



## **Customer Success Story**

SharePoint Portal Server 2003 Implementation for Carter & Burgess, Inc.

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## Overview

Carter & Burgess is one of the top engineering consulting firms in the United States. Founded in 1939 as a partnership offering landscape architecture and civil engineering services, the company has grown dramatically from 300 employees and \$22 million in revenue in the early 1990's to 2,500 employees today and to an estimated \$420 million in revenue in 2005. With such recognized projects as D/FW International Airport, Mandalay Bay Hotel & Casino in Las Vegas, and Time-Warner Telecommunications data centers throughout the country, Carter & Burgess has become one of the most recognized and awarded firms in their sector.

Historically, Carter & Burgess has embraced technology initiatives on an as-needed basis to support company growth and business objectives, wisely resisting the recent trend to over-invest in technology for its own sake. As the company has grown in size and expanded their market offerings, the need for greater levels of communication and collaboration throughout the enterprise and across geographical boundaries has resulted in several Intra/Extranet projects that have met with varying degrees of success. As the company positions itself for even greater growth in the future, the need for an integrated, secure, flexible and scalable collaboration solution has become a top initiative for senior management.

In spring of 2005, the company selected a new CIO with a long history of mission-critical technology management and services delivery experience to augment the management team. One of the first and most important objectives of the new CIO would be to implement a first-class portal solution to facilitate collaboration, document management, project coordination, and cross-functional communication throughout the enterprise.

## Objectives

Unlike organizations with no prior exposure to collaborative solutions, Carter & Burgess had the experience of prior Intranet initiatives to draw upon when crafting their objectives for the current project. Project sponsors were well aware of what had and had not worked in the past, giving them a clear vision for the new portal. This allowed the company to produce clear, unambiguous goals that might have been too ambitious for a first-generation portal but were well within the capabilities of existing staff and external project resources based on prior experience.

As defined by the project sponsors and management, the next generation portal solution would be required to meet the following objectives to be considered successful:

- Improve the location of company-related information
- Increase staff efficiency, productivity and satisfaction
- Support internal communications and collaboration
- Reduce duplication of effort
- Reinforce corporate identity

## Challenges

Earlier attempts at producing an easy to use, informative, and productive portal had been loosely organized and driven mostly by marketing and business technology. The design process did not include departmental sponsors and overall project controls were not implemented, despite the firm's recognized success in external project management. This led to fragmented solutions that hindered as many employees as they were intended to help. The new portal would have to overcome a great deal of internal animosity and involve a high-degree of user participation, especially in the design phase, to garner acceptance from the user community.

### Timeframe

Under a great deal of pressure to improve internal communication and collaboration, management set a very aggressive timeline for implementation of the new portal. With a ninety-day window in which to complete all phases of the project, from initial design to launch, the project was fast-tracked from the very beginning. A great deal of inter-departmental cooperation and teamwork would be required to meet such an aggressive deadline.

### Design

Due to earlier attempts to satisfy a small group of constituents, the overall design and navigational structure of the existing intranet was lacking in both visual appeal and ease-of-use. The new design would have to overcome these issues and would require a fresh approach based on a well-conceived taxonomy. This obviated the possibility of a modified design based on existing layouts, which would have saved time, requiring a complete, ground-up design process.

### Perception

After several iterations of a company portal and continuing usability issues, the user community was less than enthusiastic about yet another revision to the intranet. The general perception that the intranet was hard to use and information difficult to locate would have to be overcome through consultative design and a good communications strategy.

### Data Migration

A great deal of content had already been developed for the existing intranet. Migrating it to the new portal would require a great deal of effort, most of which had to be performed manually. Automation tools would be required to relocate documents and preserve existing metadata. The project team did not possess sufficient skills at the outset of the project to perform the migration tasks and the business technology department, who had created and continued to maintain the vast majority of content, had all its resources committed to other high-value projects. In addition, the state of the

migration tools market for SharePoint Portal Server is rather nascent, resulting in suboptimal vendor offerings, some of which were in late beta and early first version releases. This increased the risk of launching the new portal with incorrect, missing, or altered metadata, a problem which had plagued the previous Intranet project and caused a great deal of user dissatisfaction.

