



*Web Site Development & Design Done Your Way*

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## **WHITE PAPER**

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*Dynamic Content for Your Web Site: Increasing User Satisfaction and Lowering Costs*

Database-Driven Content is a requirement for Web sites with many pages or highly dynamic pages. To be effective, a large dynamic site must be maintained regularly; otherwise it runs the risk of becoming static and therefore unused. Without regular updating, the site will have stale content and customers will become bored and start looking elsewhere.

We design Database-Driven Content sites that make ongoing maintenance and updates easy and actively engaging to the user, so they'll keep coming back to the site. Our solutions include searchable online catalog and user feedback areas. To help our clients further understand the benefits of Database-Driven Content sites, we have written the following White Paper.

A Dynamic Content Web site enhances the user experience and enables easy content management for the Web site administrators. There are tangible benefits for the Web site owner too, in the form of user retention and tracking. Dynamic content does not have to be implemented all at once, pieces can be added as the functionality is justified or required. In addition, the extent of dynamic content can be modified making it available for small and large sites.

## **Satisfying and Engaging Site Users**

Site users receive a major benefit from dynamic content in the form of personalization. Personalization is the ability of a Web site to provide information specific to the user. This feature can be seen on sites such as Amazon where customers are provided book recommendations based on past purchases, or on many shopping sites where an account can be created to store shipping information for easy retrieval for future orders. It can be as simple as a site having a "Hey John, welcome back!" message when the site is revisited.

Enabling a Web site to store order history provides the ability for a user to track order status, provides recommendations on similar products, and provides a list of user preferences (e.g. a wish list). Dynamic content goes beyond user accounts, though. As a user navigates the site, the Web pages can display recently visited pages, in effect building a dynamic menu for the user. If the site is a catalog or listing site, it can show a short list of the past few items looked at, including a small image so the user can easily recognize and return to that item later.

The second benefit of dynamic content is that it allows a customer to tailor the look and functionality of a site to their preferences. If the user wants to set the display to sort by cost rather than alphabetically by product name in a catalog, or by state instead of city in an address listing, they can save that information temporarily to make the site easier for them to navigate and use. If they are using a weather Web site, they may want to see the temperature on their weather page, but not the chance of rain. By setting their preferences, the site is configured to best serve their needs, which increases user satisfaction with the site.

Another benefit is that customer preferences can now influence Rich Media (e.g. Flash) on a Web site. For example, a Flash movie can import content dynamically from a data source and display information in the movie such as a customer's name, or it can track that the customer preferred an animated talking cartoon bear when they asked for help within the movie rather than a talking paper clip. The details of the content displayed could also be affected; if the user indicated they liked a blue convertible over a red sedan, then the vehicle in the Rich Media presentation could be set as a convertible and colored blue using alternate vehicle models and setting the appropriate color.

## **Reducing the Maintenance Burden**

Dynamic content Web sites can reduce the burden on internal staff by providing easy to use data-entry forms and affording site users the opportunity to contribute content to the site (e.g. entering events into a site calendar). Administrators can modify that content via an online Web form. For example, a property listing would have entry fields for street address, city and zip, and a drop down for state; a product listing would have cost, weight, color, size, and description. These types of forms provide for easy entry of data, and offer a means to check for proper formatting (such as price with correct form of x.xx)

and restrictions on value (such as a state dropdown to limit states to proper abbreviations).

Changing the design template for the pages simply can use these same forms, used by site users to enter information. Users can add content such as calendar events and job postings, which can be easily reviewed by an administrator and approved to appear on the Web site. By using a Web form, there is little or no training necessary to maintain the content, as the form has the appropriate fields pre-determined.

The forms can also be very complex, with multiple pages. Forms for complex tasks as hazardous material reporting or quarterly earnings reports can be provided to make it easy to enter information which is then published on the Web site in a highly formatted fashion, without requiring staff to know how the display is constructed--just that they have to enter information in the appropriate fields on the Web form.

Another benefit of dynamic content is that content from the Web site can be formatted for non-Web applications. If there is data on the Web site that needs to be entered into non-Web systems, such as for order processing or customer tracking, or even something as simple as an Excel file so that the data can be analyzed and charted, dynamic content can be used to collect the data via online forms. Then, an administrative form can provide a means to select, sort and export that data for downloading and importing into other systems.

