

CORPORATE PORTALS

More than Just a Pretty Face

A corporate portal can either be a money pit or a big hit. With the right strategy, a portal can put a smile on your corporate face.

BY RICHARD V. DRAGAN ILLUSTRATION BY WILLIAM REISER

Step into a doctor's office at a Providence Health System hospital in Portland, Oregon, and you'll see the latest portal technology in practice. From a single screen, a doctor can examine patient X rays, review lab results, and submit insurance claims. In fact, similar portals are being peered into every day at close to 50 hospitals around the country.

Today portals are more than just a pretty interface, as Randy Spratt, senior VP of technology at McKesson Corp., will tell you. McKesson is a Fortune 50 company with a division that connects physicians' portals with hospital computing infrastructures. McKesson has installed at least 48 portals using software from Epicentric and custom modules to inte-

grate billing and insurance systems for hospitals with hundreds or even thousands of physicians.

By working with existing systems, portals can automatically track doctors' activities to speed up billing and insurance claims. More important, each provides a single view showing all of a patient's records, such as X rays and scanned versions of paper documents. This helps doctors make better medical decisions for more patients. "Hospitals that

provide portals to their physicians are much more likely to have patients referred to them, so the hospital sees a growth in business as a result," says Spratt.

Transactions Get Traction

What works in health care is turning out to be a good prescription for the rest of corporate America. Transaction-based processing like that used in McKesson's portals is a real win. And portals' new tie-ins with Web services

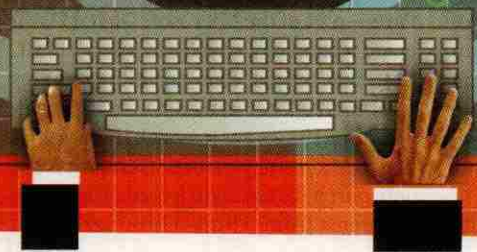
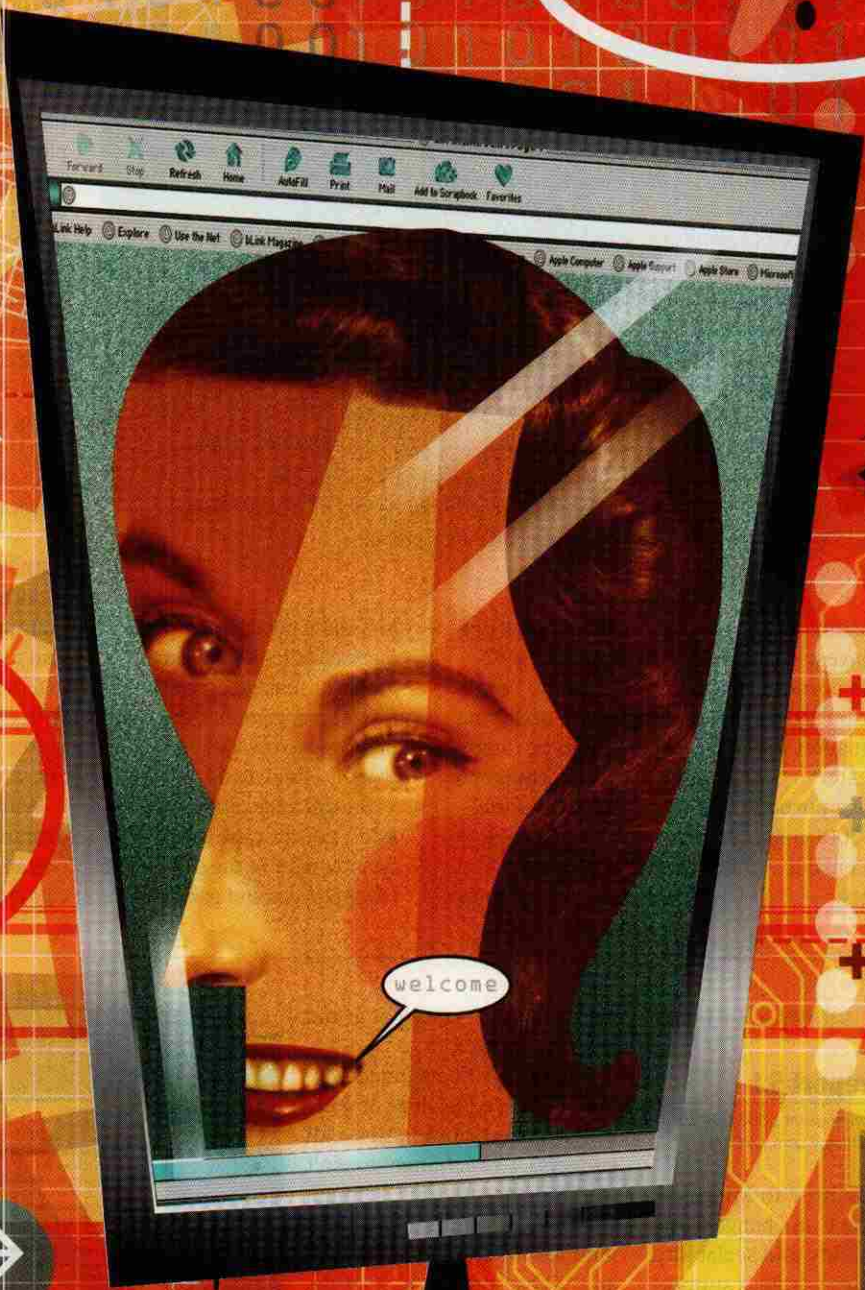
will provide a standard way to incorporate even more transactions. In the past, companies had a tough time getting employees to use their portals, because those portals could not be used for doing any real work, only for viewing information.

