Microsoft

HEROES

happen {here}

Windows Server 2008 Microsoft Visual Studio 2008 Microsoft SQL Server 2008

{ Visual Studio 2008 and Application Lifecycle Management }

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VSTS Consultant/Trainer
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Application Lifecycle Management

More for Testers

- Faster and smarter test execution
- Support for AJAX web testing
- Enhanced Load Testing

More for Developers

- Integration of Visual Studio Team Edition for Database Professionals
- Code Metric Generation
- More sophisticated Code Analysis

More for Everyone

- Better query for work items
- Build configuration editor
- Continuous Integration
- More real-time visibility for version control
- High fidelity web access
- Better SharePoint integration

Visual Studio Team System

Feedback from the field

"With Visual Studio Team System, we thought we were buying developer tools; what we got was a culture changing tool."

John Szurek
Enterprise Architect

ClearChannel

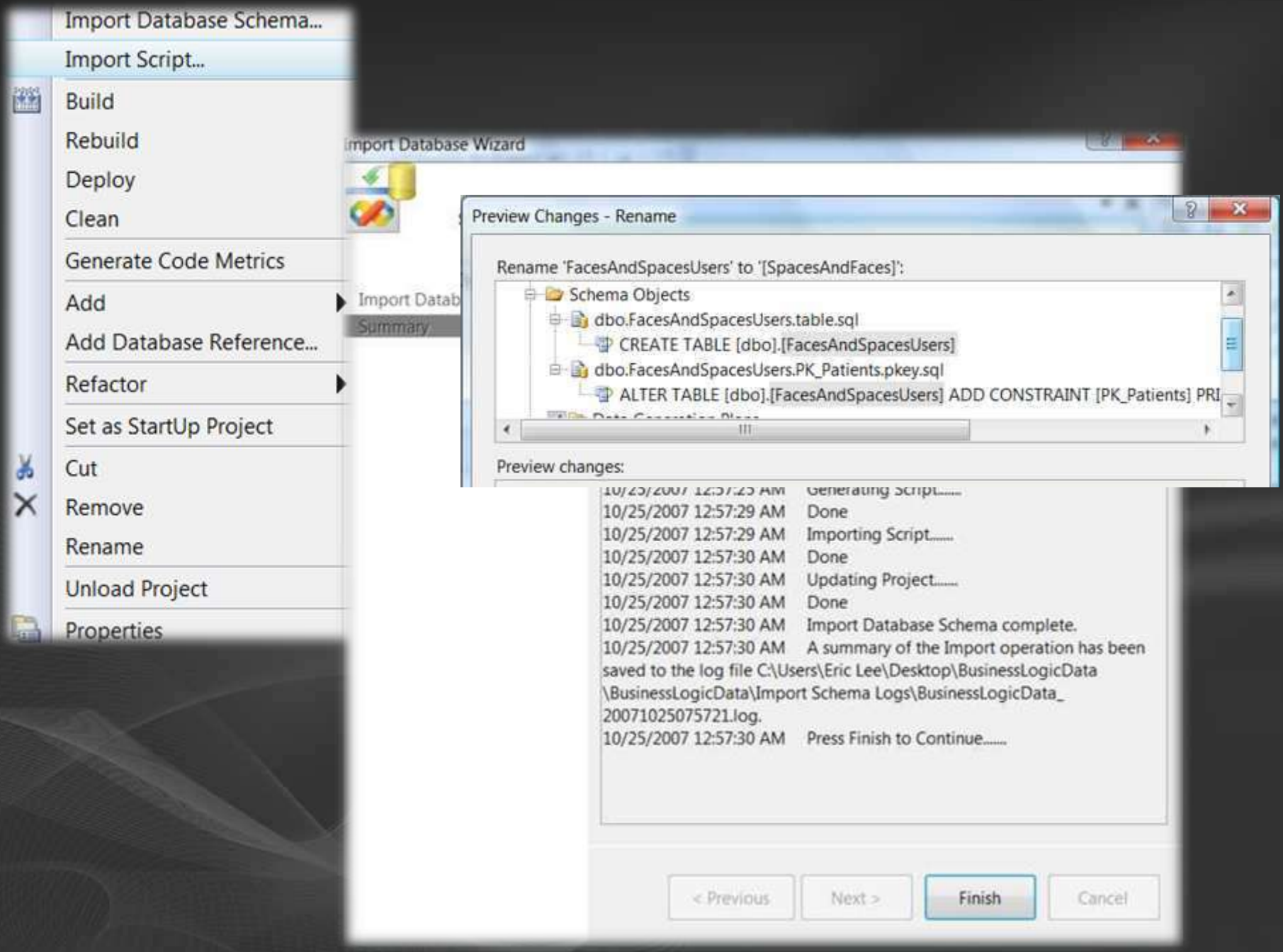
Productivity Breakthroughs
Database Development

