

ASP.NET Dynamic Data

Presented by Eric Phan



Eric Phan

- Solution Architect @ SSW
- Loves to try out new technologies
- Pushed for and is using Dynamic Data in an intranet application for a utilities company



Agenda

- What is ASP.NET Dynamic Data?
- How do I get it?
- How do I customize it?
- What's coming in future versions
- Is it ready?



What is ASP.NET Dynamic Data

- Web application scaffolding framework
- Microsoft's version of Ruby on Rails



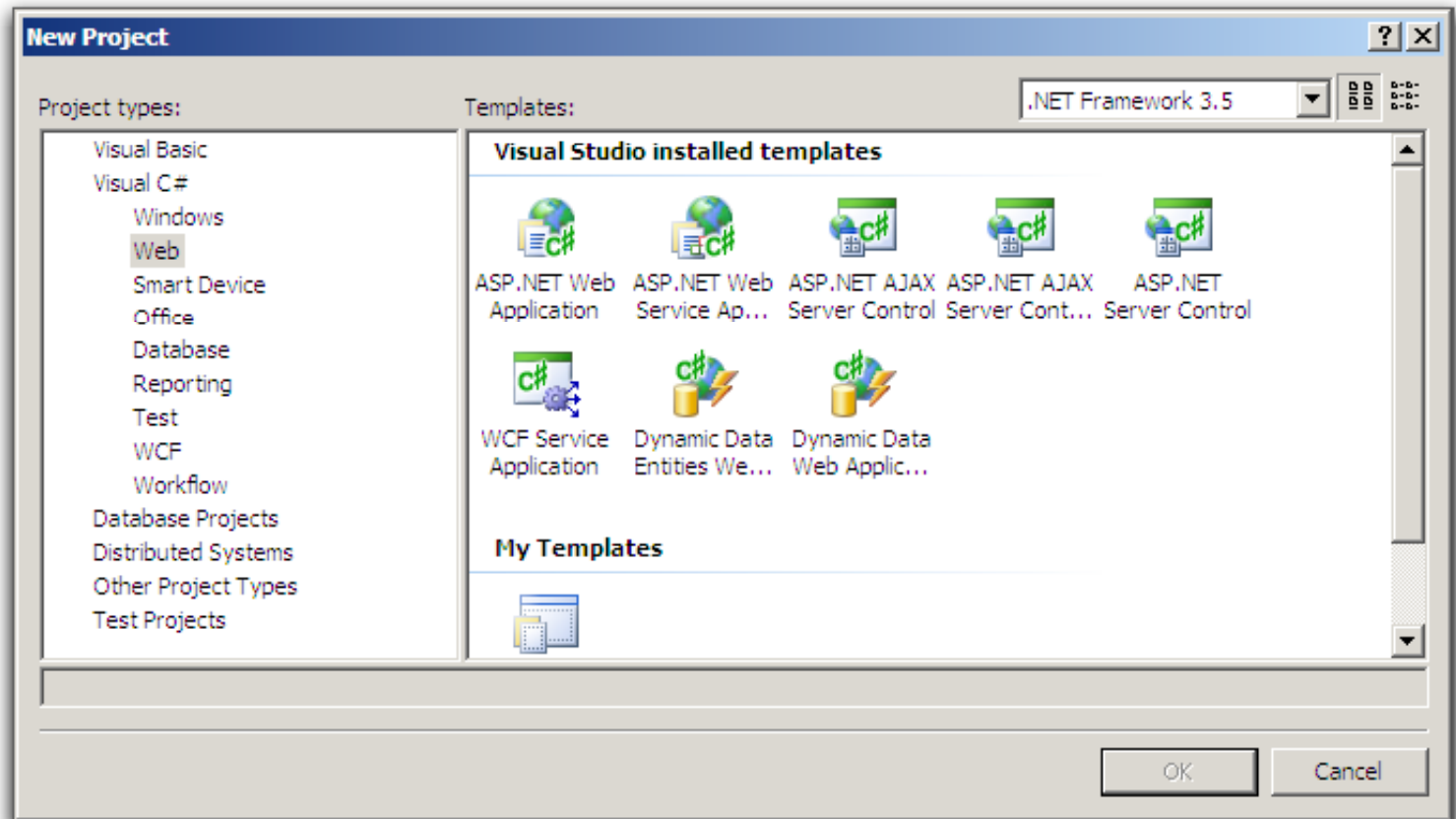
How do I get it?

