

# SharePoint 2010

Und warum Sie als Software-Entwickler  
das interessieren sollte

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**msdn Tech**  
*Talk*

# Worum wird's gehen?



- What the heck is SharePoint?
- Das Userinterface
- Einfache Anwendungen
- Visual Studio Support
- SharePoint Project Items
- Kommunikation nach draußen

# What the heck is SharePoint?



- 1001 Sichtweisen
- Philosophie
- Architekturübersicht
- Relevante Komponenten
  - Services
  - Search
  - Authentifizierung
- Developer-Ansätze

# What the heck is SharePoint?

Beliebte Antworten darauf:

- „Ja, da kannst du so Listen machen“
- „Wir verwenden das, um unsere Dokumente zentral abzulegen“
- „Dort schau ich immer nach, in welchem Bereich Jemand arbeitet“
- „Ist nicht die Website von Dolce Gusto damit gemacht?“
- „Das ist unsere **Business Collaboration Platform!** Mann!“

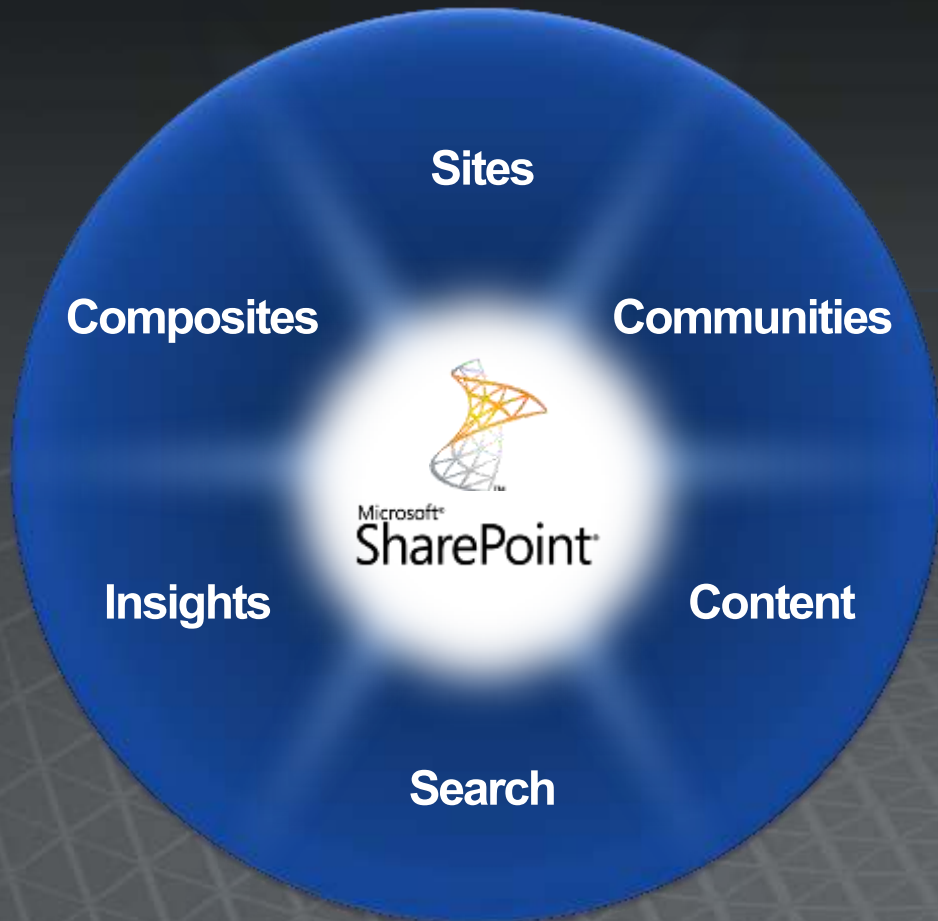
# What the heck is SharePoint?

Daraus lässt sich wie folgt vereinfachen:

- Man kann beliebige „Tabellen“ und „Datensätze“ erzeugen  
→ **(DB)**
- Es verwaltet meine Dateien  
→ **(DMS)**
- Es lassen sich beliebig Webinhalte anzeigen  
→ **(CMS)**
- Es läuft im Web und ist per Browser und APIs zugreifbar  
→ **(Service)**
- Es zeigt Zusammenhänge zwischen den einzelnen Usern an  
→ **(Social Platform)**
- Man steckt beliebige Bauteile (Templates) zu dem zusammen was man benötigt  
→ **(Framework)**

