

Percussion CM System

Web Content Management With A Focus On Results

**Developing .NET Applications with
Percussion CM System**



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Developing .NET Applications with Percussion CM System

Percussion CM System can compliment your .NET driven applications by providing them with accurate and approved content. CM System is uniquely architected to perform content management tasks that can be either separate from or integrated with the .NET code logic that drives front-end application. Percussion does not impose any limitations on your specific implementation, leaving you free to choose your version of .NET, web server, operating system, hardware, and scalability and failover solutions.

This distinctive capability reflects the unrivaled flexibility of Percussion's adaptive architecture, allowing organizations to:

- Cost-effectively and quickly implement content management in an existing framework.
- Redesign or even add dynamic applications to their sites as need arises.
- Enjoy continual support of and compliance with existing coding or UI standards.

Percussion CM System and .NET: Differences and Similarities

It is important to understand is where differences and similarities (or overlaps) exist between the two environments. Both products provide functionality required to create web pages and web sites, yet are different in terms of core functionality.

Differences:

- **Managing Content** – Percussion's main focus is managing content for a diverse group of editors and contributors. Features such as workflow, versioning, audit trail, and managing content relationships are a core part of the system. .NET does not manage content
- **Development Environment** – Microsoft provides an integrated development environment (IDE) for creating robust and dynamic applications. Visual Studio is provided to specifically create C# and Visual Basic .NET pages and sites that can de-bugged and compiled by trained .NET developers. Visual Studio can also be integrated with Visual SourceSafe via plugins for code versioning. Percussion's value is in providing a tool for developers to indicate where content should be placed - It is not built to be a full IDE like Visual Studio.

	 
Manages Content	Does Not Manage Content
Not a Development Environment (Content Tagging)	Development Environment
Publishes Content (File System or DB), Web Site Pages, Binaries, and associated files	Publishes Web Site Pages, Binaries, Components, Dynamic Code and associated files
Uses Templates	Uses Templates
Preview Pages	Preview Pages

Similarities and Overlap:

Publishing, template, and preview decisions will inform the approach you choose when integrating Percussion CM System with .NET applications.

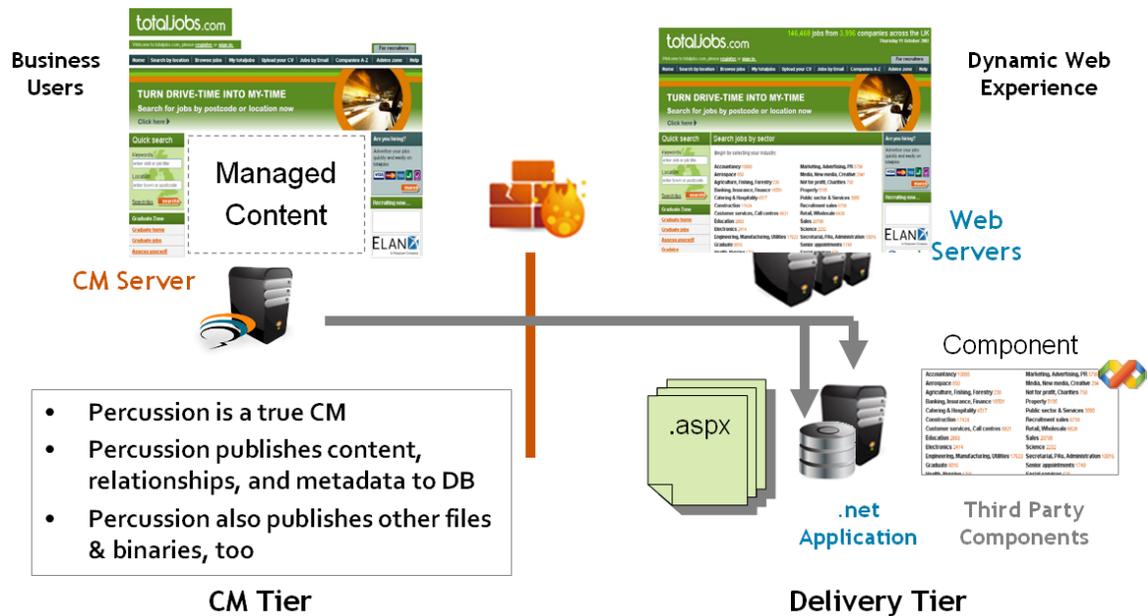
- **User Templates** – Templates are used in both environments. In CM System, content tags are placed within templates, enabling the assembler to place content. In Visual Studio, the templates are embedded with .NET code, providing the dynamic logic required to perform specific functionality or behavior.
- **Publishing** – CM System and .NET both provide the capability to publish sites. Sites consist of many files, including pages, style sheets, server and client side programming logic and scripts, images, videos, etc. – all which need to be pushed to front-end servers. Both environments can publish out files as sites or micro-sites, regardless of where those files reside. The differences stem from the unique assets they manage and produce.
- **Preview Pages** – Previewing pages may require assembling from various technologies. With dynamic pages, previews are typically done on a server that can support all the necessary components. Percussion provides a virtual representation of the content, allowing it to be tested accurately. .NET applications will require previewing on a separate server that supports the framework that matches your application.

