



Windows SharePoint Services Development Part 2: The User Interface European Microsoft SharePoint Conference 2007

February 12th to 14th, 2007
Convention Center
Hotel Estrel, Berlin, Germany

 Microsoft®
**Office SharePoint®
Server 2007**

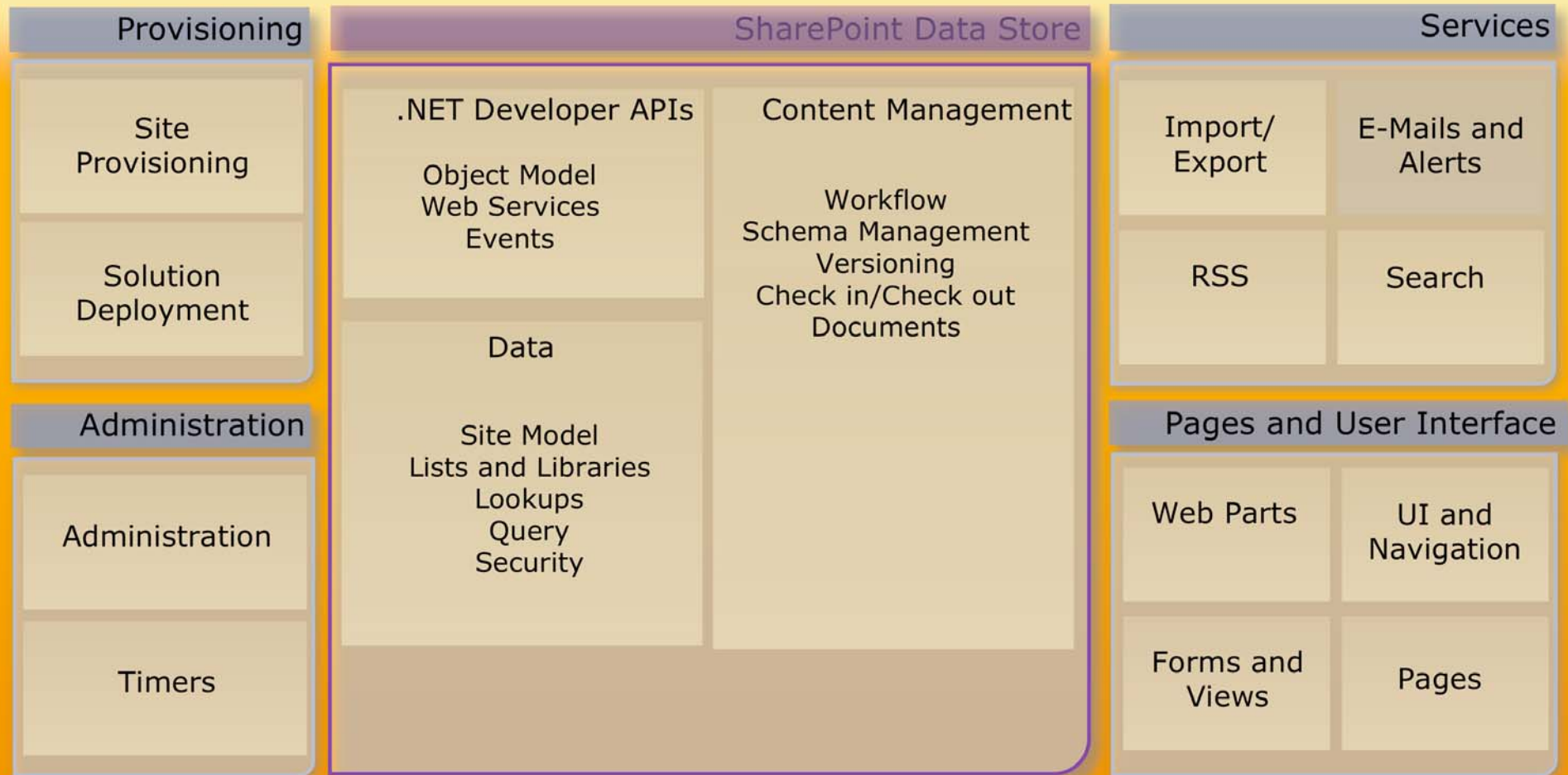
Windows SharePoint Services Development Part 2: The User Interface

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Program Manager
Windows SharePoint Services