## Solution

Carter & Burgess chose to implement the new company portal based on Microsoft's SharePoint Portal Server 2003. Despite their previous experience with the product and the existing SharePoint development skills in business technology, the design group was given no advance information on the capabilities or limitations of the product and was directed to design a platform-agnostic solution. This allowed the advisory group to work from a clean slate, focusing on usability, taxonomy and content issues rather than technical issues.

By electing to continue their investment in SharePoint products and technologies, Carter & Burgess was able to leverage the following advantages:

- Existing product knowledge and development expertise
- Limited development requirements of critical features, including document management, collaboration tools and dynamic data presentation.
- Active Directory integration
- User familiarity with team sites, list management and document collaboration
- Compatibility with other .NET applications throughout the enterprise

The decision to utilize SharePoint for the new portal did create some distinct challenges, including:

- Limited customization options due to the SharePoint architecture
- Limited availability of third-party tools to support data migration
- Recruitment of additional personnel with SharePoint development expertise
- SharePoint-specific architecture and infrastructure requirements

To mitigate these factors, the company engaged an external subject matter expert early in the design process, aggressively recruited development personnel with the necessary experience, and reassigned business technology resources to free up those with SharePoint-specific skills for key development requirements.

## Strategy

In order to overcome the project's inherent challenges and create a clear distinction between the existing intranet and the new portal, the project team made several key strategic decisions early in the process. First, the portal would be renamed to create an entirely new internal brand. Second, the team would review other successful solutions, including award-winning intranets and Cisco Systems highly effective corporate portal, as a basis for formulating a design concept. Third, the project leaders would communicate aggressively with management, the advisory group, department sponsors, and the user community throughout the project lifecycle, treating it more as a traditional product launch campaign rather than an internal initiative.

## Team

The project team was comprised of an advisory group who represented various departments during the design phase, a marketing group responsible for final design decisions and content, and a business technology group to implement and support the solution. In addition, and review group of senior management, department heads, and key personnel was kept abreast of events and consulted on broad design matters. For subject matter expertise on Microsoft SharePoint Portal Server, Carter & Burgess selected Eric Shupps, President of The eGroup LLC, to assist with product-specific design issues and customization of the portal to meet the final design requirements.

## Taxonomy

As with many first-time SharePoint deployments, the existing Intranet structure mirrored the corporate organizational structure, with content authored, viewed and managed at the division, group, office, department or unit level. Top-level navigation elements included such uninformative categories as 'Departments', 'Divisions', 'Sites' and 'Tools'. Information retrieval was difficult and counter-intuitive, as users were forced to locate content based upon its source rather than its context or topical relevance.

