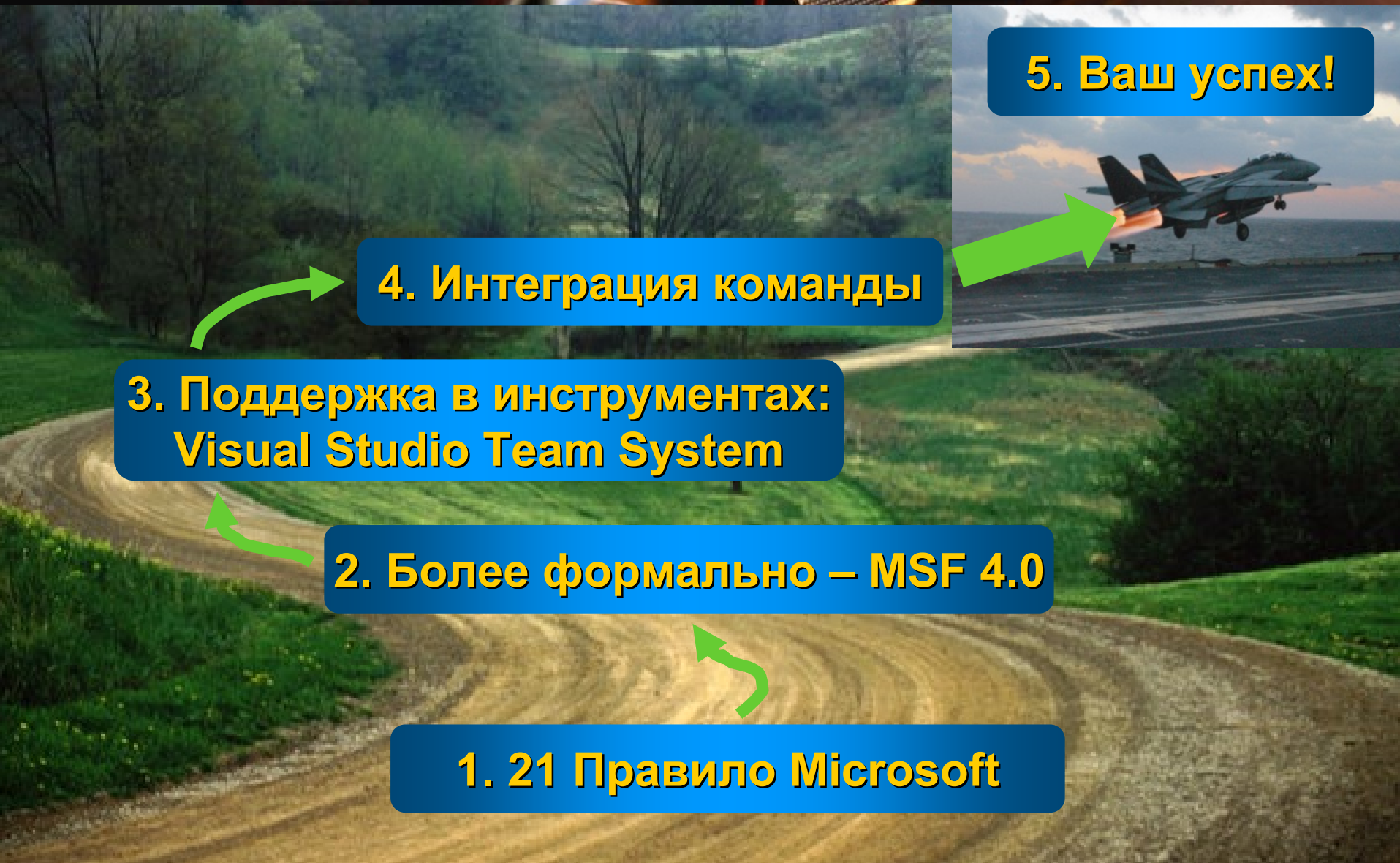


Командная разработка ПО – секреты успеха Microsoft

Александр Ложечкин
Microsoft

Путь к успеху



4. Интеграция команды

3. Поддержка в инструментах:
Visual Studio Team System

2. Более формально – MSF 4.0

1. 21 Правило Microsoft

5. Ваш успех!



21 правило разработки ПО в Microsoft

- **ИСТОЧНИК**
 - Jim McCarthy
 - Статья «21 Rules of Thumb for Shipping Great Software on Time»
 - <http://www.blogontheweb.com/richardm/articles/ShippingSoftwareOnTime.aspx>
- **21 простое правило**
- **3 секции**
 - Вовремя
 - Лучший продукт
 - Выпустить

Вовремя

1. Не знайте того, чего вы не знаете
 - Предположения – это только предположения
2. Всегда понимайте, где вы находитесь
 - Помните, кому можно доверять - QA
3. Помните о треугольнике приоритетов
 - «Мы делаем быстро, дешево и качественно. Выберите любые 2 показателя»



4. Старайтесь быть на виду
 - Неделя = вечность. Каждый проект, который отстает на месяц, вначале отставал на один день
5. Используйте точки контроля с отсутствием дефектов
 - Никто не достиг цели, пока ее не достигли все
6. Бойтесь разработчиков в башнях из слоновой кости
 - Разработка ПО – командная работа. Золотое сечение Microsoft $\approx 6 \text{ dev} : 3 \text{ QA} : 1 \text{ PM} : 2 \text{ writers}$
7. Плохая дата \neq просто плохая дата
 - Нужно не опаздывать, а прогнозировать
8. Опаздывая, не проигрывайте
 - За одного битого двух небитых дают

Вовремя



9. Чем проще – тем лучше

- Принцип KISS. Лучше меньше – да лучше

10. Время для проектирования – это время для проектирования

- Помните о сроках

11. Если вы не можете это собрать – значит вы не сможете это выпустить

- Живите регулярно

12. Думаете о переносимом ПО?

- Переносимость – это хорошее свойство чемоданов. Но не ПО

Лучший продукт



13. Заказчик – это ваше все

- Заказчик всегда лучше вас знает, что ему нужно

14. Самое главное – единство и интеграция:

15. Двигайтесь правильным курсом

16. Будьте гибкими

17. Соблюдайте баланс

18. Развивайте продукт постепенно

19. Продукт – это иерархия компонентов

20. Все должны разделять общее видение продукта

Выпустить

21. Ваша главная задача – выпустить продукт

- Выпуск продукта – цель каждого члена команды
- Роль руководителя – вести процесс к выпуску



Все то же самое, но чуть более формально

- Microsoft Solutions Framework

Microsoft
Products
Groups

Microsoft
Services

Microsoft
Information
Technology
Group


Microsoft
Certified
Partners

Проверенные
практики

www.microsoft.com/msf

Microsoft®
Solutions Framework

Краткий курс истории MSF

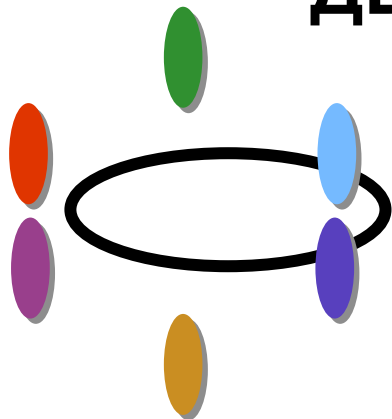


- Появился в 1991 году, как набор рекомендаций
- Выпущено 3 версии
- Источники знаний: Borland, Merrill Lynch, The Agile Alliance и The Software Engineering Institute
- MSF Partner Council: Accenture, Avanade, Capgemini, EDS, Fujitsu, Infosys, Unisys

