

• **avanade**[®]

Avanade ALM Assessment



Avanade invites You to a discussion around Application Lifecycle Management

- Do you feel that your custom developed applications have high run costs?
- Is application management and maintenance costing you a fortune?
- Do you feel that the implementation projects are risky and often delivered late, over budget or do not deliver the required functionality? Are you under pressure from the business?
- Do you feel that your development team is not as efficient as it could be?
- Are your development & test processes and environments slow and expensive?
- Do you have quality issues?
- Are your project metrics late or unreliable? Is it difficult to ascertain project status and momentum?

Industrializing the Application Development Lifecycle can help! Give us 4 hours to explain how!

Invitation for Avanade Workshop

The first step is for our experts to present in more detail the typical approach (processes, tools, methods) that have made other organisations highly successful. We will also present a case study of an organization which has successfully lowered their cost of managing development by 80% at the same time as the bug rate has been decreased to 30% of the industry average as benchmarked by Gartner.

The second step is to jointly discuss the key areas of interest for your organization:

- Development Processes
- Application Lifecycle Tools
- Dependant Infrastructure
- Operation Support Models and Teams
- Operations Documentation
- Service Management Processes
- Service Monitoring and Reporting
- Capacity and Availability Management
- Backup, Restore and Disaster Recovery
- Future Technology Adoption

Avanade appreciates that every customer has different business priorities, needs and requirements that will drive the actual focus of the review and the particular deliverables. The workshop is completely non binding.

Please turn the page to learn more



Who is Avanade?

Avanade is a global IT consultancy dedicated to using the Microsoft platform to help enterprises achieve profitable growth. Through proven solutions that extend Microsoft technologies, Avanade helps enterprises increase revenue, reduce costs, and reinvest in innovation to gain competitive advantage.

We started as a joint venture between Accenture and Microsoft, and were formed to merge the strengths of both companies – Accenture's consulting and Microsoft's technology expertise – into a single company. We have over 7200 professionals in 22 countries and have been working with organizations such as GN Store Nord, IT- og Telestyrelsen, Telenor, Berendsen, Choice Hotels, Systembolaget, Sandvik, Norwegian Air, Sijja Line, Finnish Communications Regulatory Authority in the Nordic region.

Facts:

Over 60% of Software Development projects are abandoned, delivered late, over budget or do not meet business requirements.*
40% of effort in an average software project is rework.**
High performance organizations spend 43% less running and fixing their applications, allowing them to invest 18% in market differentiating capabilities.***

Facts references:

*Standish Group 2003 **Ivy F. Hooks and Kristin A. Farry, Customer-Centered Products, AMACOM, 2001 ***2006 Accenture IT Investing for High Performance

Next step – the Avanade Health Check

At the completion of the workshop and based on your interest we can perform an in depth Lifecycle Health Check from a processes, tools and operations perspective.

We will also carefully assess the integration between application development and operations as this represents one of the most significant factors associated with a healthy software development lifecycle.



Health Check deliverables

Upon completing the Health Check you will have an in depth report, analysis and recommendations that provide clear and concrete steps you can take in order to improve your software development lifecycle.

For example:

- Summary of collected data, findings, and information
- A combination of "gap", SWOT, maturity ratings or other relevant forms of analysis to help customers understand where they are today
- A prioritised list of recommendations (both technical and operational) in the form of a Lifecycle Improvement Roadmap whereby each recommendation is based on derived IT and business value in a phased approach
- List of tactical/quick wins that may result in immediate value

Get Healthy!

For more information or to schedule a 4-hour Health Check workshop, contact us today.

Case Study:

With 22,000 employees and a turnover of €12 billion in 2005, Achmea is the largest insurance company in the Netherlands. It wanted to increase the responsiveness of its IT department by improving the transparency of development projects.

Partnering with Avanade and Microsoft, Achmea successfully implemented Microsoft® Visual Studio® 2005 Team System, which provides administrators with access to detailed, accurate information across multiple systems.

Projects can now be tracked from beginning to end, making it easier to maximise efficiencies in the development process. And with Visual Studio 2005 Team System, the company's 200 developers have increased productivity.

"Since deploying the solution, Achmea has seen an enormous rise in productivity..."

"Avanade was the ideal partner for us, providing in depth technical expertise that stretches over and above a basic knowledge of Microsoft technology."
-Remco Jorna, Lead Architect, Achmea

For more information, see <http://www.microsoft.com/casestudies/casestudy.aspx?casestudyid=4000000562>.



Agenda

You have many options and we will focus on the ones for larg(er) projects

Off-shore and Agile development is mixed in

Why Large SW Projects are Hard to Deliver

ALM & VSTS & Agile – Short Introduction

Prepare for Your Project

During Project

Special Off-Shore Considerations

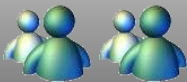
Other Ways to cut Costs for Large Projects

References

Why Large SW Projects are Hard to Deliver

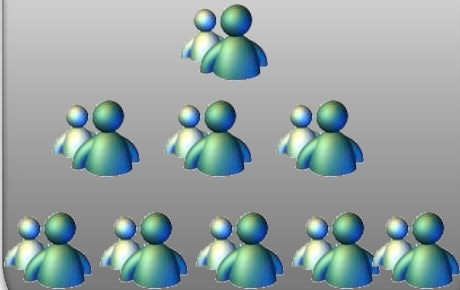
Some Characteristics for Business Application SW Projects

Small(er)
<4-5 People



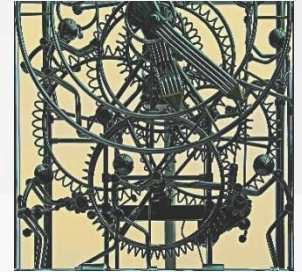
- Possible to survive without methodology, documentation and development processes
- Risk of failed/delayed project may not be financially critical
- All requirements and design can be understood by one person
- Projects can be “saved by heroes”, individuals working intensely to fix problems

Large(er)
5 -> + 100



- Failures and/or overruns are very expensive and application is critical to organization
- Methodology and processes required but time consuming
- No-one in project understands everything
- Many dependencies between stakeholders
- Correct planning & estimation up front is not easy
- World changes during project
- Will often be required to use off-shore developers to lower cost

Why Large SW Projects are Hard to Deliver



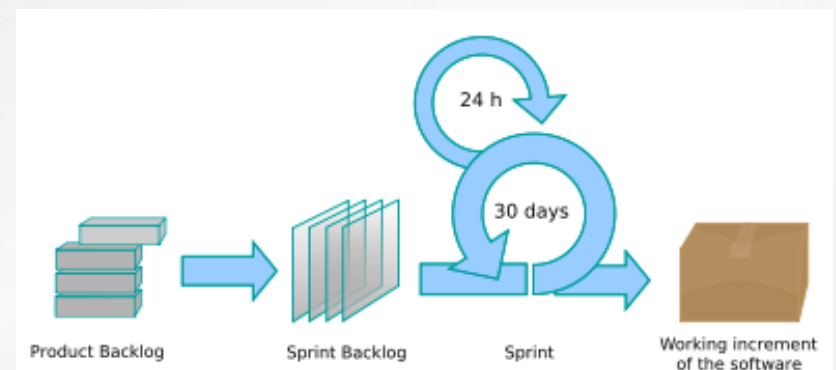
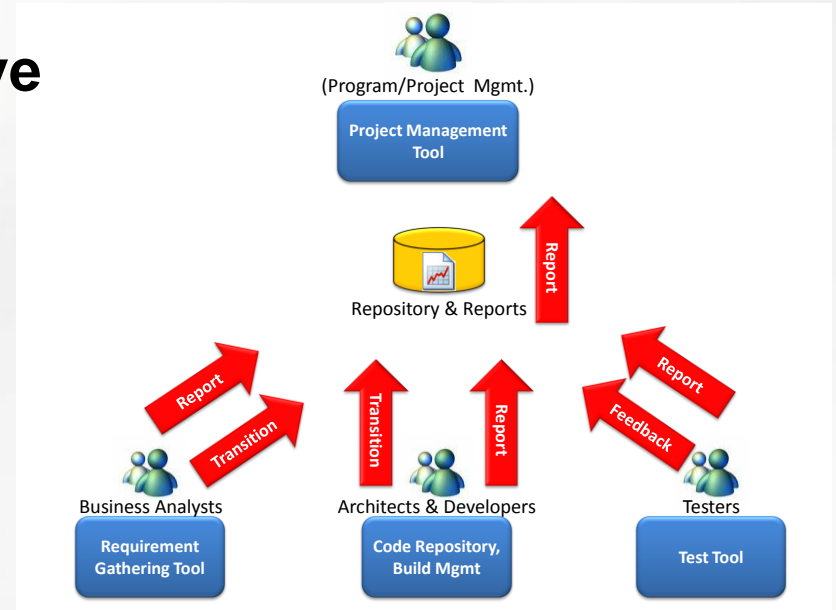
My Experience on Large Project “Facts of Life”