- Visual Studio 2008 SP1
- .NET Framework 3.5 SP1



Build a functioning data entry site in 5 mins





DYNAMIC DATA SITE

[← Back to home page](#)

My tables

Table Name
Categories
CustomerCustomerDemos
CustomerDemographics
Customers
Employees
EmployeeTerritories
Order_Details
Orders
Products
Regions
Shippers
Suppliers
Territories



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[← Back to home page](#)

Regions

	RegionID	RegionDescription	Territories
Edit Delete Details	1	Eastern	View Territories
Edit Delete Details	2	Western	View Territories
Edit Delete Details	3	Northern	View Territories
Edit Delete Details	4	Southern	View Territories

[+ Insert new item](#)



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.. < [Back to home page](#)

Entry from table Regions

RegionID	1
RegionDescription	Eastern
Territories	View Territories
	Edit Delete

[Show all items](#)



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[.. < Back to home page](#)

Edit entry from table Regions

RegionID	1
RegionDescription	<input type="text" value="Eastern"/>
Territories	View Territories
Update Cancel	



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[← Back to home page](#)

Edit entry from table Products

ProductName	<input type="text" value="Chai"/>
QuantityPerUnit	<input type="text" value="10 boxes x 20 bags"/>
UnitPrice	<input type="text" value="18.0000"/>
UnitsInStock	<input type="text" value="39"/>
UnitsOnOrder	<input type="text" value="0"/>
ReorderLevel	<input type="text" value="10"/>
Discontinued	<input type="checkbox"/>
Order_Details	View Order_Details
Category	<input type="text" value="Beverages"/>
Supplier	<input type="text" value="Exotic Liquids"/>
Update Cancel	



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[← Back to home page](#)

Products

Discontinued Category Supplier

	ProductName	QuantityPerUnit	UnitPrice	UnitsInStock	UnitsOnOrder	ReorderLevel	Discontinued	Order_Details	Category	Supplier
Edit Delete Details	Chai	10 boxes x 20 bags	18.0000	39	0	10	<input type="checkbox"/>	View Order_Details	Beverages	Exotic Liquids
Edit Delete Details	Chang	24 - 12 oz bottles	19.0000	17	40	25	<input type="checkbox"/>	View Order_Details	Beverages	Exotic Liquids



Recap

- 1. Create a ASP.NET Dynamic Data Website
- 2. Create your DBML file
- 3. Register your data context in the Global.asax
- 4. Set scaffold all to true
- 5. Run it



Register your model

```
namespace <Company>.FOMS.WebUI
{
    public class Global : System.Web.HttpApplication
    {
        public static void RegisterRoutes(RouteCollection routes)
        {
            MetaModel model = new MetaModel();

            model.RegisterContext(typeof(NorthwindDataContext), new
            ContextConfiguration() { ScaffoldAllTables = true });
        }
    }
}
```



Can we give it to a client?

- Yes?
- No?



Not quite

- What about the look and feel?
 - Header names, field names
 - Unwanted columns
- What about validation?
 - E.g. Negative cost price!



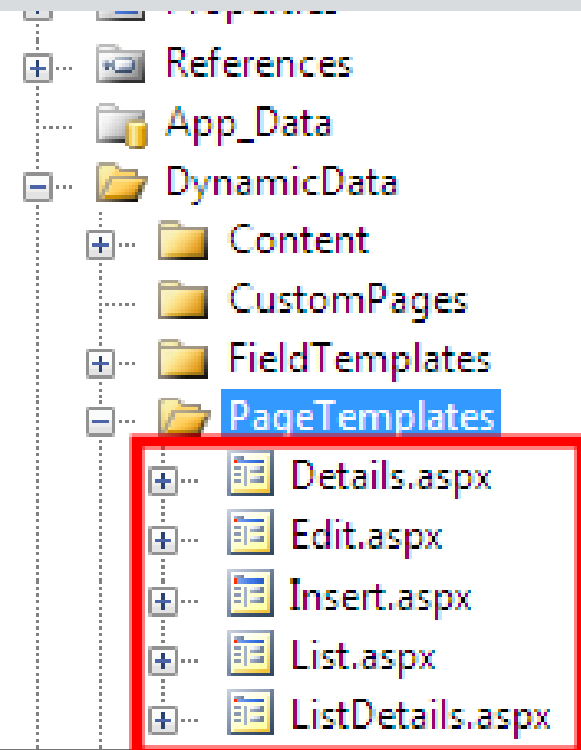
Customization

- Several levels of customization
 - Page Templates
 - Field Templates
 - Meta Data
 - UI Hints
 - How tables are rendered