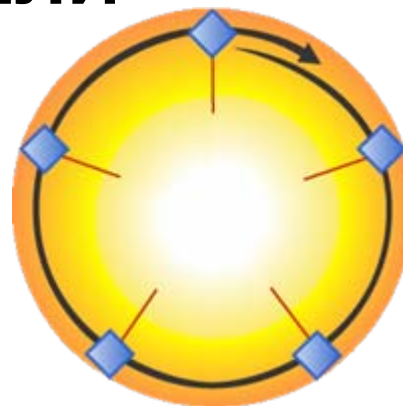
Структура MSF 3.0

ДВЕ МОДЕЛИ

Модель
Проектной
Группы



Модель
Процессов



ТРИ ДИСЦИПЛИНЫ



Дисциплина
управления
Проектами



Дисциплина
управления
Рисками



Дисциплина
управления
Готовностью

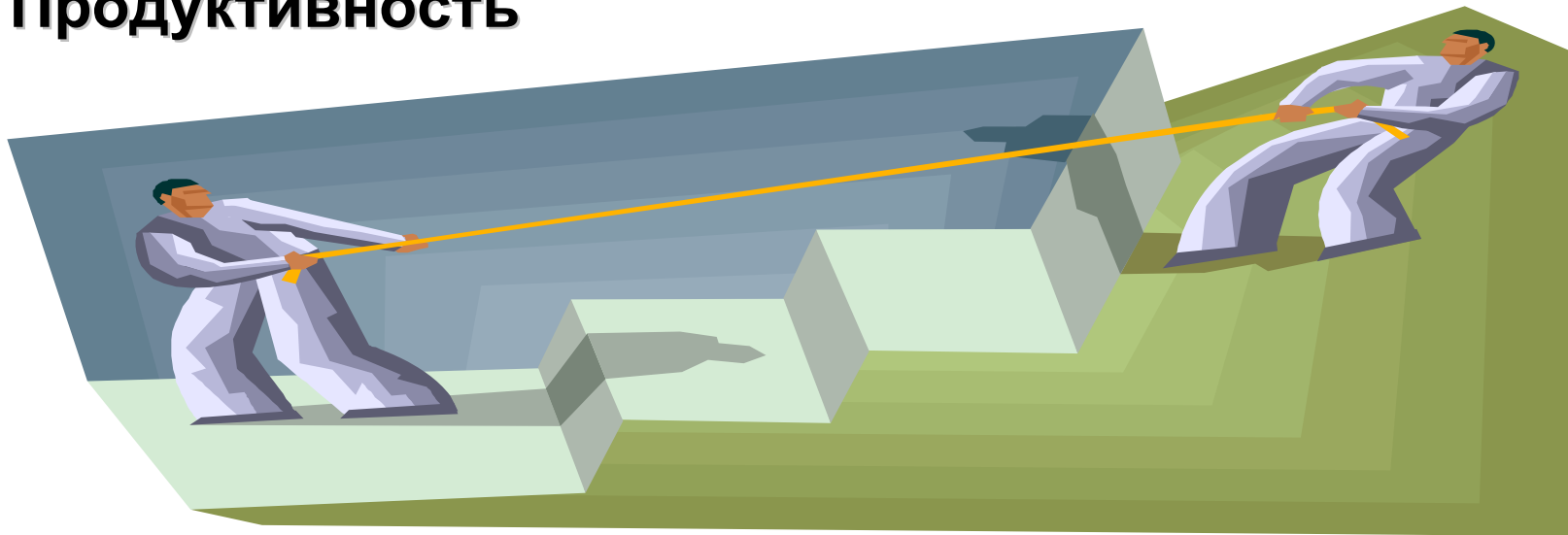
Microsoft Solutions Framework 4.0

- Эволюция MSF 3.0
- 2 философии
 - Быстрые процессы
 - Формальные процессы
- Поддержка в инструментах
 - Visual Studio Team System

Проблемы с проектами и процессами

Предсказуемость

Продуктивность



Почему бы процессу не помочь росту продуктивности?

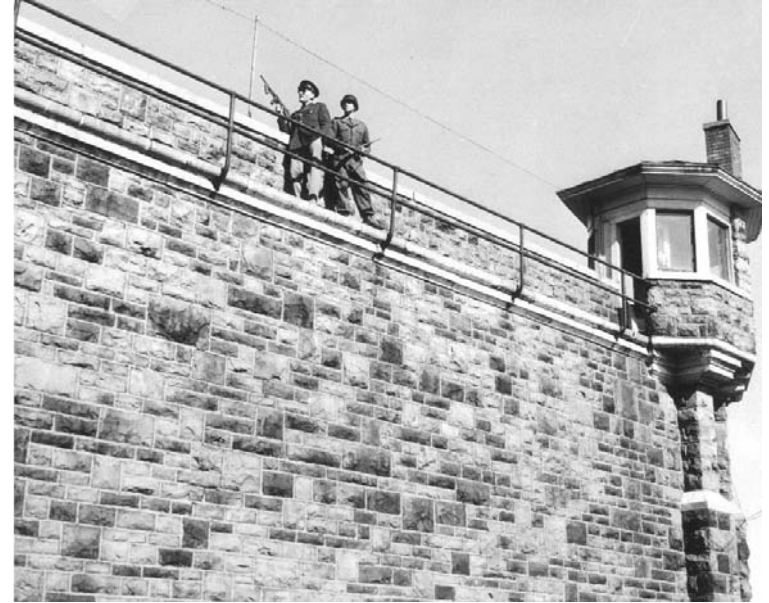
MSF for Agile Software Development

- Люди работают параллельно
- Люди – это главное
- Многое выясняется в процессе
- Заказчик – ключевой участник проекта
- Первый результат появляется очень быстро
- Продукт постепенно проявляется из прототипов



MSF for CMMI Process Improvement

- Формальный процесс
- Соответствие CMMI level 3
- Большие команды, длительный процесс разработки
- MSF for CMMI расширяет MSF Agile
 - Больше верификации
 - Больше планирования
 - Отслеживание потраченных ресурсов



Скорость или предсказуемость?

MSF Agile

- Эволюция и адаптация
- Идеально для условий конкуренции
- Опора на людей
- Планируй по мере продвижения

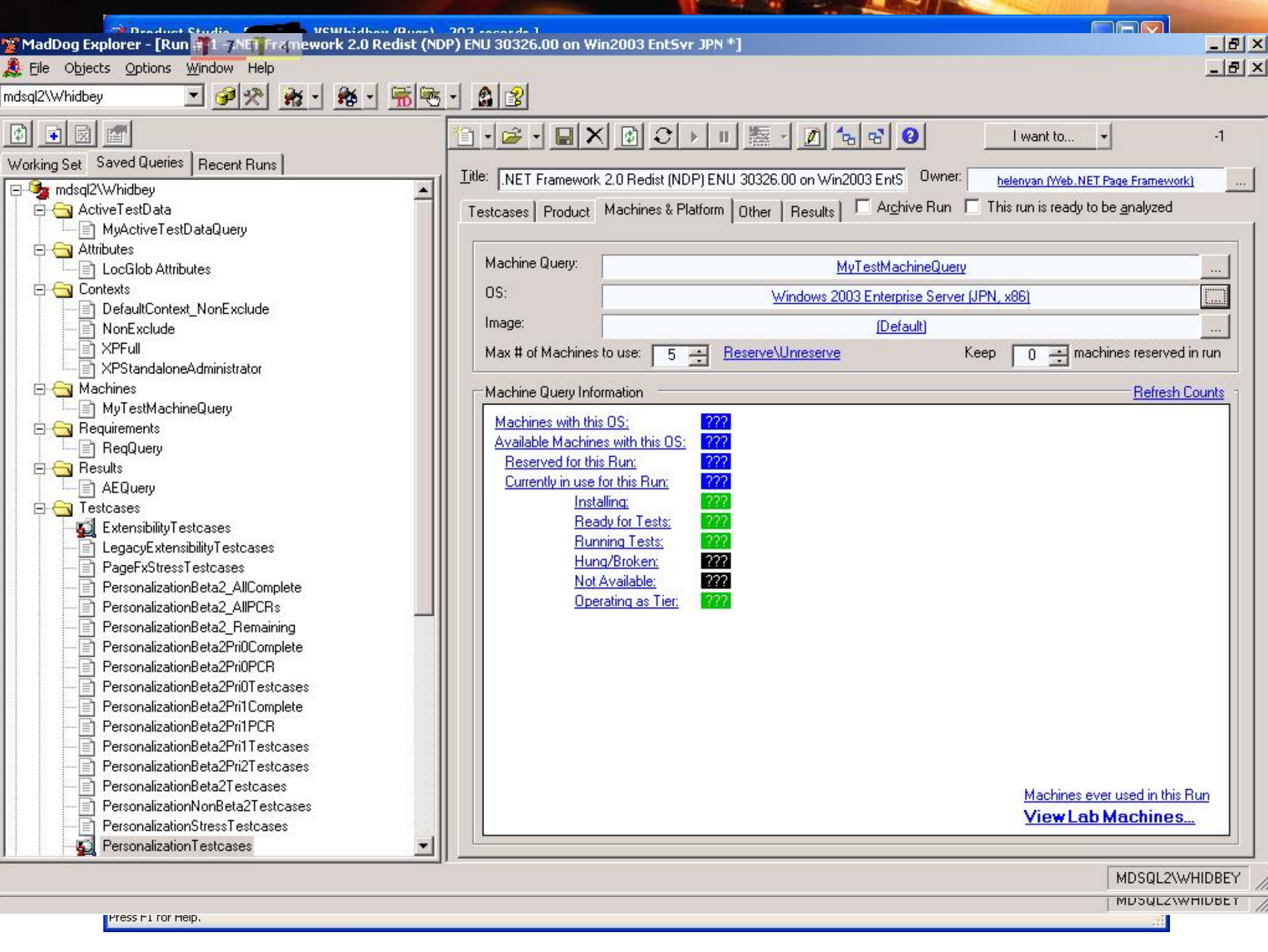
MSF for CMMI

- Планирование и оптимизация
- Идеально для устойчивых условий
- Опора на процессы
- Планируй заранее

Что сейчас?