As our reviews of six enterprise portal solutions illustrate, the software is now robust enough to deliver real efficiencies and return on investment. Given tighter corporate IT

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Epicentric Foundation Server 4.0

Seldom has an Editors' Choice garnered as many superlatives as Epicentric Foundation Server 4.0 to place it above a strong group of competitors. Epicentric's portal gets the gold for its feature set, scalability, cross-platform support, content management, and user management. It's simply the most complete solution, including portlets for data sources and applications that other portals make you pay extra for.

Epicentric's support for multiple portals, which enterprises can use for different groups of employees or partners, exceeds that of any other product in our roundup, and the complementary delegated administration features are without equal for large-scale deployment. The permissions feature, the most sophisticated among the portals we reviewed, lets administrators specify roles, groups, and access rights for each type of content. Epicentric's portal also rises above the competition by including its own content management system—complete with versioning—which you can use in conjunction with an existing CMS such as Documentum or Interwoven.

Netegrity Interaction Server 5.1 also impressed us as a Java-based portal with a generous selection of standard portlets and respectable content management capabilities.

For bargain hunters with their own programmers, Novell Portal Services 1.5 offers an inexpensive start, as long as using Novell's eDirectory server isn't a problem.

budgets, getting the most out of this type of investment is crucial. And portals aren't cheap. According to a recent study from market research firm Forrester Research, the average portal implementation in 2001 cost over \$300,000 in licensing and developing costs.

Planned costs for new portals typically average \$2 million. Even in the best of economic times, justifying this expense can be tough.

That's why companies are now justifying their portal purchases as cost-cutting measures. If a company's policy requires its employees

to use the portal to enroll *themselves* in benefit programs or make their own travel arrangements, the cost of having extra staff do this work is eliminated.

Budget considerations aside, portals can also simplify and organize the daily work of employees and partners.

They offer a way to centralize disparate needs such as benefit choices, company newsletters, legacy applications, and mobile e-mail into a single Web interface. Another benefit of a portal is that an employee can log on just once to use several applications. Better yet, each user can personalize his or her portal screen, and administrators can match interfaces to different roles in the organization. For example, a sales team can get to its leads faster without being distracted by information that's not central to its role, and HR can go right to employee benefits data.

Pure Play or Platform?

A portal's prowess at integrating with existing systems also contributes to a positive ROI. But effective integration with existing systems requires real work by developers, which can be costly.

With Web services just over the horizon, connecting portals with enterprise applications should become easier.