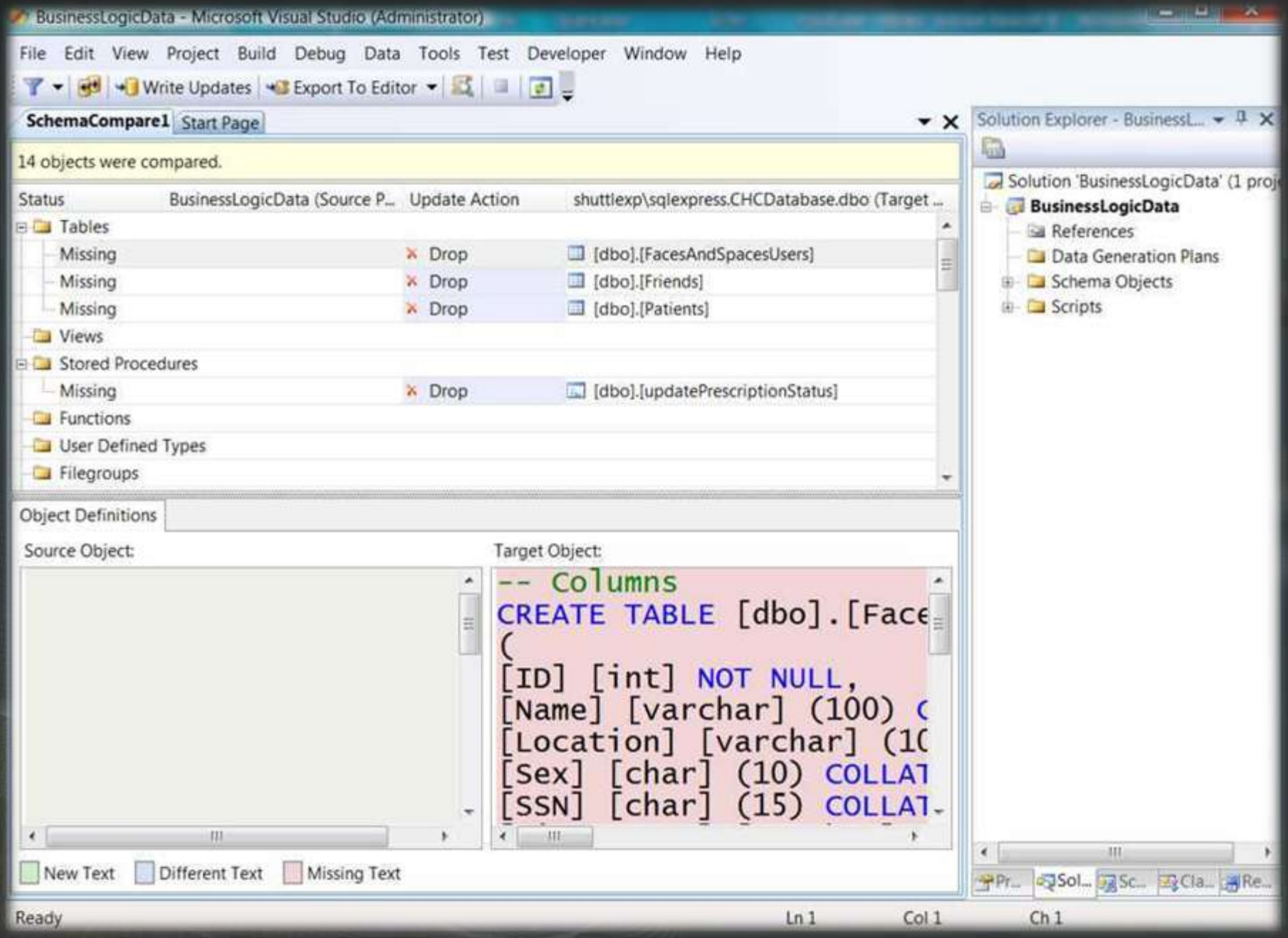
The Challenge

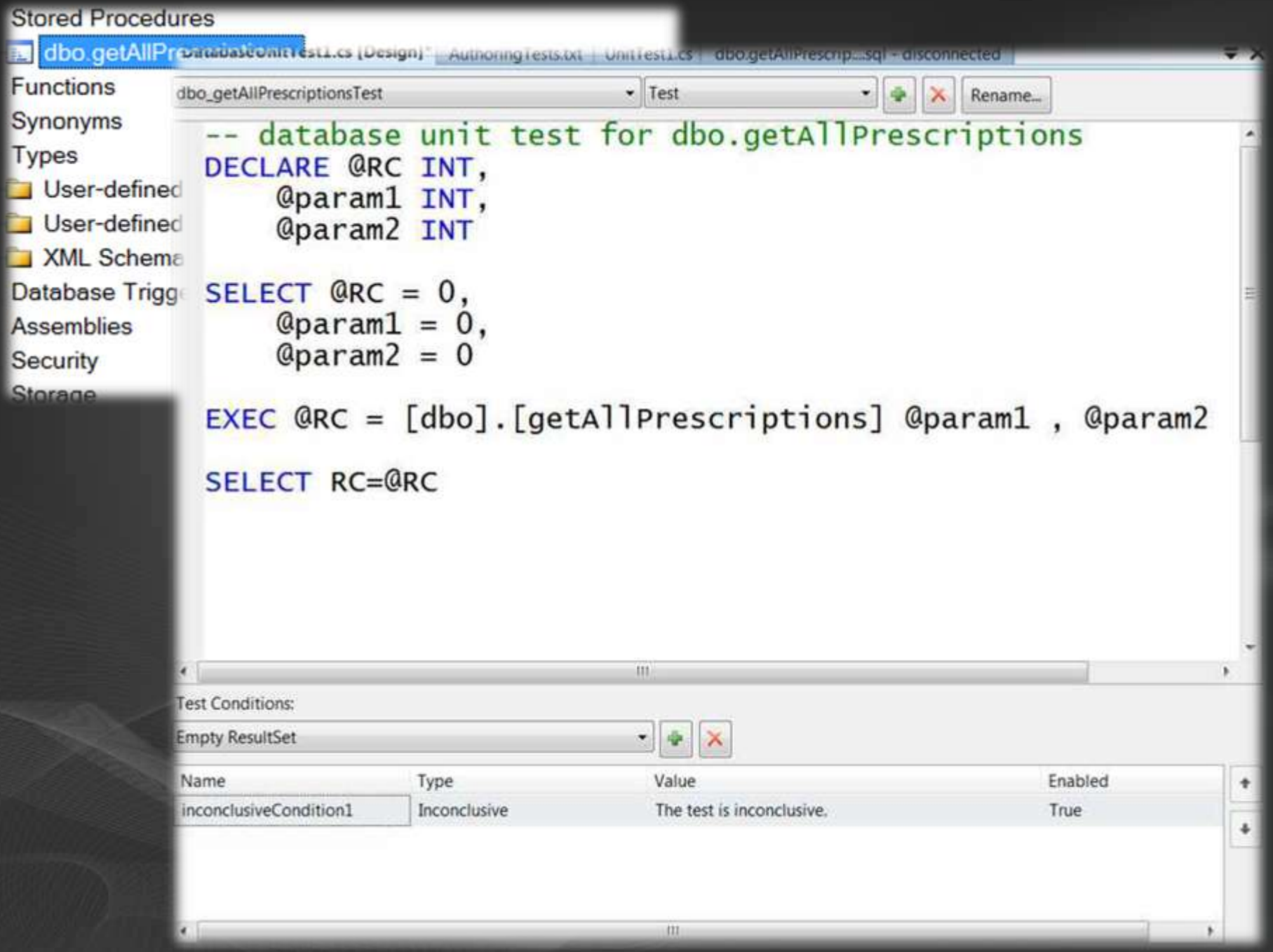
Databases are ubiquitous, but because of inadequate tools, database development was not able to benefit from formal change and configuration management, the way ‘regular’ software development does.

The Solution

- Visual Studio 2008 Team System includes the highly acclaimed Team Edition for Database Professionals product, which includes
  - A change and configuration management friendly project structure
  - Schema import/export
  - Data generation plans for test data
  - Automated deploy
  - Schema and data comparison


Import Database Schema...
Import Script...
Build
Rebuild
Deploy
Clean
Generate Code Metrics
Add
Add Database Reference...
Refactor
Set as StartUp Project
Cut
Remove
Rename
Unload Project
Properties
Import Database Wizard
Import Datab
Summary
Preview Changes - Rename
Rename 'FacesAndSpacesUsers' to '[SpacesAndFaces]':
Schema Objects
dbo.FacesAndSpacesUsers.table.sql
CREATE TABLE [dbo].[FacesAndSpacesUsers]
dbo.FacesAndSpacesUsers.PK_Patients.pkey.sql
ALTER TABLE [dbo].[FacesAndSpacesUsers] ADD CONSTRAINT [PK_Patients] PRI
Preview changes:
10/25/2007 12:57:29 AM Done
10/25/2007 12:57:29 AM Importing Script.....
10/25/2007 12:57:30 AM Done
10/25/2007 12:57:30 AM Updating Project.....
10/25/2007 12:57:30 AM Done
10/25/2007 12:57:30 AM Import Database Schema complete.
10/25/2007 12:57:30 AM A summary of the Import operation has been saved to the log file C:\Users\Eric Lee\Desktop\BusinessLogicData\BusinessLogicData\Import Schema Logs\BusinessLogicData_20071025075721.log.
10/25/2007 12:57:30 AM Press Finish to Continue.....
< Previous
Next >
Finish
Cancel