- **Проблемы в коммуникациях**
 - Архитекторы и разработчики
 - Разработчики и тестеры
 - Архитекторы решения и архитекторы инфраструктуры
 - Руководители проекта и все остальные
- **Множество неинтегрированных инструментов**
 - Отслеживание требований и ошибок
 - Учет задач
 - Разработка кода
 - Тестирования кода
- **Невозможность понять текущее состояние**
- **Отсутствие единой точки входа**



Working Set | Saved Queries | Recent Runs

- mdsql2\Whidbey
 - ActiveTestData
 - MyActiveTestDataQuery
 - Attributes
 - LocGlob Attributes
 - Contexts
 - DefaultContext_NonExclude
 - NonExclude
 - XPFfull
 - XPSstandaloneAdministrator
 - Machines
 - MyTestMachineQuery
 - Requirements
 - ReqQuery
 - Results
 - AEQuery
 - Testcases
 - ExtensibilityTestcases
 - LegacyExtensibilityTestcases
 - PageFxStressTestcases
 - PersonalizationBeta2_AllComplete
 - PersonalizationBeta2_AllPCR's
 - PersonalizationBeta2_Remaining
 - PersonalizationBeta2Pri0Complete
 - PersonalizationBeta2Pri0PCR
 - PersonalizationBeta2Pri0Testcases
 - PersonalizationBeta2Pri1 Complete
 - PersonalizationBeta2Pri1 PCR
 - PersonalizationBeta2Pri1 Testcases
 - PersonalizationBeta2Pri2 Testcases
 - PersonalizationBeta2Testcases
 - PersonalizationNonBeta2Testcases
 - PersonalizationStressTestcases
 - PersonalizationTestcases

I want to... -1

Title: .NET Framework 2.0 Redist (NDP) ENU 30326.00 on Win2003 EntS Owner: helenyan (Web .NET Page Framework)

Testcases | Product | Machines & Platform | Other | Results | Archive Run This run is ready to be analyzed

Machine Query: MyTestMachineQuery

OS: Windows 2003 Enterprise Server (JPN, x86)


Image: [Default]

Max # of Machines to use: 5 Reserve\Unreserve Keep 0 machines reserved in run

Machine Query Information Refresh Counts

Machines with this OS:	???
Available Machines with this OS:	???
Reserved for this Run:	???
Currently in use for this Run:	???
Installing:	???
Ready for Tests:	???
Running Tests:	???
Hung/Broken:	???
Not Available:	???
Operating as Tier:	???

[Machines ever used in this Run](#)
[View Lab Machines...](#)



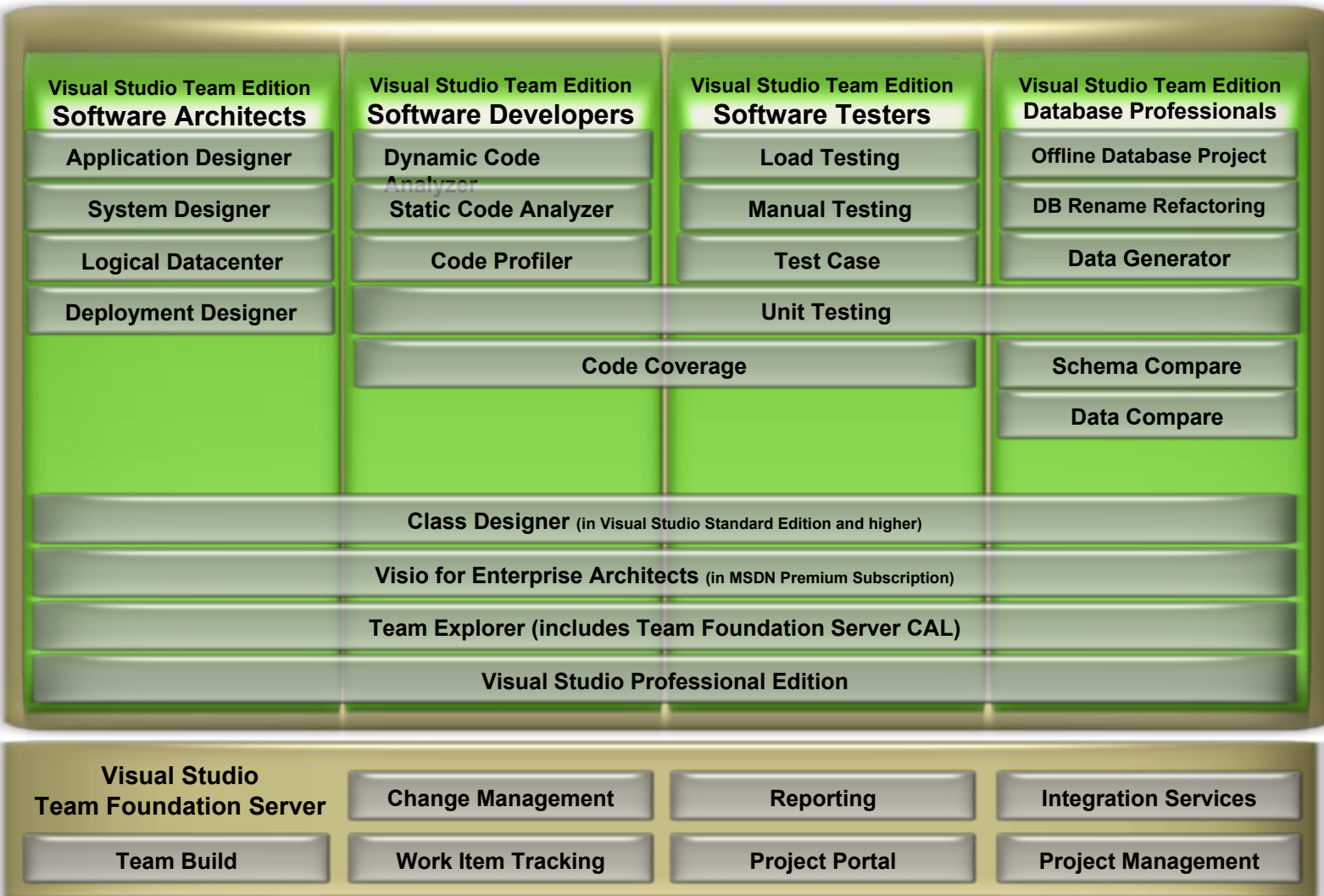
Поддержка в инструментах Visual Studio Team System

- Visual Studio – не только инструмент разработчика
- Инструменты команды
 - Visual Studio Team Edition for Software Developers
 - Visual Studio Team Edition for Software Architects
 - Visual Studio Team Edition for Software Testers
 - Visual Studio Team Edition for Database Professionals
- Интеграция команды
 - Visual Studio Team Foundation
- Поддержка процесса разработки
 - Microsoft Solutions Framework