Windows SharePoint Services v3.0 Developer Map

Office SharePoint Server 2007



Windows Internal Database/
SQL Server 2000/
SQL Server 2005

ASP.NET 2.0

Windows Workflow Foundation

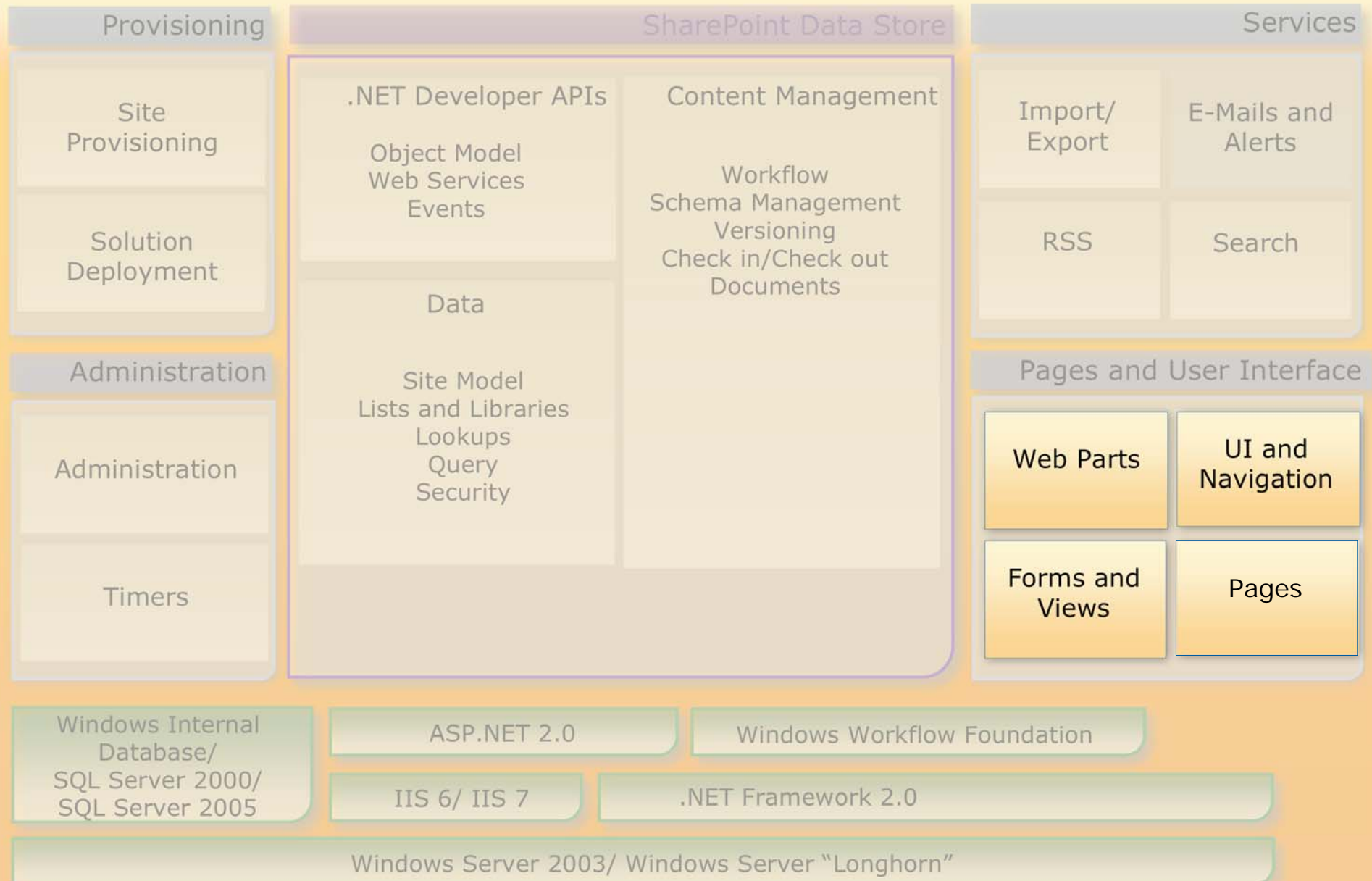
IIS 6/ IIS 7

.NET Framework 2.0

Windows Server 2003/ Windows Server "Longhorn"

Windows SharePoint Services v3.0 Developer Map

Office SharePoint Server 2007



Extending the User Interface of SharePoint

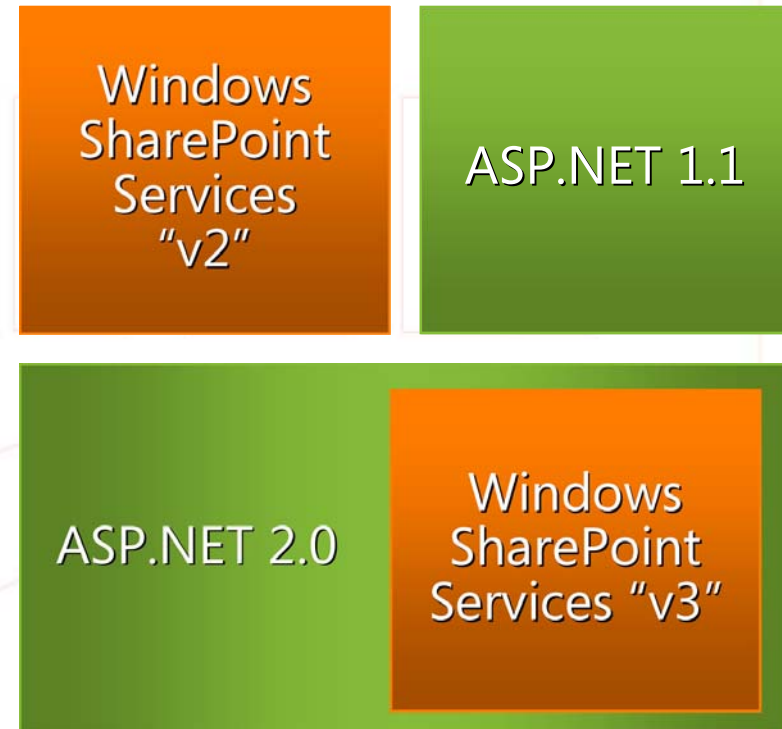
- Customize look and feel of a site
 - ▶ Customize Master Pages
 - ▶ Customize CSS
 - ▶ More on Customization:
Session @ 10AM Tuesday, February 13
- End-user customizable web user interface
 - ▶ Build Web Parts
- Build a custom application
 - ▶ Extend SharePoint UI
 - ▶ Build a Feature with CustomActions and DelegateControls
 - ▶ Reusable UI Component
 - Build a Control
 - ▶ User Interface Pages
 - Build a _layouts and Contents pages
 - ▶ Forms and Views
 - Build Control Templates