# Microsoft SharePoint 2010

The **Business Collaboration Platform** for the Enterprise and the Web



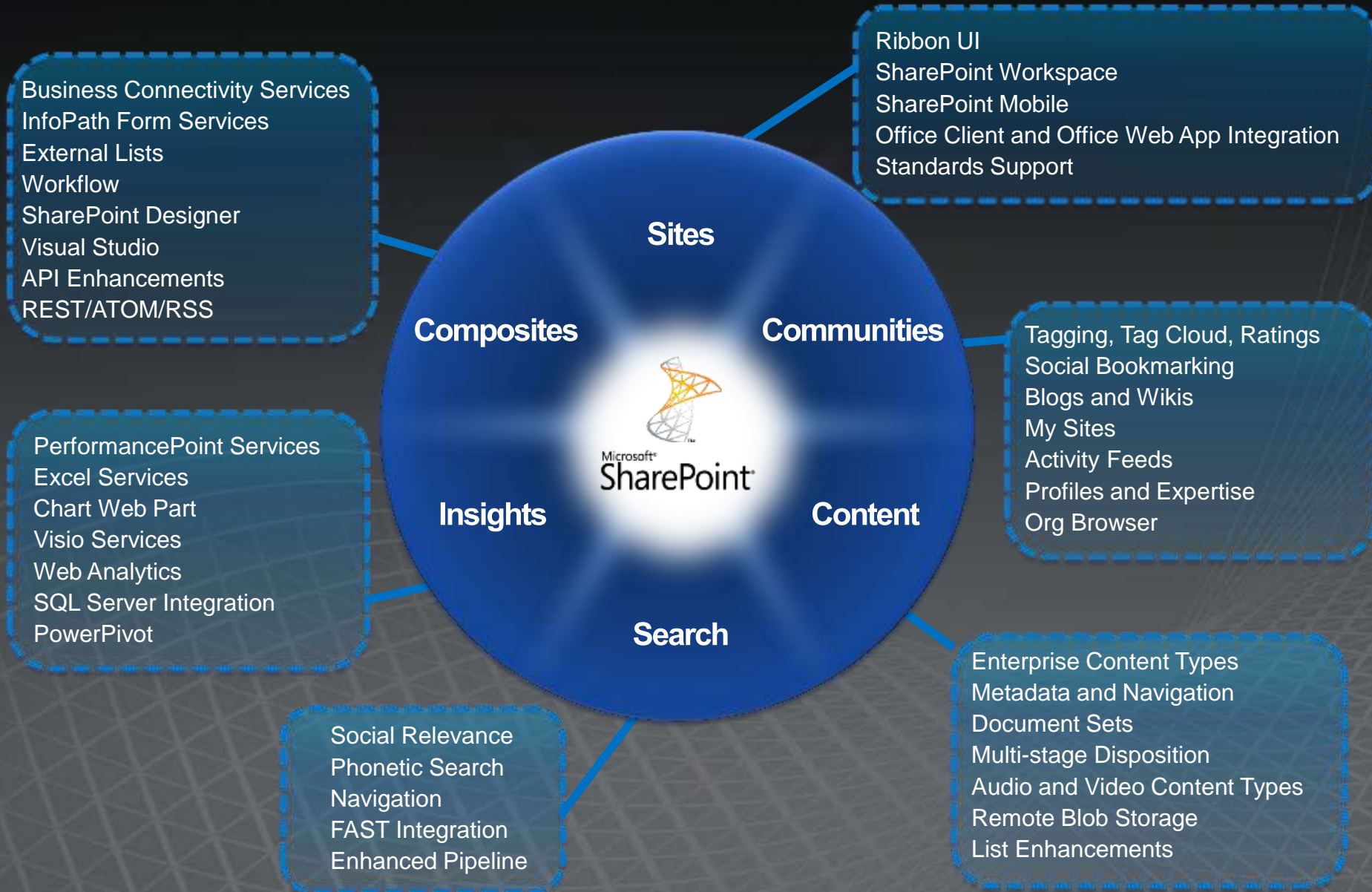
*Connect and Empower People*

*Cut Costs with a Unified Infrastructure*

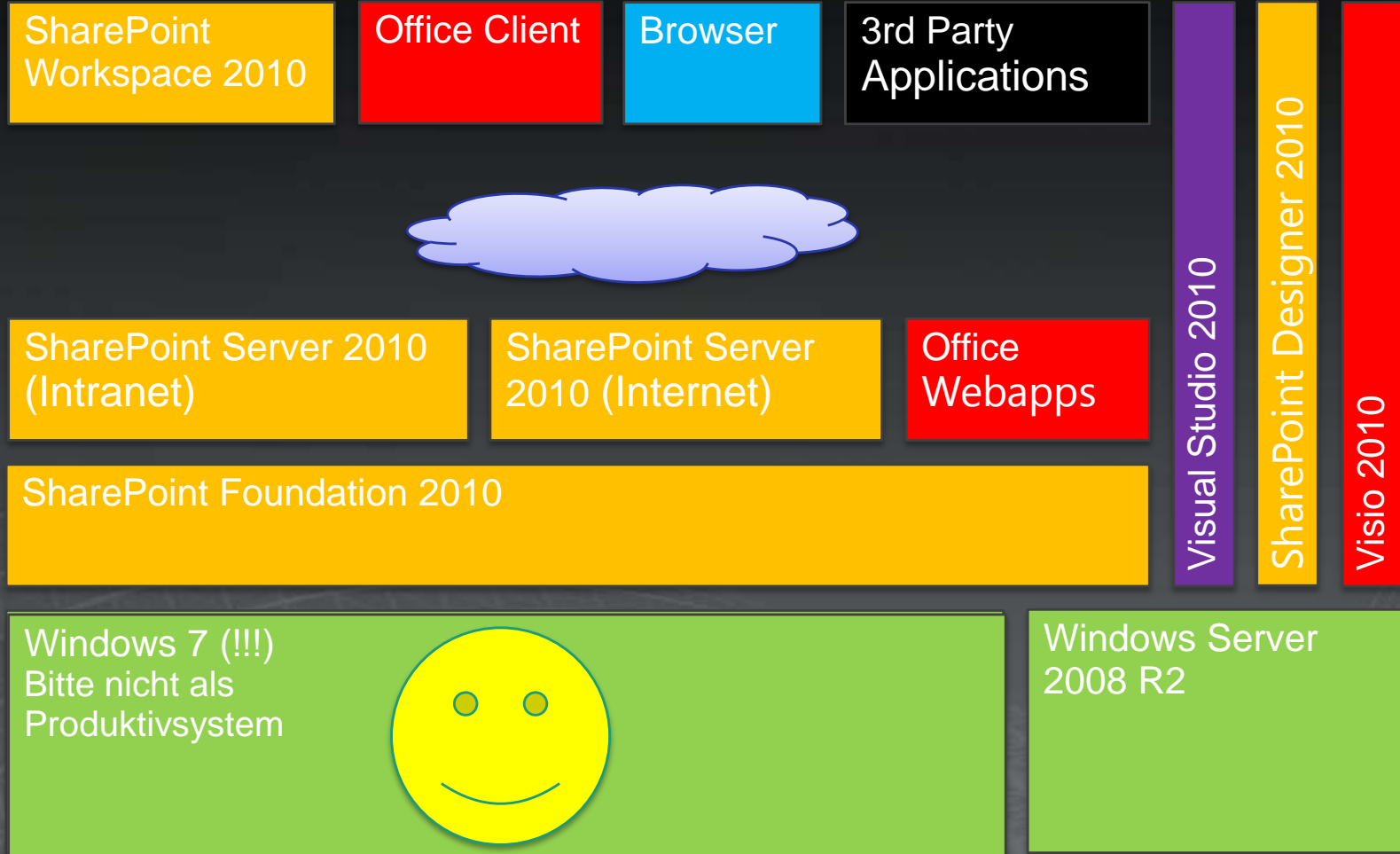
*Rapidly Respond to Business Needs*



# Microsoft SharePoint 2010

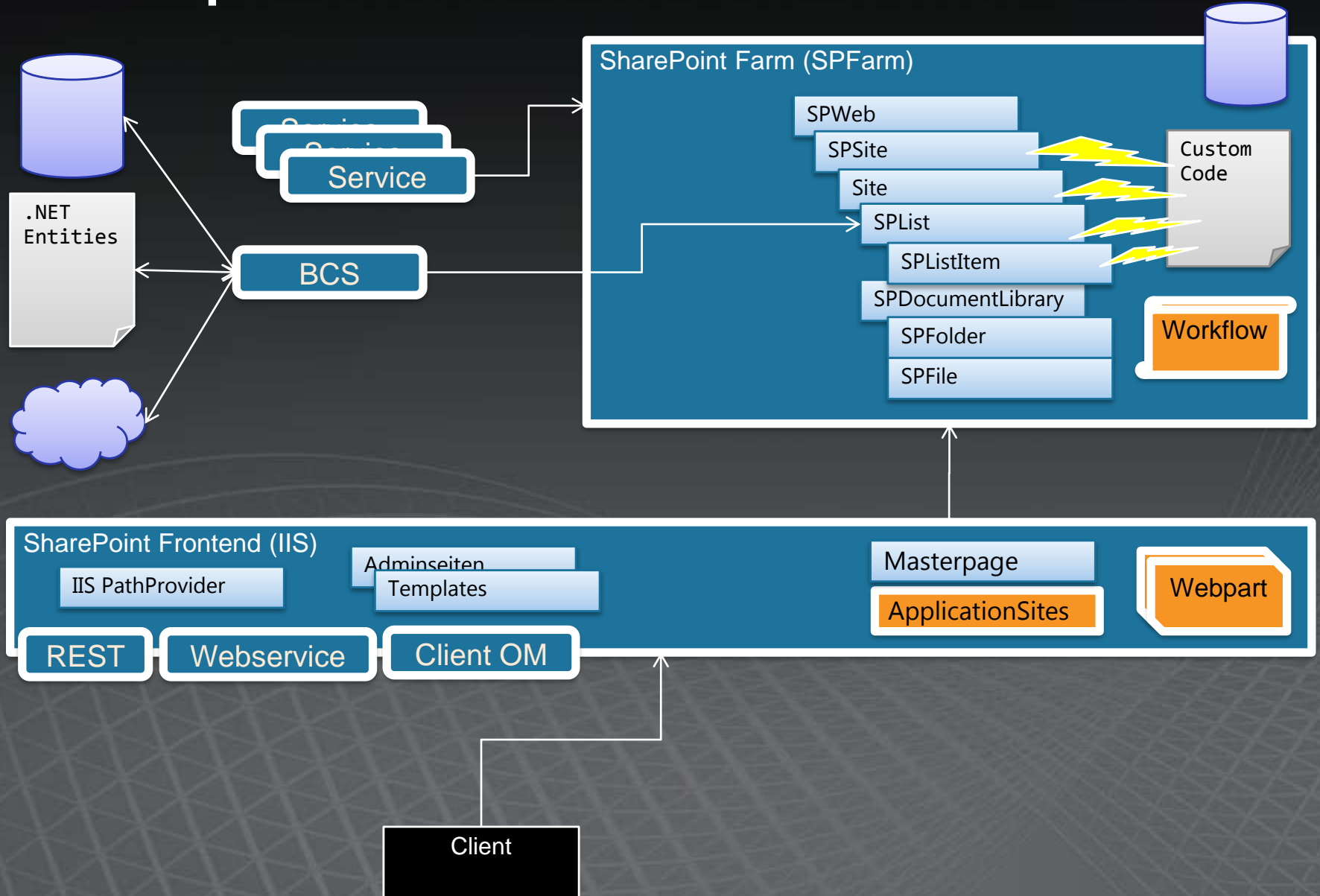


# Produktübersicht





# Komponenten-Übersicht



# Wichtige Aspekte

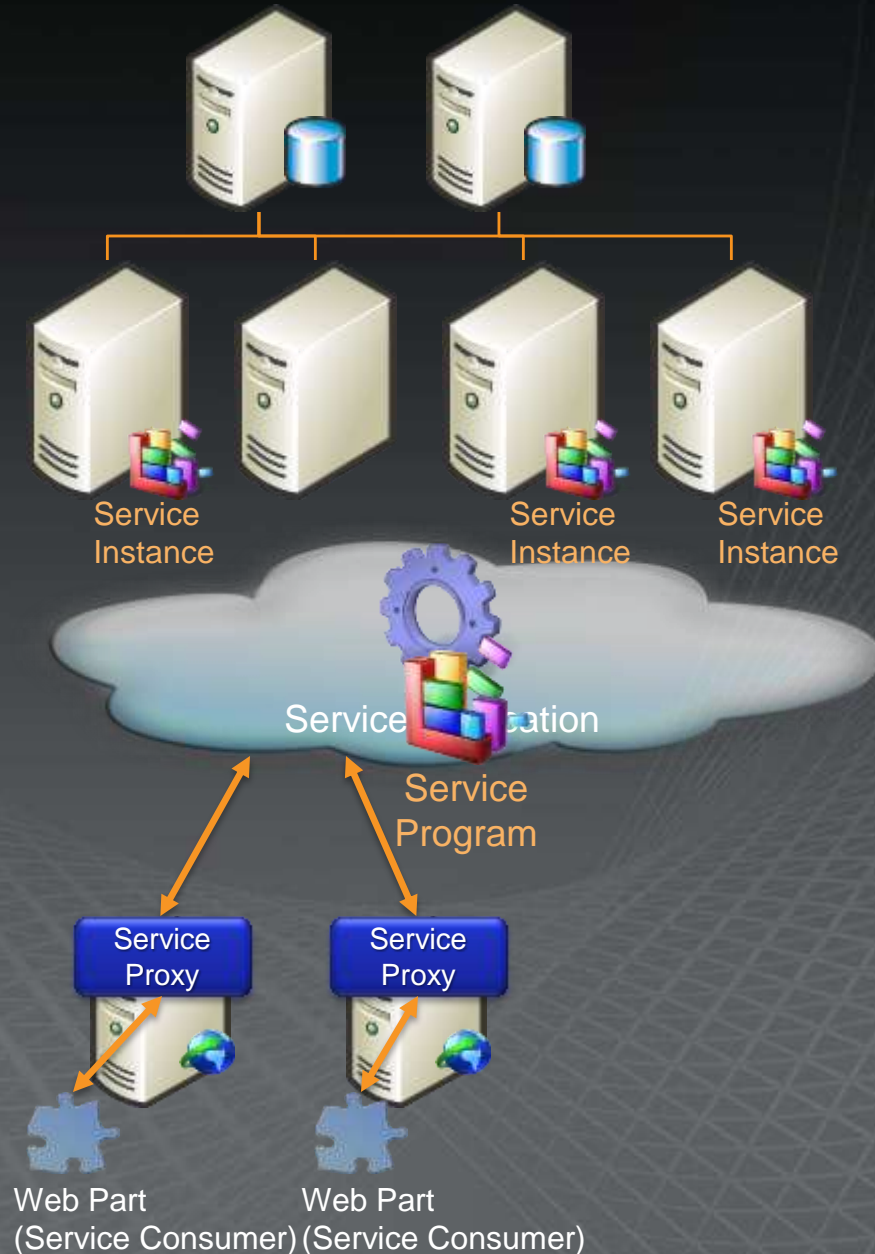
- Services
- Security

# Shared Service Provider in 2007

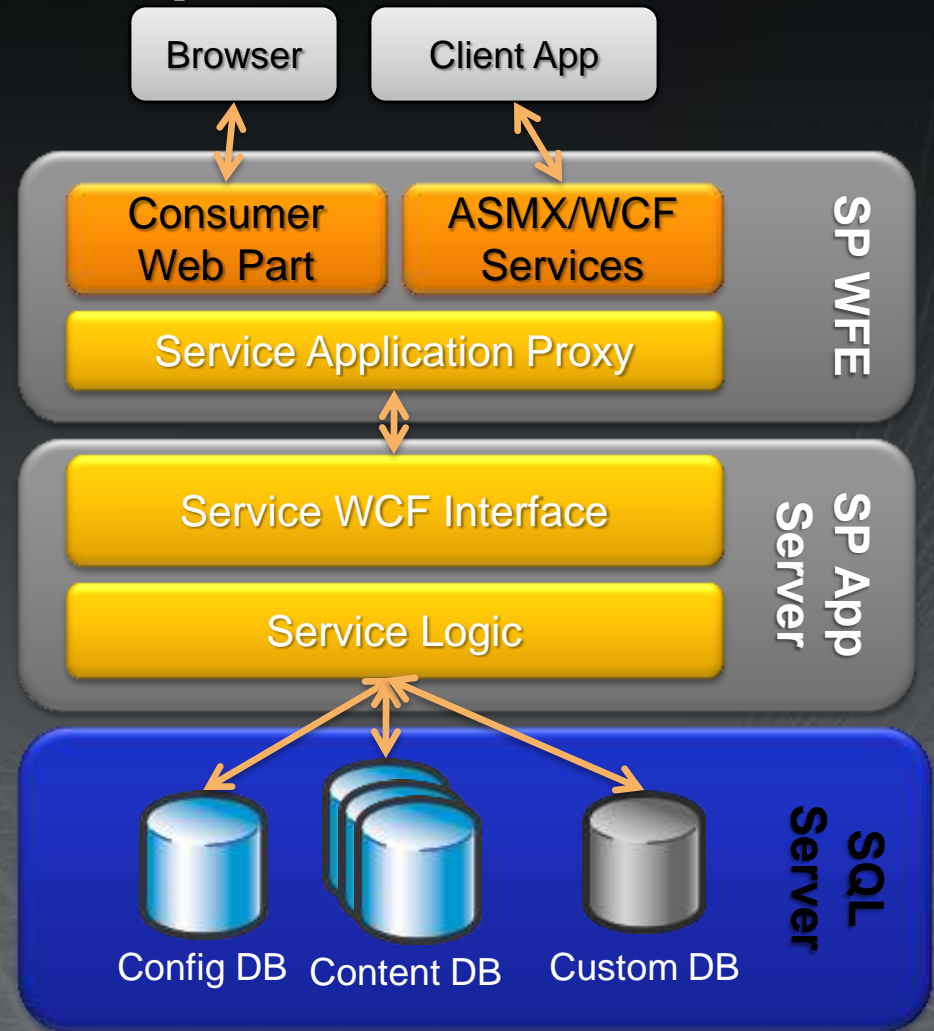
- Die Verbesserungen durch den Shared Service Provider
  - Alles oder Nichts-Philosophie (Search / Profiles / Excel / BDC)
  - Nicht erweiterbar
  - Webanwendungen fest mit Services verdrahtet
  - Installation mit Farm verbunden

# Service Model – Architektur

- **Service:**  
Actual program
- **Service Machine Instance:**  
Actual instance of the running service on a server
- **Service Application:**  
Configuration of the service in a farm
- **Service Application Proxy:**  
Reference to the Service Application
- **Service Consumer:**  
Bits that utilize the service's logic



# Service Model Komponenten

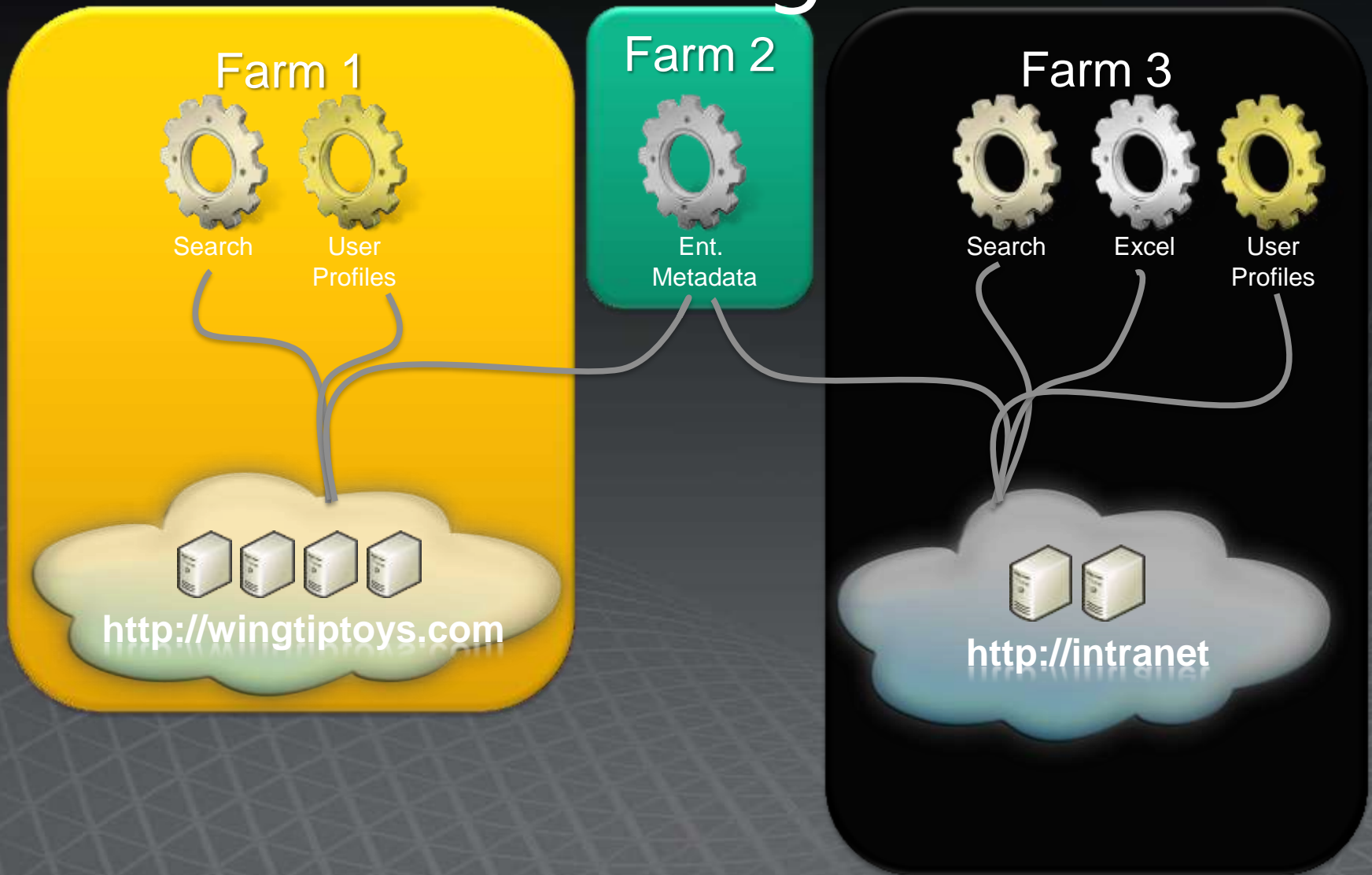




# Beispiele der Standard-Services

- Excel Services
- Web Analytics
- Search
- Enterprise Metadata
- BDC -> Business Connectivity Services
- User Profiles

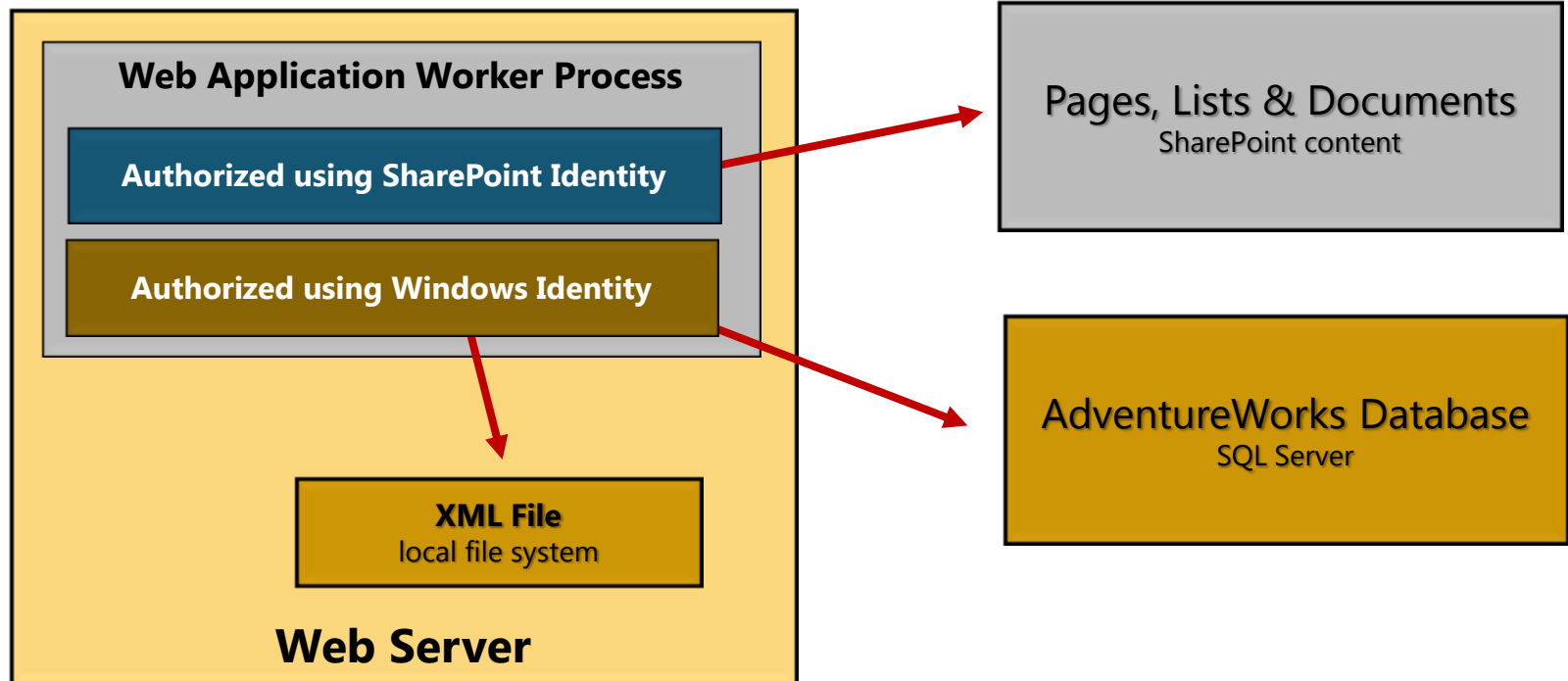
# Service Model – Logical View



Services

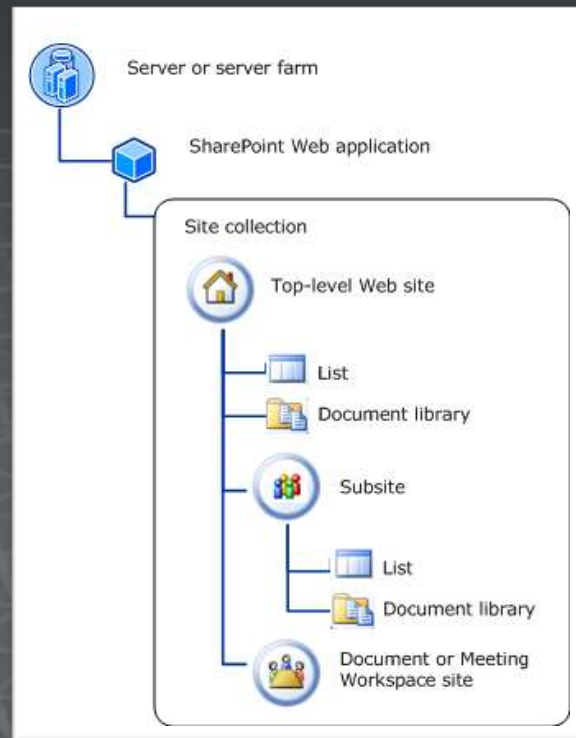
*demo*

# WSS Identity vs. Windows Identity



# Securable Objects

- Objekte sind in einer Baumstruktur
  - Jedes Objekt kann sein eigenes ACL haben
  - Objekte ohne ACL erben
  - Die Root-Seite ist auch Root-ACL



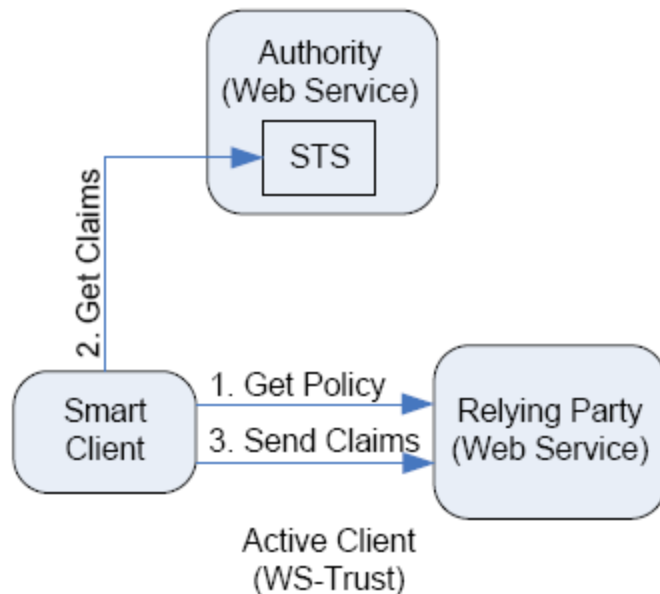


# SharePoint 2010 Security

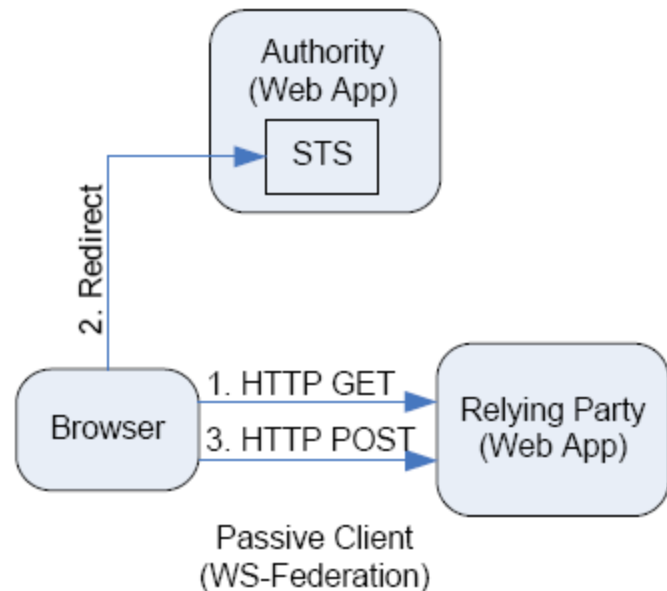
- SharePoint 2010 Authentifizierung ist neu
  - WSS wechselt zum claim-based security model
  - SharePoint 12 arbeitet weiter, aber im legacy mode
- Warum?
  - Entkoppelt WSS vom authentication Provider
  - Unterstützt mehrere authentication Provider
  - Handover ohne Kerberos
  - Ermöglicht Zusammenarbeit zwischen Organisationen
  - PeoplePicker control kommt mit Claims klar

# Claims-based Scenarios

## Active Client - Smart Client App



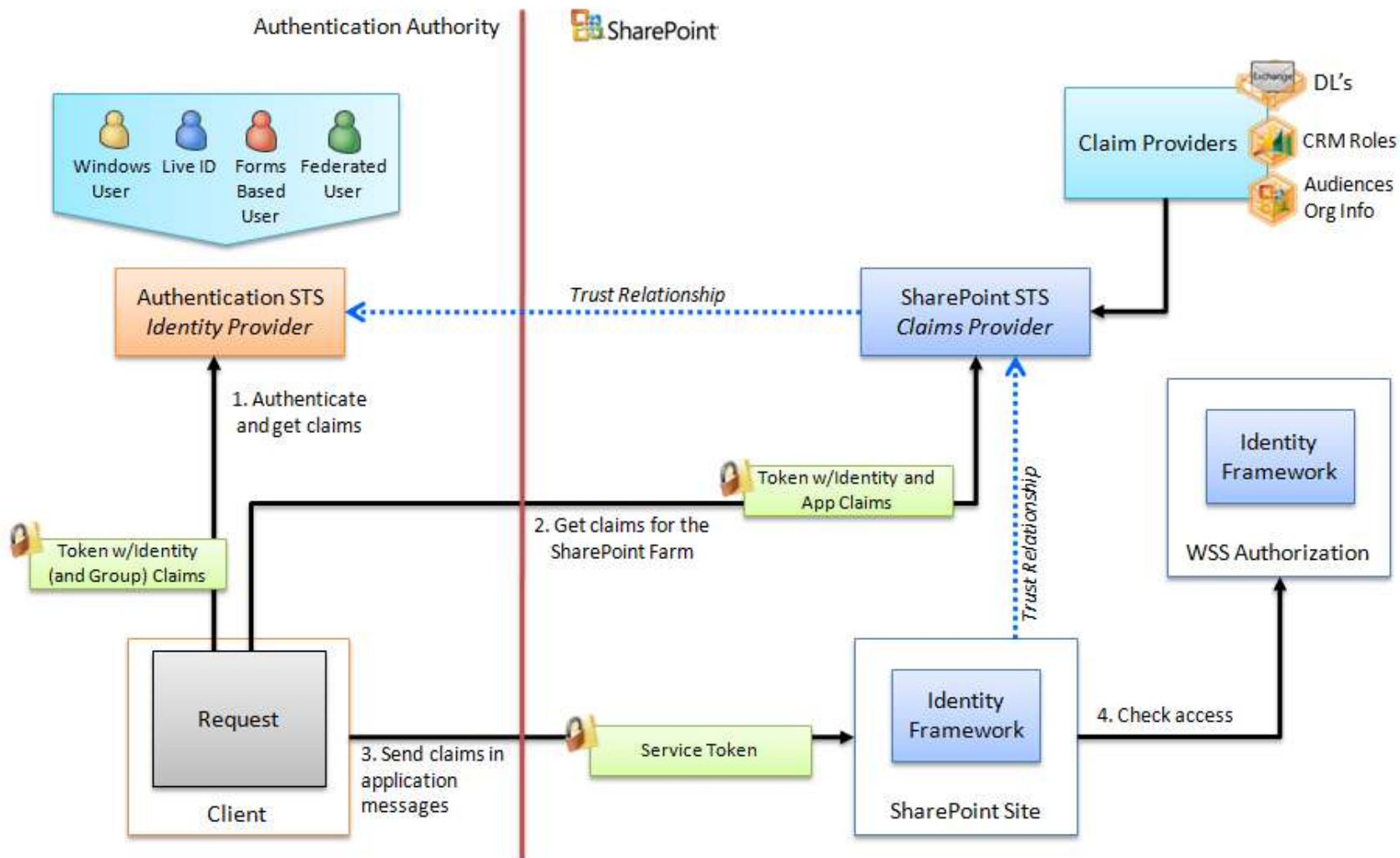
## Passive Client - Browser



# Claims in SharePoint 2010

- Zwei Szenarien
  - Incoming claims
  - Outgoing claims
- Wie funktionieren incoming claims?
  - Externer Security Token Service erstellt Token
  - SharePoint STS erstellt claim-based identity
  - SharePoint STS based on Claims Provider
  - Incoming claim identity ist mit SPUser verbunden
  - Ab hier läuft wie in SharePoint 2007

# Incoming Claims



# Outgoing Claims

- Welche Identität verwendet das Frontend?
  - Standard ist claims-based identity
  - Legacy mode auch mit Windows identity
- Wie ist das Szenario?
  - WFE code redet mit Services
  - WFE code redet mit externem LOB-System
  - WFE code redet mit anderer Farm



# Das Userinterface



- Neues UI
  - Standard-Konform
  - Dialog-Framework
  - Themes
- Inhalts-Politik
  - Alles ist ein Wiki
  - Einfacher Import von Inhalten
- Umfangreiche Integrationsmöglichkeiten

# SharePoint 2007 Commands

Office 14 Teams > WSS

Welcome John Pruitt | My Site | | | |

## WSS User Experience

All Sites

WSS | Dev | **PM** | Test | WSS Community | Office Portal | Partners | Documentation | Office Server Lab | crnext | Visual Upgrade | W

WSS > PM > WSS User Experience > Shared Documents

### Shared Documents

Share a document with the team by adding it to this document library.