BusinessLogicData - Microsoft Visual Studio (Administrator)
File Edit View Project Build Debug Data Tools Test Developer Window Help
Write Updates
Export To Editor
SchemaCompare1
Start Page
14 objects were compared.
Status
BusinessLogicData (Source P...
Update Action
shuttlexp\sqlexpress.CHCDatabase.dbo (Target ...
Tables
Missing
Drop
[dbo].[FacesAndSpacesUsers]
Missing
Drop
[dbo].[Friends]
Missing
Drop
[dbo].[Patients]
Views
Stored Procedures
Missing
Drop
[dbo].[updatePrescriptionStatus]
Functions
User Defined Types
Filegroups
Object Definitions
Source Object:
Target Object:
-- Columns
CREATE TABLE [dbo].[Face
(
[ID] [int] NOT NULL,
[Name] [varchar] (100)
[Location] [varchar] (10
[Sex] [char] (10) COLLAT
[SSN] [char] (15) COLLAT
New Text
Different Text
Missing Text
Solution Explorer - BusinessL...
Solution 'BusinessLogicData' (1 proj
BusinessLogicData
References
Data Generation Plans
Schema Objects
Scripts
Ready
Ln 1
Col 1
Ch 1


Stored Procedures
dbo.getAllPr
Functions
Synonyms
Types
User-defined
User-defined
XML Schema
Database Trigg
Assemblies
Security
Storage
dbo_getAllPrescriptionsTest
Test
Rename...
-- database unit test for dbo.getAllPrescriptions
DECLARE @RC INT,
@param1 INT,
@param2 INT
SELECT @RC = 0,
@param1 = 0,
@param2 = 0
EXEC @RC = [dbo].[getAllPrescriptions] @param1 , @param2
SELECT RC=@RC
Test Conditions:
Empty ResultSet
Name
Type
Value
Enabled
inconclusiveCondition1
Inconclusive
The test is inconclusive.
True

Productivity Breakthroughs
AJAX Web Testing

The Challenge

AJAX-enabled web applications are very popular, but their asynchronous nature makes testing them very difficult.

The Solution

- Visual Studio 2008 Team System enables team members to target even the most complex AJAX applications – HTTP requests, whether user or script generated are captured as part of the web test.

Productivity Breakthroughs
Unit Testing Improvements

The Challenge

Practicing formal Test Driven Development (TDD) is very demanding for even the most sophisticated of development tools.

The Solution

- Visual Studio 2008 Team System makes great strides towards making TDD more productive. These improvements include:
  - *Better Execution Times*
  - *Run Tests*
  - *Short Cut Keys to Run Tests*
  - *Disable Deployment*
  - *Test Inheritance*
  - *Directly go to the Point of Failure*

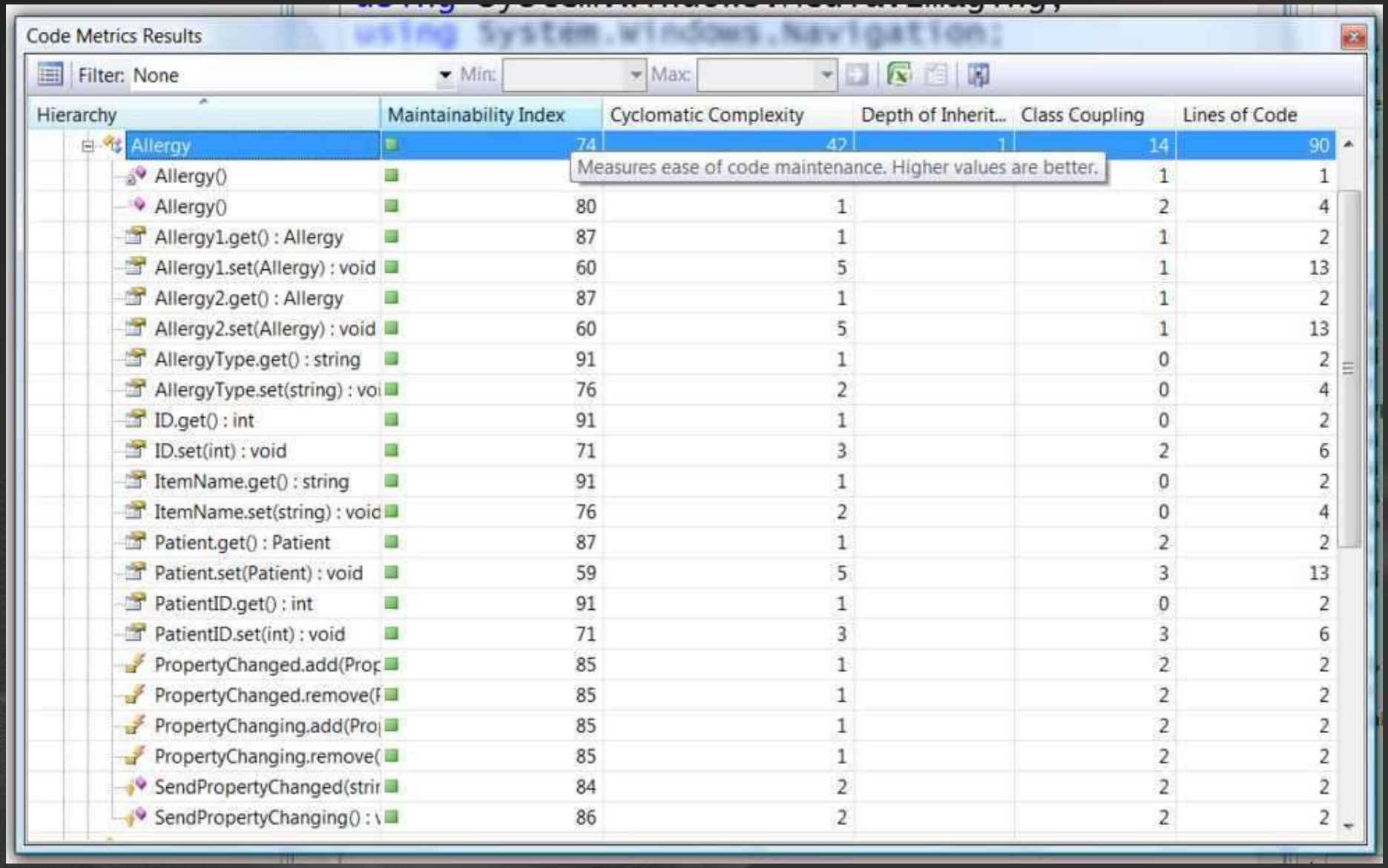
Productivity Breakthroughs
Integrated Code Metrics

The Challenge

How do developers know they are writing code that can be maintained and understood in the future?