Agenda

- Architecture
- Page Model
 - Master Pages
 - Web Parts
- ASP.NET AJAX
- User Interface Extensions
- Forms and Views

User Interface Architecture

- SharePoint is “just” an ASP.NET application
- Better integration with ASP.NET
 - More ASP.NET features “shine through”
 - Uses new ASP.NET features
 - VirtualPathProvider
 - PageParserFilter



Differences Between SharePoint and ASP.NET

- In SharePoint...
 - Knowledge workers can edit ASPX pages
 - Thousands of sites, based on templates
 - Lots of conventions around user interface
- Therefore, a difference in security models
 - No-code Pages
 - No code behind
 - SafeControls

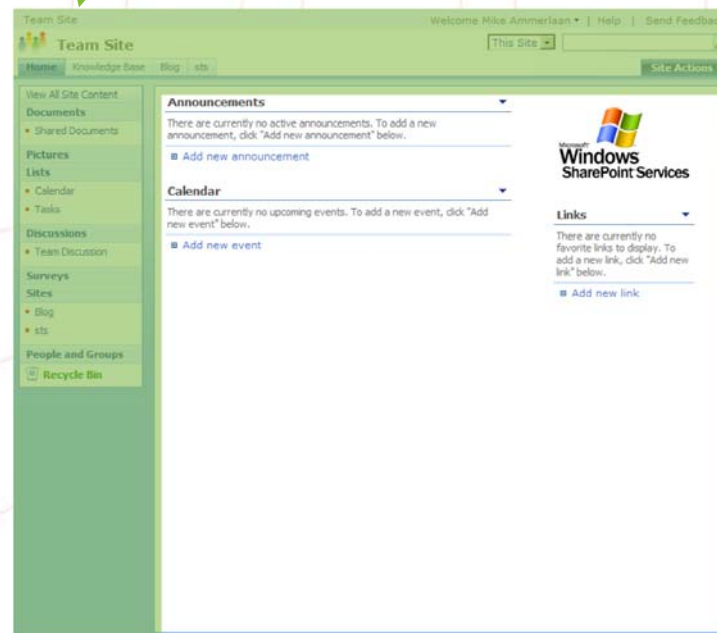
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- Architecture
- Page Model
- **Master Pages**
 - Web Parts
- ASP.NET AJAX
- User Interface Extensions
- Forms and Views