New | Upload | **Actions** | Settings

Type Name Modified

	Fit and Finish	12/4/2007 4:17 PM	WINGROUP\gailg
	Presentations	2/28/2008 11:01 AM	Reeves Little
	Shoes	3/31/2008 4:40 PM	Reeves Little
	UX learning	7/10/2007 11:10 AM	Kevin Davis
	VBP Nav CogWalk	6/25/2007 3:45 PM	John Pruitt
	breadcrumb	2/18/2008 3:04 PM	Jason Morrill
	Browser Ribbon V	4/24/2007 4:23 PM	WINGROUP\gailg
	Commenting in O	10/24/2007 11:08 AM	Kevin Davis
	Content page Edi	2/14/2008 4:00 PM	John Pruitt
	Exchange - Share	6/6/2007 3:43 PM	Kevin Davis
	Exchange clickthr	6/12/2007 5:24 PM	Kevin Davis
	gailg	10/25/2007 2:00 PM	WINGROUP\gailg
	icon season over	10/25/2007 10:02 PM	Kevin Davis
	M1 Spec Status T	7/9/2007 11:35 AM	John Pruitt
	M2 Readiness - U	11/2/2007 10:28 AM	WINGROUP\gailg
	Office Server Rib	12/2007 12:35 PM	WINGROUP\gailg
	People and Group	16/2007 1:07 PM	Kevin Davis
	rib top	18/2008 2:56 PM	Jason Morrill
	Scenario Health T	26/2007 5:06 PM	WINGROUP\gailg
	Server Ribbon Ch		John Pruitt
	Server Ribbon Pa		John Pruitt
	SharePointCalendar_Dec2007		WINGROUP\gailg
	SharePoint-Exchange_Integration_Checkpoint_June		WINGROUP\gailg
	Sharing in Office	23/2007 11:39 PM	Steven Greenberg
	The New WSS User Experience_OAC	27/2007 11:45 AM	WINGROUP\gailg
	The New WSS User Experience_OAC_Final	11/2/2007 9:02 AM	WINGROUP\gailg
	UX Training Signu List	4/5/2007 10:42 AM	WINGROUP\gailg

**Actions**

- Edit In Place**
- Edit in Datasheet**  
Bulk edit items using a datasheet format.
- Open with Windows Explorer**  
Drag and drop files into this library.
- Add to My SharePoint Sites**  
Add this list to the collection of SharePoint sites accessible through Office Client Open and Save dialogs.
- Remove from My SharePoint Sites**  
Remove this list from the collection of SharePoint sites accessible through Office Client Open and Save dialogs.
- Manage My Links**  
Manage the list of bookmarks that appear in My SharePoint Sites.
- Connect to Outlook**  
Synchronize items and make them available offline.
- Export to Spreadsheet**  
Analyze items with a spreadsheet application.
- View RSS Feed**  
Syndicate items with an RSS application.
- Alert Me**  
Receive e-mail notifications when items change.

**Other Actions**

- View Properties
- Edit Properties
- Edit in Microsoft Office PowerPoint
- Delete
- Send To**
  - Other Location
  - E-mail a Link
  - Download a Copy
- Check Out
- Unpublish this version
- Version History
- Workflows
- Alert Me

**Site Actions**

- Create**  
Add a new library, list, or web page to this website.
- Edit Page**  
Add, remove, or update Web Parts on this page.
- Site Settings**  
Manage site settings on this site.
- Site Workflows**  
Start or check the status of a site workflow on this site.

**Documents**

- All Documents
- Explorer View
- Ribbon Designs with Status
- My submissions
- Approve/reject Items
- Modify this view
- Create view

**Commands Überall**

# SharePoint 2007 Navigation

Office 14 Teams > WSS

Welcome John Pruitt | My Site | | | |

**WSS User Experience**

All Sites

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WSS > PM > WSS User Experience > Shared Documents

**Shared Documents**

Share a document with the team by adding it to this document library.

New | Upload | **Actions** | Settings

**Team Vail**

- Team Vail Wiki
- Team Vail Documents

**WSS UX PM**

- UX Team White Board
- Team contact list
- Calendar

**Pictures**

- WSS Ribbon Group Template Catalog
- Ribbon Group Template Wish List

**Browser Ribbon V-Team**

- V-Team Documents
- Ribbon Issue Tracking

**Visual Blueprint**

- VBP Documents
- VBP Issues
- Prototype tasks

**Documents**

- Shared Documents
- Notebooks
- Ribbon Handbook
- WSS UX Wiki

**Lists**

- WSS UX Top Issues

**Visual Consistency**

- String Freeze and Visual Polish documents
- Consistency Issues

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Syndicate items to an RSS feed.
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- Edit Properties
- Edit in Microsoft Office PowerPoint
- Delete
- Send To**
  - Other Location
  - E-mail a Link
  - Download a Copy
- Check Out
- Unpublish this version
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**Create**  
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**Edit Page**  
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**Site Settings**  
Manage site settings.

**Site Workflows**  
Start or check the status of a workflow on this site.

**All Documents**

- Explorer View
- Ribbon Designs with Status
- My submissions
- Approve/reject Items
- Modify this view
- Create view

**Page Reloads und Navigation**

Type	Name	Modified	Revised By
Folder	Fit and Finish	12/4/2007 4:17 PM	Reeves Little
Folder	Presentations	2/28/2008 11:01 AM	Reeves Little
Folder	Shoes	3/31/2008 4:40 PM	Kevin Davis
Folder	UX learning	7/10/2007 11:10 AM	John Pruitt
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Folder	Commenting in O	6/6/2007 3:43 PM	Kevin Davis
Folder	Content page Ed	6/6/2007 3:43 PM	Kevin Davis
Folder	Exchange - Sha	12/1/2007 4:50 PM	WINGROUP\gailg
Folder	Exchange clickth	10/10/2007 4:00 PM	WINGROUP\gailg
Folder	gailg	7/9/2007 11:35 AM	WINGROUP\gailg
Folder	icon season over	10/2/2007 10:28 AM	WINGROUP\gailg
Folder	M1 Spec Status T	12/1/2007 12:35 PM	WINGROUP\gailg
Folder	M2 Readiness - U	1/16/2007 1:07 PM	Kevin Davis
Folder	Office Server Rib	1/18/2008 2:56 PM	Jason Morrill
Folder	People and Group	1/26/2007 5:06 PM	WINGROUP\gailg
Folder	rib top	1/30/2007 5:32 PM	John Pruitt
Folder	Scenario Health T	1/30/2007 5:32 PM	John Pruitt
Folder	Server Ribbon Ch	1/30/2007 5:32 PM	John Pruitt
Folder	Server Ribbon Pa	1/30/2007 5:32 PM	John Pruitt
Folder	SharePointCalendar_Dec2007	1/30/2007 5:32 PM	John Pruitt
Folder	SharePoint-Exchange_Integration_Checkpoint_June	1/30/2007 5:32 PM	John Pruitt
Folder	Sharing in Office	1/30/2007 5:32 PM	John Pruitt
Folder	The New WSS User Experience_OAC	1/30/2007 5:32 PM	John Pruitt
Folder	The New WSS User Experience_OAC_Final	1/30/2007 5:32 PM	John Pruitt
Folder	UX Training Signu List	1/30/2007 5:32 PM	John Pruitt

# The SharePoint 2010 User Interface

The screenshot displays the SharePoint 2010 user interface. At the top, the ribbon is set to the 'Edit' tab, showing options like 'Edit', 'Check In', 'Edit Properties', 'Delete Page', 'Publish', 'Approve', 'Reject', 'Manage Workflow', 'Make Homepage', 'Incoming Links', 'Edit Mobile Page', 'View All Pages', 'Library Permissions', and 'Library Settings'. A 'Give Feedback' button is also visible. The left navigation pane includes links for 'Documents', 'Lists', 'Discussions', 'Sites', 'Recycle Bin', and 'View All Site Content'. The main content area features a large 'Welcome!' message and a list of 'Announcements' with one entry titled 'asdasdsadasda'. Below this is a 'Shared Documents' list with three items: 'jl', 'book1', and a file with a 'NEW' icon. A photo of three people working together is shown on the right. The status bar at the bottom indicates 'Trusted sites | Protected Mode: Off' and '100%' zoom.

**Site Actions** | Browse | **Edit** | Share & Track | [Give Feedback](#) | My SharePoint | WINGTIP\Administrator

**Edit** | Check In | Edit Properties | Delete Page | Publish | Approve | Reject | Manage Workflow | Make Homepage | Incoming Links | Edit Mobile Page | View All Pages | Library Permissions | Library Settings

**Status:** Only you can see and modify this page.

[Home](#) | This Site: Updated by workflow | Page checked out

## Welcome!

to your new team site, some of the things you can do here are:

### Announcements

<input type="checkbox"/>	Title	Modified
<input type="checkbox"/>	asdasdsadasda	6/28/2009 8:16 AM

### Shared Documents

<input type="checkbox"/>	Type	Name	Modified	Modified By
<input type="checkbox"/>	Folder	jl	6/28/2009 10:04 AM	WINGTIP\Administrator
<input type="checkbox"/>	Document	book1	6/28/2009 1:17 AM	WINGTIP\Administrator
<input type="checkbox"/>	Document	NEW	6/28/2009 10:06 AM	WINGTIP\Administrator

Trusted sites | Protected Mode: Off | 100%



# Ribbon



Durchgängig

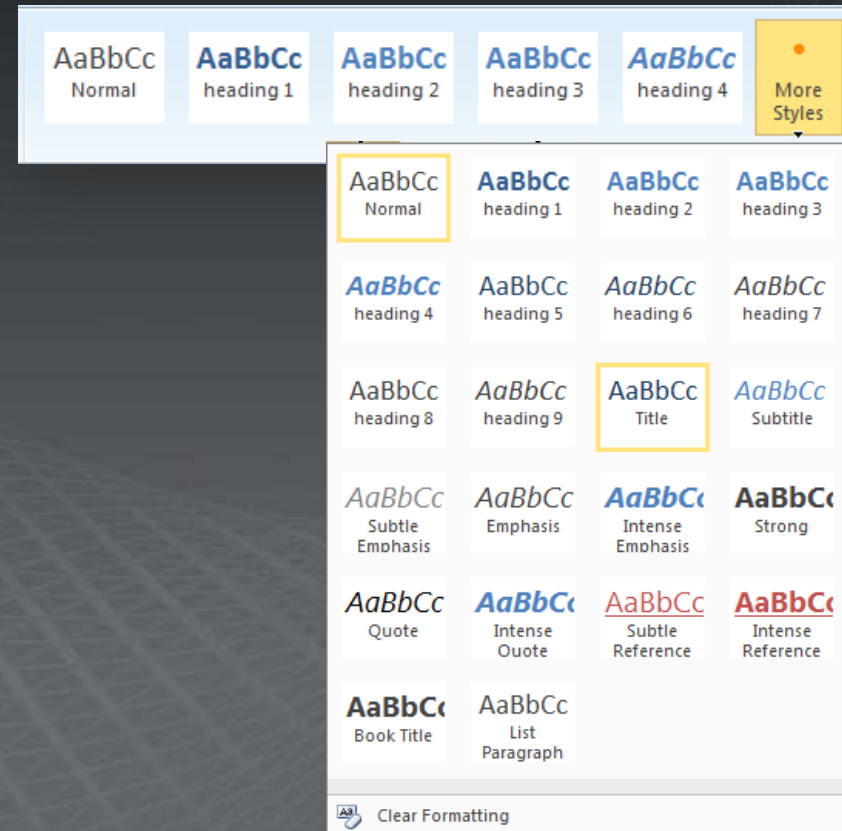
Einheitlich

**Bekannt**



# Ribbon Controls

- Button
  - Split button menu
    - Static
    - Stated
  - Drop down & Flyout menus
    - Customizable
    - Hierarchical
  - Checkbox
  - Toggle Button
  - Label
  - Textbox
  - Combo box
  - Spinner
  - Table control
  - Color picker
- In-ribbon gallery control
    - Drop down grids are our answer



# Status Bar and Notification Area

The screenshot shows the SharePoint 2010 user interface. The top ribbon includes tabs for Site Actions, Browse, Edit, and Share & Track. The Edit tab is active, showing options like Edit, Check In, Edit Properties, Versions, Permissions, Delete Page, Approve, Reject, Publish, Manage Workflow, Make Homepage, Incoming Links, Edit Mobile Page, View All Pages, Library Permissions, and Library Settings. A yellow callout labeled "Notification" points to the top right corner, which includes a "Give Feedback" button, a user profile for "My SharePoint WINGTIP\Administrator", and a "Page checked out" notification. Below the ribbon, a blue status bar displays the message "Status: Only you can see and modify this page." A yellow callout labeled "Status Bar" points to this message. The main content area features a "Welcome!" message and a list of "Announcements" with one entry titled "asdasdsadasda" modified on 6/28/2009 at 8:16 AM. Below this is a "Shared Documents" section with a table listing files like "jl" and "book1". A photograph of three people working on a laptop is also visible. The bottom status bar shows "Trusted sites | Protected Mode: Off" and a 100% zoom level.

**Notification**

**Status Bar**

**Status:** Only you can see and modify this page.

**Announcements**

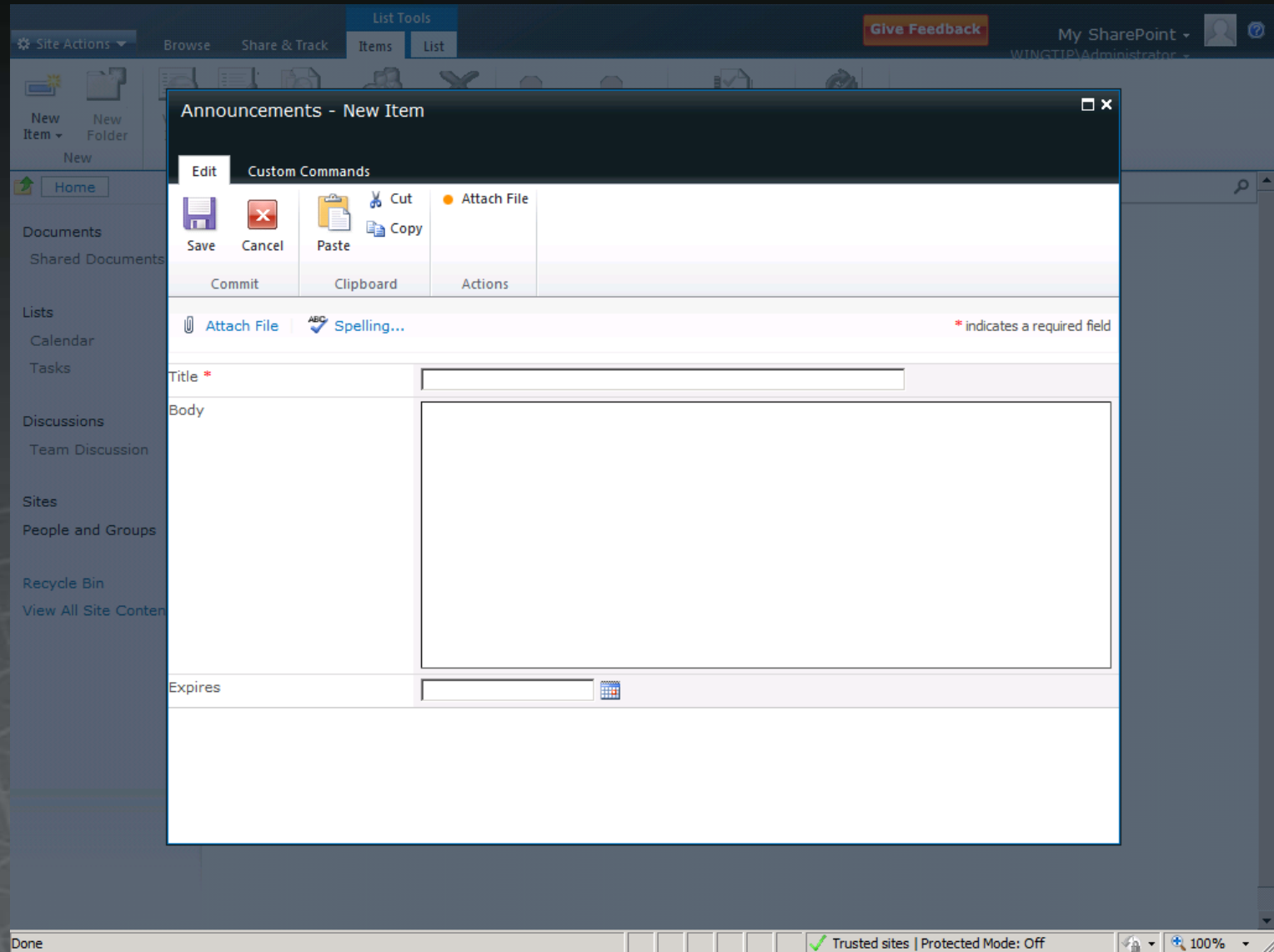
<input type="checkbox"/>	@ Title	Modified
<input type="checkbox"/>	asdasdsadasda	6/28/2009 8:16 AM

**Shared Documents**

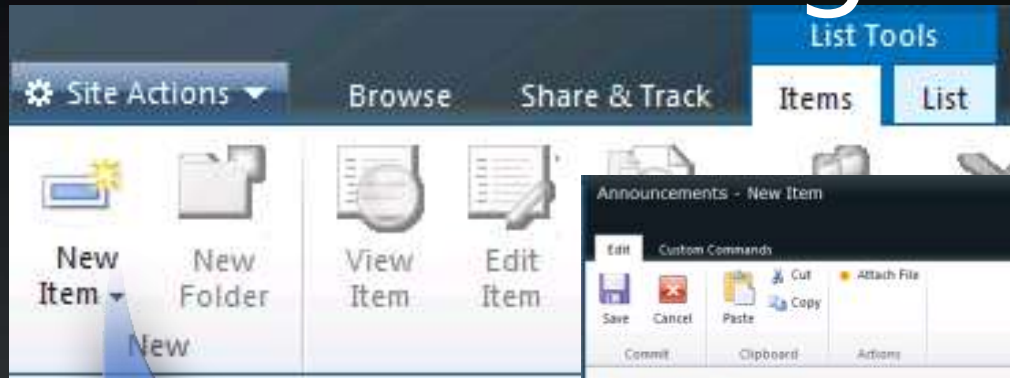
<input type="checkbox"/>	Type	Name	Modified	Modified By
<input type="checkbox"/>	Folder	jl	6/28/2009 10:04 AM	WINGTIP\Administrator
<input type="checkbox"/>	Document	book1	6/28/2009 1:17 AM	WINGTIP\Administrator

Trusted sites | Protected Mode: Off

# The Dialog Framework



# In-Place Editing


A screenshot of the 'Announcements - New Item' dialog box. It features a 'Title' field with an asterisk indicating it is required, and a large 'Body' text area. There are also 'Attach File' and 'Spelling...' buttons. A blue arrow points from the 'Body' field to the 'AJAX refresh' label.