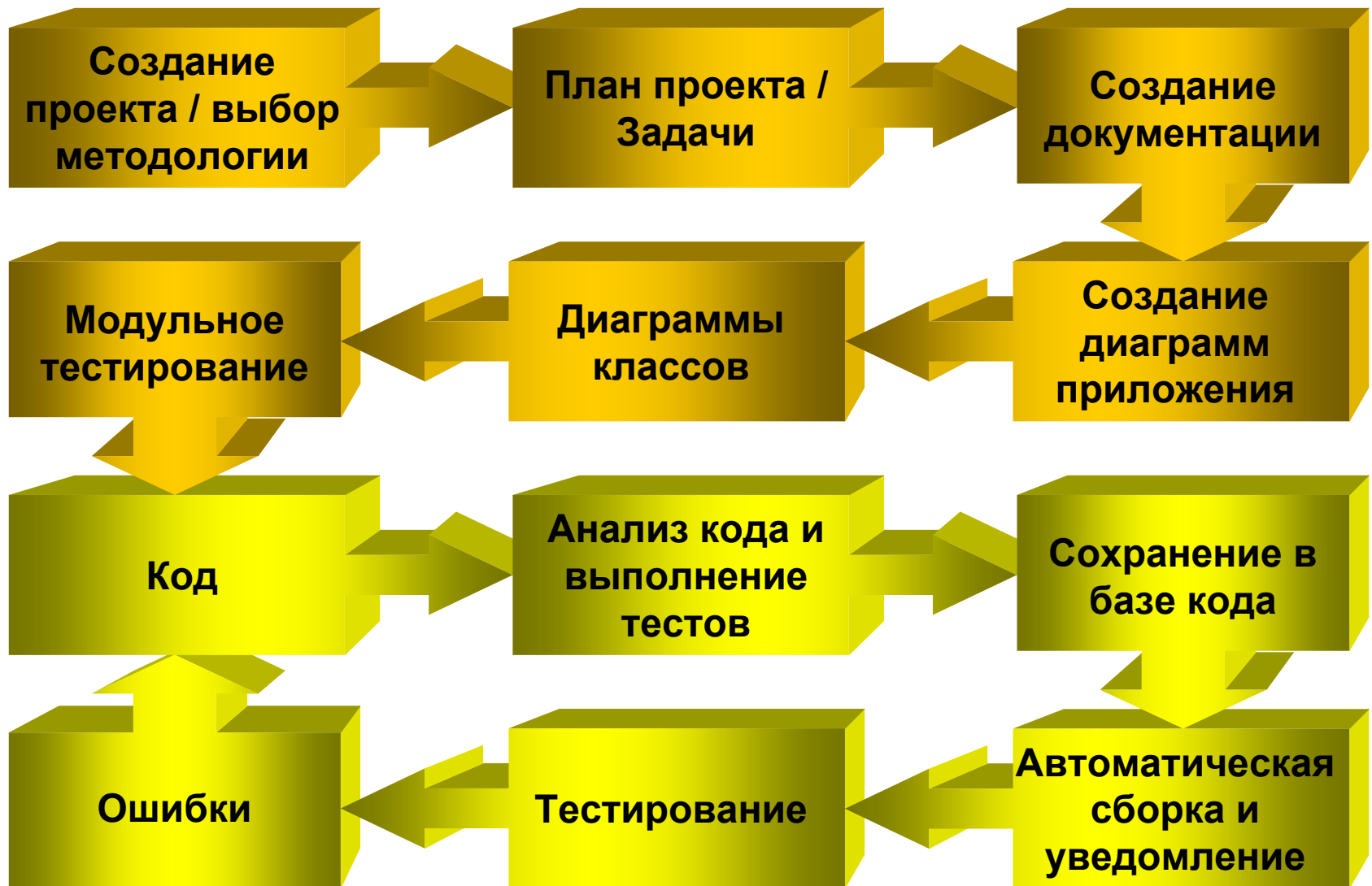
Visual Studio Team System с ВЫСОТЫ ПТИЧЬЕГО ПОЛЕТА

Process and Architecture Guidance

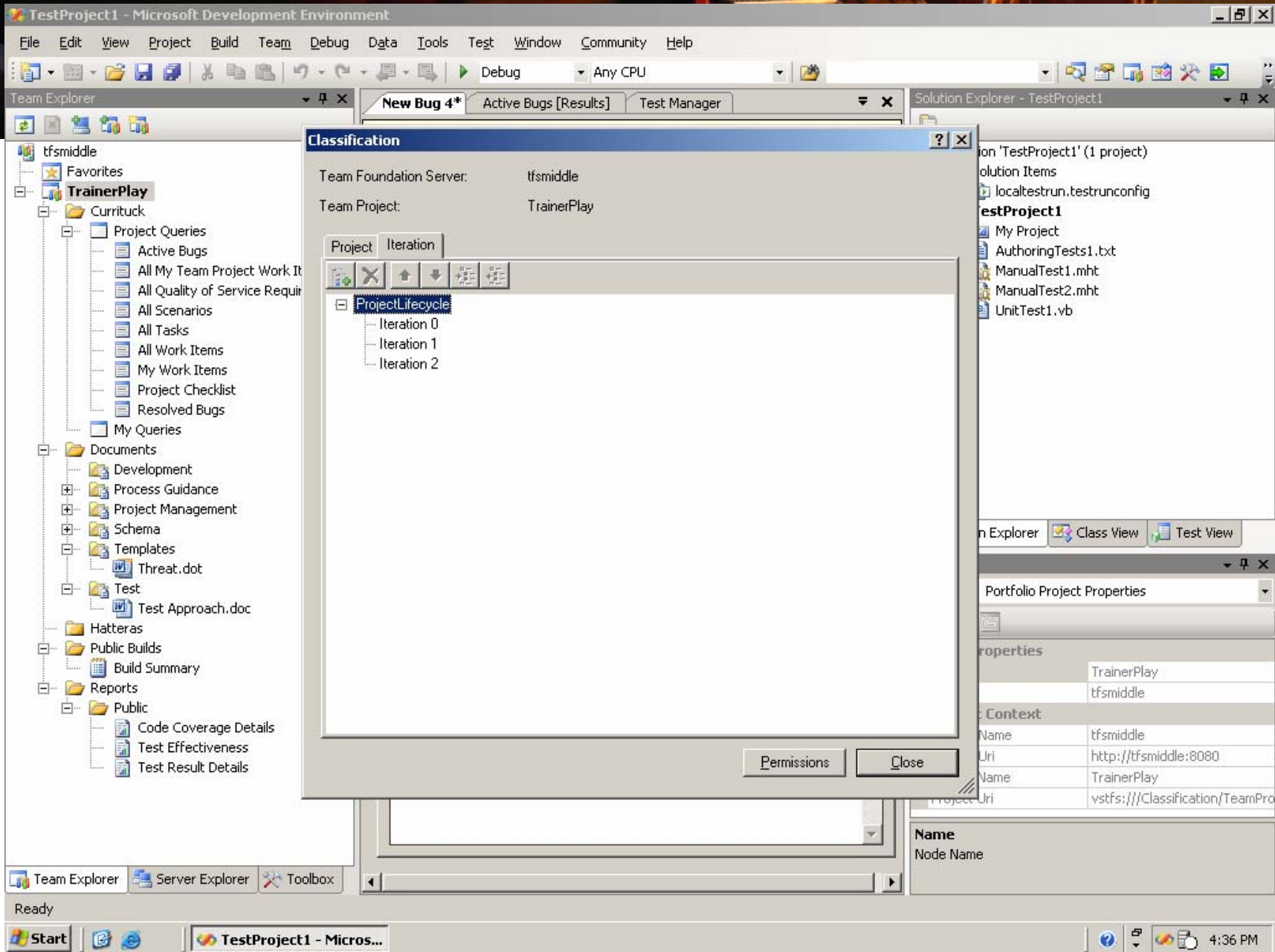
Visual Studio Industry Partners



Процесс разработки проекта



1.



2. Создание плана проекта

The image displays a workflow for project planning and requirements management using Microsoft Excel, Microsoft Project, and Microsoft Development Environment.

Microsoft Excel - All Items.xls

Title	Kind	State	Priority
1 Instore pickup: Customers should be able to pickup their online orders in a retail store.	Requirement	Active	1
2 Store locator: The website should provide the store locator functionality.	Requirement	Active	1
3 Store search: Customers can locate a store by City, State, Zip Code.	Requirement	Active	1
4 Store Map: The website should assist the customer with map and driving directions to the store of their choice.	Requirement	Active	1
5 Store inventory: Customers should be able to check inventory by store or a store within a specified radius.	Requirement	Active	1
6 Hold inventory: The website should allow customers to reserve inventory for 4 days.	Requirement	Active	1
7 Confirmation: Customers should be notified upon the completion of the sale.	Requirement	Active	1

Microsoft Project - All Items.mpp

Work Item ID	Status	Task Name	Duration	Finish	Resource Names
1	Active	Development	3 days	Wed 4/28/04	Art Benson(9%)
2	Active	Design Instore pickup, store locator and inventory services	2 days	Tue 4/27/04	Art Benson
3	Active	Identify implementation tasks for new services	1 day	Wed 4/28/04	Art Benson
4	Active	Testing	13 days	Mon 5/17/04	Renee Davis(6%)
5	Active	Scenario Tests	10 days	Wed 5/12/04	Renee Davis
6	Active	Test Instore pickup: Customers should be able to pickup their online orders in a retail store	3 days	Mon 5/24/04	Renee Davis
7	Active	Test Store locator: The website should provide the store locator functionality.	1 day	Tue 5/18/04	Renee Davis
8	Active	Test Store search: Customers can locate a store by City, State, Zip Code	1 day	Wed 5/19/04	Renee Davis
9	Active	Test Store Map: The website should assist the customer with map and driving directions	1 day	Thu 5/20/04	Renee Davis
10	Active	Test Store inventory: Customers should be able to check inventory by store or a store within a specified radius	1 day	Fri 5/21/04	Renee Davis
11	Active				
12	Active				
13	Active				