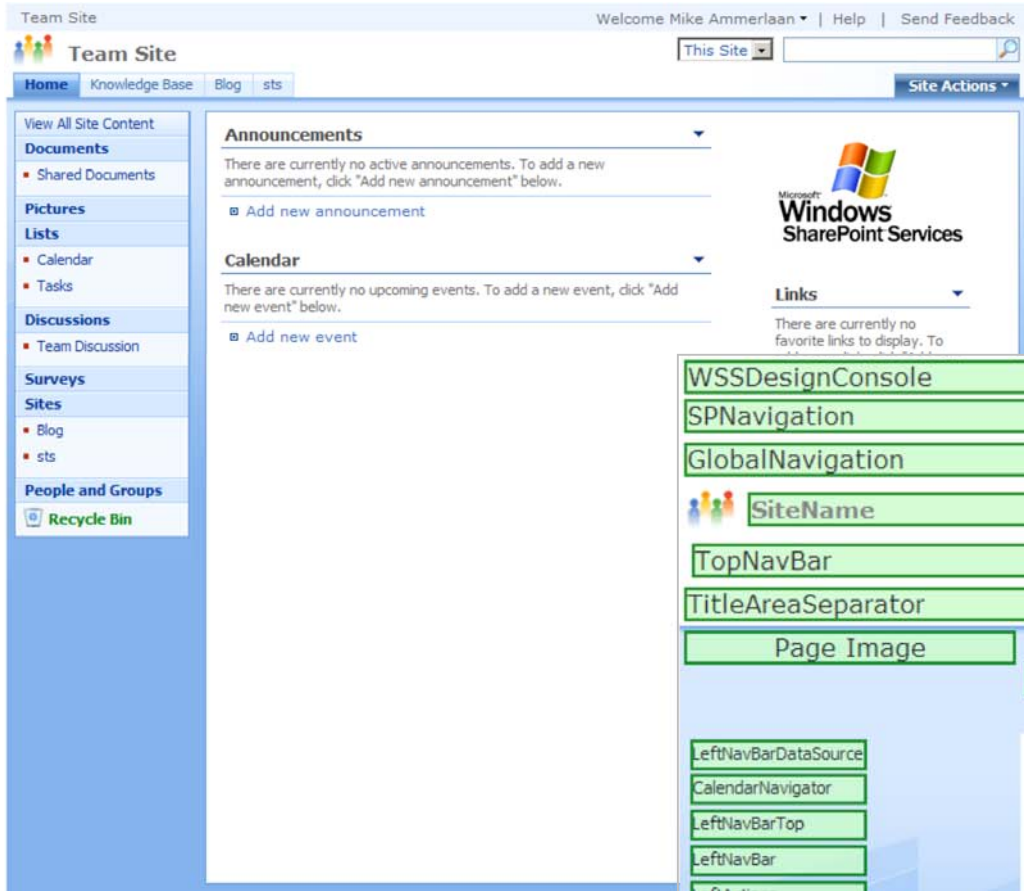
Master Page Concepts

- One page (master) holds the “chrome”
- Many pages point at the Master
- Master Page defines “Placeholders” which can be overridden in child page

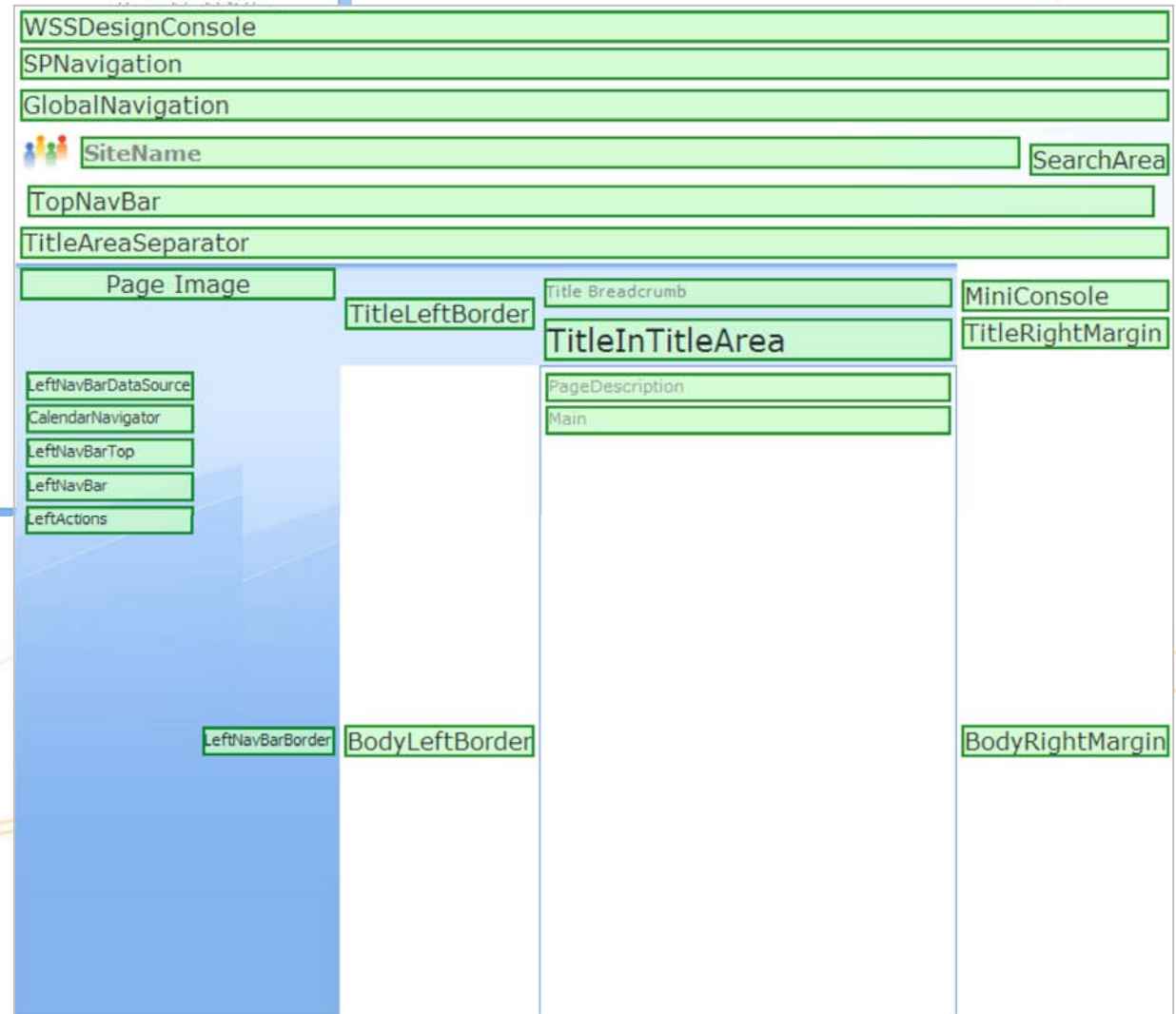
Master Page “Chrome” (default.master)



Content Page (default.aspx)



Master Pages Placeholders



Master Pages In WSS

- Each content page in WSS “points” to a master page
- Each WSS site has a Master Page Gallery (document library)
- Site metadata indicates where WSS looks for a master page
 - Content pages (e.g., default.aspx) default to the per-site master page gallery
 - Application pages default to the _layouts directory

Master Page Tokens

- Two dynamic tokens
 - ~**masterurl/default.master**
 - spweb.MasterUrl
 - "System Master Page" in MOSS
 - ~**masterurl/custom.master**
 - spweb.CustomMasterUrl
 - "Site Master Page" in MOSS
- Two static tokens
 - ~sitecollection/default.master
 - ~site/default.master

MOSS User Interface:

Inherit site master page from parent of this site

Specify a master page to be used by this site and all sites that inherit from it.