### **Impact on the Organization**

Dynamic content provides an insight into the preferences of site users. If a user is searching incorrectly, dynamic content allows for the implementation of instant help. Either a message can be displayed like on Google that says "Perhaps you were searching for Spider-man" when the user is searching for "spiderman". In a more extensive implementation, this could be supplemented by a live help chat that appears so that a customer service representative can ask the user if they have questions or need help.

Similarly, dynamic content leads to increased knowledge of user actions. Search terms can be stored and reviewed to make searching better. A knowledge of customer preferences, such as wish lists, can aid in anticipating future buying patterns.

Dynamic content also increases Web site "stickiness". Stickiness is how long a user stays on a Web site, and how often they return. If there is content that changes frequently, such as a weekly status update, daily happenings page, or a list of new products available this week, then users will return frequently to your site. If there is dynamic content that is easily provided and reformatted to meet users' needs, then the users will stay on the site reviewing that content.

## **Technical Details**

Dynamic content can be handled several ways. The more robust is to use a database to store the information, though text files can be used as a simple storage model. After the information is stored in the database, it can either be published as static HTML pages via the administrative interface mentioned above, or can be dynamically accessed using a scripting language such as Perl, PHP, and Active Server Pages, or an application environment such as Java or Cold Fusion.

For light content management tasks, databases such as Access can be used. For more demanding applications, especially for dynamically generated pages such as customer personalization, a more robust solution is required, such as the Open Source MySQL or PostgreSQL, or the commercial databases SQL Server and Oracle.

Since the extent of dynamic content can be varied, it is available on virtual hosted Web sites, as well as dedicated web servers.

## **Benefits of Dynamic Content**

Dynamic content provides benefits to Web site users, administrators and owners, including the following advantages for:

- \* Site Users
  - o Personalization
  - o Customization to Preferences
  - o Ability to Contribute Content
  - o Increased Satisfaction
- \* Site Administrators
  - o Ease Maintenance Burden
  - o Reduce Training Requirements
  - o Eliminate Re-entry of Data
- \* Site Owners
  - o Provide Better Help to Users
  - o Track User Actions
  - o Increase Customer Satisfaction and Loyalty

To reach its maximum potential, a Web site needs effective use of dynamic content. For a site to engage users and be easily maintained, dynamic content is an essential element. The benefits of that dynamic content are far reaching, impacting customers, staff and the business itself, offering advantages for all parties involved.

## Some of our client below have benefited from our interactive approach

1. We implemented the teacher *School Technology and Readiness* tool for planning and assessment. Along with a redesign of the campus STaR Chart, we did a completion for the system for ESC 12 (and the end-user the Texas Education Agency) by September 1, 2004, in time for Texas' teachers to complete this online survey.
2. We were called upon by *Lone Star Internet* to help with the many projects that they were working on. Due to an influx of requests for development, Lone Star Internet contacted us to provide additional resources to complete their projects to meet deadlines. In addition, we provided application testing and review services.
3. We were chosen by *Loomis Group* to re-develop their client extranet. Previously static HTML pages updated manually, we provided a dynamic, database-driven application that allowed all the staff to update the Kiosk with new project designs and documents for client review. Pleased with the work, Loomis Group requested that we add another section that would maintain the company's contact database of clients, partners, and industry contacts.
4. As part of our ongoing relationship, we worked with *AMD* to upgrade and enhance their online testing system. Developed previously by us, the system was updated to interface with the company-wide SAP system so that testing records are automatically updated in an employees file. In addition, we implemented the new AMD Web site design, and added additional administrative functionality to make the system even easier to use.
5. We were chosen by *Fredericksburg Traditionals* to re-develop their web-based reservation system to provide more detailed reservation information and re-design the user-interface to make it easier for the member hotels to use.
6. *The Railway Industrial Clearance Association of North America* deploys the new RICA membership directory. This dynamic directory allows RICA staff to easily enter new members and update old member information, rather than having to manually edit the page.
7. We deliver the new online catalog administration application to *University of Texas Press*. This new application allows UT Press to easily administer their online catalog and make instant updates to product information. This application was deployed to coincide with the site re-design.