Application Model vs. Component Model

There are two basic models that can be deployed depending on the amount of dynamic logic required for a web site: Component Model and Application Model. The main difference between these two models applies to the areas in which the environments overlap, as described above. The model used should be chosen based

on which environment is most suited to be the master with regards to templates, preview and publishing.

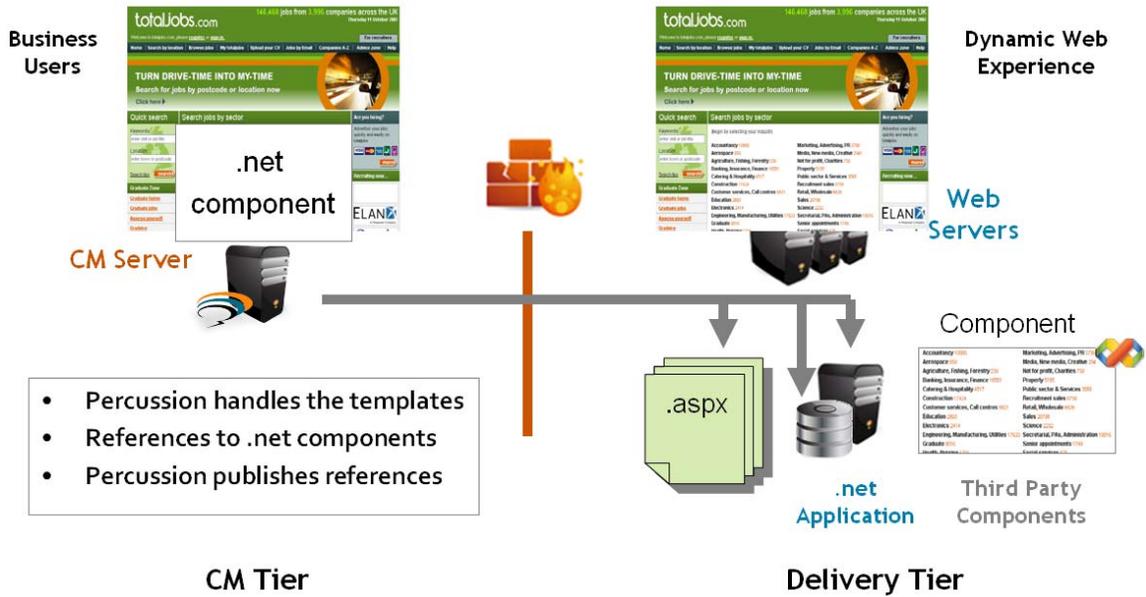
Application Based Model – All development found in the page is controlled by the suite of products provided by Microsoft. In the CM Tier, Percussion CM System will manage content, metadata, relationships and binaries for internal users and publish this content - commonly to a database via Database Publishing or to the file system - to the Microsoft application. The content structure is dictated by the Microsoft application (and not proprietary to the CMS) and contains formatted content (HTML fragments, XML, dates, etc.) that can be easily used by the application. The Microsoft application can access the approved content via standard API such as ODBC or JDBC. Rendered pages are assembled by the front-end server at runtime.