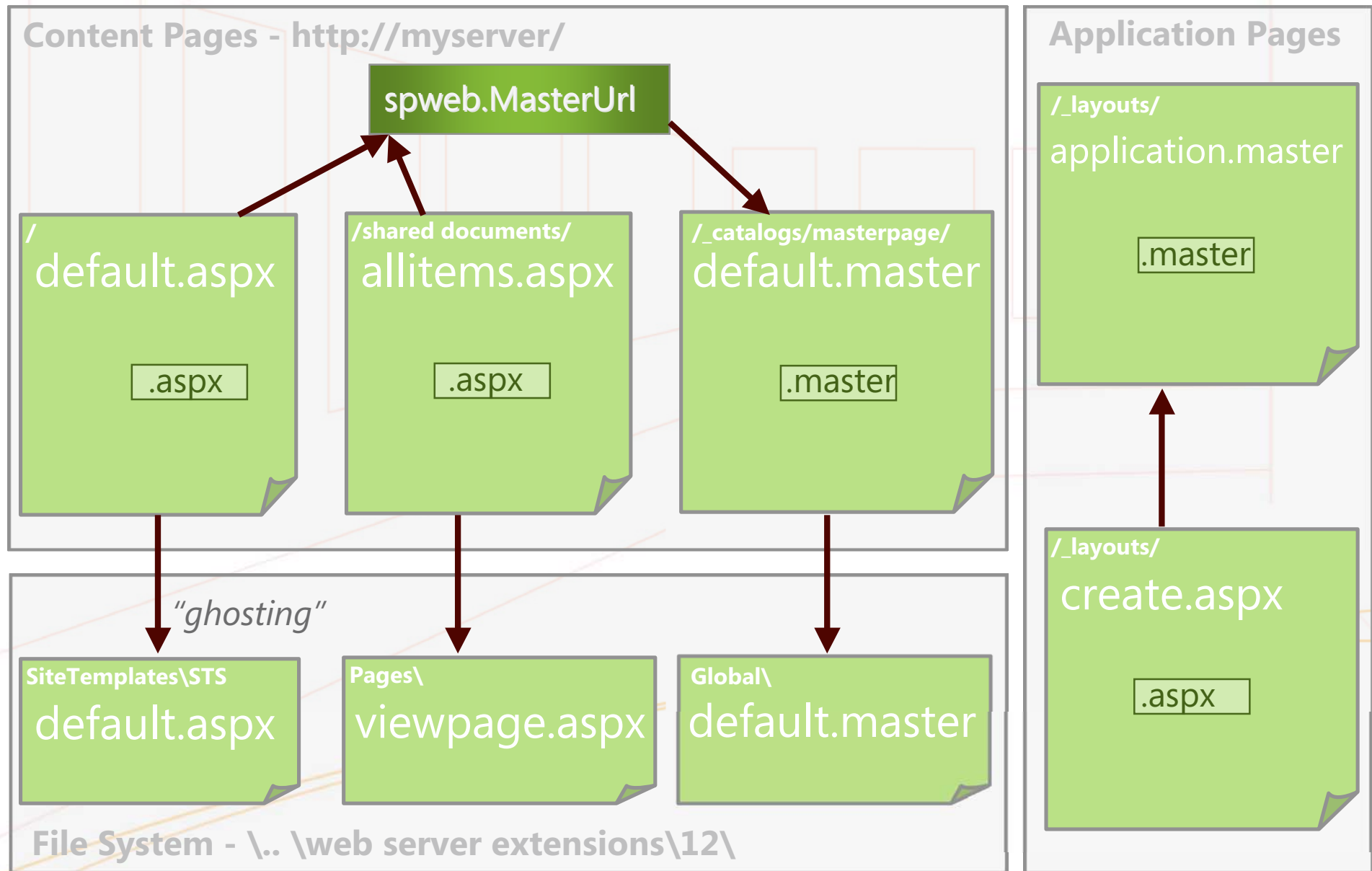
OrangeSingleLevel.master

PROPERTY	VALUE
TITLE	OrangeSingleLevel.master
DESCRIPTION	With the Lefthand Dash, all incoming sites and the Dash member sites, the incoming sites are to be displayed in the same group of an immediate view on the Lefthand, the view property of these sites are defined, which is based about half of the Dash view settings.
URL	
TEMPLATE	
LAYOUT	
MASTERPAGE	
PAGELENGTH	
PAGEWIDTH	
PAGEHEIGHT	
PAGEWIDTH	
PAGEHEIGHT	
PAGEWIDTH	

Provides a top navigation bar that shows a single level of navigation and a vertical navigation section that does not include flyouts, and presents them by using an orange color scheme