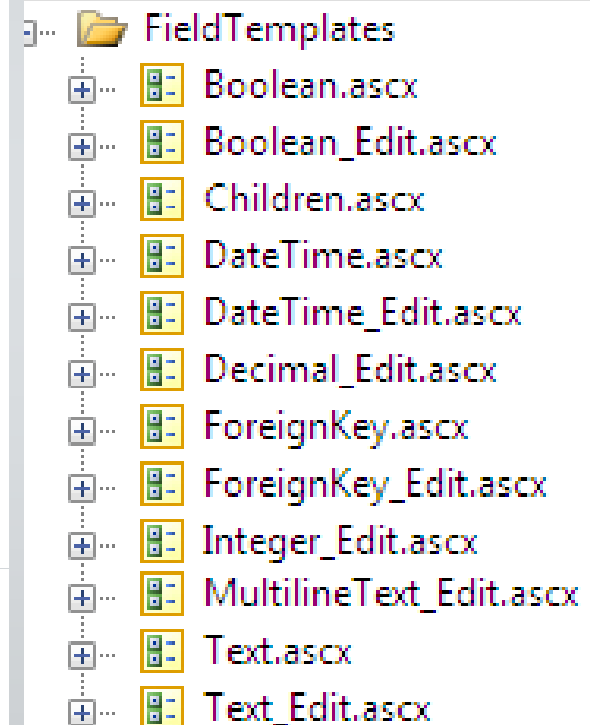
Page Templates

- Customize the CRUD pages
 - Details.aspx
 - Edit.aspx
 - Insert.aspx
 - List.aspx
 - ListDetails.aspx



Field Templates

- Customize the way fields are rendered
- Used in conjunction with UIHint attribute
- Create your own field template to render a field your own way e.g. Image columns, Email Columns and URL columns



I want a proper DateTime picker

Edit entry from table Employees

LastName	<input type="text" value="Davolio"/>
FirstName	<input type="text" value="Nancy"/>
Title	<input type="text" value="Sales Representative"/>
TitleOfCourtesy	<input type="text" value="Ms."/>
BirthDate	<input type="text" value="12/16/2008"/>
HireDate	<input type="text" value="1/05/1992 12:00:00 AM"/>



I want an AJAX Date Picker

- Modify Field
Templates\DateTime_Edit.ascx
- Drop in the AJAX Calendar extender
- Fix up some CSS
- Now we have a nice calendar popup for all date fields

Edit entry from table Employees

LastName	<input type="text" value="Davolio"/>
FirstName	<input type="text" value="Nancy"/>
Title	<input type="text" value="Sales Representative"/>
TitleOfCourtesy	<input type="text" value="Ms."/>
BirthDate	<input type="text" value="12/16/2008"/>
HireDate	
Address	
City	
Region	
PostalCode	
Country	

December, 2008

Su	Mo	Tu	We	Th	Fr	Sa
30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10



Meta Data

- Validation
- UI Hints
 - Display Name
 - Display Format
 - Default Value



Validate Negative Stock Levels

Edit entry from table Products

ProductName	Chang
QuantityPerUnit	24 - 12 oz bottles
UnitPrice	19.0000
UnitsInStock	17
UnitsOnOrder	-40
ReorderLevel	25
Discontinued	<input type="checkbox"/>

Inspect Clear Profile

Console HTML CSS Script DOM Net Options

[Exception...] "Sys.WebForms.PageRequestManagerServerErrorException: Sys.WebForms.PageRequestManagerServerErrorException: The UPDATE statement conflicted with the CHECK constraint "CK_UnitsOnOrder". The conflict occurred in database "Northwind", table "dbo.Products", column 'UnitsOnOrder'. The statement has been terminated.' when calling method: [nsIDOMEventListener::handleEvent]" nsresult: "0x8057001c (NS_ERROR_XPC_JS_THREW_JS_OBJECT)" location: "<unknown>" data: no]



Validate Negative Stock Levels

- DB had constraints on stock level that were not picked up by Dynamic Data
- Caused JavaScript error on postback
- Add our own validation to those columns
- Add a reference to `System.ComponentModel.DataAnnotations`
- Create a metadata class for the table



Validate Negative Stock Levels

Edit entry from table Products

List of validation errors

- The field UnitsInStock must be between 0 and 2147483647.