- Requirements will change regardless of your methodology
- No methodology & processes -> Guaranteed problems
- “You get what you track”: Quality, Requirements, Test, Budget
- Time-consuming processes gets abandoned at crunch time
- Often requirements exist for certain deadline, cost and scope
- Dependencies often causes delays that are discovered too late to remedy due to insufficient cross team progress tracking
- Transition points between teams are costly and create errors
- Most problems caused by management & quality of requirements and testing, not often by poor code quality
- Off-shore saves cost but adds a significant layer of complexity

Why Large SW Projects are Hard to Deliver

What Can Help

- Base decision making on **objective** and **updated** data
 - Minimize time to manage processes and create decision data using tools
 - Reduce transition problems between stakeholders
 - Track what you want to achieve
-
- Use a development methodology that can handle change
 - Work in iterations
 - Use your methodology correctly
 - Do your homework up front



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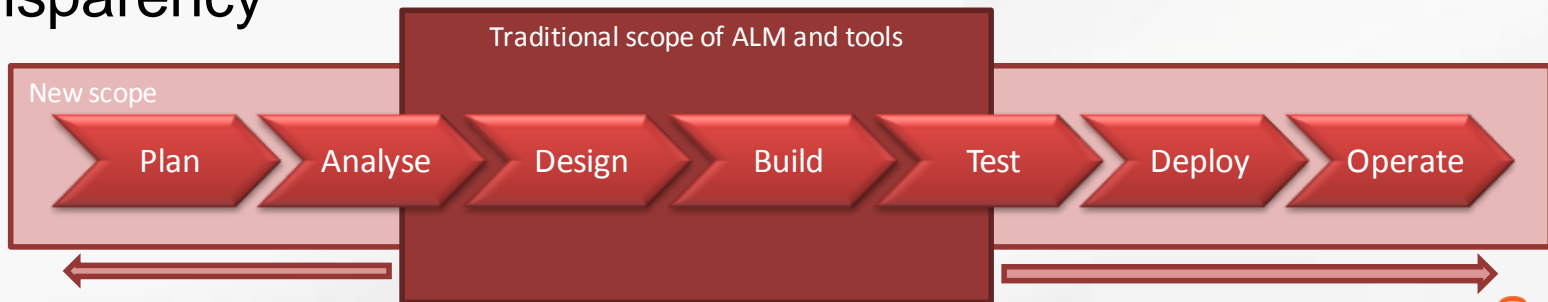
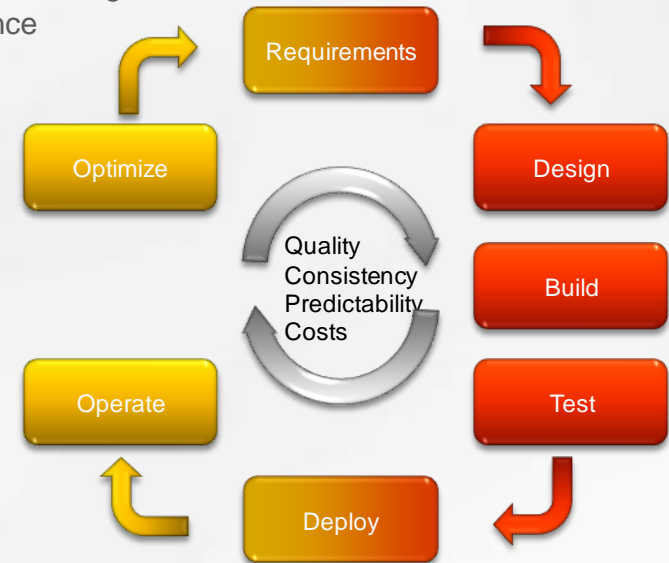
Application Lifecycle Management - Introduction

It is all about Processes

- Support development methodology whichever that is
- Automate as much process management as possible
- Provide process transparency
- Provide traceability across user groups **not only** for developers

Higher Quality, Cheaper Development, Lower Risk, full transparency

- Application Development
- Application Management
- Governance



VSTS Introduction

"All in One" Suite

Client Tools

- Visual Studio, Office & Web Clients

Server Tools (TFS)

- One Shared Repository for code and process artifacts
- Build In Data Warehouse
- Build Framework
- Process artifacts (bugs, requirements, test cases etc.) are called work-items

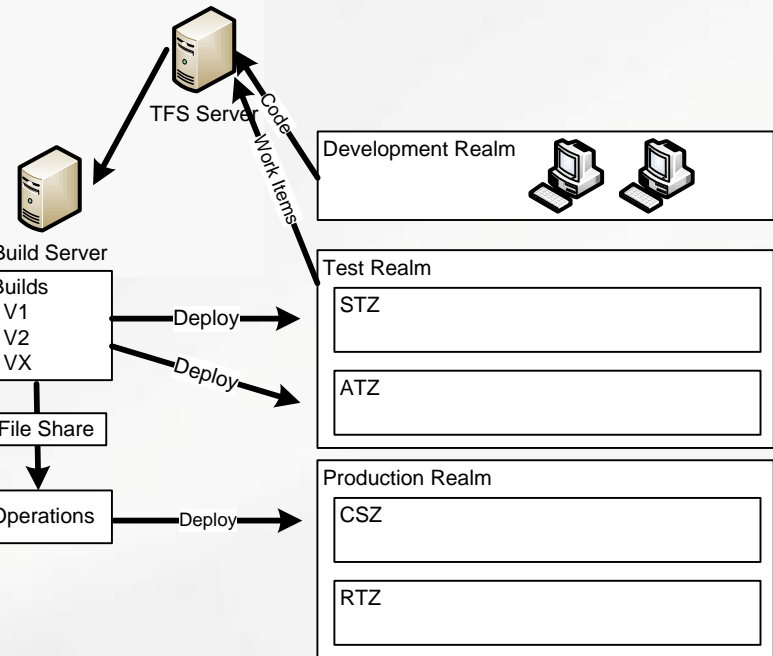
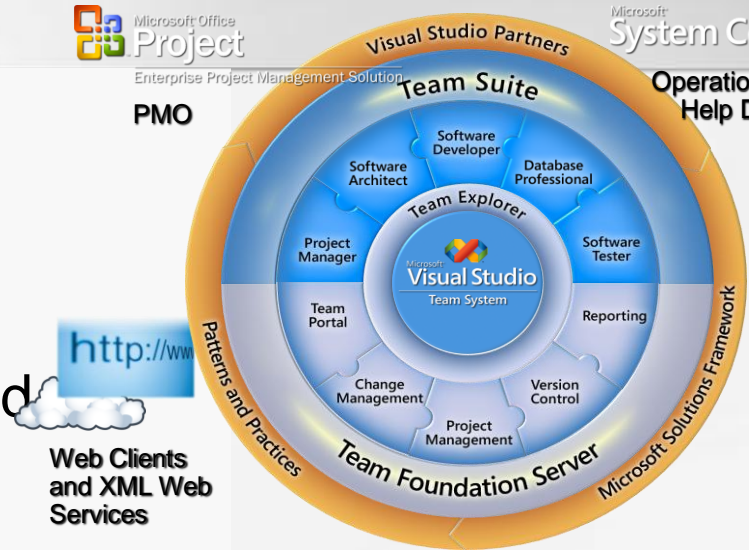


Enterprise Project Management Solution

PMO



Operations and Help Desk



New Bug 2 : Bug XXX

Title: Bug XXX

Classification

Area: DiskMirror

Iteration: DiskMirror

Status

Assigned to: Jakob Leander State: Active Triage:

Rank: Reason: New Priority: 2

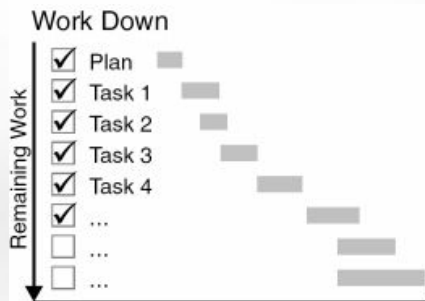
Description History Links File Attachments Details