The Solution

- Visual Studio 2008 Team System integrates sophisticated code metrics that enable developers to gather:
  - Cyclometic complexity
  - Maintainability Index
  - Inheritance Depth
  - Class Coupling
  - Lines of code



Hierarchy	Maintainability Index	Cyclomatic Complexity	Depth of Inherit...	Class Coupling	Lines of Code
Allergy	74	42	1	14	90
Allergy()				1	1
Allergy()	80	1		2	4
Allergy1.get() : Allergy	87	1		1	2
Allergy1.set(Allergy) : void	60	5		1	13
Allergy2.get() : Allergy	87	1		1	2
Allergy2.set(Allergy) : void	60	5		1	13
AllergyType.get() : string	91	1		0	2
AllergyType.set(string) : voi	76	2		0	4
ID.get() : int	91	1		0	2
ID.set(int) : void	71	3		2	6
ItemName.get() : string	91	1		0	2
ItemName.set(string) : void	76	2		0	4
Patient.get() : Patient	87	1		2	2
Patient.set(Patient) : void	59	5		3	13
PatientID.get() : int	91	1		0	2
PatientID.set(int) : void	71	3		3	6
PropertyChanged.add(Prop	85	1		2	2
PropertyChanged.remove(P	85	1		2	2
PropertyChanging.add(Pro	85	1		2	2
PropertyChanging.remove(	85	1		2	2
SendPropertyChanged(strir	84	2		2	2
SendPropertyChanging() : v	86	2		2	2

Productivity Breakthroughs
Enhanced Code Analysis

The Challenge

Code review are time consuming, error prone and depends on ‘group’ knowledge.

The Solution

- Code analysis examines every path code might take; looking for known problems and concerns. This feature has been greatly enhanced in Visual Studio 2008
  - Better discoverability of the feature through the Developer top-level menu
  - More flexible warning suppressions
  - Code analysis report comparison
  - Enhanced code analysis check-in policy
  - Code-aware spell checker

Productivity Breakthroughs
Performance Profiler

The Challenge

Understanding data gathered by a profiler is difficult and tedious

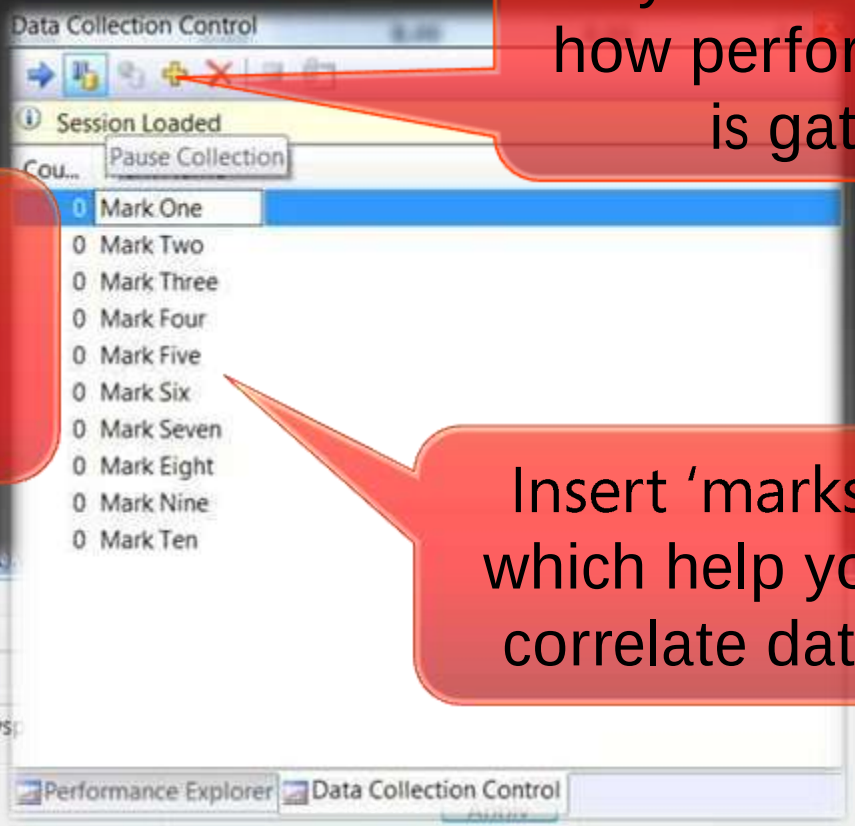
The Solution

- In Visual Studio 2008 Team System, the industrial strength profiler has been enhanced across the board; this includes:
  - New data collection control
  - WCF support
- However, probably its most notable features is its ability to visually compare performance data.

Dynamically control how performance data is gathered.

Compare 2 performance reports against each other

Insert ‘marks’ which help you correlate data



Comparison Files

Baseline File: WPFPhysician071025.vsp

Comparison File: WPFPhysician071025(1).vs

Comparison complete.

Comparison Column	Delta	Baseline Value	Comparison V...
System.Windows.Application.LoadComponent(object,class System.Uri)	11083913	273871669	284955582
WPFPhysician.PhysicianHOLDataContext.get_Patients()	707448	32642981	33350429
WPFPhysician.App..cctor()	292369	1451251	1743620
WPFPhysician.Window1..ctor()	180325	5575658	5755983
WPFPhysician.PhysicianHOLDataContext..ctor()	29915	875091	905006
WPFPhysician.App.InitializeComponent()	7872	706097	713969
System.Windows.FrameworkElement.add_DataContextChanged(class System.Windows.Depe	1128	2717	3845
WPFPhysician.PatientRecordView.System.Windows.Markup.IComponentConnector.Connect(in	690	6248	6938
WPFPhysician.Window1.SetupData()	449	3253	3702