ProductName	<input type="text" value="Chai"/>
QuantityPerUnit	<input type="text" value="10 boxes x 20 bags"/>
UnitPrice	<input type="text" value="18.0000"/>
UnitsInStock	<input type="text" value="-11"/> The field UnitsInStock must be between 0 and 2147483647.
UnitsOnOrder	<input type="text" value="0"/>
ReorderLevel	<input type="text" value="10"/>
Discontinued	<input type="checkbox"/>
Order_Details	View Order_Details
Category	<input type="text" value="Beverages"/>
Supplier	<input type="text" value="Exotic Liquids"/>
Update Cancel	



Can I change these names to be more readable?

ProductName	<input type="text" value="Chai"/>
QuantityPerUnit	<input type="text" value="10 boxes x 20 bags"/>
UnitPrice	<input type="text" value="18.0000"/>



Can I change these names to be more readable?

- Add a reference to System.ComponentModel
- Add the DisplayName attribute to the columns

```
[DisplayName("Name")]
```

```
public string ProductName { get; set; }
```

```
[DisplayName("Qty per Unit")]
```

```
public string QuantityPerUnit { get; set; }
```

```
[DisplayName("Unit Price")]
```

```
public decimal UnitPrice { get; set; }
```



Can I change these names to be more readable?

Edit entry from table Products

Name	<input type="text" value="Chai"/>
Qty per Unit	<input type="text" value="10 boxes x 20 bags"/>
Unit Price	<input type="text" value="18.0000"/>



What about currency format?

Edit entry from table Products

Name	<input type="text" value="Chai"/>
Qty per Unit	<input type="text" value="10 boxes x 20 bags"/>
Unit Price	<input type="text" value="18.0000"/>
Units in Stock	<input type="text" value="11"/>



What about currency format?

- Display Format attribute
 - Null Values
 - Apply format string in edit mode



What about currency format?

Edit entry from table Products

Name	<input type="text" value="Chai"/>
Qty per Unit	<input type="text" value="10 boxes x 20 bags"/>
Unit Price	<input type="text" value="\$18.00"/>



Can I set a default value?

Add new entry to table Products

Name	<input type="text"/>
Qty per Unit	<input type="text"/>
Unit Price	<input type="text"/>
Units in Stock	<input type="text"/>
UnitsOnOrder	<input type="text"/>
ReorderLevel	<input type="text"/>
Discontinued	<input type="checkbox"/>
Category	[Not Set] ▼
Supplier	[Not Set] ▼
Insert Cancel	



Can I set a default value?

- Default Value attribute
 - Can be applied to any type



Can I set a default value?

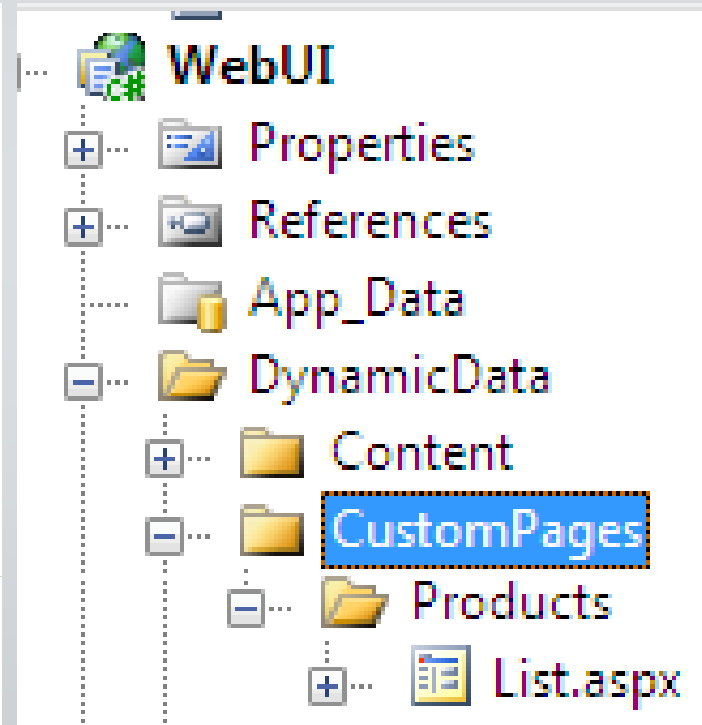
Add new entry to table Products

Name	<input type="text" value="Type a clever product name"/>
Qty per Unit	<input type="text"/>
Unit Price	<input type="text"/>
Units in Stock	<input type="text" value="0"/>



What if I want Product list to be displayed differently?