Description: This is a Bug

Agile/SCRUM Introduction - Concepts

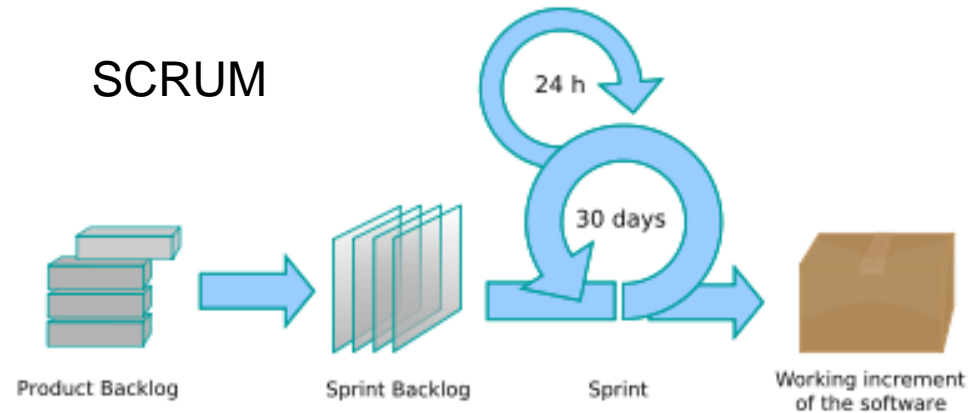


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Many still works
Waterfall approach
even if they know it
is not optimal
All work planned
detailed up front and
attempt to stick with
plan

SCRUM



- Only deliverables customer values count, tracked in “Product Backlog”. This is ranked high level requirements
- Small self-organizing teams work in iterations (Sprints) of 1 month managing their own work “day by day”
- Only one sprint at a time is planned covering subset of product backlog, and evaluated after completed.
- Completion means “potentially deployable”



Agenda

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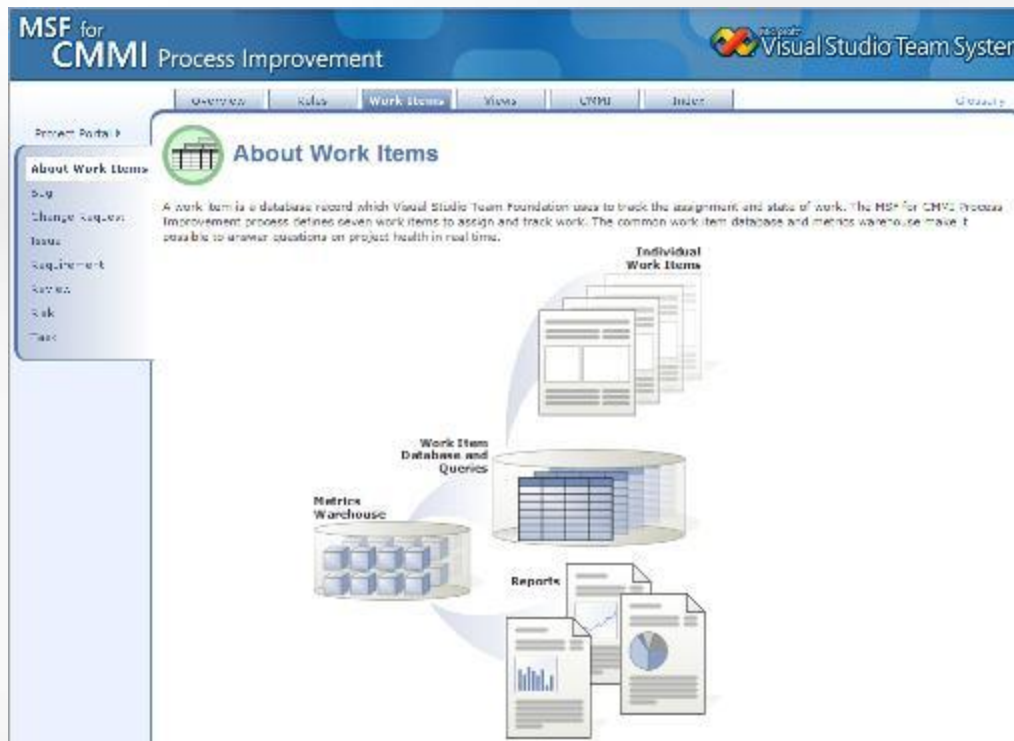
Prepare Project - Methodology

VSTS is delivered with two Project Templates and a Process Guide

- MSF for Agile
- MSF for CMMI

Each template determines which process artifacts are available, CMMI has more

For large projects always use the CMMI template or buy/customize another one



You can configure your own process guide and process template to your methodology

- Custom Work items
- Custom reports
- Custom Process Guide

Will be available to all new projects and ensures consistency

Avanade use our own template

Tip: Use TFS Power Tools for modification

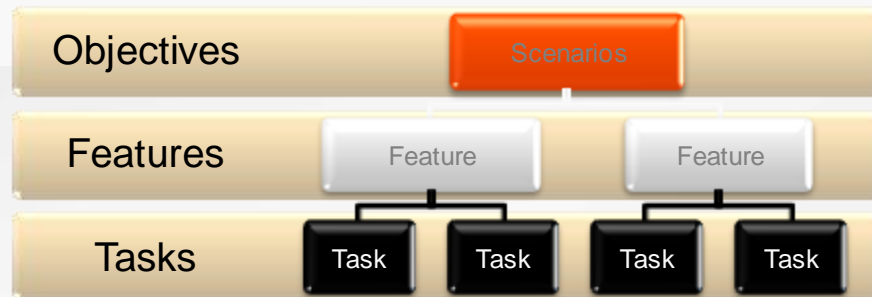


Prepare Project - Structure

Very Important – Work Item Hierarchy

One of the most important things, plain and simple, to achieve success with TFS for large projects is choosing a good work-item hierarchy

- Consider grouping “by Scenario” (use case) for software that is very process oriented (standard)
- Consider grouping “by Feature” for software where this is possible (custom work item)
- To track user testing end-to-end you may need some customization to have test-cases



TFS2008 does not support a “true hierarchy” (will come in 2010) so instead add custom reference fields that link up to layer “above”

If you do not do this properly it is hard to make useful reports

Excellent series of 10 articles here from Microsoft Dev Team on how they configured TFS for a 3.000+ person project

http://blogs.msdn.com/teams_wit_tools/archive/2008/03/27/how-microsoft-devdiv-uses-tfs-chapter-1-our-process.aspx

Prepare Project – Plan & Estimate

Book Recommendation: “Hollywood Secrets of Project Management Success”
Did you know that for most movies, which are not unlike SW development projects, even a 2% overrun is considered a disaster?



We are often also faced with having to provide an estimate early (and keep it) even though all requirements may not exist in detail