{ Productivity Breakthroughs }
Running Code Metrics

demo

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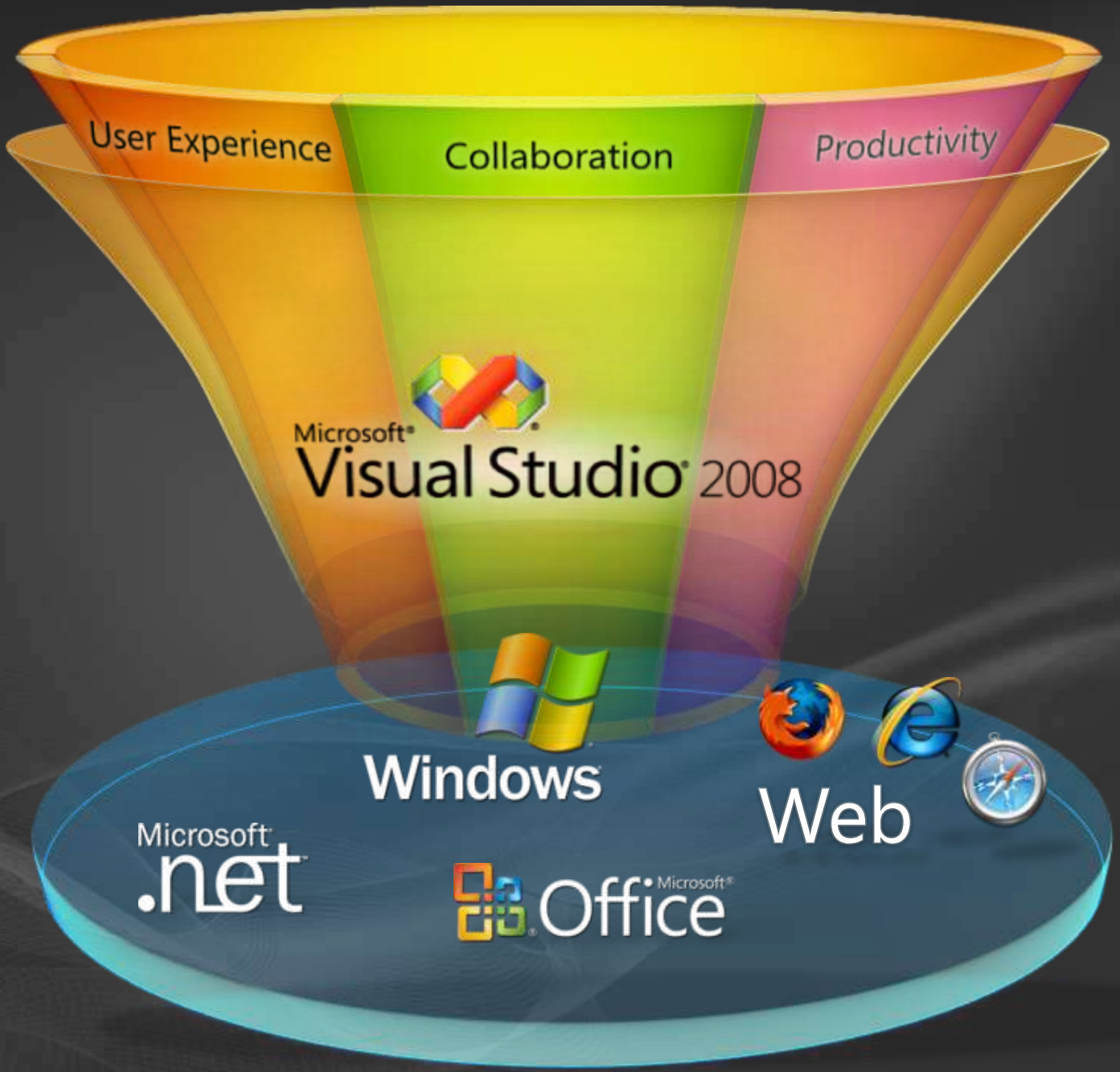
User Experience
Collaboration
Productivity
Microsoft
Visual Studio 2008
Windows
Web
Microsoft
.net
Office
Microsoft

Performance
Feedback from the field

Operation	VS 2005	VS 2008	Improvement
Start the IDE	00:30		
Load solution	03:45		
Get Latest (no changes)	00:13		
Rebuild solution	02:21		
Run all tests	05:29		
Start the application	00:19		

The solution has 33 projects including a database project, a web application project, numerous DLLs, an EXE and a WiX installer. There are almost 1,600 unit and integration tests.

John Rayner
Conchango

Breakthrough User Experience

Team Foundation Server Web Access

The Challenge

Not everyone on the team wants to use Visual Studio to access Team Foundation Server

The Solution

- Team System Web Access
- AJAX-enabled web interface to Team Foundation Servers that is equivalent to the Team Explorer in terms of functionality.

{ Breakthrough User Experience }
Team System Web Access

demo

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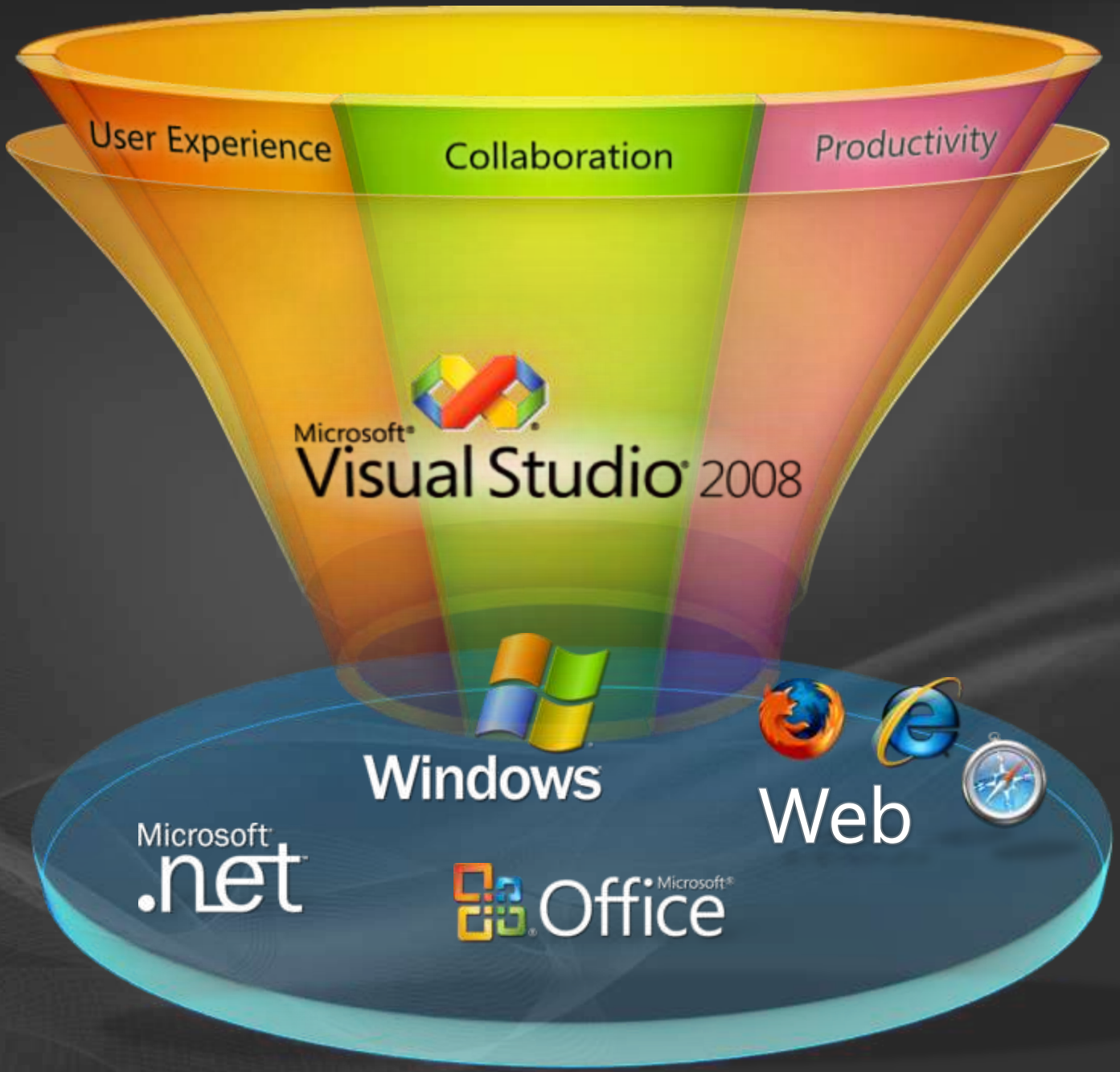
User Experience
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Collaboration