Popup dialog




AJAX refresh







Title	Modified
SharePoint 14 Is Awesome <span>NEW</span>	6/29/2009 2:04 AM

# Massen-Operation auf List-Items

  
Custom

  
Delete  
Item

 I like it  
 To-Do  
 Save for Later

  Title	Modified
 Office 14 is Awesome too! 	6/29/2009 2:09 AM
 SharePoint 14 Is Awesome 	6/29/2009 2:04 AM



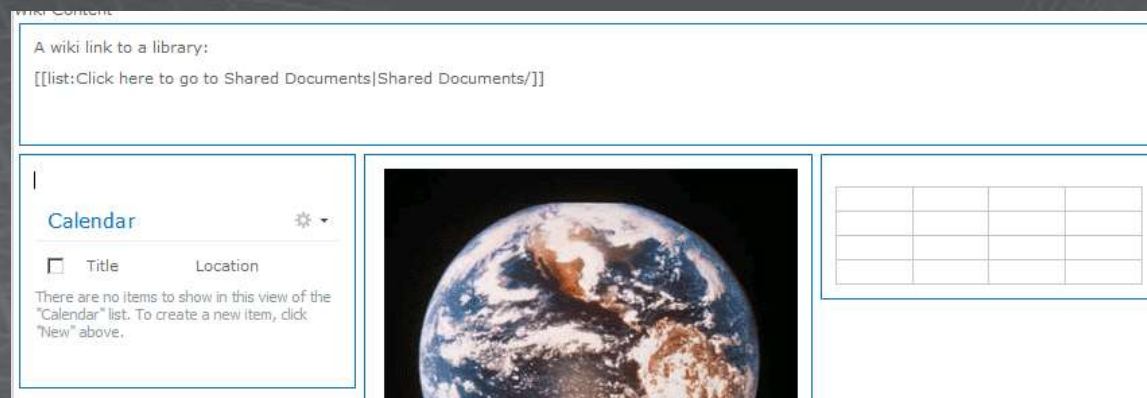
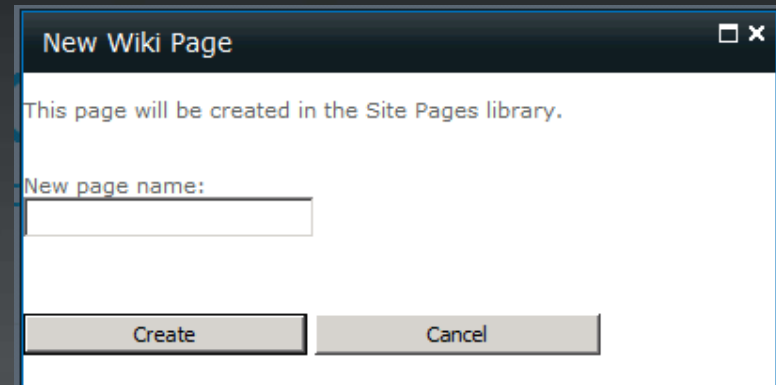
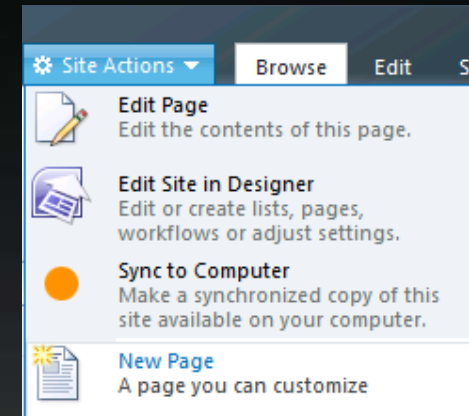
# UI + Dialogs

*demo*



# Inhaltsseiten

- Jede Seite hat eine PageLibrary
- Ein Klick -> neue Seite
  - Name eingeben
  - Editieren
- [[Wiki Linking]] to
  - Pages
  - Lists
  - Items
  - Documents



1

2

3

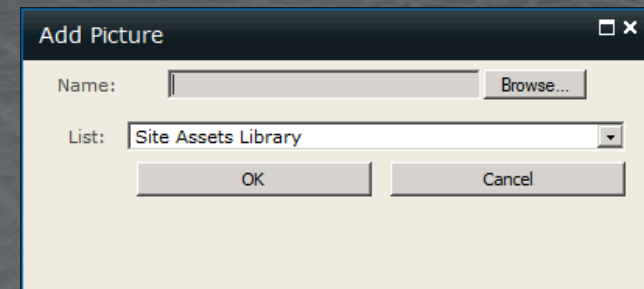
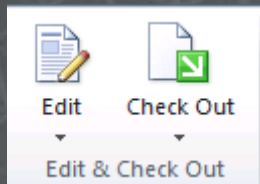
# Edit Like in Word

- Single click editing experience
  - Nahtloser Wechsel zwischen Ansicht und Bearbeitung
- Textanpassungen und Formatierung wie in Word
  - Umfangreiches Toolset für Textformatierung
- Unkompliziertes Einfügen von Bildern und Links
  - Asset library

Edit

Pick Content

Insert



# Master Pages

v4.master

- Standard-Masterpage
- User content pages (lists\content pages\etc)
- \_layouts pages (site settings, etc)

minimal.master

- Minimiert für volle "App Experience". Vollansicht von Office Apps
- ...ohne Navigation
- ...ohne Ribbonbar
- ...Vollbild für die Applikation

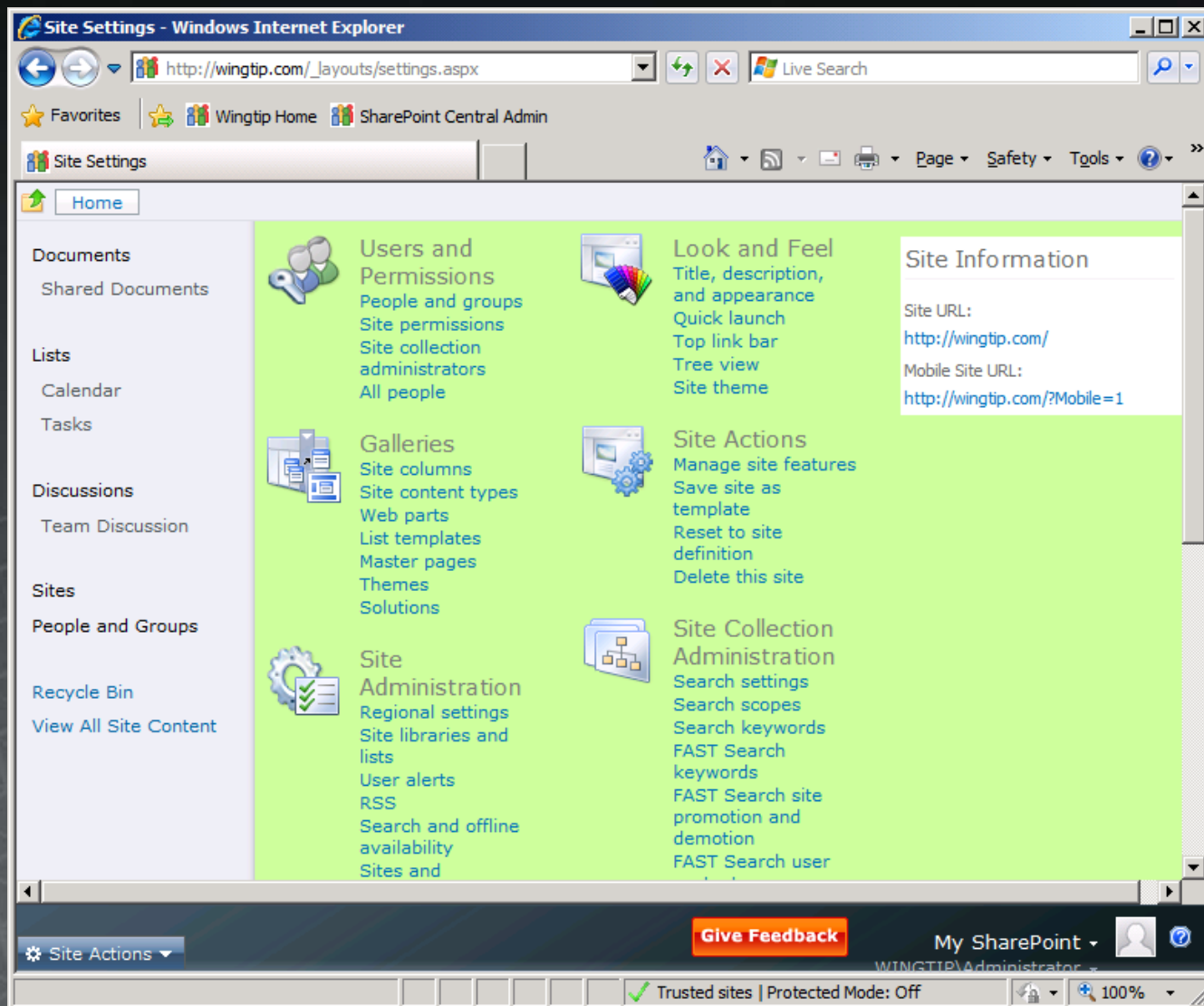
simple.master

- Für einfache Seiten wie Login, Errorpages,...

default.master

- Legacy-Layout aus WSS 3
- Keine Ribbons,...

# Themes



# Multi-Language Interface

- Anzeige der selben Seite in verschiedenen Sprachen
  - Language Pack
- Festgelegte Primärsprache
- Alternativsprache wird durch Benutzer gewählt
- MUI durch Ressourcen realisiert (Satellite Assemblies)
- OM Support

# Content Authoring Improvements

- Authoring Experience
  - Mehr Spaß durch UX-Verbesserungen
  - Automatischer Save auch für unpublizierte Inhalte
- HTML Editor
  - Cross browser, perfekte Bindung an Ribbons
  - Erweiter-/Anpassbar
- Web Asset Editor
  - Schnelles Auffinden, Sortieren, Anzeigen von Assets
  - ...ohne Reload
- Embedded Video
  - IIS bitrate throttling module
  - Stored in SQL / external BLOB
  - Skinable Silverlight plugin



# Standards Compliance

- Strict XHTML 1.0
- Cross-Browser
  - Tier 1 support: IE, Firefox
  - Tier 2 support: Safari
- WCAG 2.0 AA

New Rich Text Editor supporting XHTML.

# Benutzerdefinierte Actions

- Eigene Commands einfügen
  - ECB
  - Ribbon
  - Form Toolbars
  - View Toolbars
  - Settings pages
- List-, Site-, SiteCollection-weit
- SharePoint Designer  
oder Object Model support
- Deklarativ im XML



Editor, Themes,  
User Actions,...

*demo*

# SharePoint 2010 Form Support

- Multiple forms per type
- User Actions für die Navigation
- Web 2.0 Power
- Replace default view / edit Web Part
- InfoPath Integration










# InfoPath List Form

Title	<input type="text"/>
Attachments	 <a href="#">Click here to attach a file</a>
Body	<div></div>
Expires	<input type="text"/> 

**Fields** ▾ ×

Drag a field to add it to the form

**Insert a Field:**


 ID
 Title *
 Created By
 Modified By
 Modified
 Created
 Attachments
 Body
 Expires

[Show advanced view](#)

**Actions**

[Add Field](#)

[Manage Data Connections...](#)

 [Help with Fields](#)

# Custom Forms

*demo*



# einfache Anwendungen



- Web Application & Site Collection erzeugen
- Wo sind die Pages
- CMS / Navigation
- Listen erzeugen
  - Datentypen
  - Lookups
  - Validierung
- Workflows

# List Item Validierung

- Eine einfache Validierung ist durch einfache Formeln möglich

### List Validation Settings: Sample

**Formula**

Specify the formula to test before items in this list are saved. This formula must evaluate to TRUE in order for the save to occur; any other value will result in a validation failure.

Example: `=NOT(AND(ISNULL(a), ISNULL(b)))` will only pass validation if column a or column b contains a value.

[Learn more about proper syntax for formulas.](#)

Formula:

Insert Column:

Created  
Modified  
Title

[Add to formula](#)

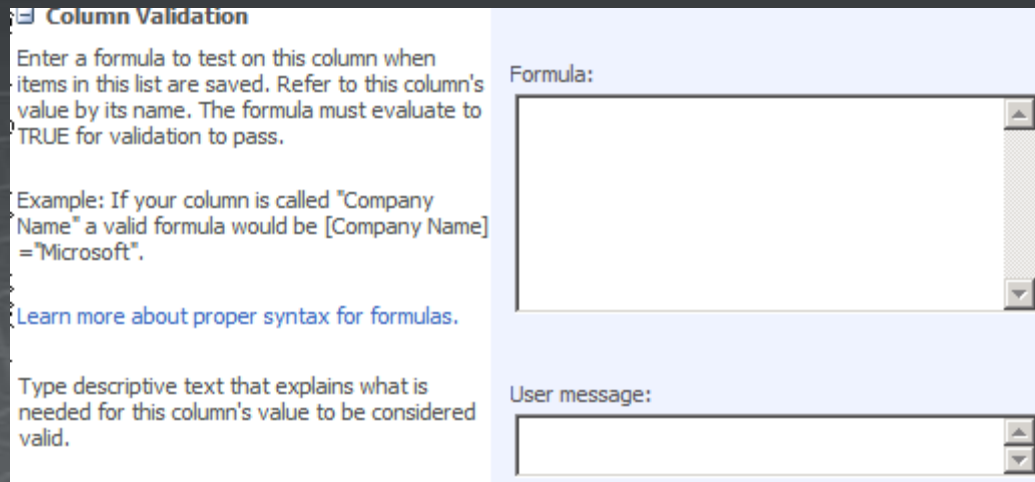
**User Message**

Type descriptive text that will help site visitors understand what is needed for a valid list item. This description will be shown if the validation expression fails.

User Message:

# List Item Field Validierung

- Das Selbe auf Feld-Ebene



**Column Validation**

Enter a formula to test on this column when items in this list are saved. Refer to this column's value by its name. The formula must evaluate to TRUE for validation to pass.

Example: If your column is called "Company Name" a valid formula would be [Company Name] = "Microsoft".

[Learn more about proper syntax for formulas.](#)

Type descriptive text that explains what is needed for this column's value to be considered valid.

Formula:

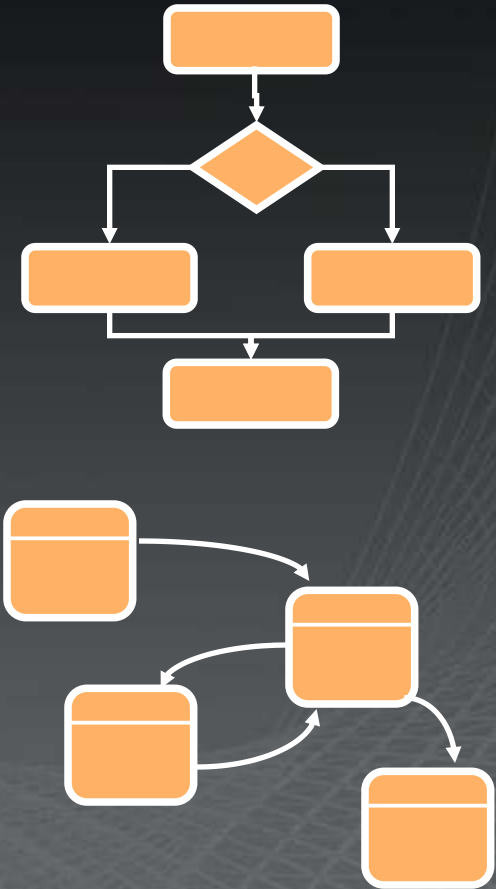
User message:

Listen

*demo*

# Windows Workflow Foundation

- Workflow engine shipped as part of the .NET 3.0 Framework
- Model workflows as state machines or sequential steps
- Long-running and stateful





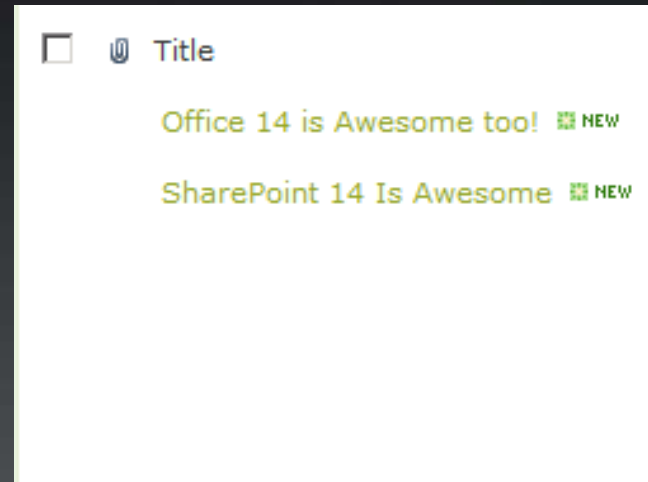
# "Whats New" for SharePoint 2010

- For the end-user
  - New targets to run a workflow
  - Visio visualization
- For the power-user
  - Improved nested logic
  - New Task Process designer
  - Customizable OOB workflows
- For the developer
  - Visual Studio 2010 SharePoint tools
  - Workflow Events
  - Pluggable External Data Exchange Services

# SharePoint 2010 Workflow Targets



Site



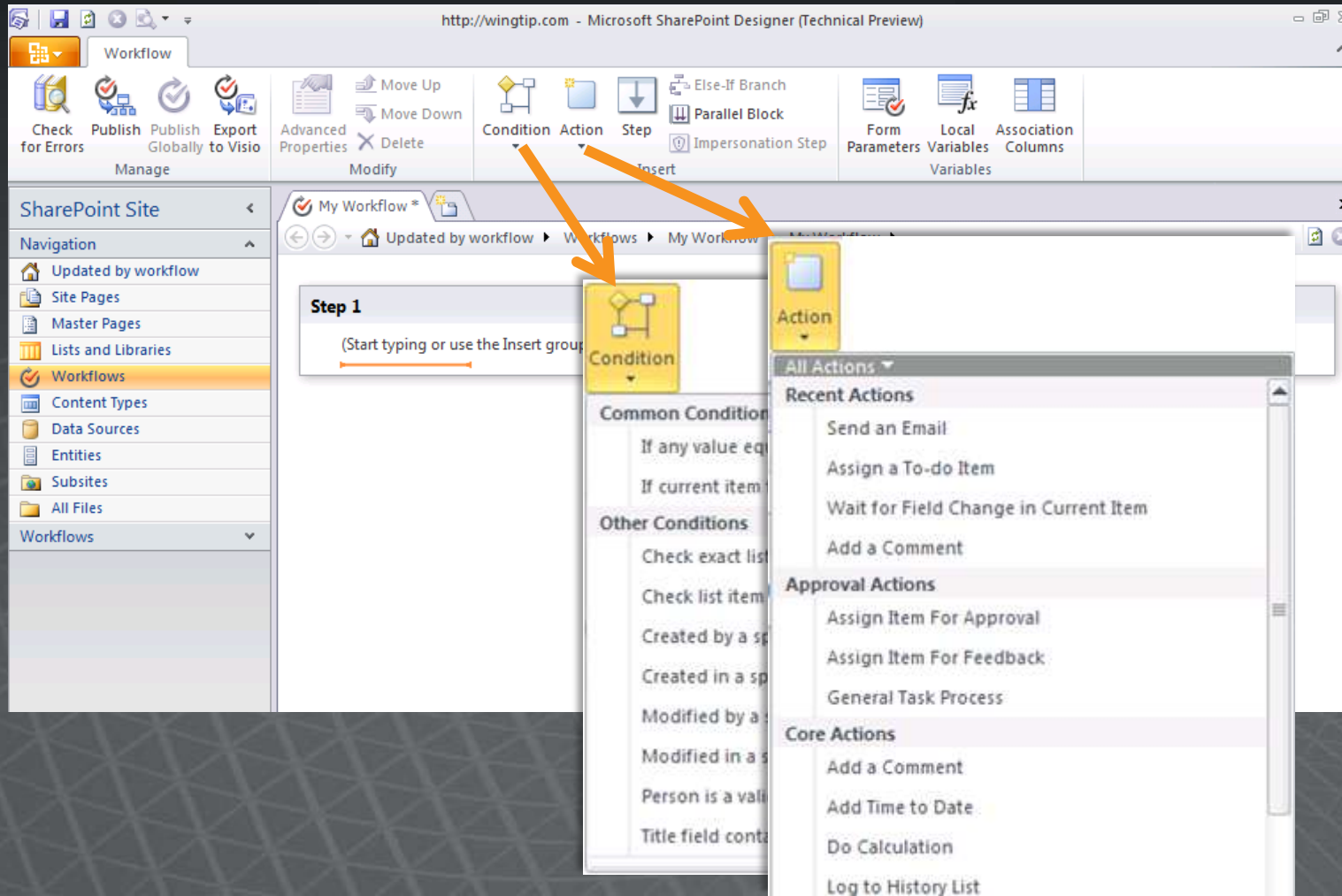
List Item

# SharePoint Designer Improvements

- Für den Entwurf
  - Neuer deklarativer Workflow-Designer
  - Advanced task process designer
  - InfoPath Forms
  - Visio workflow designer
- Für die Entwicklung
  - Wiederverwertbare "reusable" workflows
  - Visio Visualisierung
  - Export als WSP