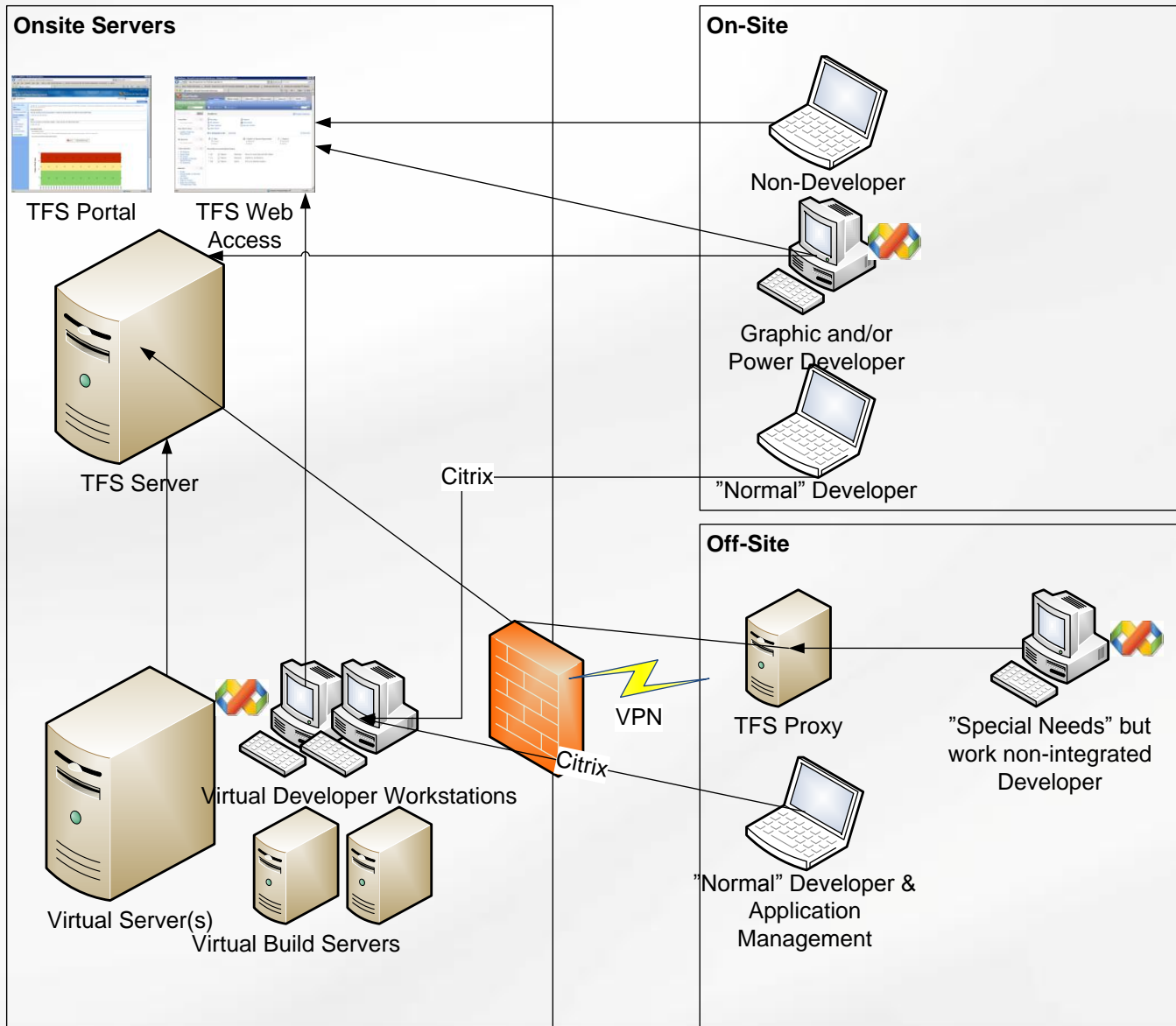
For Large Projects AvanaRe Recommends

- Define non-functional requirements as work-items and details inside work-items for features/scenarios
- Estimate as good as you can up-front with a detailed estimate based on the information available and assumptions. Find base-line scope & estimate
- Plan your project. Break it down into Scenarios & Features without specifying too much detail and apply estimates. This is tracking baseline
- Minimize cross scenario/feature dependencies to the middle of a feature or scenario. Better to split it in two so each can be closed
- Rank work with high priority to business done early
- True Agile is impossible with Fixed Scope, Fixed Budget, Fixed Date but illusion to think Waterfall will do better
- For large Agile projects plan a “Sprint 0” which does planning & high level design (Architecture, Infrastructure, Requirements) for entire project

Prepare Project – Understand User Groups

Stakeholder	Requirements
Program Management	See High Level Status on TFS SharePoint portal
Project Management	See Detailed Status on TFS SharePoint portal
Functional Design and Testing	Works via TFS Web Access or VS to create artefacts (work-items), design documents, test-cases etc. Also consumes a variety of reports
Architecture & Code Review	Works from Visual Studio and must be able to see code and work-items. Often this is an experienced on-site developer.
On-Site Developer	Primarily works from Visual Studio to access work-items & documents. Must be able to access legacy from dev environment
Off-site Developer	Have the same need as the on-site developer. If using TFS Proxy cannot work on Integration to legacy. Low network latency can be issue
Rich UI Developer (on-site or off-site)	Developers that needs to work with very advanced UI and graphics like video etc. Virtualized dev workstation will not work since there is no support for DirectX (hardware supported graphics)
Application Management	High level of access to test & prod environments Can often get by with slower network speed and some latency on dev environment.
Ops & Dev Support & the ones paying for environments	Operations must ongoing supply developers with developer environments that must ongoing be created, patched, and maintained. Want minimized work-effort to create new environment and to keep cost down

Prepare Project – TFS Infrastructure for Large Projects



- Virtualized environment that handles off-shore developers
- Quick provision of development machines
- Can handle adv. UI dev.
- Provide access to all user groups via portals or VS
- TFS Proxy

Prepare Project – TFS Structure & Branching

- ▶ Think about this up front can save a lot of pain: <http://msdn.microsoft.com/en-us/library/bb668955.aspx>
- ▶ For most large projects do like this

My Team Project

Development – Container to isolate active development

Feature A – Isolated branch for development

Source

Feature B – Isolated branch for development

Source

Main – Main integration and build branch. All changes come together here.