- ASP.NET Dynamic Data lets you customize how tables are rendered
- Under Custom Pages create a folder for your table
- Create the page you wish to customize



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[← Back to home page](#)

Products

Discontinued All Category All Supplier All

Chai \$18.00	Chang \$19.00	Aniseed Syrup \$10.00
Chef Anton's Cajun Seasoning \$22.00	Chef Anton's Gumbo Mix \$21.35	Grandma's Boysenberry Spread \$25.00
Uncle Bob's Organic Dried Pears \$30.00	Northwoods Cranberry Sauce \$40.00	Mishi Kobe Niku \$97.00
Ikura \$31.00	Queso Cabrales \$21.00	Queso Manchego La Pastora \$38.00
Konbu \$6.00	Tofu \$23.25	Genen Shouyu \$15.50



Things to lookout for...

■ GUID Primary Keys

- You need to unscaffold these columns otherwise you will only get the {00000000-0000-0000-000000000000} guid being created
- [ScaffoldColumn(false)]



What's coming in the next release

■ ASP.NET Dynamic Data 4.0

- Better support for EF
- Better support for MVC
- Advanced filtering
- Insert pages grabbing default values from filters
- Image Field Template
- Better Validator



Is this ready for prime time?

- YES!
- We're using it right now on an internal intranet application with a large customer.
 - It's given us all our admin pages for free
 - We can customize major pages as required
 - We're using
 - LINQ to SQL
 - JQuery
 - WCF REST
 - ASP.NET Membership and Role Provider



Roster

Employee

Equipment

Reports

Admin

Logout
ericphan

Depot: All

Region: All

Employee Type: All

Filter:

Group by: Alphabetical **Regions** Depot

Add new employee

SMS selected

Email selected

Select All

Select None

_MANAGEMENT (8)

28571
0412 345 678
Engineering Officer
West Gosford

38845
0412 345 678
Superintendent
Oatley

35060
0412 345 678
Superintendent
Oatley

31565
0412 345 678
Superintendent
Chatswood

35426
0412 345 678
Operating Support Assistant
Oatley

45140
0412 345 678
Superintendent
West Gosford

42774
0412 345 678
Operating Support Assistant
Chatswood

44639
0412 345 678
Manager
Chatswood

CENTRAL (34)

CENTRAL COAST (23)

NORTH (23)



List of validation errors

- Suburb is required
- Email is required



T000000002
Justin King
Manager
Bankstown

Personal info

First Name

Last Name

Date of birth

Service Number

Contact details

Address 1

Address 2

Suburb

Postcode

State

Phone Number

Mobile Number

Email

Employment info

Position

Depot

Pay Level

Date Joined Section

Grade

Save

Cancel

Proudly developed by SSW Sydney Web Design





Registration Number:

Chassis Number:

Etag Number

GRN Phone Number

Fleet Number

Vehicle Make

Vehicle Model

Vehicle Year

Last Service Date

Description

Renewal Date

Expiry Date

Currently Assigned to:

Employee

Store

SAVE

CANCEL

Proudly developed by SSW Sydney Web Design





28571

General Info

Equipment

Certifications ¹

Assign Vehicle

Assign Kit

Assign Equipment



Barr

Fuse



Shangri

Fax



Nix na

Desktop PC



Medical Kit

5 items

[This employee has 1 expired item](#)



Registration Number:

Vehicle Make:

Vehicle Year:

VIN #:

Etag Number:

GRN Phone Number:

Chassis Number:

Fleet Number:

Region ID:

Rego Expiry Date:

SAP Reorder Code:

Issued on:

Renewal Date:

Edit vehicle

Proudly developed by SSW Sydney Web Design

Is this really built on ASP.NET
Dynamic Data?



Roster

Employee

Equipment

Reports

Admin

 Logout
ericphan

Admin Tables

Table Name
Certifications
Certification Status
Depots
EmployeeCertifications
EmployeeEquipments
EmployeeKits
EmployeeTypes
EquipmentGroups
Equipments
EquipmentTypes
Grades
KitItems
Kits
PayPoints
Stores



Resources

- Official Homepage
 - www.asp.net/dynamicdata/
- CodePlex Samples
 - <http://www.codeplex.com/aspnet/Release/ProjectReleases.aspx?ReleaseId=14473>
- CodePlex – ASP.NET Dynamic Data Futures
 - <http://www.codeplex.com/aspnet/Release/ProjectReleases.aspx?ReleaseId=14475>



Resources

- Scott Gu's Blog

- <http://weblogs.asp.net/scottgu/archive/2007/12/14/new-asp-net-dynamic-data-support.aspx>

- Scott Hanelman's Blog

- <http://www.hanelman.com/blog/PuttingASPNETDynamicDataIntoContext.aspx>



Two things

- EricPhan@ssw.com.au
- <http://ericphan.info>





Thank You!

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