Microsoft Development Environment - PhaseView

Title	Phase	Iteration	Status	Reason	Priority	Process	Guidance	Docs	Reports
1 Activate	Plan	ii	Closed	Resolution Confirmed	1	PG		Project Structure	
2 Identify & Assign Team Resources	Plan	ii	Closed	Resolution Confirmed	1	PG		Vision Scope	
3 Validate objectives	Plan	ii	Closed	Resolution Confirmed	1	PG		Requirements	Requirements By
4 Gather requirements	Plan	ii	Closed	Resolution Confirmed	1	PG		Usage Scenario	Scenarios
5 Create usage scenarios	Plan	ii	Closed	Resolution Confirmed	1	PG		Solution Concept	
6 Build use cases	Plan	ii	Closed	Resolution Confirmed	1	PG			
7 Document Solution Concept	Plan	ii	Closed	Resolution Confirmed	1	PG			
8 Create architecture and design	Plan	ii	Resolved	Fixed	1	PG			
9 Design Instore pickup, store locator and Inventory Services	Plan	ii	Resolved	Fixed	1	PG			
10 Specify Features	Plan	ii	Resolved	Fixed	1	PG		Feature Specifications	Prioritized
11 Estimate Schedule and Costs	Plan	ii	Resolved	Fixed	1	PG		Risk Driven Schedule	Milestone
12 Code Features	Implement	ii	Resolved	Fixed	1	PG		Workload	
13 Implement Business Logic for Find Store	Implement	ii	Resolved	Fixed	1	PG		Code	
14 Unit Test Features	Implement	ii	Resolved	Fixed	1	PG		Stress Test	
15 Refactor Features	Implement	ii	Resolved	Fixed	1	PG		Code	
16 Write Test cases	Implement	ii	Resolved	Fixed	1	PG		Workload	
17 Complete Test Passes (all other in-depth tests)	Implement	ii	Resolved	Fixed	1	PG		Daily Build	
18 Run Load/ Test on Lab Configuration	Implement	ii	Resolved	Fixed	1	PG		Resolved	
19 Resolve Bugs	Implement	ii	Resolved	Fixed	1	PG			
20 Perform Integration Testing	Implement	ii	Resolved	Fixed	1	PG		Bug Convergence	
21 Reach 285	Implement	ii	Resolved	Fixed	1	PG		285 Trend	
22 Final Customer Acceptance Test	Implement	ii	Active						
23 Identify Release candidates	Deploy	ii	Active						
24 Release to Production	Deploy	ii	Active					Release Signoff Form	
25 Transition	Deploy	ii	Active						
26 Complete final documentation	Deploy	ii	Active						
27 Transfer to operations	Deploy	ii	Active						
28 Obtain customer approval	Deploy	ii	Active						
29 Post Project Review	Deploy	ii	Active					Post Project Analysis	

Microsoft Development Environment - All Items

Advanced Query: All Items

ID	Status	Priority	Title
100000	Active	1	Instore pickup: Customers should be able to pickup their online orders in a retail store.
100001	Active	1	Store locator: The website should provide the store locator functionality.
100002	Active	1	Store search: Customers can locate a store by City, State, Zip Code.
100003	Active	2	Store Map: The website should assist the customer with map and driving directions to the store of their choice.
100004	Active	1	Store Inventory: Customers should be able to check inventory by store or a store within a specified radius.
100005	Active	2	Hold Inventory: The website should allow customers to reserve inventory for 4 days.
100006	Active	2	Confirmation: Customers should be notified upon the completion of the sale.

38

3. Создание сайта проекта и библиотеки

ДО

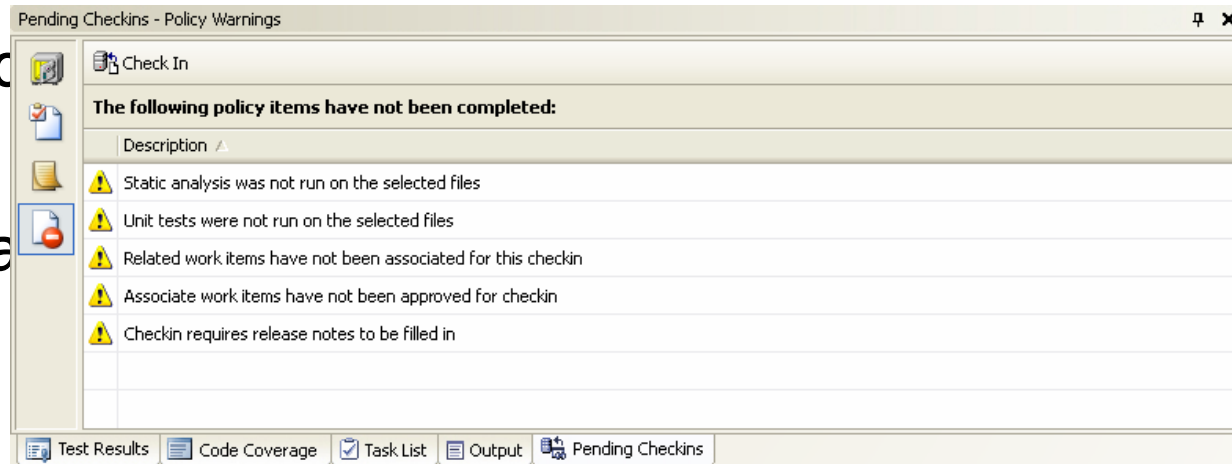
The screenshot displays the Microsoft Development Environment (MDE) interface. The main window shows a SharePoint site named 'TrainerPlay' with the URL `http://tfsmiddle/sites/TrainerPlay/_layouts/1033/viewlists.aspx?BaseType=1`. The site is titled 'Documents and Lists' and contains a table of document libraries.

Document Libraries	Description	Items	Last Modified
Development	Share a document with the team by adding it to this document library.	0	3 hours ago
Process Guidance	Process Guidance for the team documents	120	2 hours ago
Project Management	Share a document with the team by adding it to this document library.	10	2 hours ago
Schema	Schema for Process Customization	2	2 hours ago
Templates	Share a document with the team by adding it to this document library.	1	2 hours ago
Test	Share a document with the team by adding it to this document library.	1	2 hours ago

The left sidebar (Team Explorer) shows the project structure for 'tfsmiddle', including 'TrainerPlay' and various folders like 'Currituck', 'Documents', 'Schema', 'Templates', and 'Test'. The right sidebar (Solution Explorer) shows the current site structure.

4. Установка политик изменения кода, сборка

- 2 базы хранения кода:
 - Visual SourceSafe
 - Team Foundation Source Code Control
- Основные новшества:
 - Распределенная разработка, «shelving», политики
- Настройка политик Check-In:
 - Компиляция в сборке
 - Прогон тестов
 - Ассоциация зада
 - Нотификации