### Existing Portal Taxonomy

<ul style="list-style-type: none"> <li>About</li> <li>C&amp;B History</li> <li>Contractor Licensing</li> <li>Fact Sheets</li> <li>Leadership</li> <li>Publications</li> <li>Rankings</li> </ul>	<ul style="list-style-type: none"> <li>News</li> <li>Company News</li> <li>Department News</li> <li>Division News</li> <li>Office News</li> </ul>	<ul style="list-style-type: none"> <li>Divisions</li> <li>Acoustics / PMK</li> <li>Cross-Divisional Collaboration</li> <li>Facilities</li> <li>Land Development</li> <li>Public Works</li> <li>Retail &amp; Distribution</li> <li>Survey</li> <li>Transportation</li> <li>Urban Design &amp; Planning</li> </ul>	<ul style="list-style-type: none"> <li>Offices</li> <li>Austin</li> <li>Baltimore</li> <li>Boston</li> <li>California Coordination Group</li> <li>Dallas</li> <li>Denver</li> <li>Detroit</li> <li>Fort Lauderdale</li> <li>Fort Worth</li> <li>Houston</li> <li>LA - Commerce</li> <li>LA - Encino</li> <li>Las Vegas</li> <li>Little Rock</li> <li>New York</li> <li>Oakland</li> <li>Oklahoma City</li> <li>Orange County</li> <li>Orlando</li> <li>Phoenix</li> <li>Raleigh</li> <li>Sacramento</li> <li>Salt Lake City</li> <li>San Antonio</li> <li>San Jose</li> <li>Tampa</li> <li>Washington D.C.</li> </ul>	<ul style="list-style-type: none"> <li>Departments</li> <li>Business Technology</li> <li>Finance / Accounting</li> <li>Human Resources</li> <li>Marketing</li> <li>Operations</li> </ul>	<ul style="list-style-type: none"> <li>Units</li> <li>Austin Public Works</li> <li>Austin Survey</li> <li>Austin Land Development</li> <li>Austin Transportation</li> <li>Dallas Urban Design &amp; Planning</li> <li>Dallas Public Works</li> <li>Dallas Survey</li> <li>Dallas Acoustics &amp; AV</li> <li>Dallas Land Development</li> <li>Dallas Retail &amp; Distribution</li> <li>Dallas Facilities</li> <li>Dallas Transportation</li> <li>Little Rock Public Works</li> <li>Little Rock Survey</li> <li>Little Rock Facilities</li> <li>Little Rock Transportation</li> <li>Oklahoma City Transportation</li> <li>Fort Worth Urban Design &amp; Planning</li> <li>Fort Worth Public Works</li> <li>Fort Worth Survey</li> <li>Fort Worth Land Development</li> <li>Fort Worth Retail &amp; Distribution</li> <li>Fort Worth Facilities</li> <li>Fort Worth Transportation</li> <li>Detroit Facilities</li> <li>Houston Public Works</li> <li>Houston Survey</li> <li>Houston Land Development</li> <li>Houston Retail &amp; Distribution</li> <li>[more...]</li> </ul>	<ul style="list-style-type: none"> <li>Resources</li> <li>Security</li> </ul>
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In stark contrast to this approach, the new portal taxonomy would center around content-driven design principles. Content would continue to be owned and authored at the unit level but would be viewed and consumed within a more topical navigational structure. Similar content would be grouped together into contextual categories, such as 'Job Resources' and 'Help and Support', while one-off tools, utilities, and often-accessed resources would be available via drop-down lists and quick links. Search scopes would reflect the overall taxonomy, enabling users to quickly find the information they needed.

*New Portal Taxonomy*

About News Company Profile Mission - Vision Services Ranking and Awards History NAICS Code Categories	Organization Corporate Departments National Divisions National Practice Areas Regions Offices Leadership Cross-Divisional Related Entities	Employee Resources Overview Employee Handbook Human Resources Forms Manager's Corner Benefits Payroll Ethics Program Safety Program Performance Plan & Review Refer a Friend Internal Job Opportunities CB Store	Job Resources Overview Policies and Procedures Contracts Project Management Reports and Forms Standards Specifications QA-QC Library Forms and Templates Calendars Opportunity - Prospect Trackers Training and Development Marketing-Business Development Team Sites	Help & Support Applications & Tools Business Technology Help Finance & Accounting Help Human Resources Help New Hire Help
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The new taxonomy would also make extensive use of SharePoint Portal Server areas. In the existing intranet, a great deal of content was contained within web part pages stored in portal area document libraries; this led to a confusing navigational structure and a requirement for manually-created and managed menus, along with a disconnect between page and area content, permissions, and overall information organization. Team sites would continue to be used for group-level collaboration but major changes would be made to the base site definition to integrate them with the overall design scheme. A custom navigation element would be written to provide seamless tree-view navigation throughout all portal areas and team sites.