ALL REVIEWS BY RICHARD V. DRAGAN

Corechange Coreport 5.1

\$250 direct per user. Corechange Inc., 888-892-2673, 617-204-3300, www.corechange.com. OVERALL RATING: ●●●●○

Organizations committed to Microsoft technologies will like Corechange Coreport 5.1's strong usability and scalability. The package includes wireless support and connectors to data sources and applications as standard equipment.

After creating sample departments and users (a task better left to scripts), we built an attractive interface using Coreport's design tools. The process of placing objects on the interface is not entirely visual. By default, a placement control pops up and lets you shift its position, tweak its size, or hide components, but this took some getting used to. Much better was Coreport's ability to change the order of content tabs within

a portal easily—a welcome and intuitive feature.

With some 250 included *connectors* (the equivalent of what other portal companies call *gadgets*), Corechange doesn't skimp on accessories. Though we needed separately priced modules to pull off our database and Web connectivity testing, the core product includes SAP and Seibel support. Working with Web services is also a readily available option.

Coreport supports Microsoft Web Parts—part of the Microsoft Digital Dashboard technology, which can merge HTML, XML, and scripts. This capability requires Internet Explorer as the browser client, illustrating the extent to which this portal is tied to Microsoft products. Coreport is the only portal we tested that could run Office programs from within a browser—ideal



BASED ON Microsoft technologies, Corechange Coreport shows integrated Office applications and relies on Active Directory to manage users, groups, and portal resources.

for locking down pre-configured groups of desktops.

Besides common collaboration features such as chat and e-mail (through Microsoft Outlook Web Access), Coreport offers good connections to business-intelligence and decision-support systems. For searching and indexing, Corechange recom-

In the past year, infrastructure companies like BEA, IBM, Oracle, and Sun have started to offer their own portals, with tight connections to their software platforms. The pure-play portal companies we review here are feeling the pressure, because these platforms' portals will incorporate Web services just as easily as the pure-plays.

For this evaluation, we chose solutions that are not tied to any platform, because if you're already tied to an enterprise platform from BEA, IBM, Oracle, or SAP, you're likely to go with the portal offering from your platform provider. But "locking into a single vendor may not be wise or realistic," says Forrester Research analyst Nate Root, "since most businesses run multiple platforms."

Portal companies such as Epicentric and Plumtree Software continue to attract customers because they offer a rich, prepackaged set

of *portlets*, or *gadgets*, for all sorts of connectivity and customization options. For example, Plumtree boasts some 300 gadgets. Trying to stay ahead of the curve with big platform players in hot pursuit, traditional portal providers have worked hard to include more prepackaged connectors and slick tools. And they've had a few years' head start, so don't count them out.

In the table "The Portal Players," you'll see the platform offerings and their key characteristics along with other portals on the market.

How We Tested

To test our six independent portal solutions, we chose components for typical real-world deployment. We set up Java and Windows platforms and then created a model company with about 50 users in different groups, including executives, managers, HR, and IT. We added default links and a different look and feel for each de-

partment to get a sense of the flexibility you would have in fitting content to users. Our test pages made use of available portlets and components, including news, stock and weather feeds, chat, and e-mail.

Having gathered several thousand files from past *PC Magazine* stories, we then set up separate servers for both Microsoft Exchange 2000 and Stellent Content Management to see how each portal accessed these sources of corporate information. Another part of our testing was to crawl a Web site, so we used www.pcmag.com as a guinea pig. We also connected to Microsoft SQL Server 2000 data to see how each product works with existing databases.

Picking a Portal

The competitive landscape has changed significantly since we evaluated portals last year. Some products have been shaken out, and others have been acquired by bigger companies. In choosing the

enterprise portals to review, we talked with analysts to identify companies that have thriving customer lists and promising new technology.

Before deciding on a portal, you'll want to consider its level of built-in support for content management, workflow, and collaboration. Portal software also varies in the ease and power of its administrative features. Though all of these portals here are Web-based, some are easier to manage than others, and several require an existing LDAP or Microsoft Active Directory corporate directory.