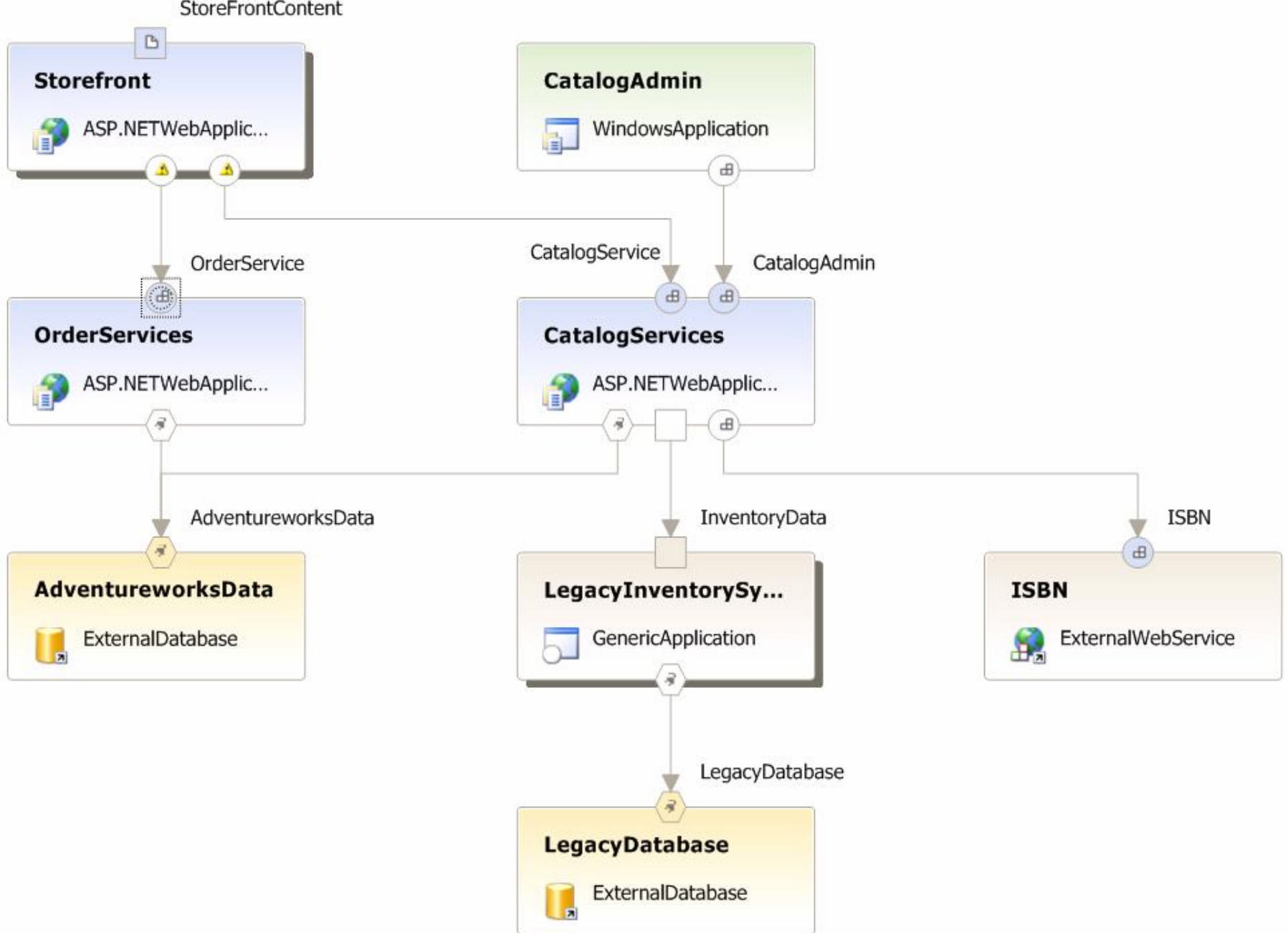
4. V...
c6

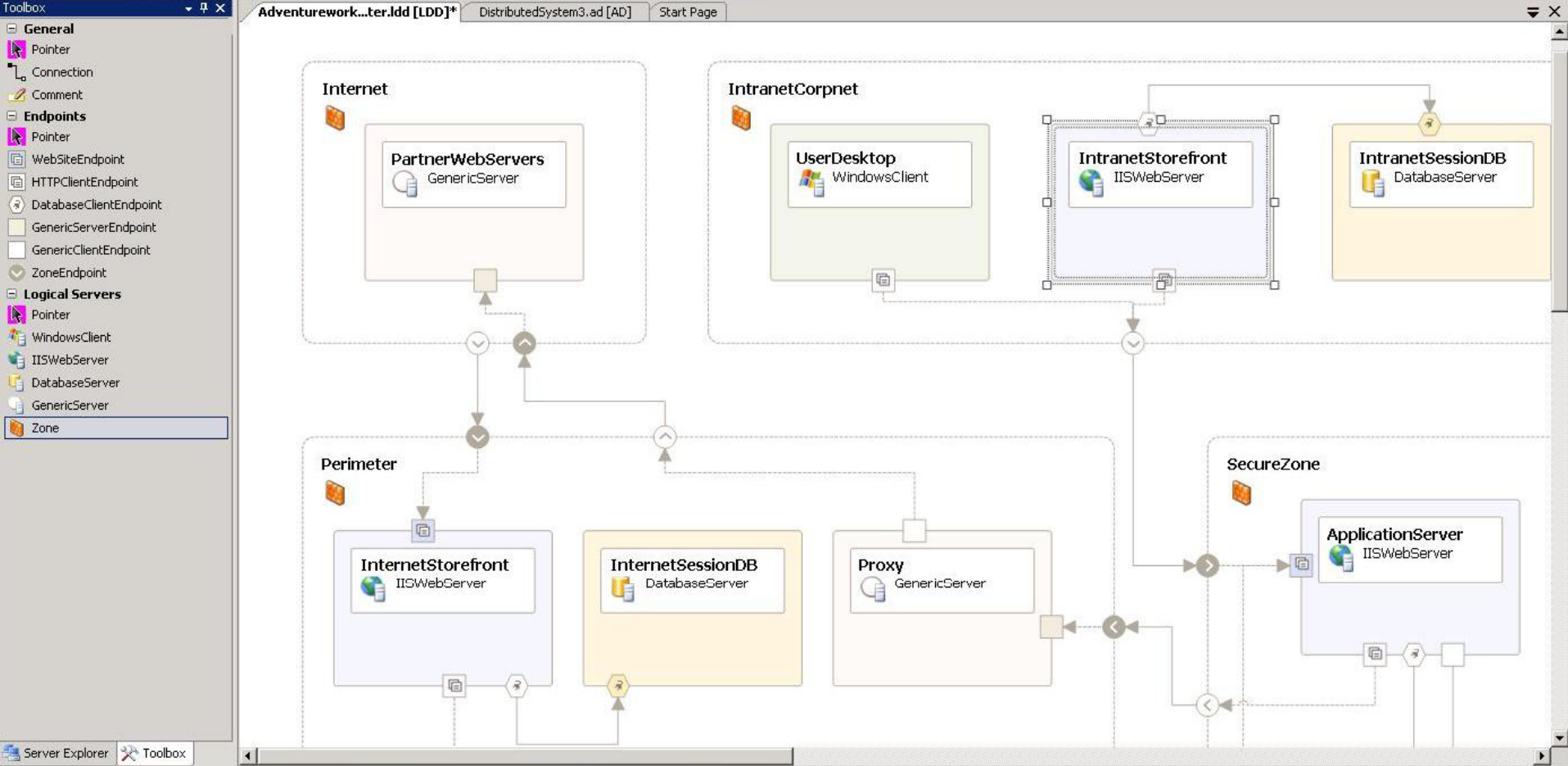
The screenshot displays the Microsoft Development Environment (MDE) interface. The main window shows the build results for 'Nightly_041106.00'. The build status is 'Completed with compilation errors'. The build steps also show 'Completed with compilation errors'. The result details for X86/Debug indicate '4 Errors, 12 warnings, no test results, no coverage results'. The result details for X86/Retail indicate '0 Errors, 10 warnings, 8/10 tests passed, 42% lines covered'. The errors and warnings section shows '0 Errors, 10 Warnings (X86Retail.error)'. The test results section shows '1/1 Test run completed, 8/10 tests passed, 0 failed, 2 other result'. The code coverage results show '42% Lines covered, 49% lines not covered, 9% lines partially covered'. The associated changesets section shows '3 Associated changesets'. The associated work items section shows '6 Associated work items, 6 active, 0 resolved'.

Test Run	Published By	Total	Passed	Failed	Other Result
BVT_TPSv21_04110600	Build Lab	10	8	0	2

Assembly	Covered (Lines)	Not Covered (Lines)	Partially Covered (Lines)	Covered (% Lines)
CurrencyConverter.dll	330	600	70	33
StoreInventory.dll	600	480	120	50

The Test Explorer window on the right shows a tree view of the test suite. The selected test is 'AddToShoppingCart.webtest'. The test type is 'Web Test' and the author is 'Mort'. The description is 'AddToShoppingCart.webtest tests Add'.





- Settings and Constraints
- Application Constraints
 - ASP.NETWebApplication
 - ASP.NET Membership
 - ASP.NET Security
 - ASP.NET Session State
 - User Defined
 - ExternalBizTalkWebService
 - ExternalWebService
 - GenericApplication
 - Logical Server Settings
 - InternetInformationServices
 - WebSites
 - OperatingSystemDescription
 - Directory
 - Custom