Another vital element of the new taxonomy would be news aggregation and personalization. In the past, news items quickly became stale or out of date as they were too general or lacked relevance for individual user groups. In the new structure, news items would be authored within the divisional, departmental, or unit area to which they were contextually relevant, then grouped and displayed on the home page and in specified news areas based on group membership. In this manner, users would be exposed to both general company information and specific job-related content automatically upon portal entry, thereby keeping the content fresh and the portal both engaging and informative.

**Design**

Carter & Burgess invested a great amount of time and effort into the visual aspects of the new portal. It was imperative that the new design be both functional and attractive, with a good balance of graphical elements and textual information. First and foremost, the design team was concerned with the usability of the new portal and the ability to easily locate and consume information. The

team also wished to express elements of the corporate culture within the overall design; as an architectural engineering firm, this meant that the site would be less fanciful and more subdued than its predecessor, while projecting an image of professionalism without becoming staid and uninviting.

MyCB Design



CBConnect Design



The new portal design featured several key elements that would be repeated throughout all area pages, personal sites, team sites and workspaces:

- QuickLinks – A collection of common links relative to a particular area or site
- Area Navigation – A context-aware, dynamic tree-view for easy navigation at all levels.
- Dynamic Menus – Views and Actions menus that would be shown/hidden as appropriate and display only relevant options.
- Applications & Tools – A drop-down list of often-used tools, utilities, and applications.
- Directory Search – One click access to the company directory
- Flexible Layout Options – Custom formatted web part zones allowing users to creatively display content while maintaining a base level of consistency.
- Drop-Down Header Navigation – A dynamic, tabbed header menu to display the first level of each main content area.

Maintaining a consistent look and feel while including all the required page elements created a significant design challenge within the SharePoint framework, especially with regard to team and personal sites. While SharePoint Portal Server is built upon the Windows SharePoint Services framework, they are two distinct products with very different structures and idiosyncrasies, requiring a great deal of customization to present a unified interface design. Hundreds of hours of development were required to create custom site definitions, templates and supporting code elements.

While this level of customization is rather uncommon for a company of Carter & Burgess' size and complexity, it supported the overall goal of user and content-driven design. The design team had no knowledge of the underlying portal architecture or customization requirements; they designed from the ground up to meet user demands and overcome existing usability issues. Although difficult and time-consuming, this process ultimately produced a product that was received with great enthusiasm by the user community and lauded for its ease of use and effectiveness.

## Development

Along with the development of custom site definitions and templates, the new portal requirements called for specific functionality not available within the core product. The Business Technology division was therefore called upon to rapidly develop point solutions to meet the project goals with little time for full requirements gathering or pre-launch quality assurance. Fortunately, the development team was comprised of highly-skilled programmers who were able to draw upon their previous experience with SharePoint products and technologies to deliver the necessary functionality in a timely manner. Highlights include:

- A company directory search tool which provides one-click searching of the corporate ERM database and Active Directory.
- A dynamic tree-view control which provides seamless area-to-area and area-to-team site navigation within each major content area.
- A drop-down menu within the page header that gives users easy access to all top-level content areas.
- A Business Technology dashboard that provides users with up-to-the-minute information on current technical support issues throughout the enterprise.
- A customizable list display web part which allows native document library views to be accessible from any portal area.
- An area-sensitive issue reporting system which automatically logs user issues while providing issue tracking and collaborative resolution.

## Achievements

The next generation portal project was a resounding success. Despite a multitude of challenges, the new portal was launched on time with very few reported issues. The user community enthusiastically embraced the new portal despite many reservations about yet another intranet initiative. The initial goals set by the project sponsors were met and the satisfaction level of both the team members and internal constituents was very high. A few of the more notable achievements from the project include:

- **Positive User Acceptance**

Overcoming negative user perceptions was difficult and required a great deal of effort in the planning and design stages. Attention to detail with regards to usability, navigation and presentation was key to garnering user acceptance and positive reviews.