# SharePoint Designer Workflows

## ● Designer



# Nested logic in SharePoint Designer

## Step 1

If field equals value

The following actions will run in parallel:

### Step 2a

The following actions will run in sequence:

If field equals value

The following actions will run in parallel:

If field equals value

Assign an Approval Process on Current Item to these users



# Prototype, Design and Develop

- SharePoint 2010 ermöglicht einen neuen Design-Prozess für Workflows
  - "Male" workflows in Visio
  - Import in SharePoint Designer
    - Parameter hinzufügen
  - Export nach Visual Studio 2010
    - Ausprogrammieren



# Workflows in Visual Studio 2010

- Seitenweite Workflows
- ASP.NET Form Templates
- Neue Events
- External Data Exchange

# Workflow Events

- Events für die Ereignisse eines Workflows
  - Started, Completed...
- Szenarien
  - Unter-Workflows aufrufen und auf Fertigstellung warten
  - Besseres Error Handling
- Bekanntes Modell für Entwickler

# SPWorkflowEventReceiver

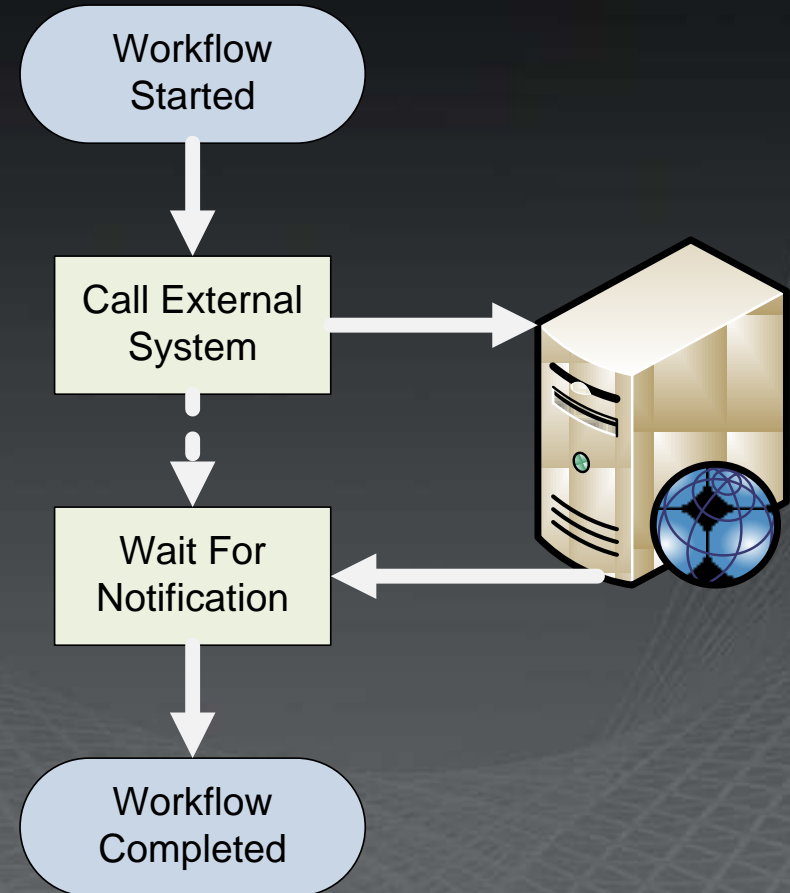
- Basisklasse für Workflow Events

```
public class MyWorkflowEventReceiver
    : SPWorkflowEventReceiver
{
    public override void WorkflowStarting(
        SPWorkflowEventProperties properties)
    {
        // your code here
        base.WorkflowStarting(properties);
    }
}
```

- Auf Site, List, Content type einhängen

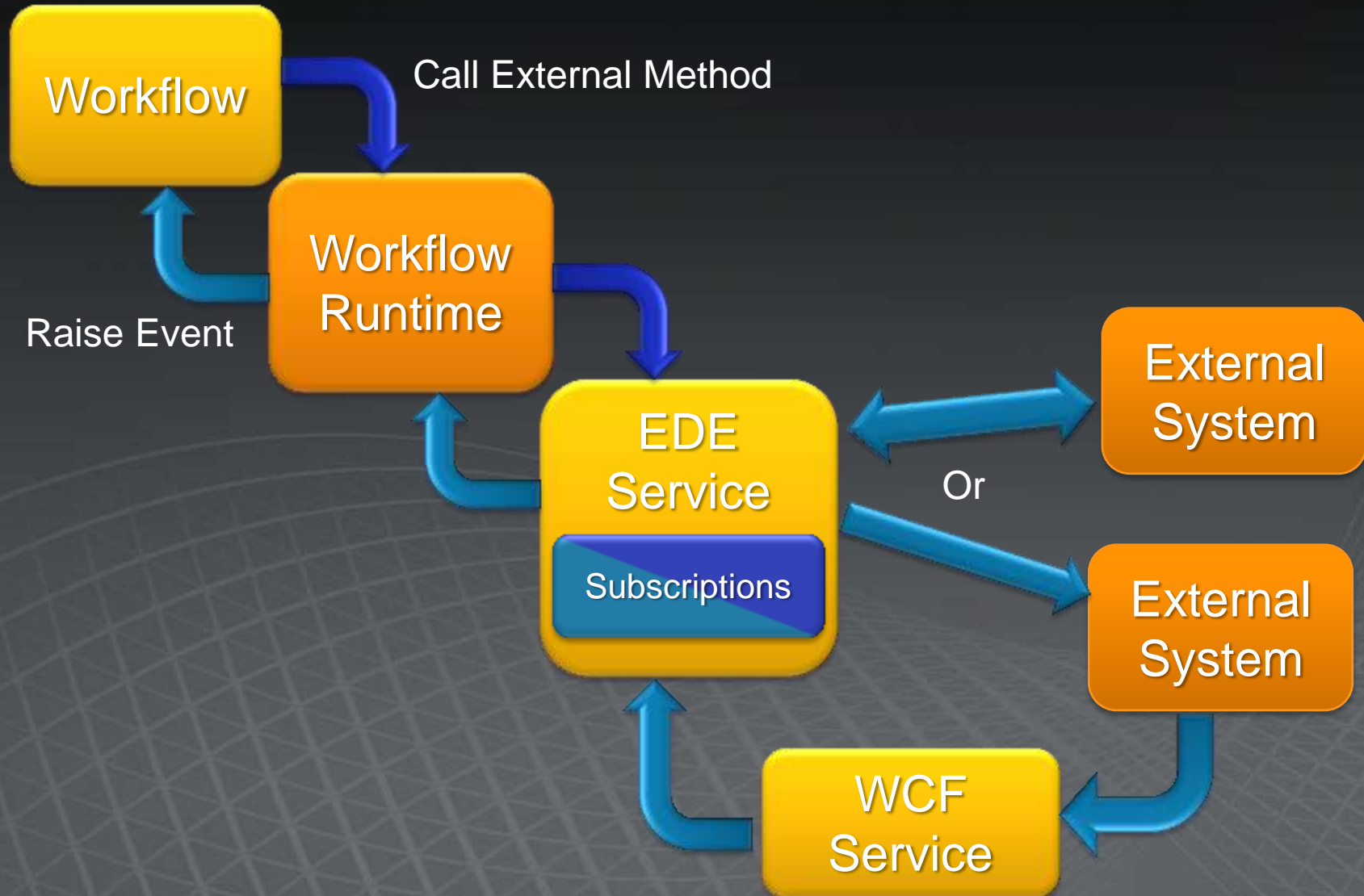
# External Data Exchange Services

- Interaktion mit Fremdsystemen über External Data Exchange Services
- Verlangt allerdings tieferes Wissen über Workflows
- Erlaubt dann auch eigene Events





# Flow of Events



# Visual Studio Support



- SharePoint Explorer
- Projekt Templates
- Feature- / Package-Manager
- Debugging
- Deployment
- TFS-Integration

# SharePoint 2007 Development

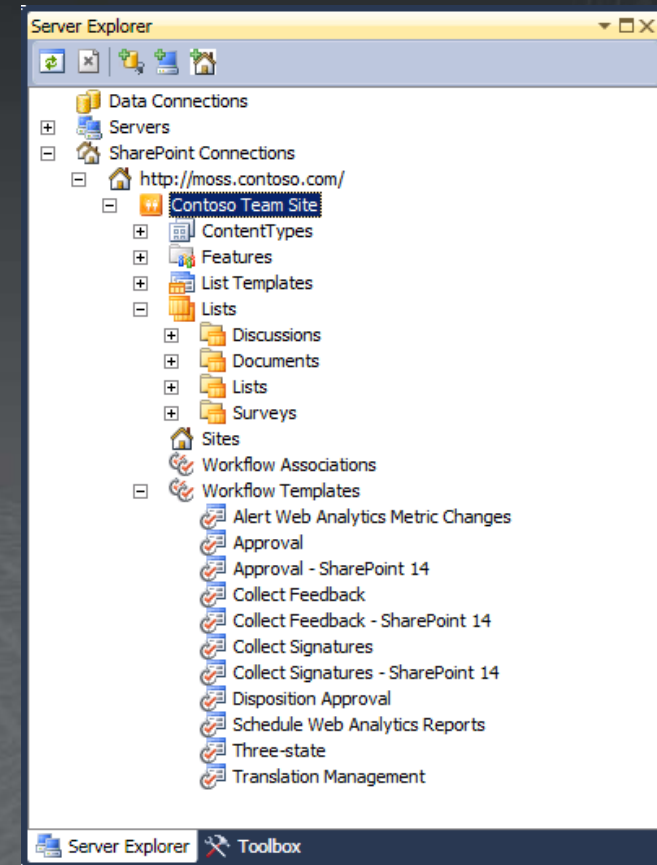
- Limitierter Support in Visual Studio
  - Visual Studio Extensions für WSS
  - Visual Studio Tools for Office in VS2008
  - SharePoint Entwickler bauen auf Community-Tools
- Viel Detail-Arbeit
  - Manuelle Anpassung von CAML files
  - Arbeiten mit der Verzeichnisstruktur von WSS
  - Manuelle Erstellung der manifest.xml
  - Erstellung des Solution Package (.wsp)

# Visual Studio 2010 SharePoint Tools

- End-to-end SharePoint 2010 developer story
  - SharePoint Explorer zur Übersicht
  - SharePoint 2010 project und item templates
  - Visual Designer für die Kernaufgaben
  - Migrationspfad für Visual Studio 2008 und WSS 3.0
  - Leicht erweiterbarer Editor (MEF für VS2010)
- Klare Vorteile
  - Abstraktion der Verzeichnisstruktur
  - Automatisierung des Package-Prozesses
  - Keine/Wenig Notwendigkeit für externe Hilfstools

# SharePoint Explorer

- Add-in für das Server Explorer Fenster
  - Einfacher Weg die Items des SP zu durchstöbern
  - Schnellstart des Elements im Browser
- SharePoint Explorer extensibility
  - Liecht erweiterbarer Browser





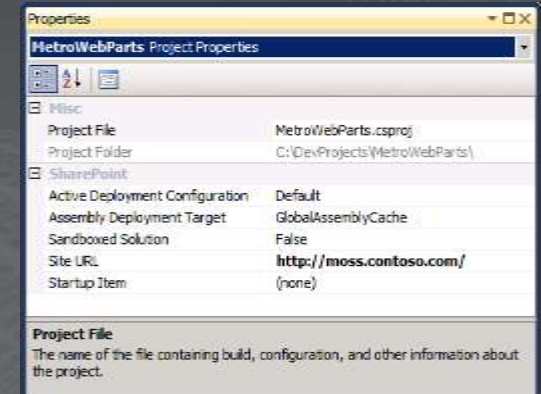
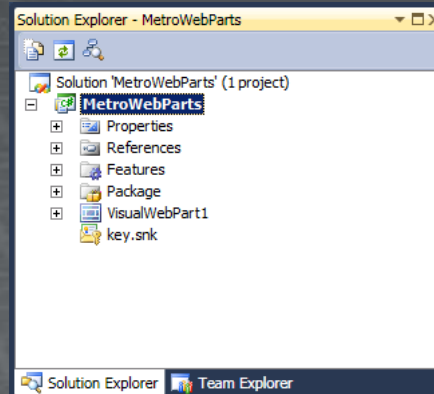
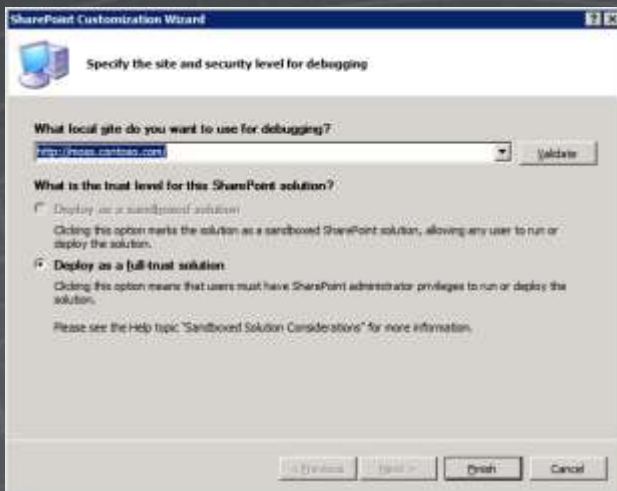
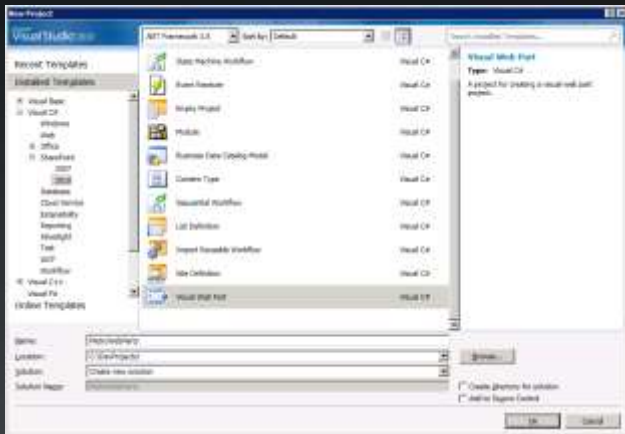
# SharePoint Explorer

*demo*

# SharePoint 2010 Project Templates

- Standard-Struktur für alle Projekte
- Standard-Items

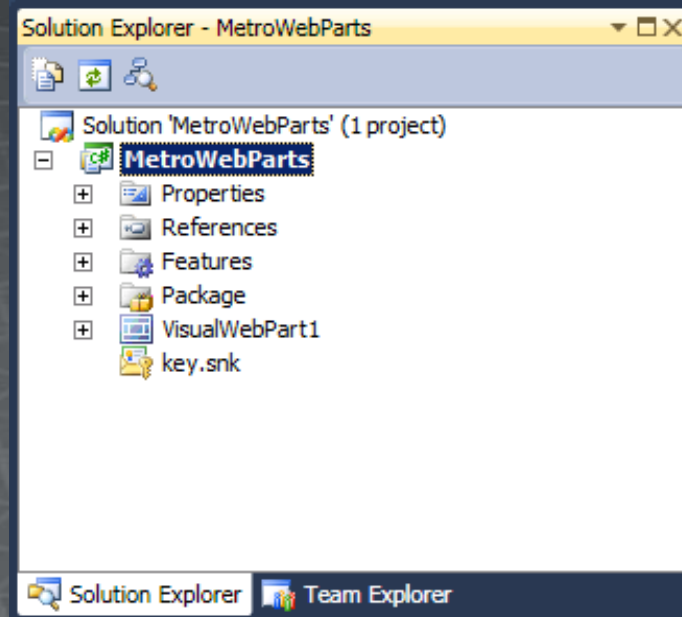
- Projektdatei
- Projektordner
- Assembly Deployment Target
- Sandboxed Solution
- Site URL
- Startup Item



# SharePoint 2010 Projektstruktur

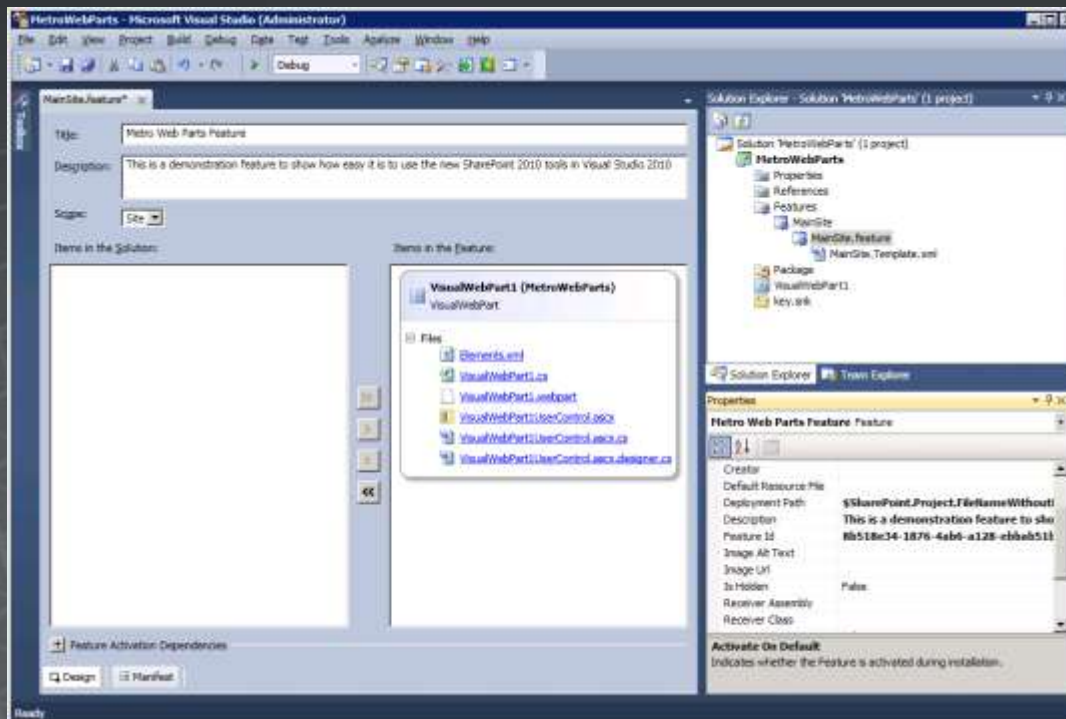
## ● Standard Projekt-Einträge

- Properties *(standard with Visual Studio)*
- References *(standard with Visual Studio)*
- Features *(always added by SharePoint 14 Developer Tools)*
- Package *(always added by SharePoint 14 Developer Tools)*
- SharePoint Project Items *(optionally added by dev using SharePoint 2010 Developer Tools)*