Reset all subsites to inherit this Site Master Page setting

SharePoint Page Layout



Master Pages In SharePoint Sites

demo

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- Architecture
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 - **Web Parts**
- ASP.NET AJAX
- User Interface Extensions
- Forms and Views

Web Parts

- End-user customizable controls
- Personalization store
- Web part framework now in ASP.NET
 - Support for assembly-based ASP.NET 2.0 parts
 - WSSv2 Web Parts fully supported
- Improved in v3: User interface for Web Parts

Types Of Web Parts

- WSS Web Parts
 - Microsoft.SharePoint.WebPartPages.WebPart
 - Client Connections, Caching, Work Items
 - Uses XML Serialization
- Direct ASP.NET Web Parts
 - System.Web.UI.WebControls.WebParts.WebPart
 - Uses ASP.NET Serialization

ASP.NET 2.0 Web Parts

demo

SharePoint Developer Tips

- Set your web.config appropriately

c:\inetpub\wwwroot\wss\virtualdirectories\80\web.config

```
...<SafeMode MaxControls="200" CallStack="true" ...>...  
...<compilation batch="false" debug="true">...  
...<customErrors mode="Off" />...
```

- Use the Logs and the Event Viewer

c:\program files\common files\microsoft shared\
web server extensions\12\logs

ASP.NET Web Part Connections

- Similar Connection Types
 - ICell -> IField, IList -> ITable
- Automatic translation from WSS v2 types
- ASP.NET 2.0 adds support
 - Custom connection interfaces
 - Custom transformers

ASP.NET 2.0 Web Part Connections

demo

Integration Limitations

- Cannot use ASP.NET 2.0 Web Part Pages; Not directly compatible as-is
 - Pages must include SPWebPartZones and SPWebPartManager
 - This is done to automatically handle compatibility issues
- No built-in support for treating .ASCX files (user controls) as Web Parts
 - You can use .ASCXs in pages, though
 - Wrappers for .ASCXs can and will be created

Agenda

- Page Model
 - Master Pages
 - Web Parts
- **ASP.NET AJAX**
- User Interface Extensions
- Forms
 - SPDataSource
 - Extensible Field Types
- Mobile Support

ASP.NET AJAX

- ASP.NET AJAX released mid-January
- Consists of:
 - JavaScript Libraries
 - Extenders and Ajax Control Toolkit
 - Web Service/JSON support
 - UpdatePanels
- SharePoint generally works well with ASP.NET AJAX
- UpdatePanels do require a workaround...

ASP.NET AJAX demo

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- Page Model
 - Master Pages
 - Web Parts
- ASP.NET AJAX Integration
- **User Interface Extensions**
- Forms and Views

Extending The User Interface

- Extensible Toolbars, Menus, Settings Pages
 - Link to pages
 - Can use ASP.NET controls on toolbars
 - Associate by
 - List type
 - Content type
 - File Type

Central Admin

Central Administration > Operations

Operations

This page contains links to pages that help you manage your server or server farm, such as changing the server farm topology.

Topology and Services

- Servers in farm
- Services on server
- Outgoing e-mail settings
- Incoming e-mail settings
- Approve/reject distribution groups

Security Configuration

- Service accounts
- Information Rights Management
- Antivirus
- Blocked file types
- Update farm administrator's group
- Information management policy configuration
- Manage settings for single sign-on

Content Type Settings

Collab > Site Settings > Site Content Type Gallery > Site Content Type

Site Content Type: Dashboard Page

Site Content Type Information

Name: Dashboard Page
Description: Create a page that displays Key Performance Indicators and Excel workbooks.
Parent: Document
Group: Business Intelligence

Settings

- Name, description, and group
- Advanced settings
- Workflow settings
- Delete this site content type
- Document Information Panel settings
- Information management policy settings
- Manage document conversion for this content type

Site Settings

Contoso Portal > Marketing > Site Settings

Site Settings

Site Information

Site URL: <http://mikeam2/marketing/>
Mobile Site URL: <http://mikeam2/marketing/m/>
Version: 12.0.0.4518

Users and Permissions

- People and groups
- Advanced permissions

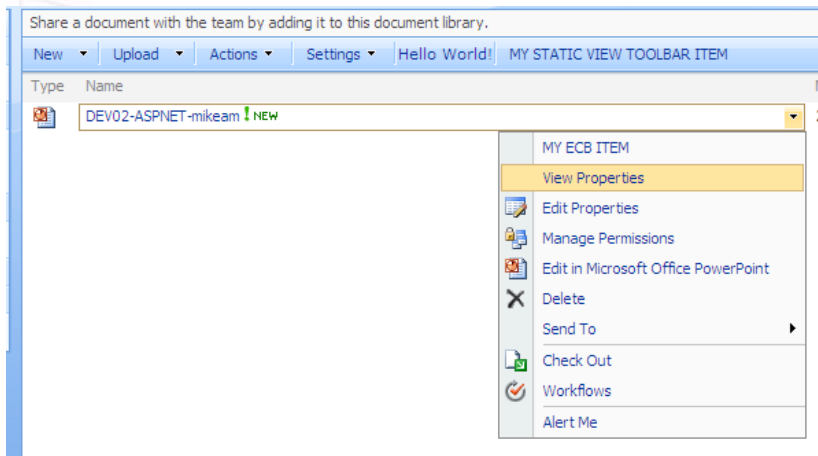
Look and Feel

- Master page
- Title, description, and icon
- Navigation
- Tree view
- Site theme
- Save site as template
- Reset to site definition
- MY SITE SETTINGS LINK
- Searchable columns