- **Cross-Functional Teamwork**

Multiple departments made critical contributions to the overall project and the general spirit of cooperation eased many potential bottlenecks. A joint effort between marketing and business technology, two groups with little in common in most organizations, was key to the project's eventual success. During the data migration phase, employees from many departments volunteered time to assist the project team in meeting the deadline; without their contributions, many of whom had no working knowledge of the product, it is doubtful that the new portal would have launched with all the requisite data.

- **Increased Productivity**

Efforts to increase productivity by removing barriers to ease-of-use in the new portal were wildly successful. The result of many careful and deliberate choices by the design team, the final taxonomy, navigational structure, and organization of content was such a drastic improvement over the previous intranet that many users immediately remarked on their ability to quickly and easily locate content.

- **Timely, Relevant Information**

One of the most common complaints heard about the previous portal was the static nature of information and lack of engaging content. By employing a strategy of delivering targeted content to specific user groups, the project team was able to engage both the general users, who appreciate timely delivery of information relevant to their jobs, and the content editors, who were empowered to create and manage their own information channels.

- **Successful Communications Strategy**

Previous portal solutions were conceived in a vacuum and imposed upon the user with little preparation; in contrast, during the project lifecycle the team provided constant updates to the user community, drawing them into the process almost from inception. Users voted on the new portal name, user advocates contributed to the visual design, department heads and key personnel provided feedback on critical issues, and the users were offered incentives to explore and utilize the new system.

## Lessons

Although the project was completed on time and enjoyed a positive reception from the user community, not everything went according to plan. As with any major initiative, internal or external, the project sponsors and key team members analyzed the outcome to determine which areas met or exceeded expectations and which areas needed improvement. The lessons learned from the next generation portal implementation include:

- **Implement Strong Project Controls From Inception**

Critical projects require effective project management, planning and coordination. The shorter the timeframe, the more important these controls become. Several issues which arose at the end of the project which had the potential to jeopardize critical milestones could have been avoided by better planning and centralized project control, communication management and coordination.

- **Ensure Project Leaders Have Sufficient Domain Knowledge**

Due to user perceptions of the previous Intranet the decision was made to place marketing at the forefront of the project and relegate business technology to a supporting role. While this was certainly effective from a communications standpoint, it created additional conflict and confusion while elevating the risk of completion. Marketing, with little or no knowledge of SharePoint, developed plans and procedures which did not reflect the actual environment or take into account technical limitations. A more effective strategy would have been to place a 'neutral' party with portal experience at the head of the project with responsibility for ensuring communication and coordination between all groups.

- **Train Content Editors Prior to Launch**

One of the most significant limitations of the previous Intranet was the lack of user empowerment. Content owners relied upon business technology personnel to create, modify and manage content on the portal – a task for which they lacked sufficient resources from the very beginning. This resulted in a severe information bottleneck with much of the portal data become quickly outdated and irrelevant. One of the primary goals of the new portal was to empower users to manage their own content. The ideal time to involve content editors in the process would have been during data migration, when old content was moved, updated and, in some cases, created from scratch; however, at launch, many of the department content editors had still not been identified and training had yet to take place. The team missed a golden opportunity to give hands-on experience on on-the-job training to the very individuals who will eventually be responsible for keeping the portal current and, by doing so, reinforced the existing perception that a third party (either business technology or marketing) would manage portal content.

## Conclusion

From the outset, the project sponsors for the new portal knew that they had conceived of a bold, difficult, and risky - yet ultimately vital - new initiative. They outlined an ambitious set of objectives, from improving information flow to increasing productivity and collaboration, while facing a daunting set of challenges, including negative user perceptions, a very narrow window of opportunity, and ground-up design.

By assembling an effective project team, selecting a platform that was both familiar to their staff and flexible enough to meet their requirements, and focusing their efforts on high-return investments such as user satisfaction and improved productivity, Carter & Burgess was able to deliver a significant new asset to their employees that will serve them well for years to come. More than a final product or distinct deliverable, the new company portal is a building block for the future of the enterprise, enabling workers to communicate, collaborate, and cooperate with their fellow employees, customers and partners.