Highlights:

- Full control of application
- Percussion handles content only ("true" content management)

Component Based Model – Pages are assembled in the CMS. There, editors build them using a WYSIWYG editor. During editing, certain components in the page (such as some controls or embedded applications) may appear but not be functional. These components will be developed with Visual Studio. When the page publishes to the delivery tier (the Microsoft application), these components will be activated.



Highlights:

- .NET is used for components and controls (not applications)
- Presentation and templates handled by Percussion CM System

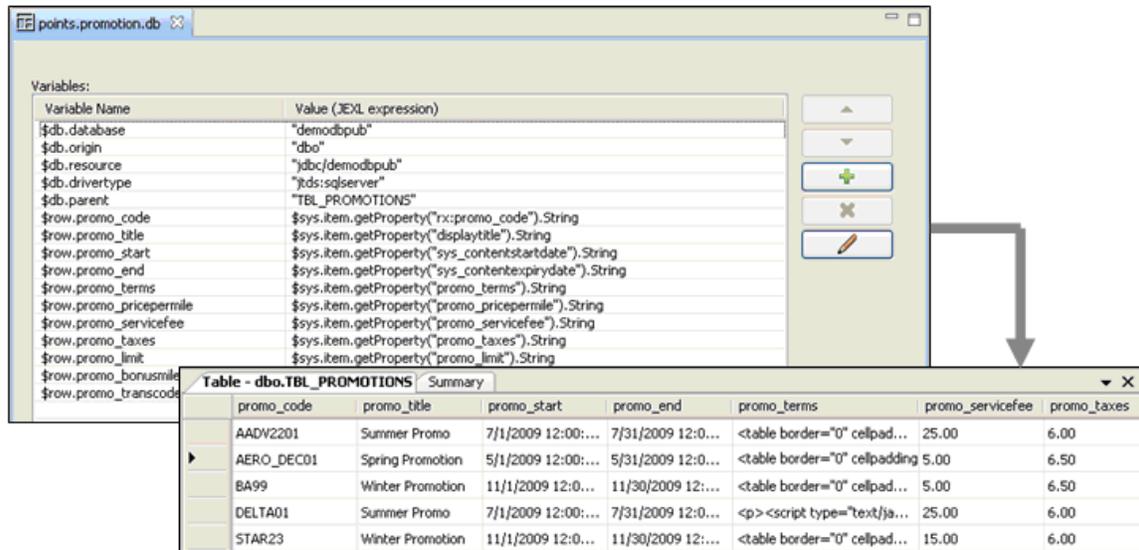
These two models are not only limited to .NET implementations. If you have a mixed environment, similar configurations will apply to additional web development technologies such as classic ASP, ColdFusion, JSP, or PHP.

Development Options

Percussion delivers content to .NET applications in an optimized format so that the applications can function at peak levels. In application-rich environments, Percussion can accommodate most existing applications without modifications.

.NET Application with Database Publishing

Percussion CM System is capable of mapping fields in a content repository to the fields required by a .NET application. This is known as **database publishing**. As the desired content is rendered, CM System can transform it into almost any applicable format, such as XML, HTML snippets, text, or another format, then publish the content into either a file-based or database repository. CM System can deliver any type of data, such as ID codes, text labels, dates, metadata, or prices to the designated repository.



The Percussion Database Publisher delivers database records to multiple target database tables. Percussion database publishing can push (insert, delete or update) Percussion-managed content into almost any database schema that is ODBC/JDBC compliant. The publishing process can be initiated manually or configured to run at regular intervals, and publishing can be suspended at any time.