Source

Other Asset Folders

Releases – Container for current release and maintenance branches

Release 2 – Active maintenance branch

Source

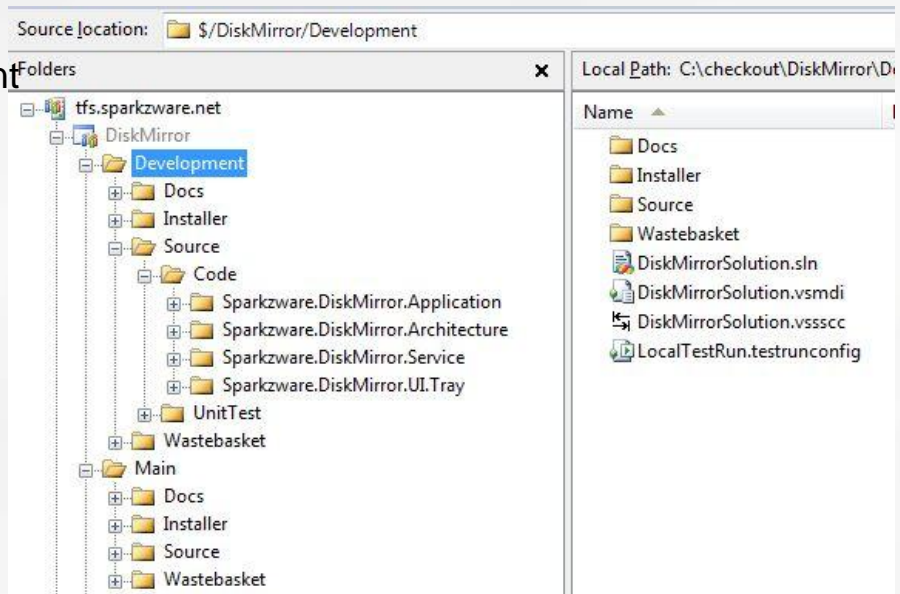
Other Asset Folders

Safe Keeping

Release 1 – Old release in safe keeping

Source

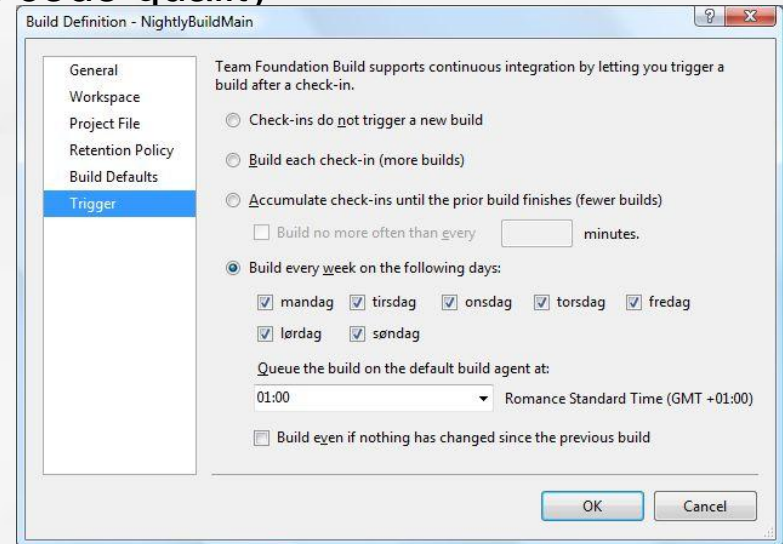
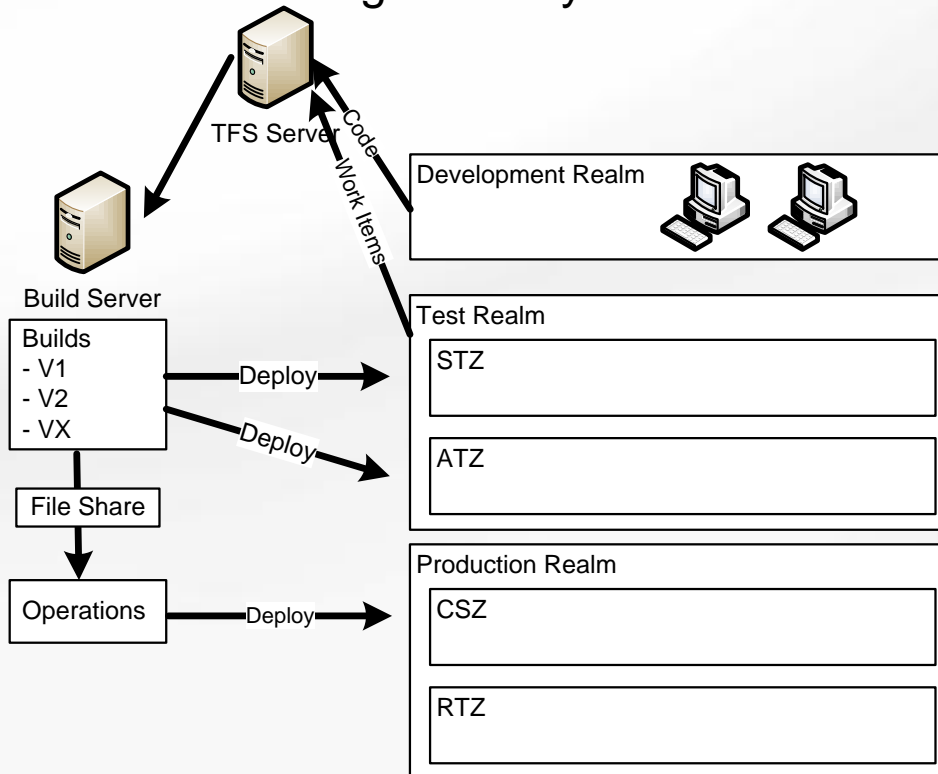
Other Asset Folders



Prepare Project – Build Servers

Daily Builds, the Heartbeat of any project and among first thing to configure

- Will build and unit-test your code on a “non developer” machine
- Will add tracking data to your warehouse on code quality



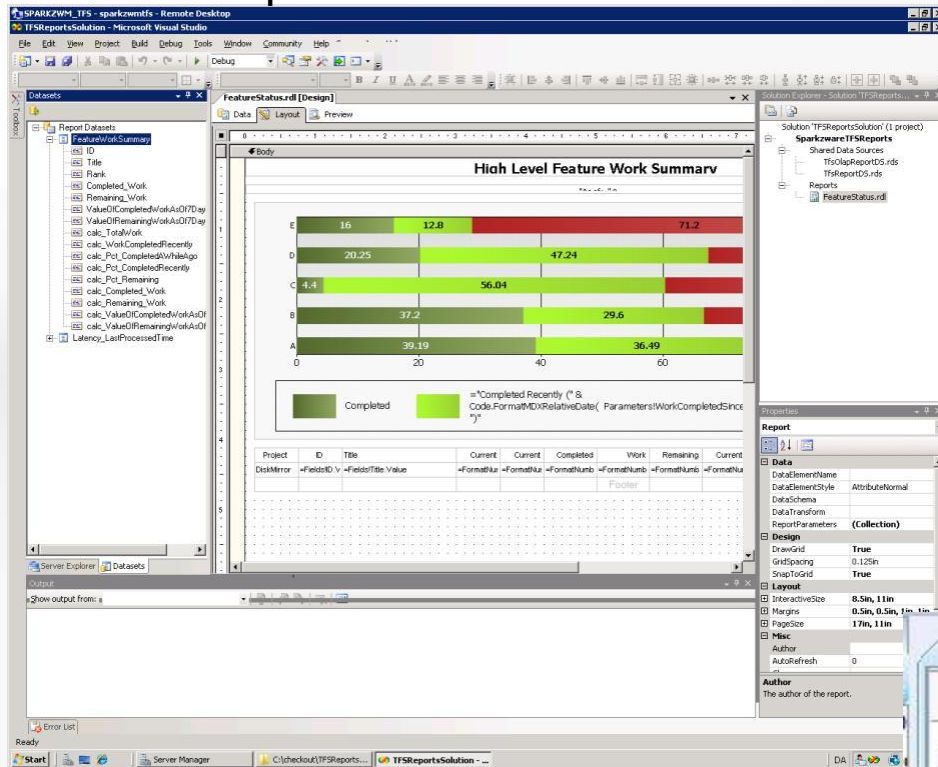
- Do Daily Build on Main Branch and possibly continuous integration on Dev Branch
- Run BVT (Build Verification Tests, typically all unit-test), Code Coverage and Code Analysis on automated build

Tip 1: When running unit-test configure it to run all test in unit-test directory and do not use “Test Lists”
Tip 2: Additional build profiles for MOSS and BizTalk etc. exist on CodePlex

Prepare Project – Custom Reports

Create Custom Reports to support tracking of your work-items

Custom Report



- TFS Warehouse is ok documented
- But writing complex Analysis Services queries is not easy
- You can create much simpler “Team Queries” instead that are often sufficient
- And all queries can be viewed in Excel

Team Query

And/Or	Field	Operator	Value
	Team Project	=	@Project
And	Work Item Type	=	Bug
And	State	=	Active

* Click here to add a clause

Prepare Project – Final Comments

Even a little ALM is much better than nothing at all

- Do not try to do everything first time on a large project
- Start with “Nightly Builds”, a standard template and standard reports

Other Tools

- If requirements definition and/or test is done in another tool, set up sync or just use “place holder” work-items for tracking purposes
- Strive to achieve all data into TFS so you can track cross team
- Excel is your friend for “Mass Changes” on work items
- Consider to feedback data from support systems and/or operational tickets end-to-end tracking

VSTS help a lot, but is not a magic “fix all problems”

- You must be committed to a methodology and use it
- Your developers must see value in improving processes
- If all is chaos you may get projects delivered but it is expensive and with high risk

Agenda

Why Large SW Projects are Hard to Deliver

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Special Off-Shore Considerations

References

During Project - Overview

What You Need to Do as Project Lead & Team Lead

- You may decide to add additional queries, reports and fields to get information
- Track progress of project ongoing and make priority decisions
- Project Lead typically work in SharePoint
- Team Leads may also choose to use Visual Studio for reporting

What You Need to Do as Designer, Developer & Tester

- Do your work in Documents, Code and Test-conditions
- Update status work-items whenever you finish something
- Developers can do all work from Visual Studio
- Designers & Tester work via use SharePoint, TFS Web Access or Visual Studio

What You Need to Do as Operations & Application Management

- Feedback information to development team via work-items

During Project – PM & Team Leads

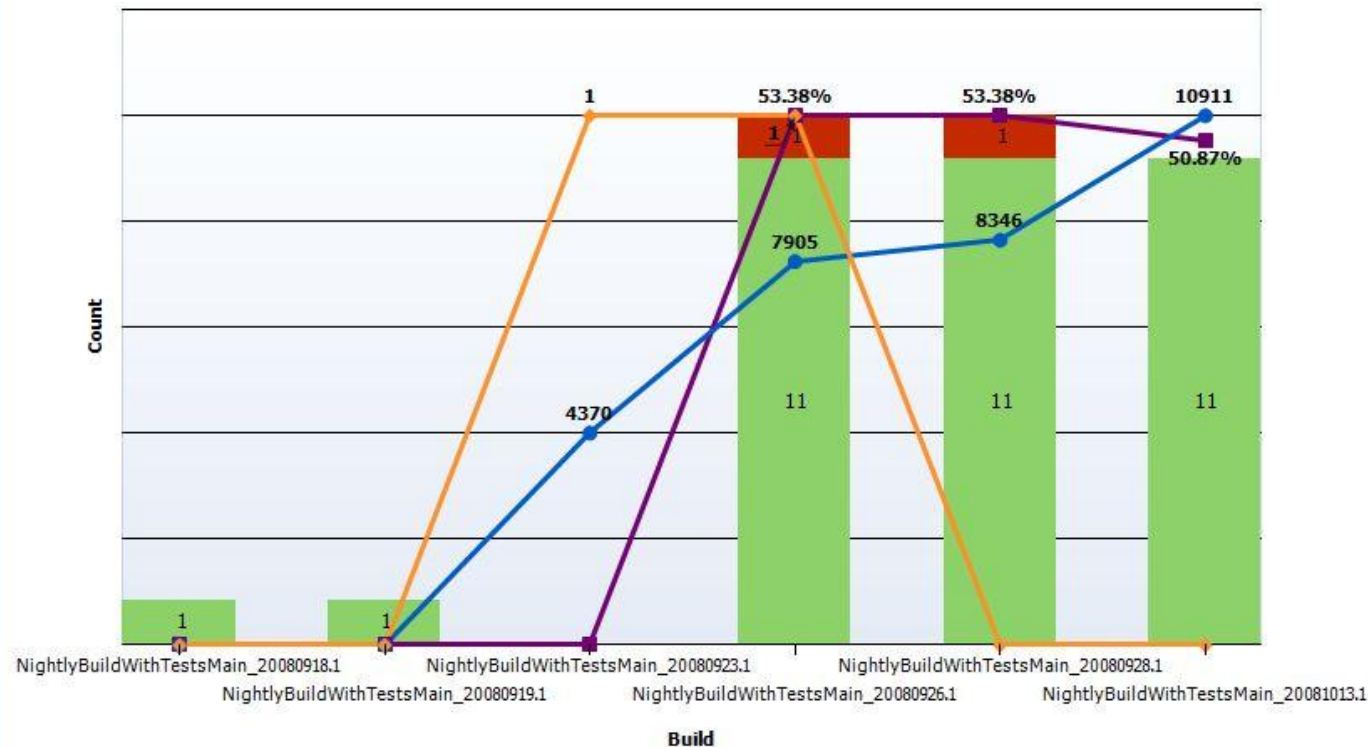
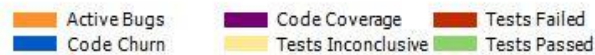
Must Read: SW Engineering with MS VSTS, Sam Guckenheimer