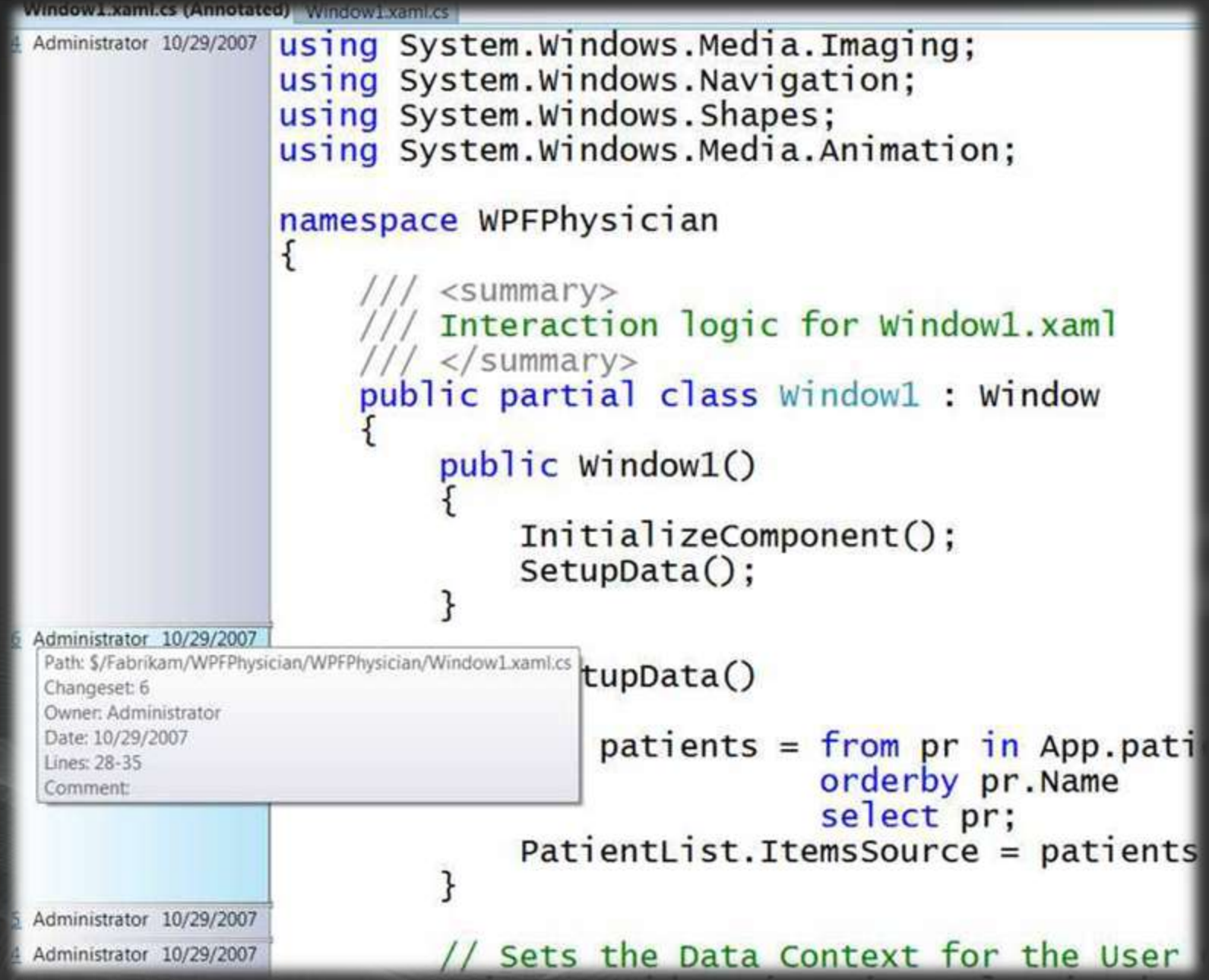
Version Control Annotation

The Challenge

How did this source file get this way? And who made the changes? Are to oft-asked, but difficult to answer questions in software development.

The Solution

Visual Studio 2008 Team System adds a new feature called annotation which visualizes every change that team members have made to a source file.


Window1.xaml.cs (Annotated)
Window1.xaml.cs
4 Administrator 10/29/2007
using System.Windows.Media.Imaging;
using System.Windows.Navigation;
using System.Windows.Shapes;
using System.Windows.Media.Animation;
namespace WPFPhysician
{
/// <summary>
/// Interaction logic for Window1.xaml
/// </summary>
public partial class Window1 : Window
{
public Window1()
{
InitializeComponent();
SetupData();
}
6 Administrator 10/29/2007
Path: $/Fabrikam/WPFPhysician/WPFPhysician/Window1.xaml.cs
Changeset: 6
Owner: Administrator
Date: 10/29/2007
Lines: 28-35
Comment:
tupData()
patients = from pr in App.pati
orderby pr.Name
select pr;
PatientList.ItemsSource = patients
}
5 Administrator 10/29/2007
4 Administrator 10/29/2007
// Sets the Data Context for the User