IntranetStorefront does not support ASP.NET Security

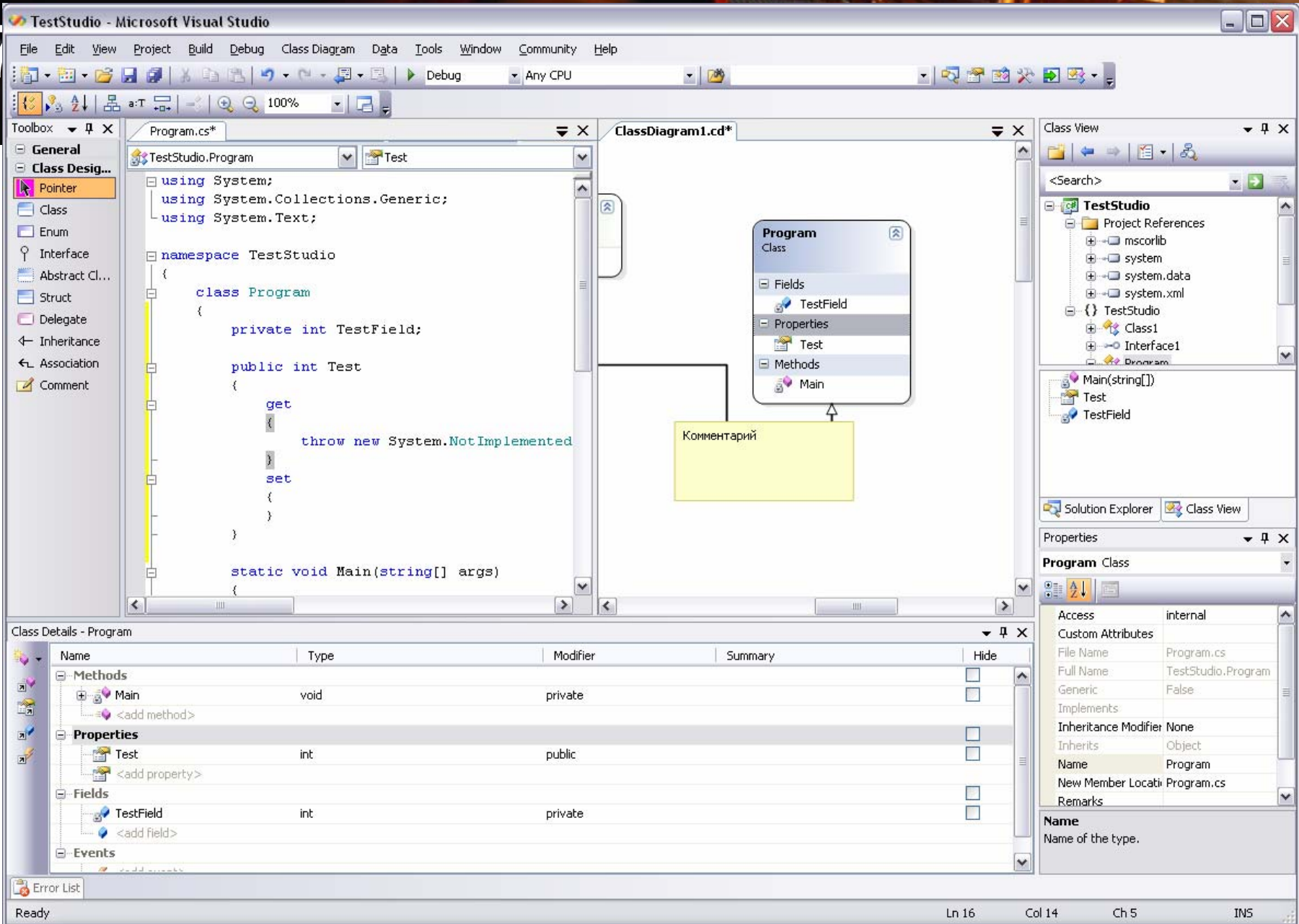
Allowed security modes:	Forms Authentication
<input type="checkbox"/> None	Password format: HTTP cookie name:
<input type="checkbox"/> Forms	<input type="checkbox"/> SHA1
<input type="checkbox"/> Passport	<input type="checkbox"/> MDS
<input checked="" type="checkbox"/> Windows	<input type="checkbox"/> Requires SSL
<input type="checkbox"/> Requires impersonation	Cookie protection: Login URL:
	<input checked="" type="checkbox"/> All
	<input type="checkbox"/> None
	<input type="checkbox"/> Encryption
	Cookie timeout: 00:30:00

Constraint authorizes only specific ASP.NET authentication providers.

The following Settings are validated in processing this constraint:

```

ASPAuthMode
<Authentication mode=>
CookieProtection
  
```



Name	Type	Modifier	Summary	Hide
Methods				
Main	void	private		<input type="checkbox"/>
Properties				
Test	int	public		<input type="checkbox"/>
Fields				
TestField	int	private		<input type="checkbox"/>

Program Class	
Access	internal
Custom Attributes	
File Name	Program.cs
Full Name	TestStudio.Program
Generic	False
Implements	
Inheritance Modifier	None
Inherits	Object
Name	Program
New Member Location	Program.cs
Remarks	

8. Создание тестовых сценариев для модульного тестирования

- Test Driven Development
- Модульное тестирование создается разработчиков для проверки работы кода
- Visual Studio помогает убрать рутину
 - Генерирует базовые классы для модульного тестирования
 - Проверяет покрытие кода тестами
 - Встраивает модульное тестирование в процесс сборки

Проверка покрытия кода

```
void PurchaseItem(int itemID)
```

```
{
```

```
    if (itemID == 0)
```

```
    {
```

```
        throw new Exception();
```

```
    }
```

```
    else
```

```
    {
```

```
        ProcessOrder(itemID);
```

```
    }
```

```
}
```

```
UnitTest()
```

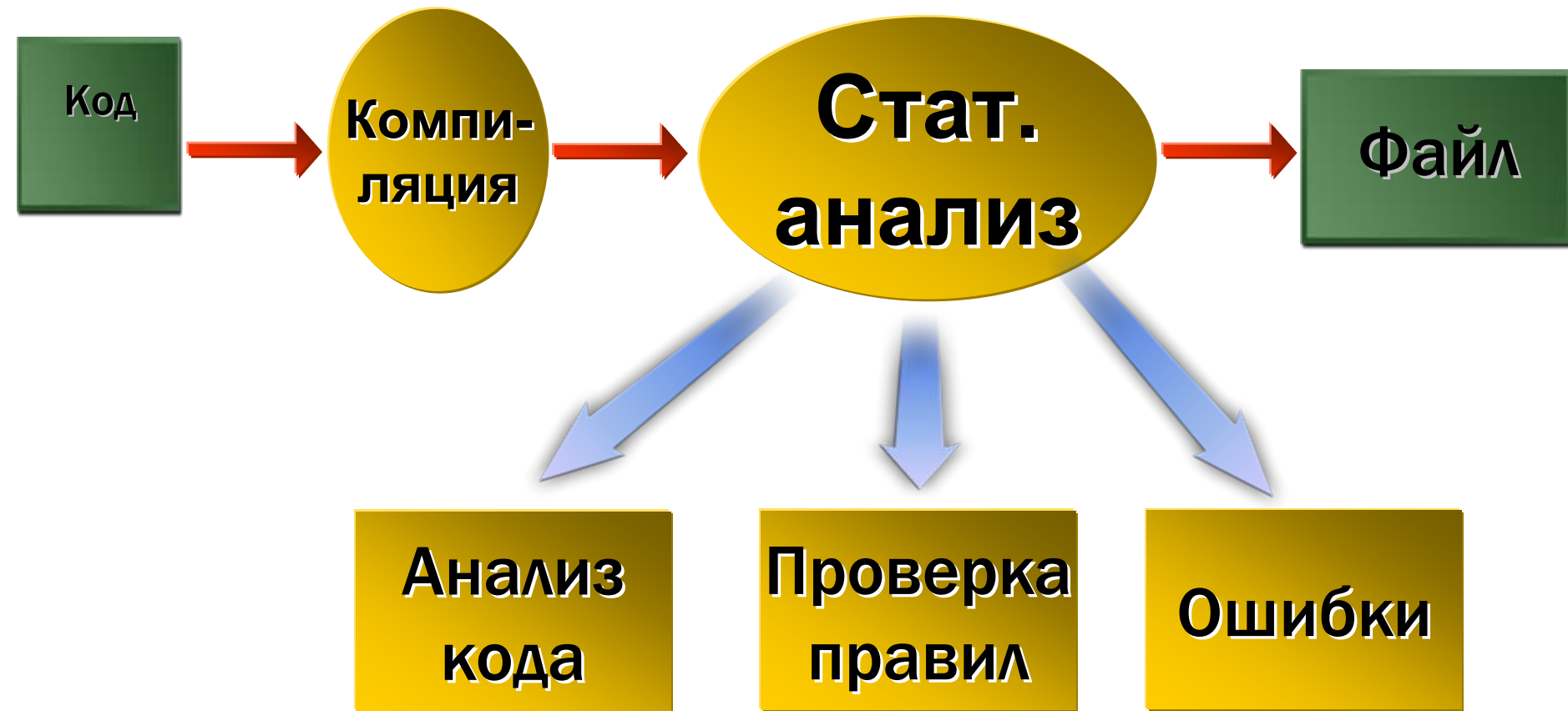
```
{
```

```
    PurchaseItem(1);
```

```
}
```



9. Статический анализ кода и профилирование



9. Статический анализ кода и профилирование



main 3

AMethod 6

BMethod 9

2

1

The screenshot displays the Microsoft Development Environment (MDE) interface. The main window is titled "TestProject1 - Microsoft Development Environment". The menu bar includes File, Edit, View, Project, Build, Team, Debug, Data, Tools, Test, Window, Community, and Help. The toolbar shows various icons for file operations and testing. The "New Bug 4*" tab is active, showing a form for creating a new bug. The form fields are as follows:

- Title: Bug
- Classification: Project Structure (Area), Project Iteration (Iteration)
- Status: Assigned To (TFSSETUP), Priority (2), State (Active), Reason (New), Triage (empty)

Below the form are tabs for Summary, Links, File Attachments, and Details. The Summary tab is selected, showing a text area for the "Detailed Description and History" with the placeholder text "Type your comment here.".