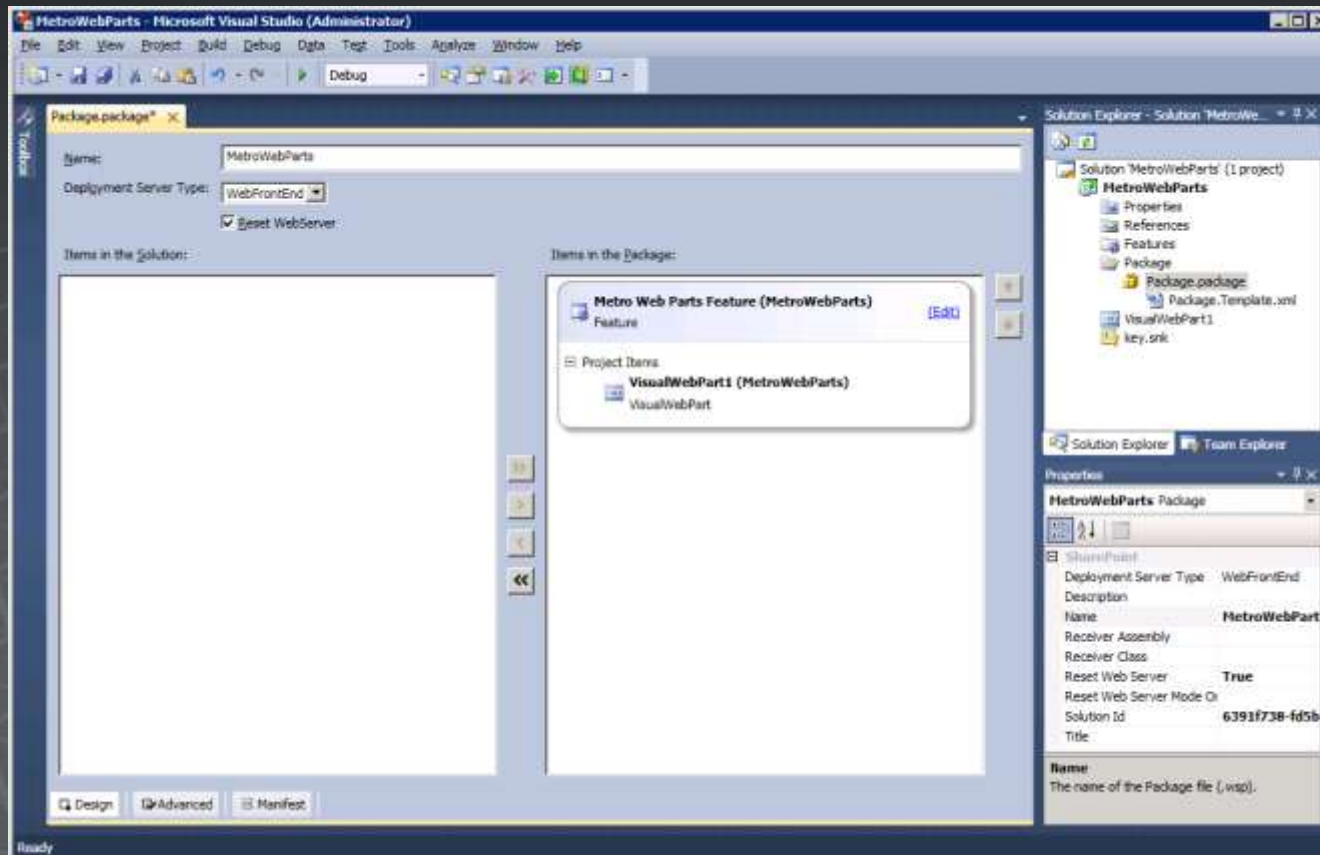
# Feature Node und Feature Designer

- Feature-Node listet die vorhandenen Features auf
  - Feature designer erlaubt sowohl "Design", als auch XML
  - Anpassung der Eigenschaften im Editor oder im Property-Window
  - Schnelle Erstellung von Feature-events (Rechtsklick)
  - Feature Designer macht die Zusammenstellung von Items einfach
  - Abhängigkeiten lassen sich auch abbilden



# Packaging

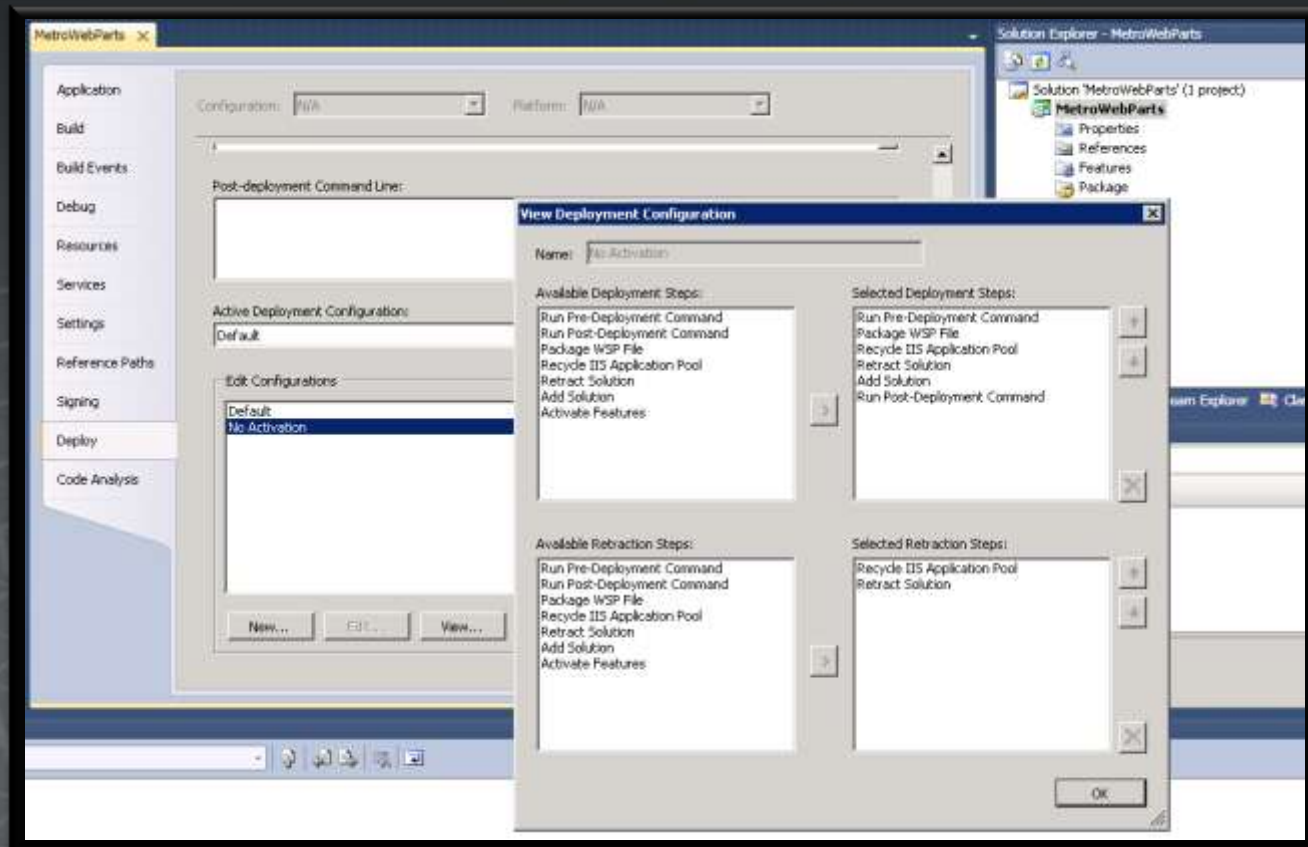
- Packaging basiert auf Package.wspdef
  - Eigenschaften anpassen mit Designer oder XML text
  - ...oder Property Window
  - Erlaubt die Zusammenstellung von Features im Paket





# Deployment Options

- Zwei Templates sind bereits da
  - Default
  - No Activation




# The F5 Debugging Experience

## Was passiert bei F5?

1. Erstellt eine neue Version der .wsp-Datei
2. Deaktiviert und entfernt die alten Features
3. Entfernt die alte .wsp-Datei
4. Liefert die neue .wsp-Datei
5. Aktiviert die enthaltenen Features
6. Hängt den debugger auf W3WP.EXE worker process (via Site URL)

```
[Guid("e4c88fab-c985-4606-8277-54a7578709d8")]
public class MainEventReceiver : Microsoft.SharePoint.SPFeatureReceiver {

    public override void FeatureActivated(SPFeatureReceiverProperties properties)
    {
        SPWeb site = (SPWeb)properties.Feature.Parent;
        // save original title
        site.Properties["OriginalTitle"] = site.Title;
        site.Properties.Update();
        site.Title = "Hello World";
        site.Update();
        // delete list named 'Tasks'
        foreach (SPList list in site.Lists)
        {
            if (list.Title.Equals("Task"))
            {
                site.Lists.Delete(list.ID);
                break;
            }
        }
        // create task list
        Guid TaskListId;
    }
}
```



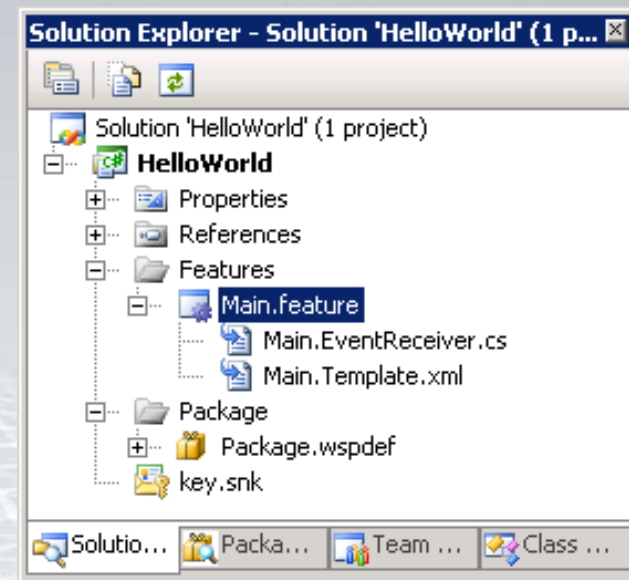
Output

Show output from: Build

```
----- Deploy started: Project: HelloWorld, Configuration: Debug Any CPU -----
Successfully created the WSP solution at: C:\Labs\02_SP14DevTools\Exercise01\HelloWorld\HelloWorld\bin\Debug\HelloWorld.wsp.
Successfully recycled the Internet Information Services (IIS) application pool.
----- Deactivate and uninstall features in old solution -----
Deactivating feature HelloWorld_Main ...
Operation completed successfully.
Uninstalling feature HelloWorld_Main ...
Operation completed successfully.
----- Retract and delete old solution helloworld.wsp from SharePoint server -----
Retracting solution...
Operation completed successfully.
Deleting solution...
Operation completed successfully.
----- Add and deploy the solution to SharePoint server -----
Adding solution...
Operation completed successfully.
Deploying solution...
Operation completed successfully.
----- Activate features in solution if necessary -----
Activating feature Main ...
```

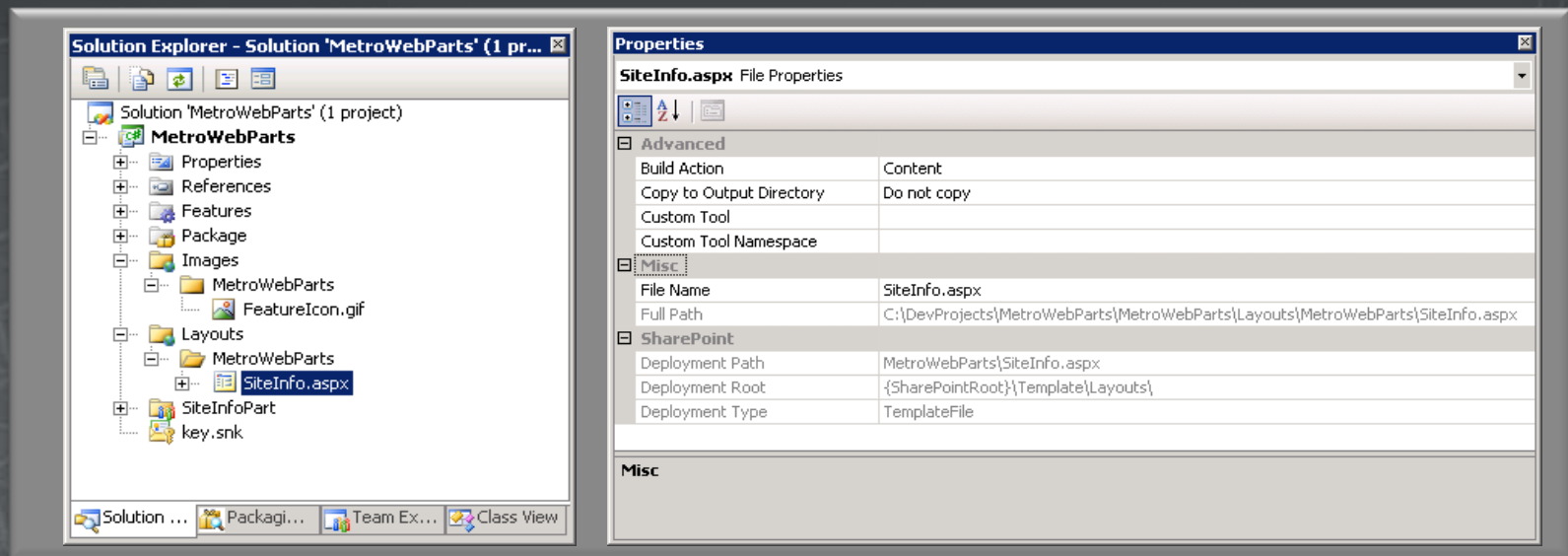
# Hallo Welt...?

# *demo*



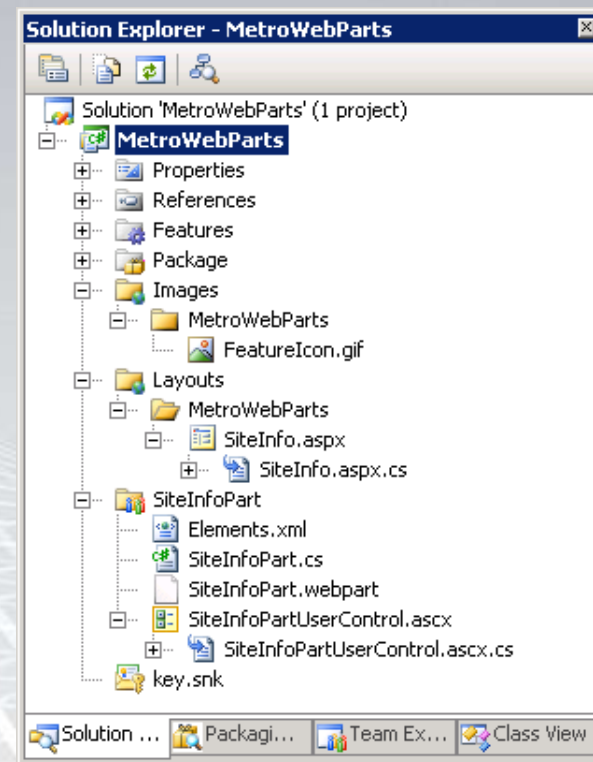
# Mapped Folders

- Manchmal braucht man doch die Ordnerstruktur
  - Layouts folder maps to virtual path /\_layouts
  - Images folder maps to virtual path /\_layouts
  - You can map other folders inside RootFiles directory
- Layouts folder key to creating application pages
  - Es hat sich bewährt für Solutions eigene Ordner zu erstellen



# Application Page

*demo*





# Sandboxed Solutions

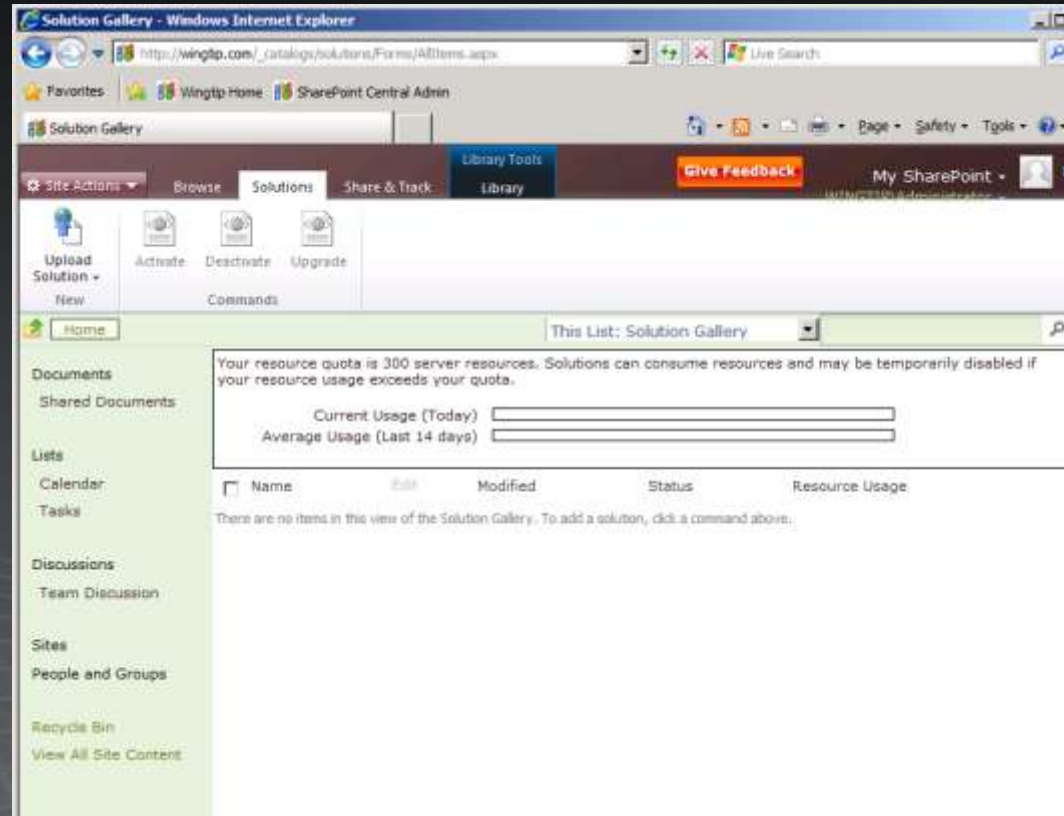
- Nur eine Teilmenge der möglichen Features
- Code in einer Sandbox starten
- Ein SiteCollection-Admin reicht für das Deployment
- Wird in der Solution Gallery gehalten





# Solution Gallery

- Auf Site-Collection Ebene
- Speichert Sandboxed Solutions
  - Stored at \_catalogs/solutions



# Sandboxed Solution Elements

- Web Parts (keine Visual Web Parts)
- Lists
- List Templates
- Custom Actions
- Workflows
- Event Receivers
- Content Types
- Site Columns
- ...