Deciding which portal fits your needs, budget, and IT expertise is the first step. Getting the most out of a portal means that you'll need to integrate with your existing business-critical systems eventually, if not right away. Our roundup of leading offerings will help you meet the challenges of choosing and building the right portal for your organization.

mends the included Autonomy Navigator, which worked well in our testing.

Coreport requires Active Directory and a server version of Windows. You don't need to modify your Active Directory schema for use by the portal. After installing these prerequisites, you can manage Coreport through the standard Management Console in Active Directory or through Internet Explorer. To replicate Active Directory attributes easily, you'll need SQL Server. Like Plumtree's portal, Coreport performs audit trails, which let you track individuals' portal usage.

Coreport offers excellent scalability by assembling disparate streams of content rather than routing them through a single server. This is similar to TIBCO's approach, but Corechange gives it a fancy name—*Web ripping*. The support for single sign-on is also well done, and if you want to dig into Coreport more deeply, you can do so through a script language.

Excellent wireless capability is also built-in: Coreport can target Pocket PC, WAP, and Palm OS devices.

Though its Windows-centric view of the world limits its appeal for some businesses, Coreport is an enterprise-worthy solution that builds on the natural strengths of Active Directory for modeling organizations and managing access rights.

Epicentric Foundation Server 4.0

\$45,000 direct per server, \$400 per user (minimum 250 users). Epicentric Inc., 800-550-1085, www.epicentric.com. ●●●●●



A portal player for more than three years, Epicentric is one of the originals, and its experience pays off: Epicentric Foundation Server 4.0 has very few limitations.

It's Java-based, with excellent cross-platform support and delegated administration for multiple sites. For-

ward-looking support for Web services and an abundance of built-in connections to lots of content sources are matched only by Plumtree's portal. With Plumtree and TIBCO, however, you pay an additional fee for many important connectors.

Getting up and running with the Epicentric portal was the smoothest process of any product in our roundup. Installing additional modules such as the Standard Syndicated Module Pack (SSMP) for basic news feeds was also easy, thanks to a separate Windows setup program.

We installed our test portal using Apache Web Server and JRun 3.0. It's also certified for use with BEA WebLogic and IBM WebSphere and can run on Linux, Solaris, or Windows. For the required database, we used Microsoft SQL Server, but Epicentric supports the most DBMSs of any product we reviewed; the options include IBM DB2, Oracle, and Sybase. The recommended search engine, Inktomi

Search 4.1, was effective in our testing.

The Epicentric portal's control of user permissions and policies is the most sophisticated among those of the products

Though not entirely visual (as with Netegrity's portal), the tools are fully up to the task of tweaking the placement of content and components on portal pages.

The core set of 78 included portlets let the Epicentric portal sail through our testing scenarios. The portal has built-in support for file and Web crawling and connectors to Microsoft Exchange and SQL Server. The help features (particularly for its Extended

running a variety of hardware and operating systems. Its support for leading-edge Web services, its slick administration abilities, and a generous selection of built-in portlets make Foundation Server an extremely strong choice.

Netegrity Interaction Server 5.1

\$240 direct per user (minimum 1,000 users).
Netegrity Inc., 800-325-9870, www.netegrity.com.

Excellent design tools, lots of connectors, and even a basic content management system make Netegrity Interaction Server 5.1 a good value. This portal offers an agile combination of power and customizability, but its relatively difficult search setup and user management hold it back from the leaders.

Installing the Netegrity portal is a notch more complicated than with other products, because it uses Netegrity's LDAP-based SiteMinder 4.61 Policy Server for security and authentication. Other portals use LDAP or a database or both. This one adds a third server for authentication. But we found this extra piece of the puzzle stayed largely out of the way.

Getting a basic portal up and running was fast, thanks to Netegrity's WYSIWYG page designer—Workspace Publisher. Though that requires Internet Explorer 5.5 or later, we were pleasantly surprised to



CONTROLLING access to all portal resources is easy with Epicentric Foundation Server's intuitive interface for setting permissions for groups of users.

in our roundup, and the level of intelligence it offers for applying permissions is a big benefit for organizations that maintain multiple portals. Not only can you specify read/write permissions and access levels for virtually every resource in the portal—from pages to components—but there's also a visual representation of permissions. And you can select whether various policies take precedence or are applied cumulatively, should they overlap.