Collaboration

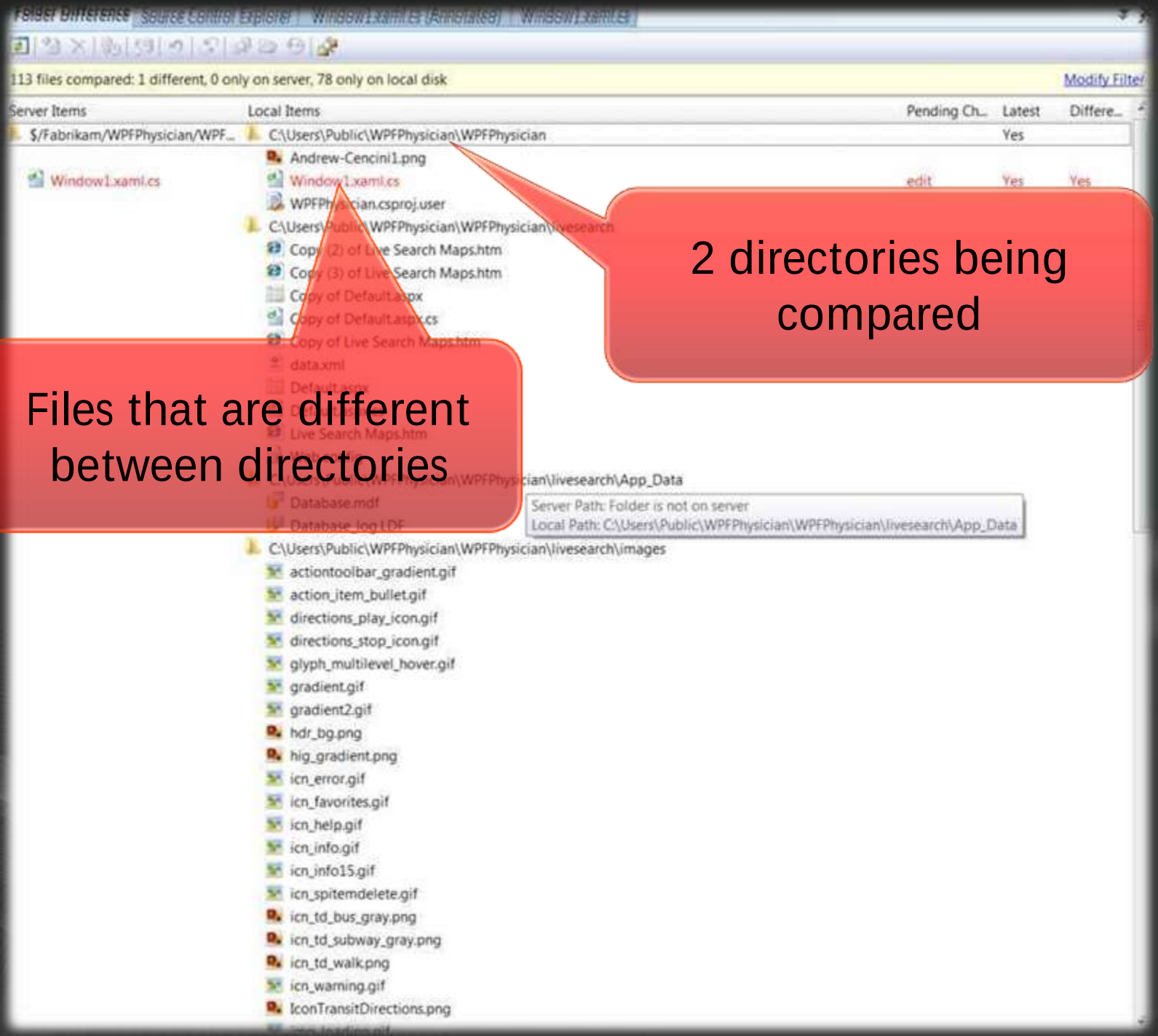
Folder-level Comparison

The Challenge

No matter what the size of the project, identifying the changes between two *sets* of files is time consuming and error prone.

The Solution

Visual Studio 2008 Team System adds a new feature to visually compare the contents of two folders under version control - changes to each file are clearly identified.


Folder Difference
Source Control Explorer
113 files compared: 1 different, 0 only on server, 78 only on local disk
Modify Filter
Server Items
Local Items
Pending Ch...
Latest
Differe...
$/Fabrikam/WPFPhysician/WPF...
C:\Users\Public\WPFPhysician\WPFPhysician
Yes
Andrew-Cencini1.png
Window1.xaml.cs
Window1.xaml.cs
edit
Yes
Yes
WPFPhysician.csproj.user
C:\Users\Public\WPFPhysician\WPFPhysician\livesearch
Copy (2) of Live Search Maps.htm
Copy (3) of Live Search Maps.htm
Copy of Default.aspx
Copy of Default.aspx.cs
Copy of Live Search Maps.htm
data.xml
Default.aspx
Live Search Maps.htm
Server Path: Folder is not on server
Local Path: C:\Users\Public\WPFPhysician\WPFPhysician\livesearch\App_Data
Database.mdf
Database_log.LDF
C:\Users\Public\WPFPhysician\WPFPhysician\livesearch\images
actiontoolbar_gradient.gif
action_item_bullet.gif
directions_play_icon.gif
directions_stop_icon.gif
glyph_multilevel_hover.gif
gradient.gif
gradient2.gif
hdr_bg.png
hig_gradient.png
icn_error.gif
icn_favorites.gif
icn_help.gif
icn_info.gif
icn_info15.gif
icn_spitemdelete.gif
icn_td_bus_gray.png
icn_td_subway_gray.png
icn_td_walk.png
icn_warning.gif
IconTransitDirections.png
2 directories being compared
Files that are different between directories