Limitierung ist die Registrierung im GAC

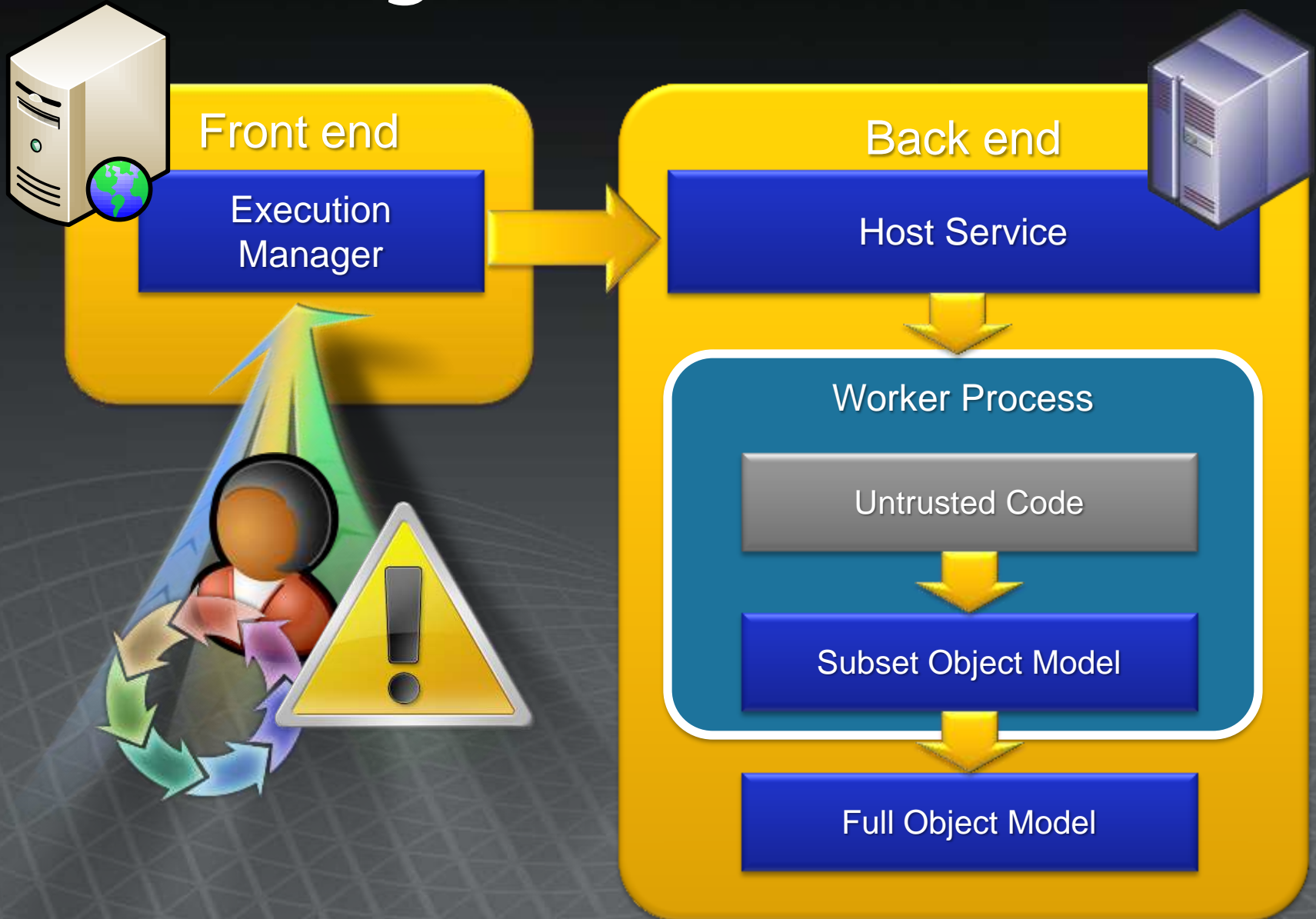
# Installing and running a sandboxed solution

*demo*

# The User Code Service

- Führt Code in der security sandbox aus
  - Sandboxed Solutions
  - InfoPath Business Logic
  - Custom Workflow Activities
- Code-Hosting in einer skalierbaren und belastbaren Umgebung
- Stellt eine sichere und überwachte Umgebung dar

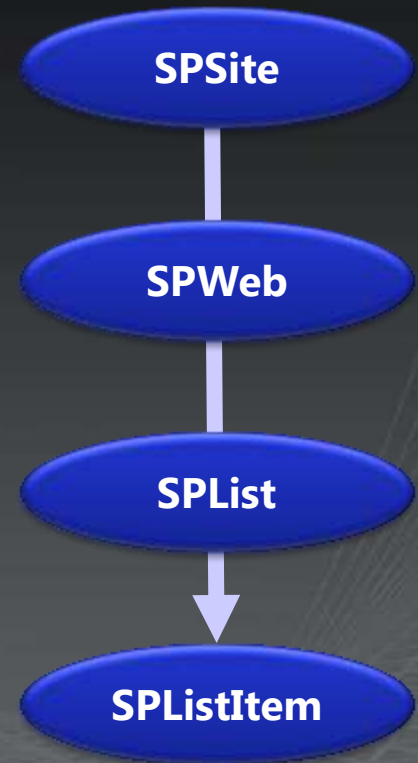
# Sandboxing Architecture





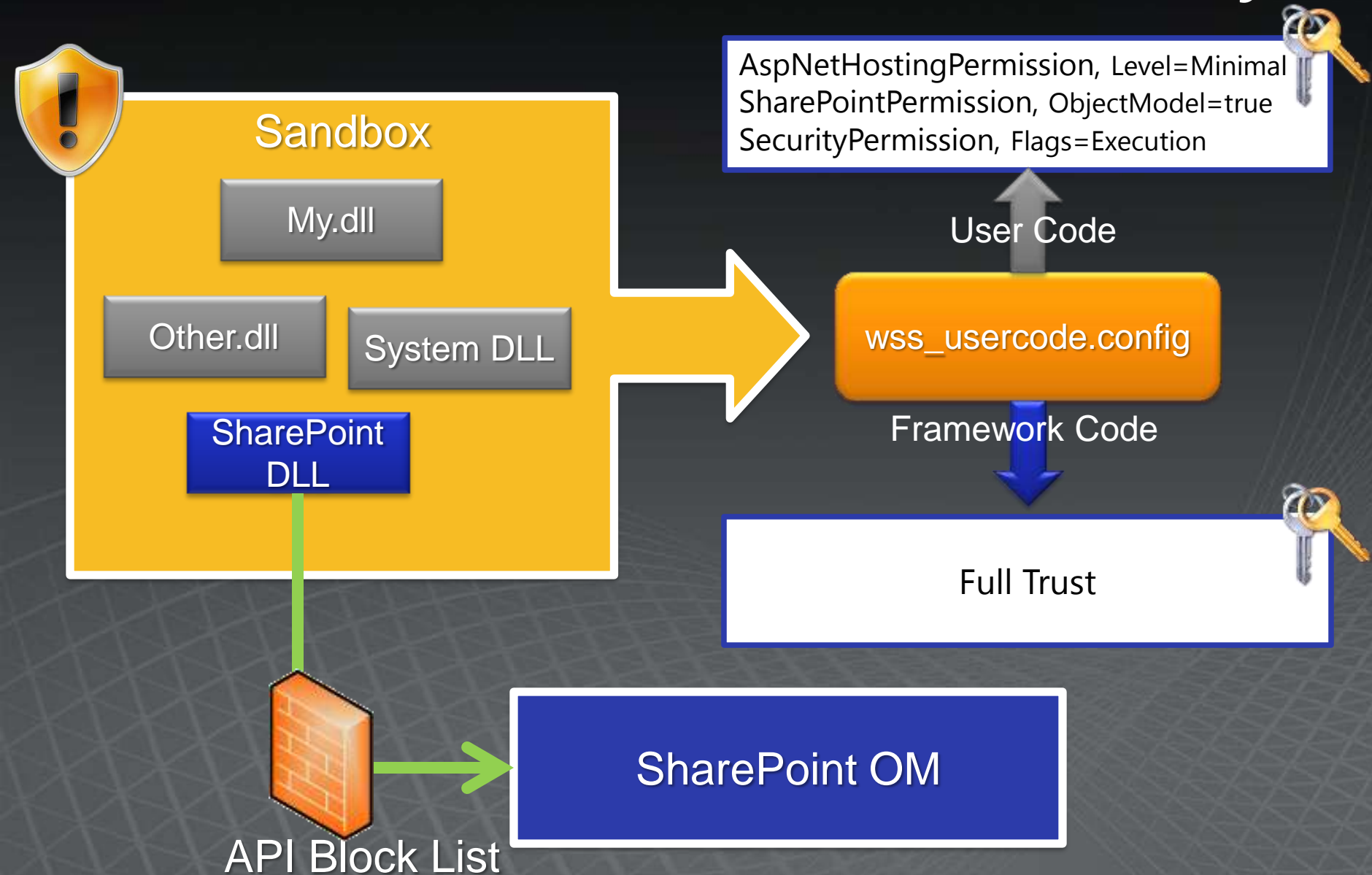
# Das kleinere Object Model

- Generell betrachtet geht
  - SPSite und darunter
- Kein SPSecurity
- Keine SPSite-Erstellung

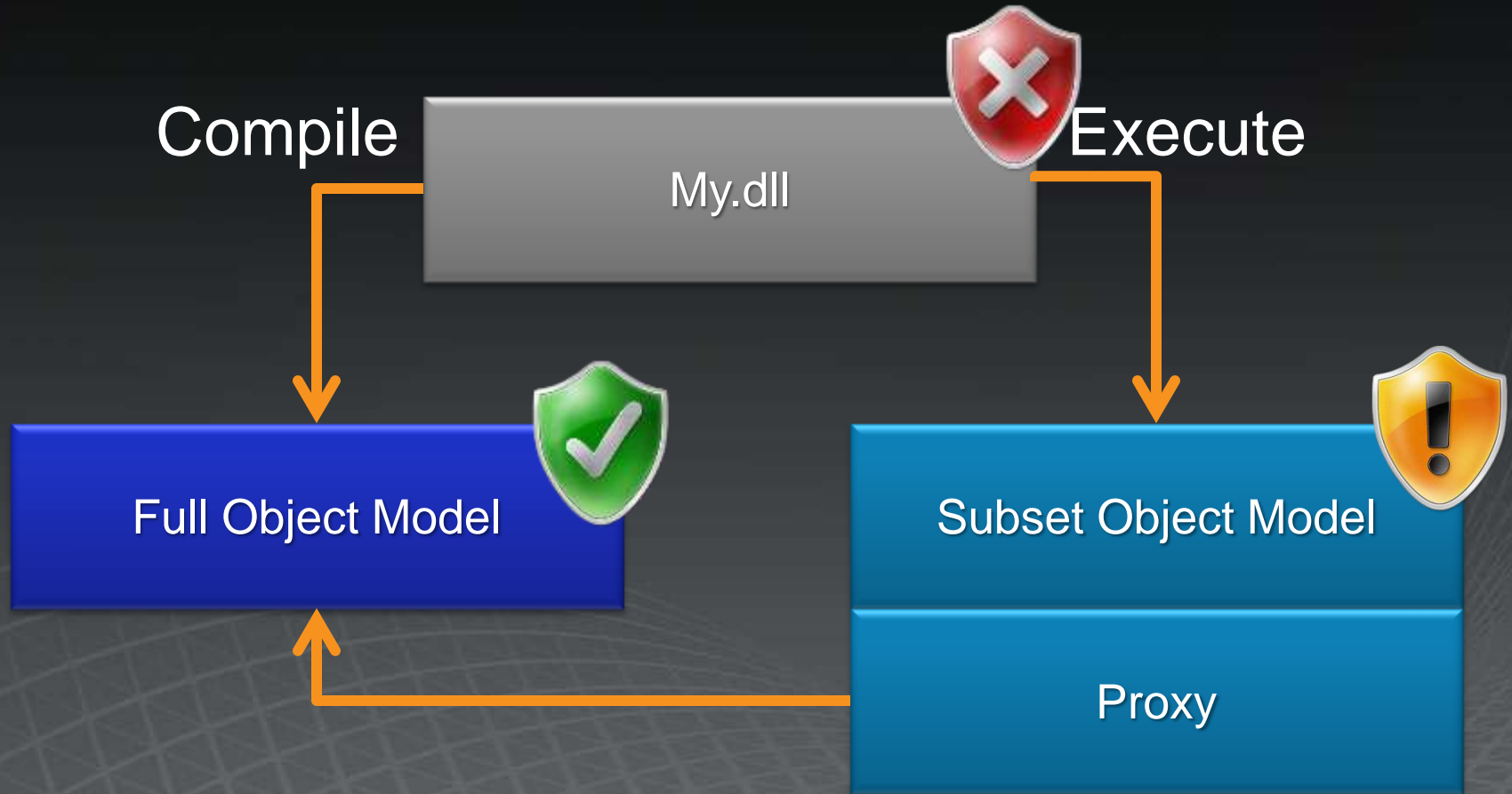




# Sandbox and Code Access Security



# Compiling and running



# Creating a Sandboxed Solution with VS 2010

*demo*

# Solution Validation

- Erlaubt die Erstellung eines Validierungsskripts
- Installation auf Farm-Level

```
[GuidAttribute("34805697-1FC4-4b66-AF09-AB48AC0F9D97")]
public class PublisherValidator : SPSolutionValidator{

    [Persisted]
    List<string> _allowedPublishers;

    public override void ValidateSolution(
        SPSolutionValidationProperties properties){
    }

    public override void ValidateAssembly(
        SPSolutionValidationProperties properties,
        SPSolutionFile assembly){
    }
}
```

# Solution Monitoring

- Farm Admins
  - Definieren die Limits (Quota und "Points")
- Site Admins
  - Identifizierung kritischer Anwendungen

Server Resources:

CPU, Memory, SQL, Exceptions, Critical Errors,  
Handles, Threads, ...

# Resource Quotas

Central  
Admin

**Site Quota Information**

Use this section to modify the quota template on this Web site collection, or to change one of the individual quota settings.

Current quota template  
**Individual Quota**

☐ Limit site storage to a maximum of:  MB

☐ Send warning e-mail when site storage reaches:  MB

Current storage used: 4 MB

User Solutions Resource Quota:

☒ Limit maximum usage per day to:  points

☒ Send warning e-mail when usage per day reaches:  points

Current usage (today) 0 points

Average usage (last 14 days) 0 points



Solution  
Gallery

Your resource quota is 300 server resources. Solutions can consume resources and may be temporarily disabled if your resource usage exceeds your quota.

Current Usage (Today)

Average Usage (Last 14 days)

Gemessen in 'Server Resources'



# Admin Sandboxed Solutions

*demo*

# SharePoint Project Items



- Application Page
  - LINQ to SharePoint
  - Master Pages
- Event Receiver
- Webparts
- Workflows

# Verbesserte Events

- Sechs neue Events in SharePoint 2010
  - WebAdding & WebProvisioned
  - ListAdding & ListAdded
  - ListDeleting & ListDeleted
- Neue Registrierungsmöglichkeiten
  - Neuer Einhängpunkt auf Site collection Ebene
  - SPSite & SPWeb event receiver registration per Feature
    - `<Receivers ListTemplateId="" Scope="" />`

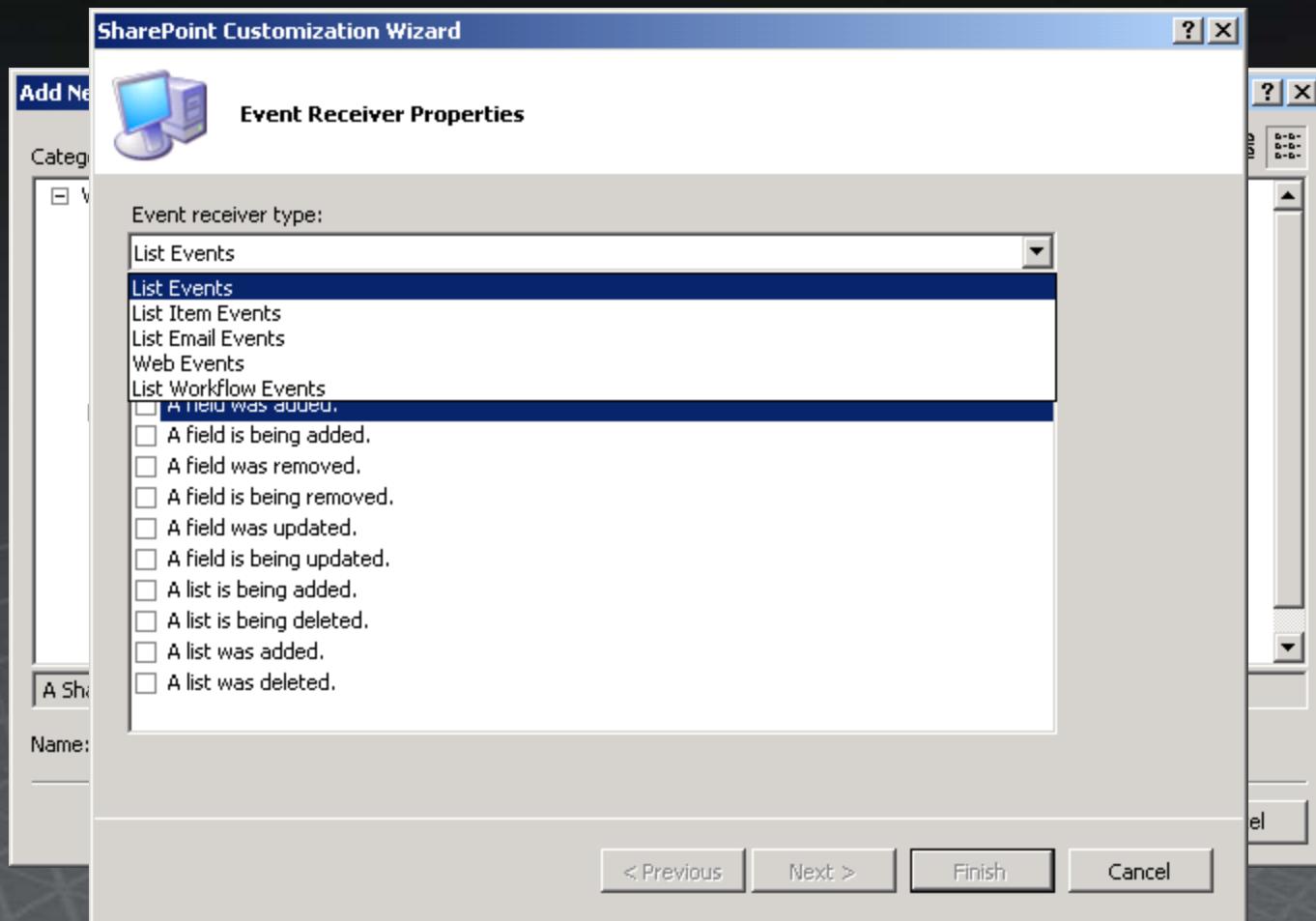
# Post Synchronous Events

- Die After-Events in WSS 3.0 waren immer asynchron
- Ärgerlich bei Aktionen, die zwar nach dem Ereignis, aber vor der Anzeige stattfinden sollten
- WSS 4.0 erlaubt die Änderung des Verhaltens
  - `SPEventReceiverDefinition.Synchronization`

# Cancelling Events & Custom Error Pages

- WSS 3.0 erlaubt es, das Event abzubrechen und eine Error-Message zu hinterlassen
- WSS '14' geht nun zusätzlich auch die Umleitung auf eine Error-Page
- Geht natürlich nicht mit Post-Events
- Synchroner Abbruch mit Error-URL
- Funktioniert leider nur im Web
  - Wird nicht mit Office-Clients funktionieren (egal welche Version)

# Events in Visual Studio 2010 Tools





# New & Improved Events

*demo*

# SQL Query

```
string cs = "Data Source=localhost;....";  
using (SqlConnection c = new SqlConnection(cs))  
{  
    c.Open();  
    SqlCommand cmd = c.CreateCommand(cs);  
    cmd.CommandType = CommandType.Text;  
    cmd.CommandText = "SELECT * FROM....";  
    SqlDataReader r = cmd.ExecuteReader();  
  
    ...
```

# XML Query

```
XmlTextReader r = new
XmlTextReader("c:\data.xml");
While(r.Read())
{
    XmlNodeType nt = r.NodeType;
    switch(nt)
    {
        case XmlNodeType.Element:
            ...
        case XmlNodeType.Attribute:
            ...
    }
```

# 2007-Style CAML Query

```
<Where>  
  <Gt>  
    <FieldRef Name='EndDate' />  
    <Value Type='DateTime'>  
      <Today OffsetDays=\"-1\" />  
    </Value>  
  </Gt>  
</Where>
```

# What is LINQ?

- Language Integrated Query
- Simplified, object-oriented way to query
- Bridges OOP and relational data
- Compile-time checked queries
- Provides IntelliSense inside Visual Studio
- Unified syntax for querying any data source

# C# Enhancements for LINQ

Check out Scott Guthrie's blog!