Track Code Quality

Quality Indicators

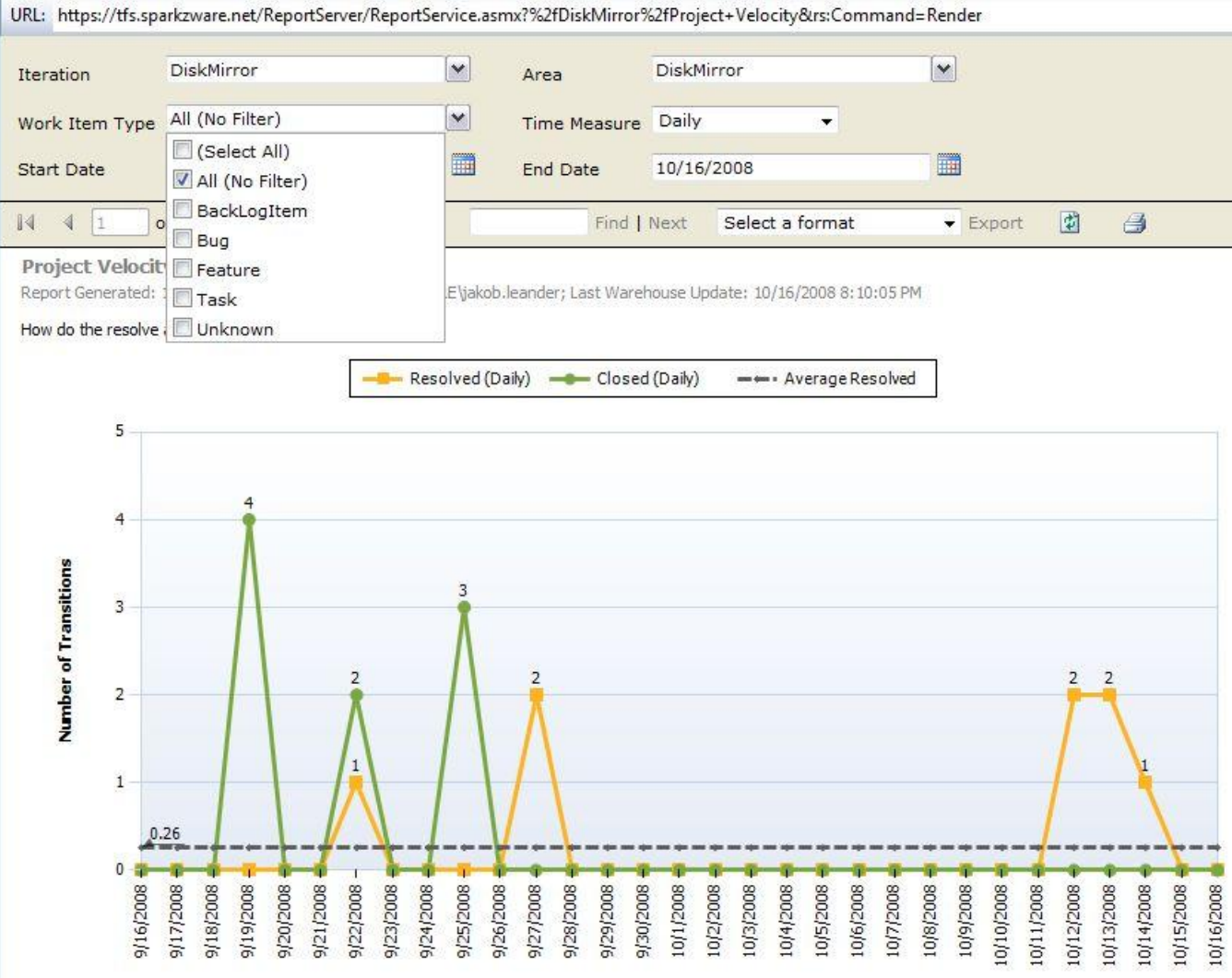
Report Generated: 10/16/2008 7:55:33 PM by SPARKZWARE\jakob.leander; Last Warehouse Update: 10/16/2008 7:09:41 PM

What is the quality of the software?



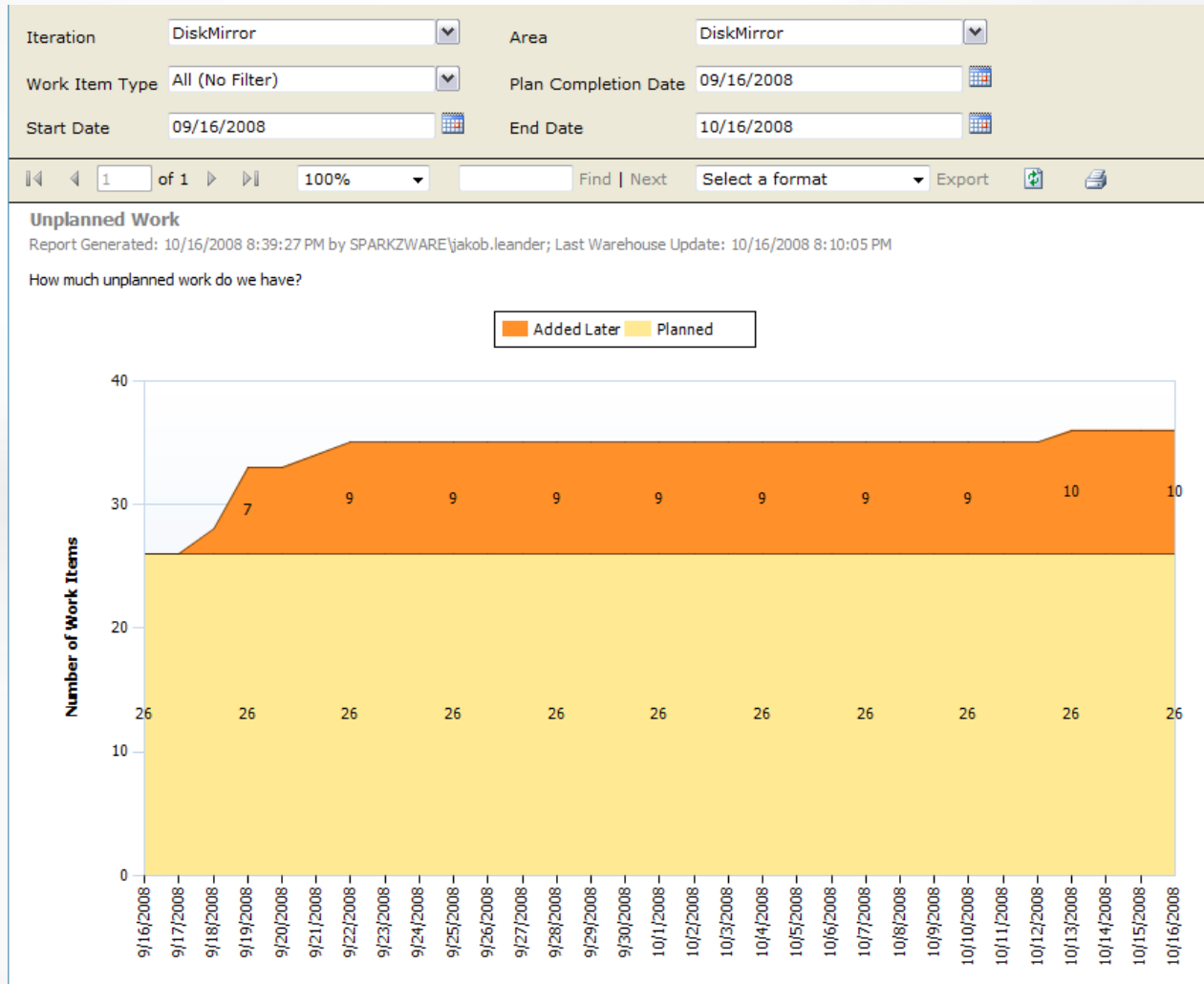
During Project – PM & Team Leads

Track Progress (work closed pr. period)