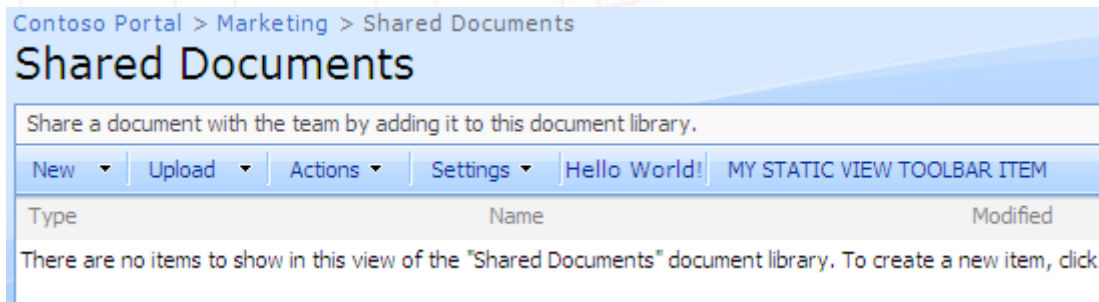
Galleries

- Master pages
- Site content types
- Site columns

EditControlBlock ("ECB")



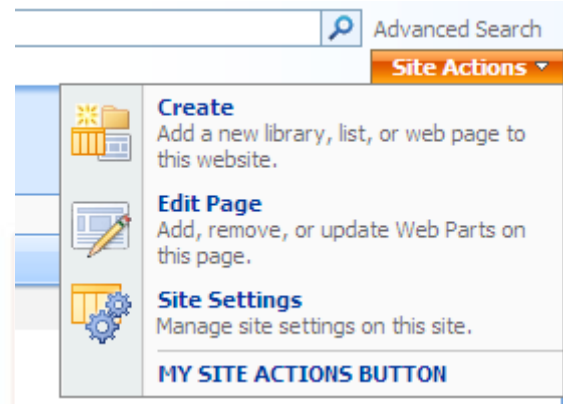
View ToolBar



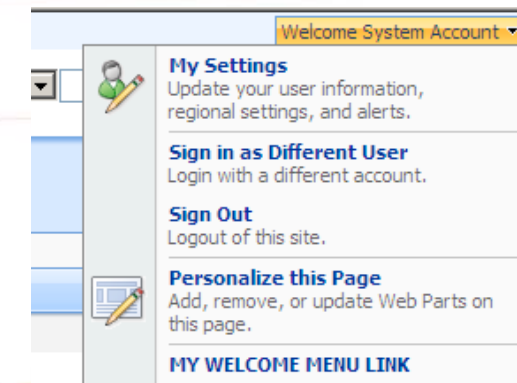
Display Form ToolBar



Site Actions



Welcome Menu



User Interface Entry Points

demo

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- Page Model
 - Master Pages
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- ASP.NET AJAX Integration
- User Interface Extensions
- **Forms and Views**

Forms and Views in WSS "v3"

- Forms

- ASP.NET Control Templates

- Extensible Field Types

- SPDataSource

- Use ASP.NET controls that work with data sources

- XSLT-based DataForms

- Views

- Out-of-Box List Views are still CAML XML-based

- Can create custom list view web parts

ASP.NET-Based Forms

- Override out-of-box control templates
 - Form Control
 - Iterators
 - Field Controls
- Specify form templates
 - By list type in schema.xml
 - By content type in feature.xml

12\TEMPLATE\CONTROLTEMPLATES\DefaultTemplates.ascx

```
<SharePoint:RenderingTemplate ID="DocumentLibraryForm" runat="server">
  <Template>
    <SharePoint:InformationBar runat="server"/>
    <wssuc:ToolBar CssClass="ms-formtoolbar" id="toolBarTbltop" RightButtonSeparator="&nbsp;" runat="server">
      <Template_RightButtons>
        <SharePoint:SaveButton runat="server"/>
        <SharePoint:GoBackButton runat="server"/>
      </Template_RightButtons>
    </wssuc:ToolBar>
    <SharePoint:FormToolBar runat="server"/>
    <SharePoint:FormComponent TemplateName="DocumentLibraryFormCore" runat="server"/>
  </Template>
</SharePoint:RenderingTemplate>
```

```
<SharePoint:RenderingTemplate ID="DocumentLibraryFormCore" runat="server">
  <Template>
    <TABLE class="ms-formtable" style="margin-top: 8px;" border=0 cellpadding=0 id="formTbl" cellspacing=0 width=100%>
      <SharePoint:ChangeContentType runat="server"/>
      <SharePoint:DocumentLibraryFields runat="server"/>
      <SharePoint:ApprovalStatus runat="server"/>
    </TABLE>
    <SharePoint:WebPartPageMaintenanceMessage runat="server"/>
    <SharePoint:DocumentTransformersInfo runat="server"/>
    <table cellpadding=0 cellspacing=0 width=100%><tr><td class="ms-formline"><IMG SRC="/_layouts/images/blank.gif"
      width=1 height=1 alt=""></td></tr></table>
    <TABLE cellpadding=0 cellspacing=0 width=100% style="padding-top: 7px"><tr><td width=100%>
      <SharePoint:ItemHiddenVersion runat="server"/>
      <SharePoint:InitContentType runat="server"/>
      <wssuc:ToolBar CssClass="ms-formtoolbar" id="toolBarTbl" RightButtonSeparator="&nbsp;" runat="server">
        <Template_Buttons>
          <SharePoint:CreatedModifiedInfo runat="server"/>
        </Template_Buttons>
        <Template_RightButtons>
          <SharePoint:SaveButton runat="server"/>
          <SharePoint:GoBackButton runat="server"/>
        </Template_RightButtons>
      </wssuc:ToolBar>
    </td></tr></TABLE>
  </Template>
</SharePoint:RenderingTemplate>
```