- IEnumerable<T>, IQueryable<T>
- Automatic Properties
- Object and Collection Initializers
- Extension Methods
- Lambda Expressions
- Query Syntax
- Anonymous Types



# IEnumerable<T>, IQueryable<T>

- Contained in System.Collections.Generic
- Implemented by the query provider
- Supports a simple iteration or a query against that type
- This is what allows LINQ to query

# Automatic Properties

- Allows short-hand property declarations
- Compiler emits getters and setters
- Used in LINQ to surface properties

```
public class Contact {  
    public string FirstName { get; set; }  
    public string LastName { get; set; }  
}
```

# Object and Collection Initializers

```
//Traditional approach
```

```
Contact c= new Contact();
```

```
c.FirstName = "Mike";
```

```
c.LastName = "Fitzmaurice";
```

```
//Object Initializer
```

```
Contact c= new Contact{ FirstName="Mike", LastName="Fitzmaurice" };
```

```
//Collection Initializer
```

```
List<Contact> contacts = new List<Contact>{
```

```
    Contact c= new Contact{ FirstName="Mike", LastName="Fitzmaurice"},
```

```
    Contact c= new Contact{ FirstName="Brian", LastName="Cox" },
```

```
    Contact c= new Contact{ FirstName="Patricia", LastName="Doyle" },
```

```
};
```

# Extension Methods

- Allow you to add methods to an object without subclassing
- LINQ has extension Methods for IEnumerable and IQueryable

```
// adding an extension method to System.String
public static class CustomExtension {
    public static bool IsValidEmailAddress(this string s) {
        Regex regex = new Regex(@"^[^\\w-\\.]+@([\\w-]+\\.)+[\\w-]{2,4}$");
        return regex.IsMatch(s);
    }
}

// using the extension method
string mail="scot@shillier.com";
if(mail.IsValidEmailAddress){
    // do something here
}
```

# Lambda Expressions

- Compact way to write anonymous functions

```
// passing parameter using an anonymous delegate
IEnumerable<Contact> results =
    contacts.Where( delegate(Contact c) {return c.FirstName=="Mike";} );

// equivalent code using a lambda expression
IEnumerable<Contact> results =
    contacts.Where( c => FirstName=="Mike" );
```

# Query Syntax

- Offers a readable alternative to Method syntax

```
IEnumerable<Contact> results =  
    contacts.Where( c=> FirstName=="Mike");
```

```
IEnumerable<Contact> results =  
    from c in contacts  
    where c.FirstName.Equals("Mike");
```



# Anonymous Types

- Allows developers to use variables without declaring the type.
- Still strongly typed, but inferred

```
var results =  
    from c in contacts  
    where c.FirstName.Equals("Mike");
```

# Available LINQ Providers

- LINQ to SQL
- LINQ to XML
- LINQ to Entities
- LINQ to SharePoint

# Hello, LINQ!

## *demo*

# LINQ to SharePoint

- Kein CAML mehr
- Entitäten direkt aus dem Business Layer
- Strongly-typed queries, compile-time check
- Intellisense unterstützung
- Microsoft.SharePoint.Linq.dll

# LINQ to SharePoint

- Entitäten erstellen
- DataContext erstellen
- Abfragen schreiben

# Creating Entity Classes

- Generiert von "spmetal"  
spmetal /web:<site Url> /code:Projects.cs
- Erstellt alle notwendigen Klassen

```
[List(Name="Customers")]
partial public class Customer
{
    [Column(Id=true)]
    public int CustomerId;

    [Column]
    public string City;
}
```



# List Relationships

- Listenübergreifende Abfragen dank Relationen
- Association Attribut markiert Relationen

```
private EntitySet<Order> _Orders;  
[Association(Storage="_Orders")]  
public EntitySet<Order> Orders {  
    get { return this._Orders; }  
    set { this._Orders.Assign(value); }  
}
```

```
var q =  
    from o in data.Orders  
    where o.Customer.City == "London"  
    select new { c = o.Customer, o };
```

# Modifying List Data

- Änderungen an den Entitäten werden aufgezeichnet...
- ...und bei `SubmitChanges()` zurück geschrieben

# LINQ to SharePoint

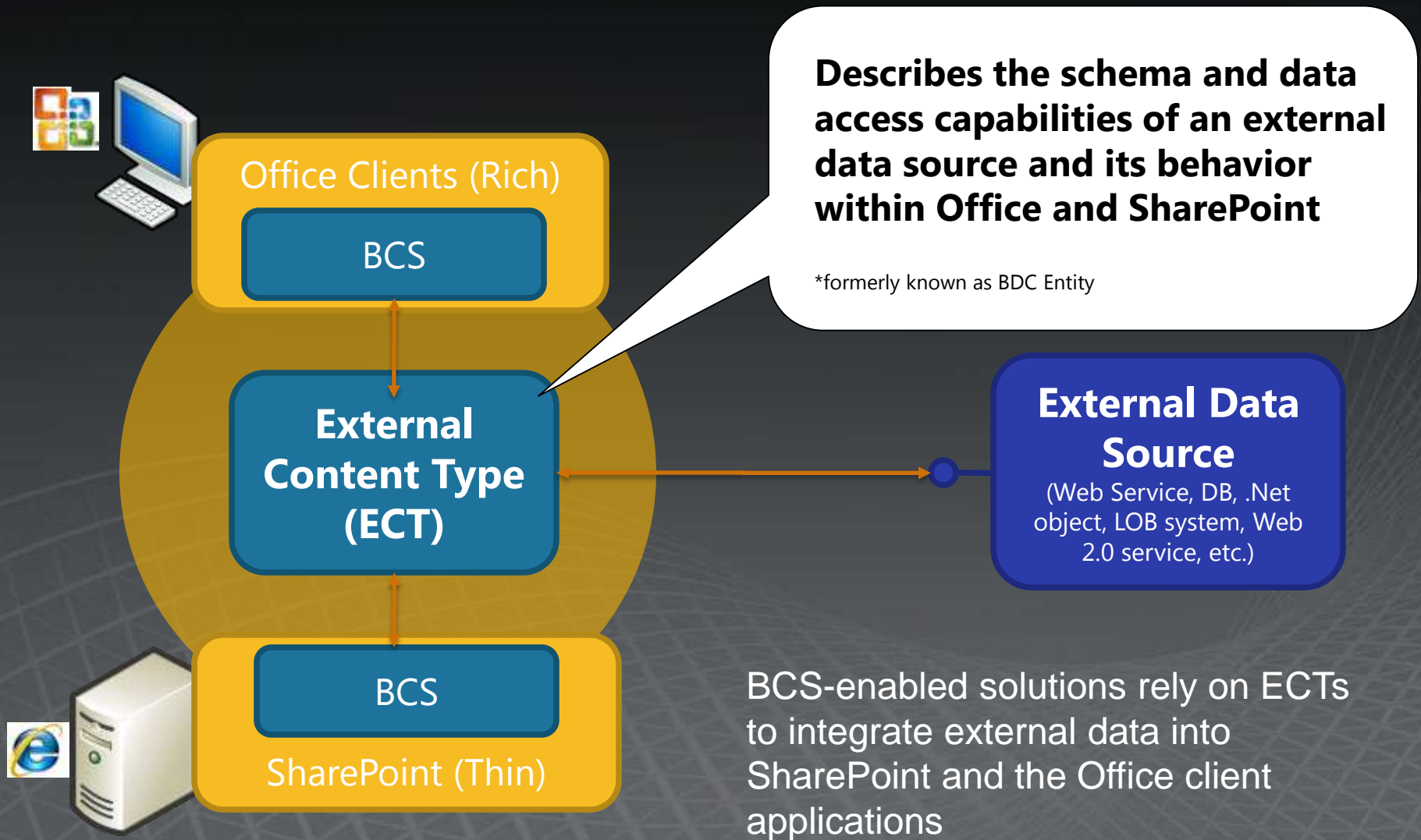
*demo*

# Kommunikation nach draußen



- Integration externer Datenquellen
  - SQL-Server
  - WCF-Services
  - .NET Entities
- RESTful API
- Client OM
  - .NET
  - JavaScript
  - Silverlight

# External Content Types



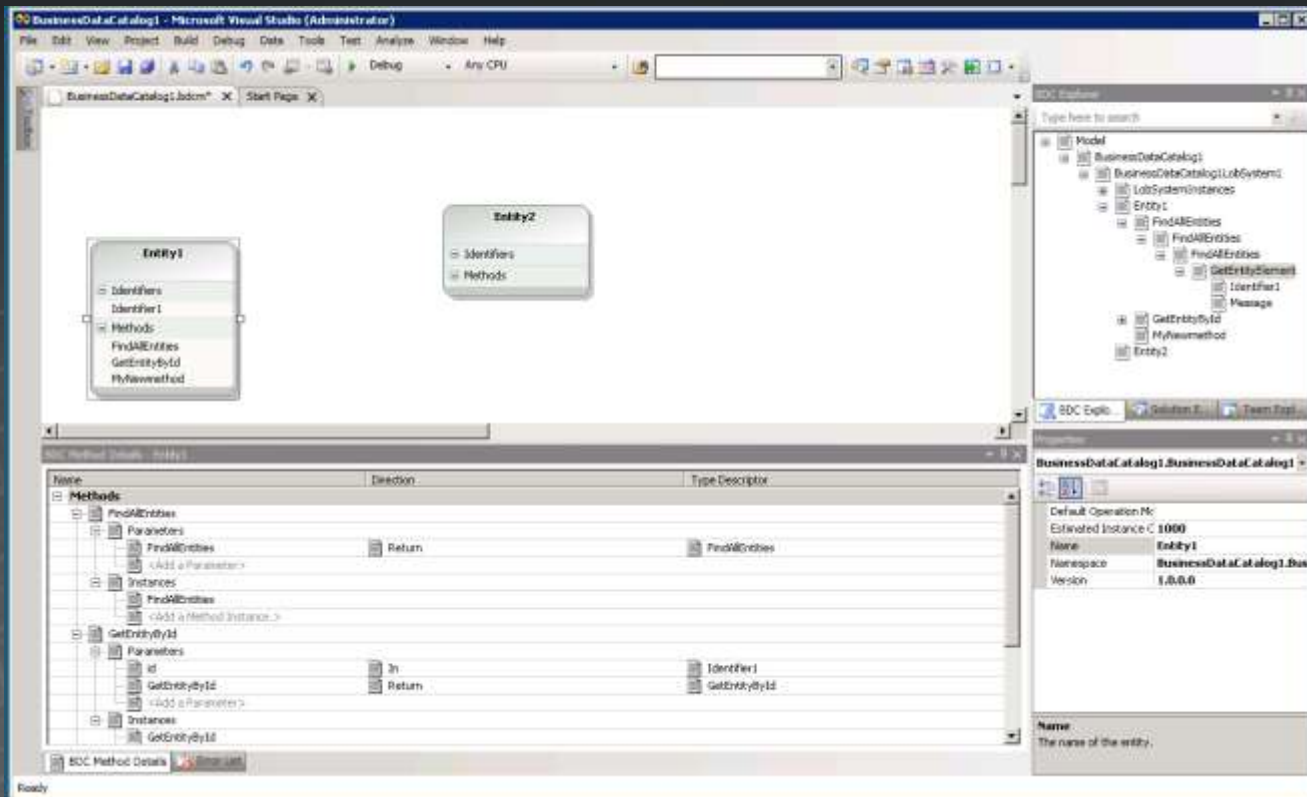
# External Data (SQL)

*demo*



# Visual Studio 2010 Support

- Erstellen eines ".NET Connectors"



# Creating a .NET Connector

*demo*

# Das Client Object Model

- Bibliothek für einen performanten Zugriff eines Clients auf die SharePoint-Daten
- Weg von SOAP, Webservices und autogenerierten Proxy-Klassen
- „Binaries“ für
  - .NET Runtime (Winforms, Office,...)
  - JavaScript
  - Silverlight

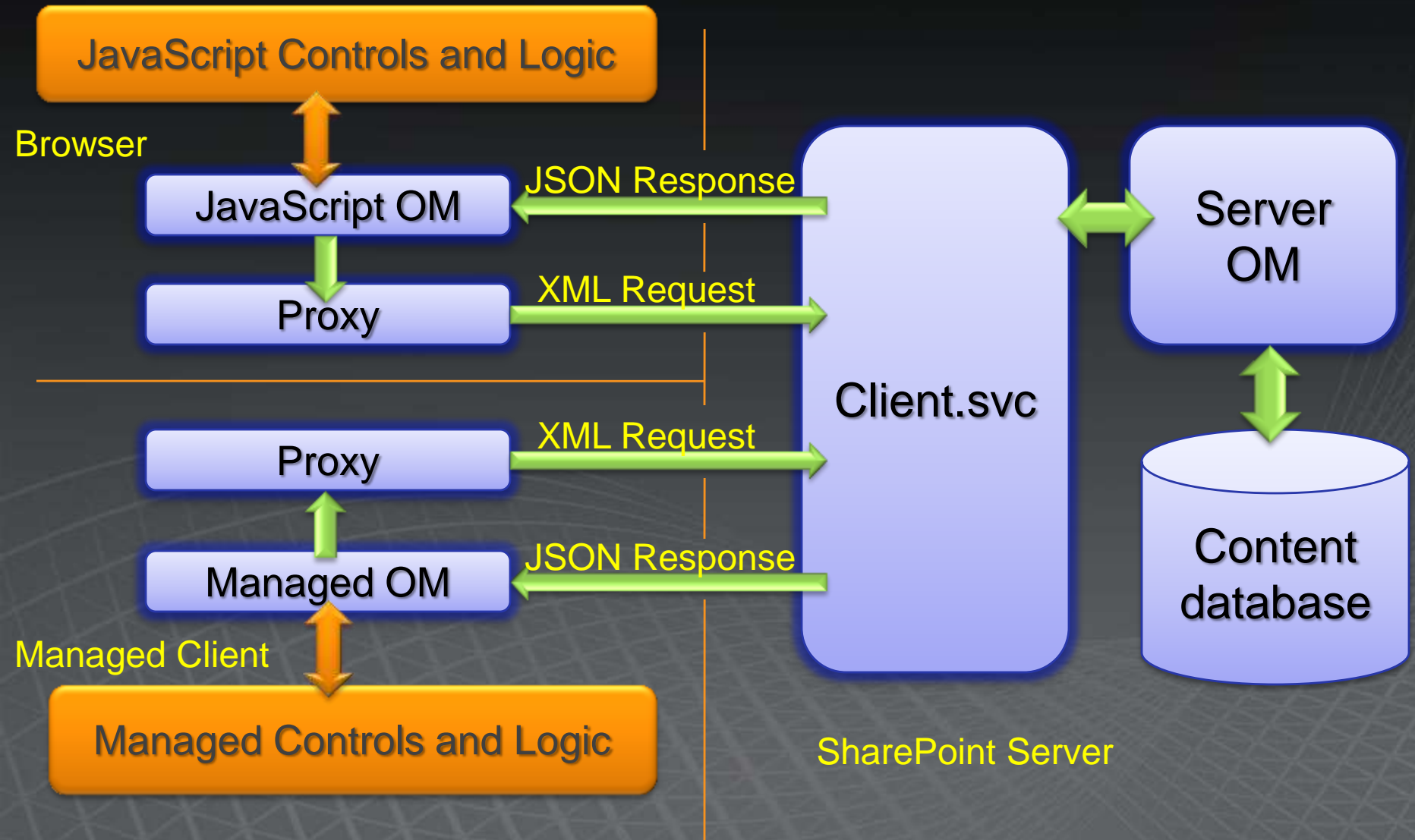
# Warum Client Object Model?

- Anfrage von Entwicklern:  
Umfangreichere API
- Client OM ganzheitliche Lösung – nicht  
einach mehr Web Services
- Stellt einen zusätzlichen Abstraktionslayer  
dar
- Einheitliches Handling für alle Technologien  
(.NET, JavaScript, Silverlight)

# Was wird unterstützt?

- Site Collections und Sites
- Lists, List Items, Views, und List Schemas
- Files und Folders
- Web, List, und List Item Property Bags
- Web Parts
- Security
- Content Types
- Site Templates und Site Collection Operations

# Using the Client Object Model





# .NET Client OM

```
ClientContext clientContext = new
ClientContext("http://server");

//Load method
clientContext.Load(clientContext.Web);
clientContext.Load(clientContext.Web.Lists);

//LoadQuery method
var q1 = from list
        in context.Web.Lists
        where list.Title != null
        select list;

var r1 = context.LoadQuery(q1);
```

# Client Object Model

*demo*

# Silverlight Client OM

- Endlich Silverlight Development durch Client OM
- Silverlight can auf mehreren Seiten betrieben werden
- Volle Silverlight-Power: Alternatives Frontend, vollwerte App
- ...bis hin zu out of Browser

# ADO.NET Data Services

- LINQ funktioniert leider nicht in Silverlight
- ListData.svc gibt als alternative RESTful Zugriff

ListData.svc

Loads ADO.NET Data Services handler assembly

Microsoft.SharePoint.ListDataService.dll

Implements IDataServiceProvider interface.

Microsoft.SharePoint.Linq.dll

Implements Linq to SharePoint provider

# Creating Silverlight Web Parts

- Verwendung des Silverlight-Host Webparts
- Das Webpart kann zusätzliche parameter an den Init-Prozess der Silverlight-App geben
- Silverlight-XAPs liegen im Layout-Verzeichnis (/\_layouts/ClientBin)

# Silverlight Web Part

*demo*



# JavaScript Client OM

- Methoden heißen unter Umständen etwas anders
- Daten auch

# JavaScript Client OM

*demo*

# Zusammengefasst...



Warum sollten sie sich gleich  
SharePoint 2010 installieren...?

# Was soll hängen bleiben?

- SharePoint ist mehr eine Plattform, ein Framework, als ein simples Produkt – die Rohmasse für Ihre Ideen
- Ansatzpunkte für Devs gibt es überall (Listen-Events, Ribbon-Anpassung, Webparts, APIs,...)
- Mit großer Macht kommt große Verantwortung! Software-Lösungen bitte nur dort, wo es nötig ist und Sinn macht.
- **SharePoint 2010 rockt!**

# Nützliche Links

- Meine Daten

- <http://blogs.msdn.com/twendel>
- [Tom.wendel@microsoft.com](mailto:Tom.wendel@microsoft.com)

- Videos für Developer @ Channel 9

- <http://channel9.msdn.com/learn/courses/SharePoint2010Developer/>

- SharePoint 2010 VM-Download

- <http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=0c51819b-3d40-435c-a103-a5481fe0a0d2>

- SharePoint Developer Evaluation Guide

- <http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=cffb14e8-88a9-43bd-87aa-4792ab60d320>

The background is a dark, textured surface with a faint, glowing wireframe grid pattern that curves across the frame. The Microsoft logo is prominently displayed in the center, with the tagline below it.

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