During Project – PM & Team Leads

“Unplanned Work”: Identify Scope Creep



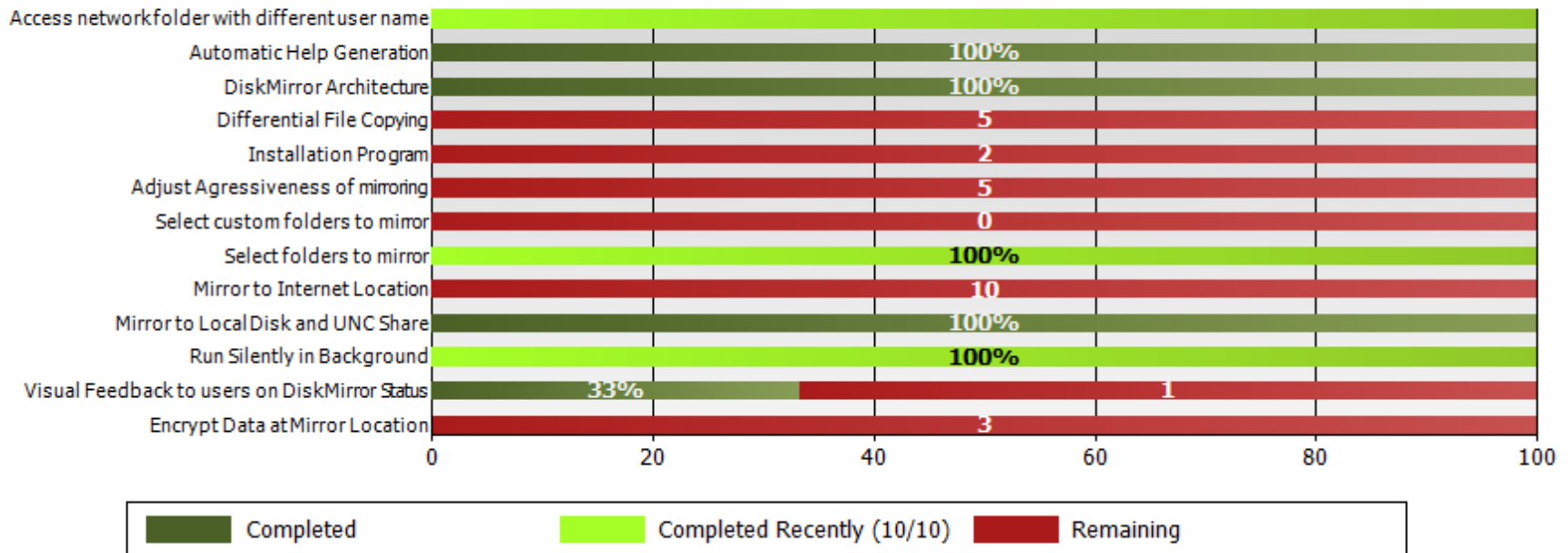
During Project – PM & Team Leads

Consider Custom High Level Reports to roll up overall progress

Consider creating a “Project Status” page on SharePoint with roll up of key KPI’s

High Level Feature Work Summary

As of: 10/16/2008 6:09:58 PM



* Modified Report based on Sample from Microsoft WIT Team

During Project – Tracking Time

Not out of Box Feature yet

- Can be done by adding fields for this to work-items
- Project Connector exist on CodePlex but hard to use
- Unless you are very mature TFS user, in most cases best approach is to track time in another tool and track progress pr. work-item instead
- Effort is much lower and data is much more accurate than nothing

The screenshot shows a TFS work item interface with the following elements:

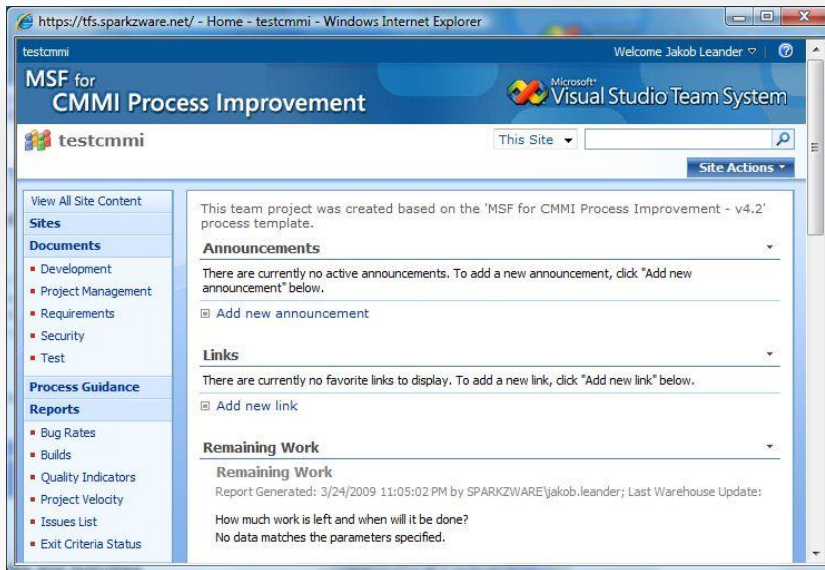
- Navigation Tabs:** Feature Details, Planning, Feature Dependencies, Crew, Quality Gates, Feature Complete, History, File Attachments, Custom, Custom #2, **Progress** (highlighted).
- Section Header:** Effort
- Effort Fields (circled in orange):**
 - Date: Start: 8/8/2006 9:00:00 PM
 - Date: Checkpoint #1: 8/28/2006 9:00:00 PM
 - Date: Checkpoint #2: 10/10/2006 9:00:00 PM
 - Date: End: 11/28/2006 9:00:00 PM
 - Remaining work (hours): 0
 - Completed work (hours): 733
 - Risk Level: Green
- Detailed Status:** Merged for GetLatest and Folder Diff for RQ

During Project – PM & Team Leads

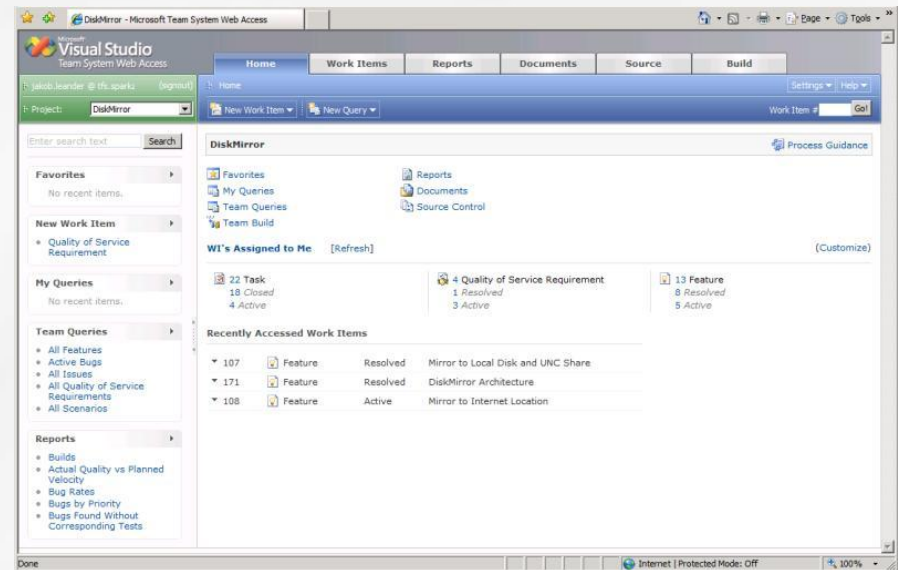
Will likely not want to use Visual Studio as Interface