The .NET application can access the published data using any standard technology, such as ADO or ADO.NET. Your developers are free to access, retrieve and update data as they normally do with any application using a database. They are also free to develop very sophisticated applications without being constrained by CM System. This includes using third-party .NET libraries, joining other databases with CM System content, and sharing (or passing) metadata between the CMS and the Microsoft application.

```
<%@ Page Language="C#" %>
<%@ import Namespace="System.Data" %>
<%@ import Namespace="System.Data.Odbc" %>

<script runat="server">
    void Page_Load(object sender, EventArgs e) {
        string ConnectionString = @"driver={MySQL ODBC 3.51 Drive
r};server=localhost;database=products;uid=me;pwd=letmein;";
        string CommandText = "select * from Products";
        OdbcConnection myConnection = new OdbcConnection(Connecti
onString);
        OdbcCommand myCommand = new OdbcCommand(CommandText, myCo
nnection);
        myConnection.Open();

        // Bind to Data Grid
        DataGrid1.DataSource = myCommand.ExecuteReader(CommandBeh
avior.CloseConnection);
        DataGrid1.DataBind();

        myConnection.Close();
    }
}
```

```
</script>

<html>
<body>
  <h2>Simple Data Report</h2>
  <hr size="1" />
  <form runat="server">
    <asp:datagrid id="DataGrid1" runat="server" CellSpacing="
1" GridLines="None" CellPadding="3" BackColor="White" ForeColor="
Black" EnableViewState="False">
      <HeaderStyle font-
bold="True" forecolor="white" backcolor="#4A3C8C"></HeaderStyle>
      <ItemStyle backcolor="#DEDFDE"></ItemStyle>
    </asp:datagrid>
  </form>
</body>
</html>
```

.NET Application with CMS-generated XML

The content can be published as XML files (or XML structures in database records) that can be used by .NET Framework XML classes. Developers can use their existing expertise in creating and manipulating .NET classes to greatly simplify working with XML data, including tasks such as converting XML to and from .NET objects, creating XML objects, extracting data using XML Path Language (XPath) and applying Extensible Style Language Transformations (XSLT).

.NET Embedded in CMS Templates

It is possible to embed .NET code into the templates used in the CMS. Percussion's assembly engine merges content into the template display using Velocity (or XSLT) embedded in the page. The .NET references will be overlooked by the assembler, which can be helpful for small code snippets that may be needed in the front-end.

The result is a page delivered to the front end with intact .NET code surrounded by content that has been "baked" into the page by the CM System. At this point, the published page will not contain any Percussion-specific code. The page may have content or metadata embedded in the .NET code rendered by Percussion. This data can help drive the .NET code logic and the overall application.

Master Pages

Using Master Pages indicates that the application will control the behavior and layout of the pages. The Application Model described above is excellent for this approach. It is also recommended that you use database publishing to give you the maximum control of your site while reaping the benefits CM System's robust content management feature set.

Percussion Publishing Glossary: Quick Reference

Assembly Engine	<p>The Assembly Engine combines content items to form partial and complete web pages or documents for non-web delivery. Percussion employs an Item-Level architecture, where content is broken down and managed at its most granular logical element. For example, a 'Press Release' may be managed as components such as "Title," "Author," "Abstract," "Body," or "Date.". This approach enables more efficient reuse of the content.</p>
Database Publishing	<p>The Percussion Database Publisher delivers database records to one or more target database tables. The publishing process can be initiated manually or configured to run at regular intervals and can be suspended at any time.</p>
Velocity	<p>Apache Velocity is an open source software project directed by the Apache Software Foundation. Velocity is a Java-based template engine that provides a simple yet powerful template language to reference objects defined in Java code. Its aim is to ensure clean separation between the presentation tier and business tiers in a Web application.</p>
XSLT	<p>XSLT is a declarative XML-based language used for the transformation of XML documents into other XML documents.</p>