ASP.NET Forms

demo

Views and CAML

- “Collaboration Application Markup Language”
- XML dialect for SharePoint list data, views, fields, queries, etc
- Extremely performant
- Deprecated for Forms
- Support for more commonly-used alternatives being added with each major release of WSS

XSLT-Based Forms And Views

- DataFormWebPart
 - For forms *and* views
 - Use SharePoint List Data, Multiple Lists
 - Can query SQL Server, OLEDB, Web Services
- Use SharePoint Designer to create these

Extensible Field Rendering

- Views
 - Must use CAML XML for view rendering
 - Fields base type is the default
 - Share field display behavior with views
- Forms
 - Share the CAML XML view rendering
 - Use a custom control for form rendering

Extensible Field Type Rendering

demo

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- **Mobile Support (Bonus!)**

Mobile Page Architecture

- <http://mysitename/m> redirects to http://mysitename/_layouts/mobile/default.aspx
- Uses ASP.NET control overrides
- Change home page via redirection by web template type
- Customize by:
 - Web Template Type
 - List Template Type
 - Field Type

Example

Home page rendering

- Customize Home page by Web/Site Template type
- .ASCX rendering template with special IDs
 - Title: Mobile_[SiteTemplateID]_HomePage_Title
 - Contents: Mobile_[SiteTemplateID]_HomePage_Co
 - Navigation: Mobile_[SiteTemplateID]_HomePage_Navigation
- Deploy to 12\TEMPLATE\CONTROLTEMPLATES



Mobile Rendering

demo

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Sweepstake

Complete your Feedback form
and have a chance
to win a Zune!*



* English US version

SharePoint Conference Hands-on Labs

The following is the list of Hands-on Labs available in SAAL C relevant to this presentation
<edit this list to remove all not relevant>:

- HOL101 What's New in Microsoft Windows SharePoint Services 3.0 Feature Walkthrough
- HOL111 What's New in Microsoft Office SharePoint Server 2007 Feature Walkthrough
- HOL171 Synchronizing Data Between Microsoft Office Groove 2007 and Microsoft SharePoint Products and Technologies
- HOL201 Introducing Content Types for Microsoft Windows SharePoint Services 3.0
- HOL202 Microsoft Windows SharePoint Services Installation and Configuration
- HOL203 Microsoft Windows SharePoint Services 3.0 Backup and Restore
- HOL211 Microsoft Office SharePoint Server 2007 People and Permissions
- HOL212 Microsoft Office SharePoint Server 2007 Personalization
- HOL213 Microsoft Office SharePoint Server 2007 Installation and Configuration
- HOL214 Microsoft Office SharePoint Server 2007 Enterprise Features Administration
- HOL215 Microsoft Office SharePoint Server 2007 Records Management Deployment and Configuration
- HOL216 Microsoft Office SharePoint Server 2007 for Search Installation
- HOL217 Getting Started with Search in Microsoft Office SharePoint Server 2007



SharePoint Conference Hands-on Labs (2)

The following is the list of Hands-on Labs available in SAAL C relevant to this presentation
<edit this list to remove all not relevant>:

- HOL241 Using Microsoft Office Excel 2007 Spreadsheets for Web Service-Based Calculations and Browser Rendering
- HOL262 Building Microsoft Office InfoPath 2007 Forms that Run as Both Rich Client and Browser Applications
- HOL301 Using Features to Provision Sites in Microsoft Windows SharePoint Services 3.0
- HOL302 ASP.NET 2.0 Interoperability with Microsoft Windows SharePoint Services 3.0 - Web Parts and Master Pages
- HOL303 Creating Workflows for Microsoft Windows SharePoint Services 3.0
- HOL304 Using List Events in Microsoft Windows SharePoint Services 3.0
- HOL305 Microsoft Windows SharePoint Services 3.0 Site Templates
- HOL311 Getting Started with the Business Data Catalog in Microsoft Office SharePoint Server 2007
- HOL312 Search Administration and Customization in Microsoft Office SharePoint Server 2007
- HOL313 Designing Content-Driven Web Sites with Microsoft Office SharePoint Server 2007
- HOL314 Microsoft Office SharePoint Designer 2007 - CSS and the Data Form Web Part

SharePoint Control Library

- SPGridView
- SPTreeView
- Field Controls
 - DateField
 - TextField
 - UrlField
 - UserField
- Validators