Foundation Server's navigation tree metaphor provides a powerful way to represent portal content visually, even for nontechnical managers. We also like the tools for placing portlets on pages.

Content Management Suite) are among the most accessible we saw.

To meet the new frontier of Web services, the software has one of the most intuitive tools—the Modular Web Services Manager—which handily enables your portal to consume Web services. Another tool, the Web Services User Interface Manager, supports a portal's consumption of content in new XML-based standards being spearheaded by the Web Service for Remote Portals (WSRP) committee.

As a pure-play provider powered by Java, Epicentric will please organizations



SCORECARD

The **page setup and design** rating reflects each portal's layout and theme capabilities. WYSIWYG page designers and wizards are advantages here. **Presentation** is a rating of how well the portal can be tuned to send custom content and formats to users based on their roles and their own preferences or clients. For the **content management** rating, we evaluate the taxonomy of workflow, approvals, and document management. **Cross-platform support** is a measurement of the portal's support for disparate operating systems, application servers, and back-end architectures. For **security and**

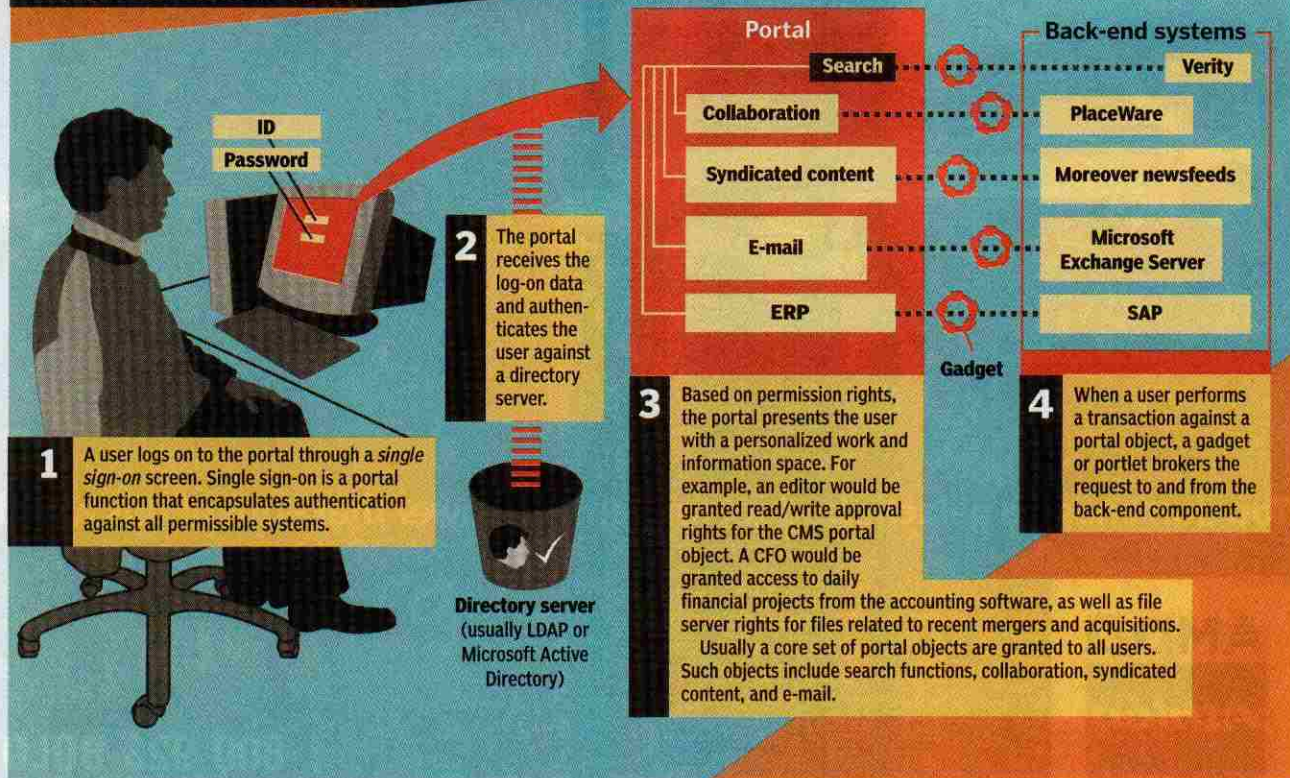
identity, we rate the ability to manage LDAP integration, authentication, and authorization, and to implement delegated administration. **Community and collaboration** includes threaded discussions, document sharing, private team workspaces, e-mail, and chat. The **search and navigation** rating reflects the depth and breadth of crawlers, indexers, and search tools. For **portlet integration**, we evaluate the portal's capabilities for accessing diverse data sources and enterprise applications. Prebuilt connectors (also called portlets or gadgets) and development environments are factors here.