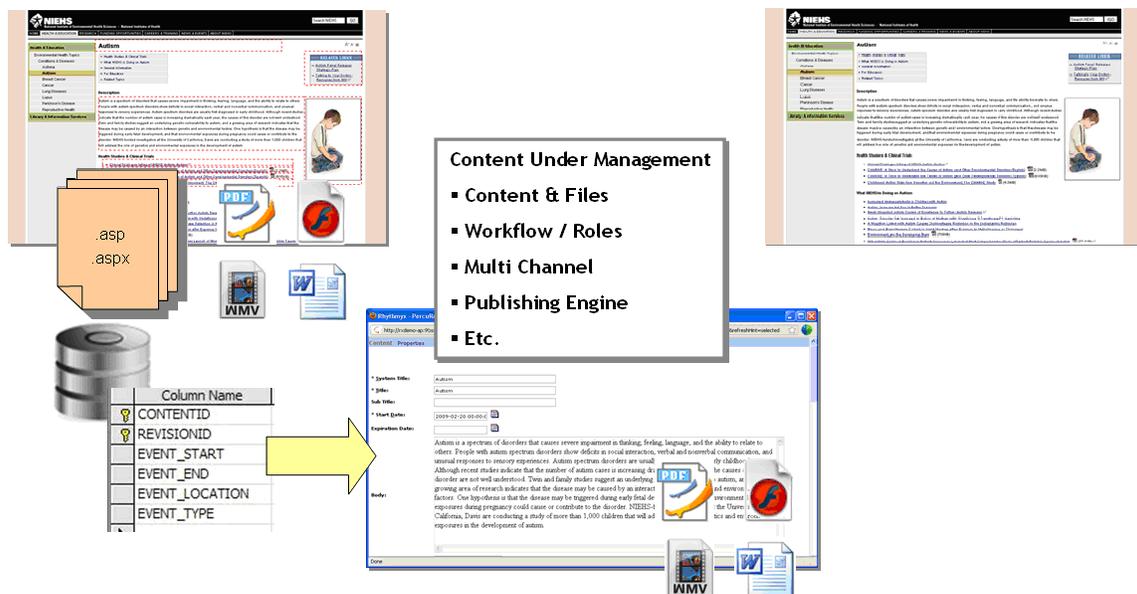
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Dynamic Site Migration

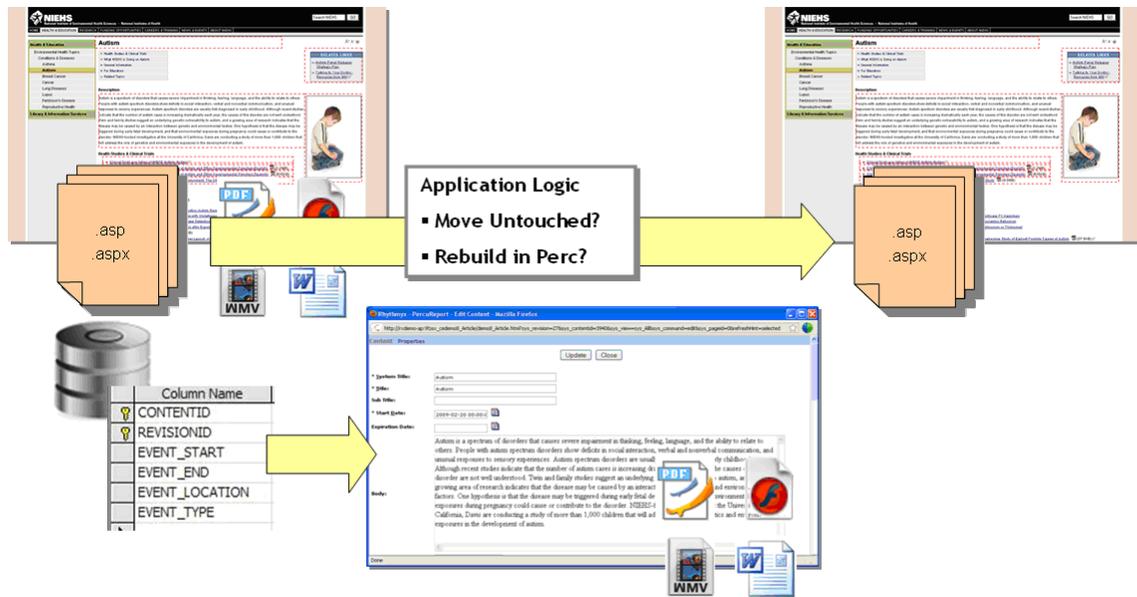
Dynamic sites consist of .NET code logic, HTML, associated files and all of the data that supports the Microsoft application. The dynamic site components can be migrated separately using the appropriate technology.