On the right side, the Solution Explorer shows the project structure for "TestProject1":

- Solution 'TestProject1' (1 project)
 - Solution Items
 - localtestrun.testrunconfig
 - TestProject1
 - My Project
 - AuthoringTests1.txt
 - ManualTest1.mht
 - ManualTest2.mht
 - UnitTest1.vb

At the bottom, the Properties window is visible but empty. The Windows taskbar at the bottom shows the Start button, taskbar icons, and the system tray with the time 4:24 PM.

SearsInventory - Microsoft Development Environment

File Edit View Project Build Debug Data Tools Window Help

OrderFromStore OrderFromStore.loa... HoldInventory.webtest FindStore.webtest TestStore.vb

Server Explorer

- Overall
- webservice
- public web site
- Machines
 - edglas-It
 - Active Server Pe
 - Memory
 - Network Interfac
 - PhysicalDisk
 - Process
 - Processor
 - System
 - Threads
 - Processes
 - Context Switc
 - Processor Qu...

Time	Value
01:35	102
01:40	102
01:45	112
01:50	112
01:55	122
02:05	132
02:10	132

Counter	Instance	Categ...	Machine	Color	Scale	Min	Max
<input checked="" type="checkbox"/> User Load	_total	Load...	EDGLA...		1000	12	132
<input checked="" type="checkbox"/> Avg. Time To Last ...	_total	Load...	EDGLA...		10	0	3
<input checked="" type="checkbox"/> Requests / Sec	_total	Load...	EDGLA...		100	0	40

Graph1 Requests Errors

Solution Explorer - Solution '...'

- ProductStatus.vb
- Store.vb
- Data
- HoldInventory.aspx
- Store.aspx
- ShoppingCartService
- TestCurrencyConverter
- TestShoppingCart
- TestStoreInventory
 - My Application
 - AssemblyInfo.vb
 - FindStore.webtest
 - HoldInventory.webtest
 - OrderFromStore.loadtest
 - TestStore.vb

Test Results - All Results

TestRun04 12/10/03 11:41:12:07 AM All Results By Category Filter Group By: (None) Customize...

Title	Result	Test Type
<input type="checkbox"/> OrderFromStore	Completed	Load and Stress Test

All Runs Completed, No Tests Selected

Test Results Code Coverage Task List Output Pending Checkins Class Details

Solution Ex... Class View

Test View - Group By None Group By: (None) Filter By: (None)

Title	Owner
TestAddMethod	Mort Gain
TestAdd_PriceProperty	Mort Gain
TestSearchMethod	Mort Gain
TestSubmitPaymentmentM	Mort Gain
Currency	Renee Da
SubmitOrder	Renee Da
TestFindMethod	Mort Gain
FindStore	Mort Gain
HoldInventory.webtest	Mort Gain
OrderFromStore	Mort Gain

Test View Properties

Ready

start Microsoft Developme... 2:54 PM

Area: All

Tests: Show

Active Bugs: Show

Code Coverage: Show

Code Churn: Show

1 of 1

100%

Find | Next

Select a format

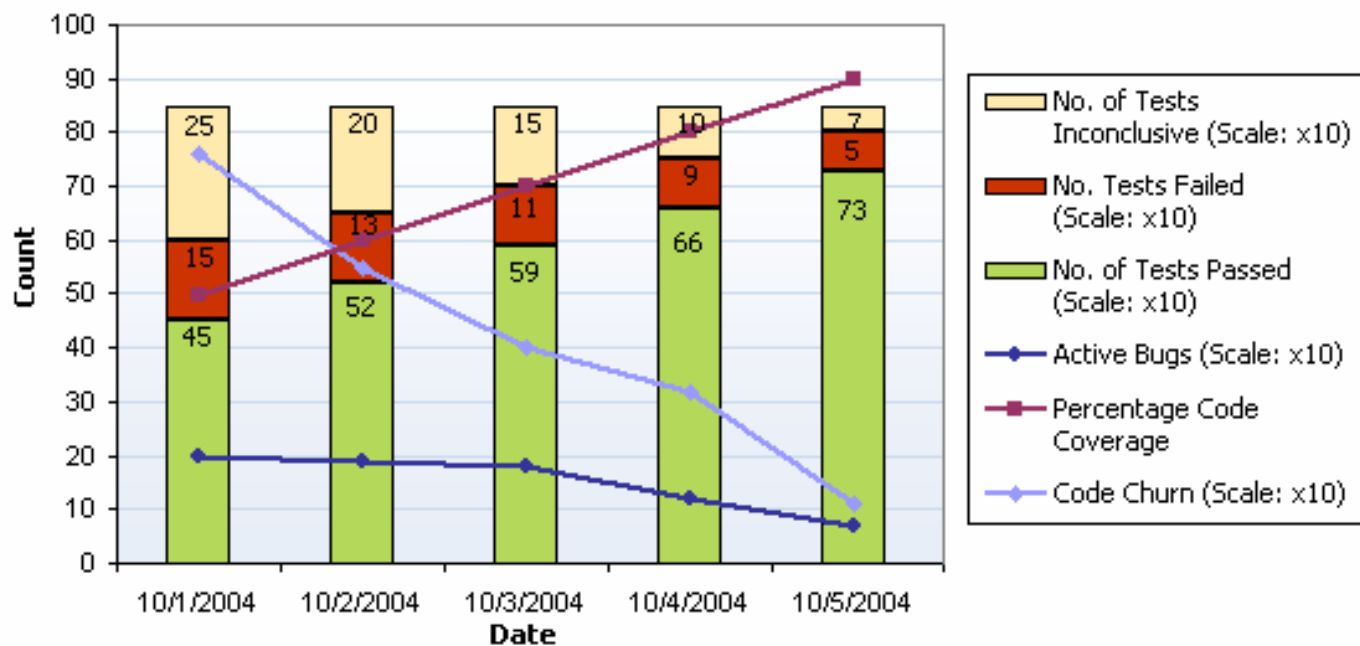
Export



Quality Indicators

Report generated: 11/04/2004 11:25 AM by jackerman

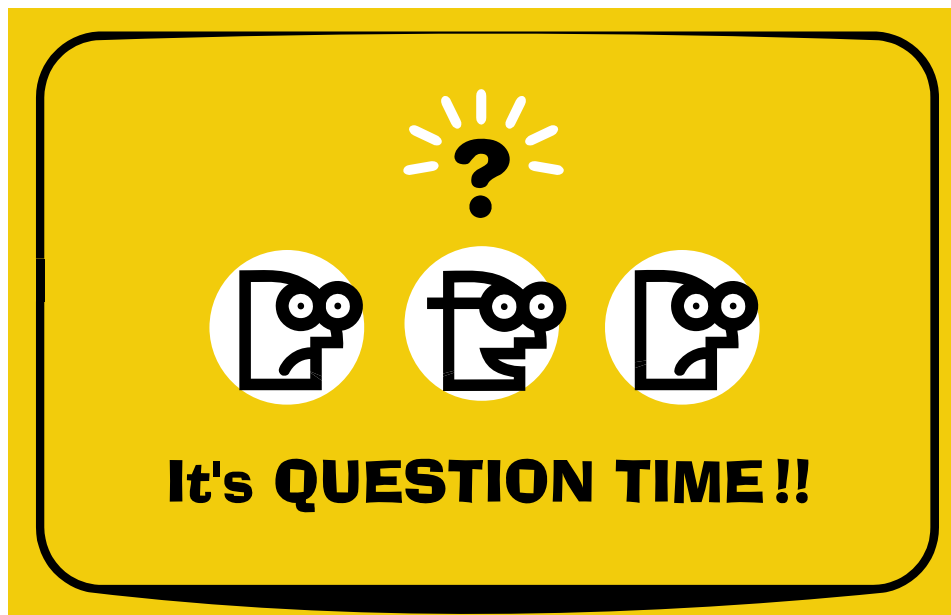
What is the quality of the software?

[View report documentation](#)

Рекомендуемые конфигурации

Пользователи	Серверы	Уровни	CPU	HDD	RAM
0..20	1	App+Data	1 x 2.2	8 GB	1 GB
20..100	1	App+Data	2 x 2.2	30 GB	2 GB
100...250	2	App	1 x 2.2	20 GB	1 GB
		Data	2 x 2.2	80 GB	2 GB
250...500	2	App	2 x 2.2	40 GB	2 GB
		Data	4 x 2.2	150 GB	4 GB

Вопросы?



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