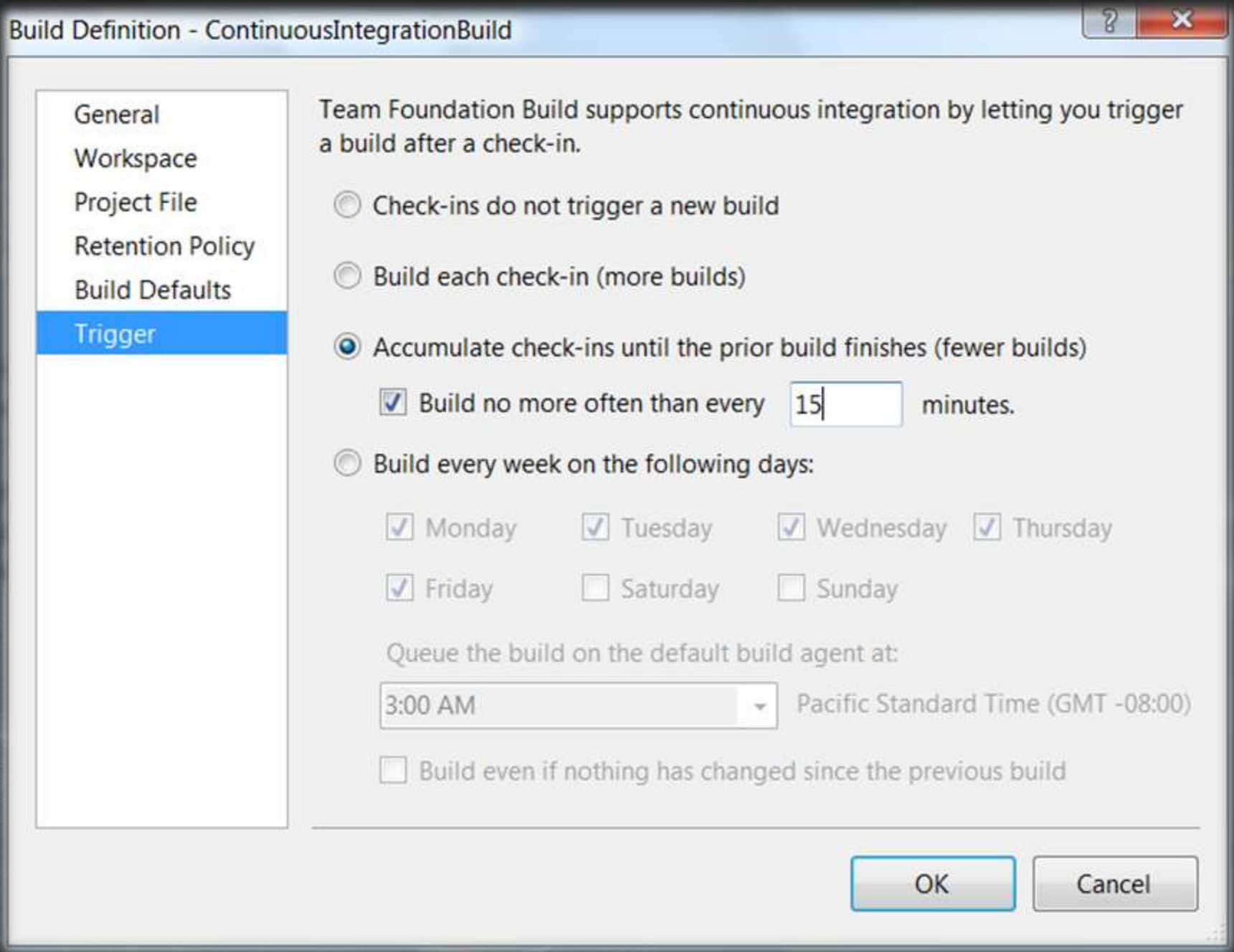
Collaboration
Continuous Integration

The Challenge

Build breaks are the bane of any productive software development team.

The Solution

- Visual Studio 2008 Team System adds continuous integration builds
- This enables developers to see breaks in a build as soon as possible, when they are the easiest to correct.


Build Definition - ContinuousIntegrationBuild
General
Workspace
Project File
Retention Policy
Build Defaults
Trigger
Team Foundation Build supports continuous integration by letting you trigger a build after a check-in.
Check-ins do not trigger a new build
Build each check-in (more builds)
Accumulate check-ins until the prior build finishes (fewer builds)
Build no more often than every 15 minutes.
Build every week on the following days:
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Queue the build on the default build agent at:
3:00 AM
Pacific Standard Time (GMT -08:00)
Build even if nothing has changed since the previous build
OK
Cancel

{ Collaboration }
Kicking off a CI Build

demo

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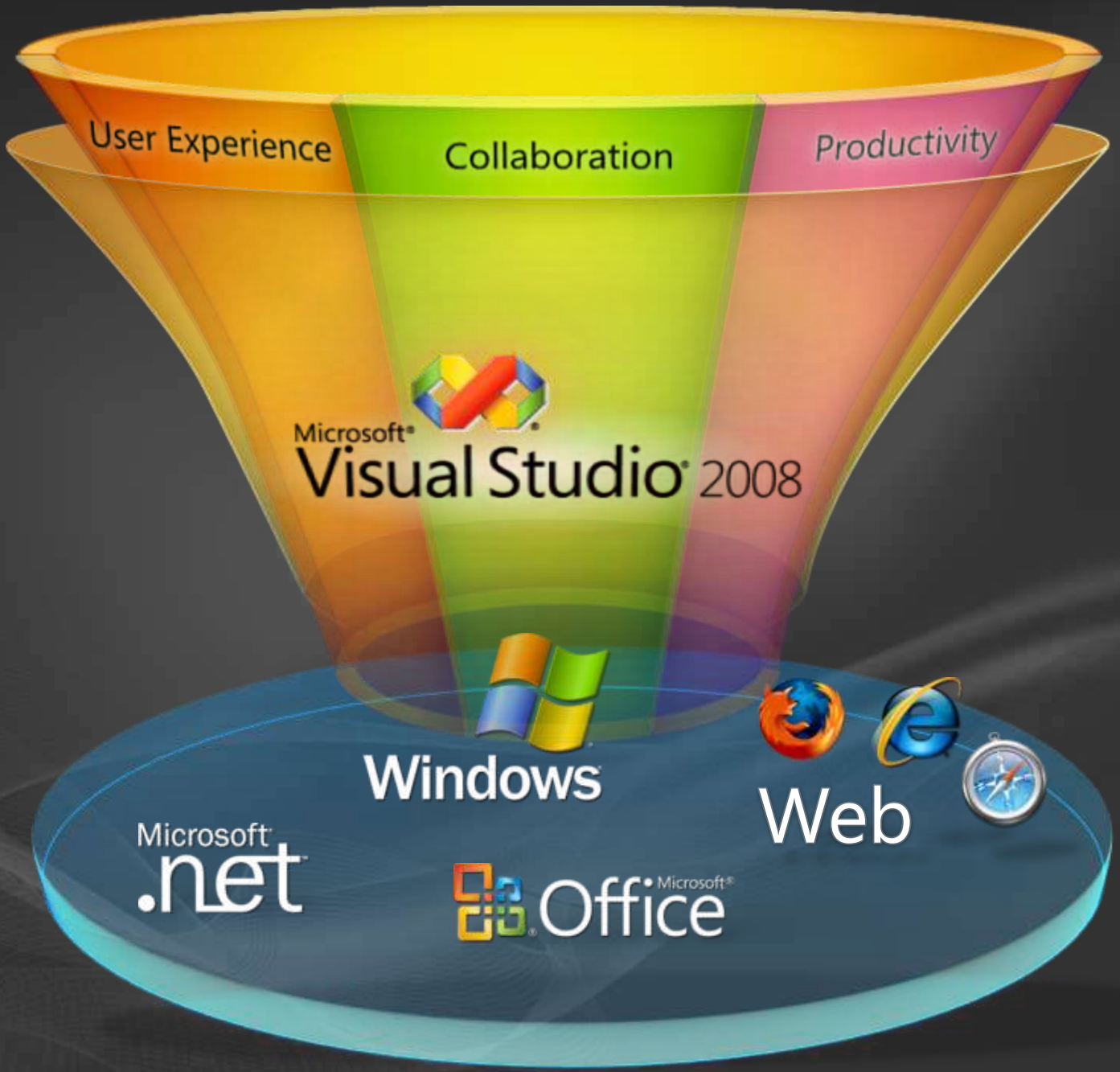
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- Better SharePoint integration

Call to Action

- Install Visual Studio 2008 Team System
  - Download available for MSDN Subscribers
- Become familiar with Visual Studio Team System
  - http://msdn2.microsoft.com/en-us/teamsystem/default.aspx
- Download pre-installed VSTS/TFS2008 VPC
  - Visual Studio® Team System 2008 Team Foundation Server and Team Suite VPC Image (Trial)
- Evaluation material at http://www.microsoft.com/vstudio

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