To migrate the data (which is most likely already structured), Percussion can pull content in via Web Services for conversion to CM System content items. All the necessary functionality will be exposed through the Web Services layer to create content and apply additional logic.

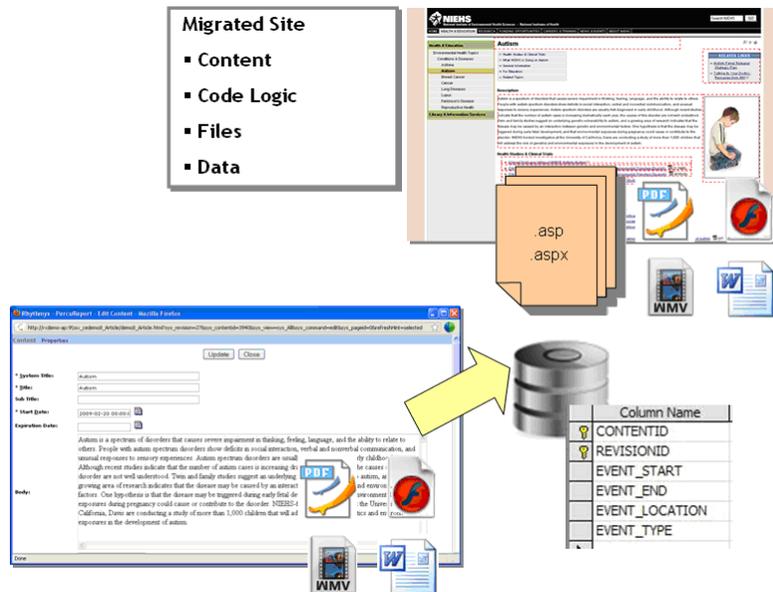
When the content has been migrated into CM System, the content is *under management*. That means your site content is now managed by a powerful content management platform with key features such as workflow, metadata tagging, role and access security, multi-channel templating, a robust publishing engine, and more.



As for the .NET application, the dynamic code logic can remain as is. CM System functions independently from the front end (delivery tier) and can push content to dynamic applications via the Database Publishing Process already discussed. This is a cost-effective solution that will result in a quick and easy re-implementation of your existing .NET-driven site.



The end result is a migrated .NET application with content managed by Percussion CM System. The site functions just like the previous site with the added benefits of managed content. Percussion's flexible adaptive architecture makes it easy to incorporate dynamic applications alongside approved content, enabling you to maintain your .NET functionality while fine-tuning content management.



About Percussion Software

Percussion provides Web Content Management systems that drive business results through multiple online channels including websites, intranets, blogs, and mobile devices. Percussion's Adaptive Architecture allows non-technical users to take control of content and presentation, provides a low-friction path to access and re-use third party content, and allows a business to pursue new opportunities without being encumbered by legacy technology. Percussion has been helping a broad cross-section of corporations, institutions and agencies generate online results, including Hotwire.com, Virginia Tech University, Kohl's, Computer Associates, AutoTrader.com, and the U.S. Department of State.

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