- Remember Licensing for non-developers in your budget

Standard SharePoint Portal



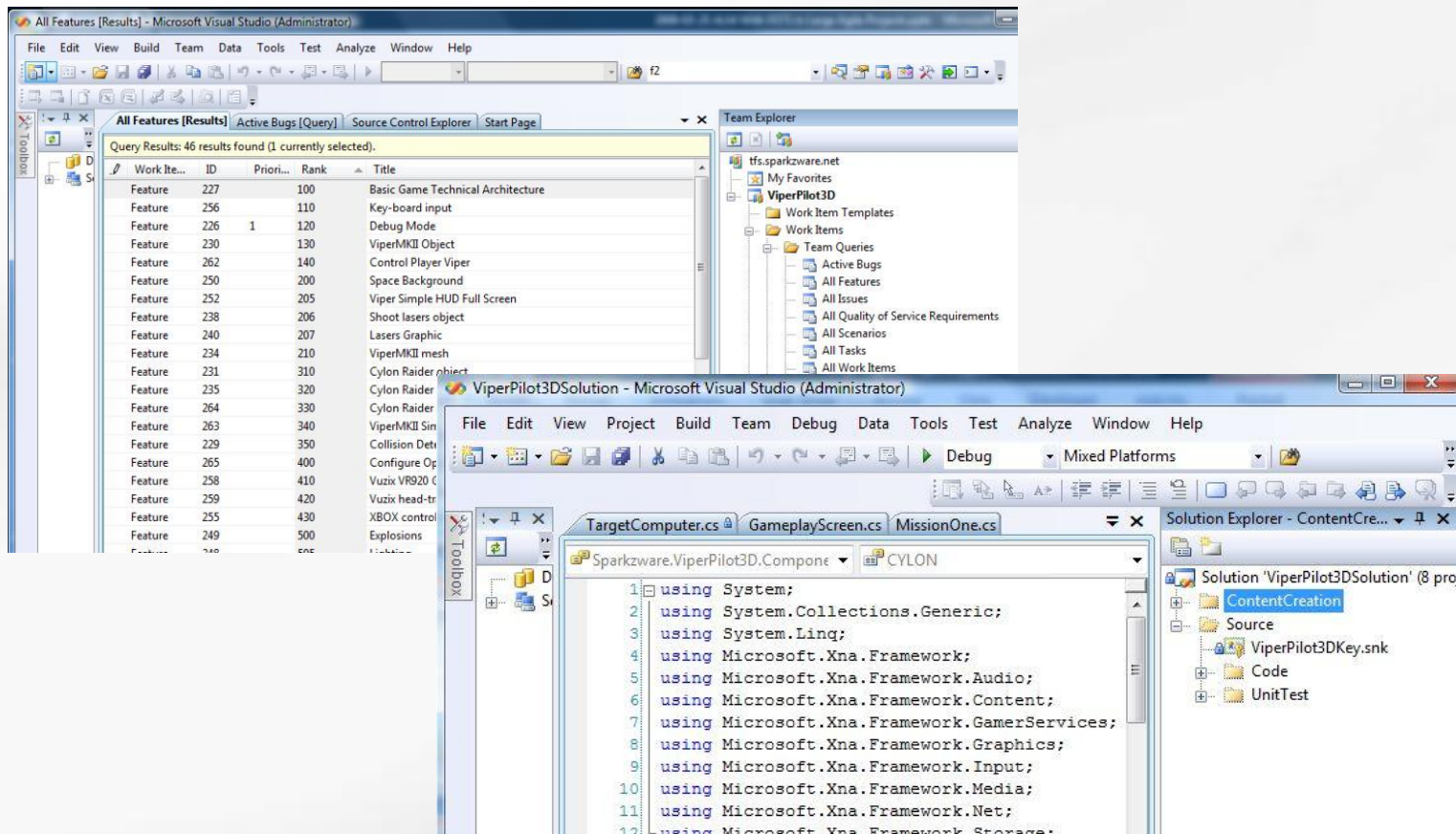
TFS Web Access from CodePlex



During Project – Developer

Accesses everything from Visual Studio

➤ Do what you normally do but update status on work-items



During Project – Designer and Tester

Access via SharePoint and/or TFS Web Access

- Do what you normally do but update status on work-items
- Store Documents in SharePoint and reference from work-items
- To create work items outside Visual Studio you need either Excel or TFS Web Access
- TFS 2008 is less mature than other tools for managing tests (will improve much in version 2010)
- However benefits of cross-discipline tracking may outweigh the missing functionality
- Critical missing functionality can be provided as custom web-parts accessing TFS and deployed to SharePoint

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Off-Shore: Special Considerations

Issue: Misunderstood Requirements

Remedy with ALM:

- Ensure that requirements & specification follows a work-item for Scenario/Feature
- Use combination of screen-shots, text and use-cases and put all in the work-item
- A good breakdown of work into work-items ensures complexity on each is kept low.

Off-Shore: Special Considerations

Issue: Unclear split of responsibility causes problems

Remedy with ALM:

- Treat off-shore teams as separate complete Agile Teams, avoid micro-management from on-shore
- Use TFS to assign work-items and track progress on the team similar to an on-shore team

Off-Shore: Special Considerations

Issue: Process management is hard when dealing with off-shore

Remedy with TFS:

- Ensure process guide is correct
- Ensure all work is covered by a work-item
- Communicate via Work-items, do not use e-mails for e.g. requirement changes
- Ensure everything is either in TFS or SharePoint, nothing on file-shares

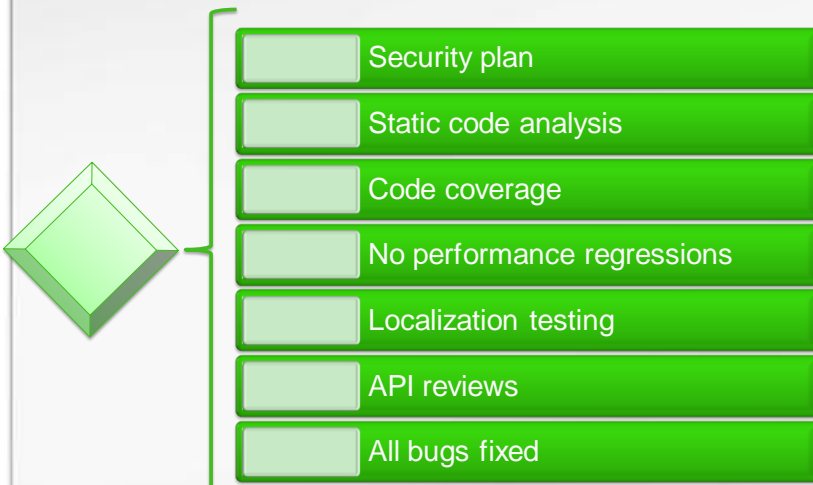
Off-Shore: Special Considerations

Issue: Unclear expectations on when “things are done”. For large projects also applies to on-shore teams but usually easier to handle on-shore

Remedy with TFS:

- Create “Quality Gates” which are hard objective important criteria
- Add special fields on work-items to validate each Quality Gate
- Make off-shore manager sign-off gates before code is accepted into main branch

Examples



* From MS WIT Team

Documents	Value	Location
FunctionalSpec	NotStarted	
Dev Design	NotStarted	
Test Plan	NotStarted	

Requirements	Value
Static Analysis	Open
Code Coverage	Open
Testing	Open
Performance Test	Open

Agenda

Why Large SW Projects are Hard to Deliver

ALM & VSTS & Agile – Short Introduction

Prepare for Your Project

During Project

Special Off-Shore Considerations

References

References

Book	Description
Software Estimation, Steve McConnell	Best book ever written on estimation
Agile Project Management with SCRUM, Ken Schwaber	Father of SCRUM
SW Engineering with VSTS, Sam Guckenheim	Best hands-on TFS book for project managers
TFSGuide, CodePlex http://www.codeplex.com/TFSGuide	Great free “how to” book on TFS configuration
Hollywood Secrets of PM, James Persse	Compares SW projects to movie making, very insightful
Microsoft WIT Team Blog http://blogs.msdn.com/teams_wit_tools/	Great Blog on TFS Work Items