	Page setup and design	Presentation	Content management	Cross-platform support	Security and identity	Community and collaboration	Search and navigation	Portlet integration	OVERALL
Corechange Coreport 5.1	●●	●●	●●	●●	●●	●●●●	●●●●	●●●●	●●●●
Epicentric Foundation Server 4.0	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●
Netegrity Interaction Server 5.1	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●
Novell Portal Services 1.5	●●	●●	●●	●●	●●	●●	●●	●●	●●
Plumtree Corporate Portal 4.5WS	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●
TIBCO ActivePortal	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●

●●●● - EXCELLENT
 ●●● - VERY GOOD
 ●● - GOOD
 ● - FAIR
 - POOR

RED denotes Editors' Choice.

The Perfect Portal



discover that laying out portlets is as easy as laying out standard Web pages—a cut above the other products we reviewed.

We are not convinced that installing a new portlet creates a new “dynamic business object” (Netegrity’s jargon), but we like the wizards for setting properties and customizing portlet behavior. Administrators will appreciate the portal’s helpful organization of content into topics and its handy scrapbook for quickly getting to the most commonly used links. Interaction Server is unique in its use of context-sensitive pop-up menus accessed via the right mouse button—a time-saving feature.

Though the text-based interface of Convera RetrievalWare (which Netegrity uses for search) is clumsy, once we had it running, it competently crawled files, Web sites, Microsoft Exchange, and even Stelent content management data.

A pleasant surprise is Netegrity’s lightweight, built-in content management. It offers simple version control, rollback, content expiration, and workflow.

Some 150 included portlets give the Netegrity portal a rich set of connectivity options. Unlike with most of the solutions

we evaluated, SAP and Siebel connectivity comes standard. And a wizard-based portlet for getting to Web services will please early adopters of this emerging technology.

When it comes to managing users, Netegrity has a precise, policy-based control for every object and task in the portal, thanks to LDAP and SiteMinder working behind the scenes. Like the Epicentric portal, Netegrity’s offers a well-designed approach to delegated administration. Although we were disappointed that we needed to go outside the portal to add new users, SiteMinder provides a good security underpinning.

Minor disappointments aside, Netegrity’s support for Java and Web service standards, excellent customizability, content management, and generous selection of built-in portlets make Interaction Server a solid package.

MORE ON THE WEB

Go to pcmag.com for more reviews of enterprise software.

Novell Portal Services 1.5

\$49,000 direct per CPU, plus \$59 per user. Novell Inc., 801-861-4282, www.novell.com. ●●●○○

With a no-frills approach to portal development, Novell Portal Services 1.5 deserves a look from organizations on a budget. Though it’s short on page design tools and content management, this Java-based cross-platform portal can start you off with a basic set of portlets. But be forewarned that thorough integration and customization will take more work than with other solutions.

Like the Epicentric, Netegrity, and TIBCO portals, Novell Portal Services runs on a wide selection of Java-based application servers. On Novell’s recommendation, we chose Apache 1.3.20 for the Web server and Tomcat 3.3 for our Java container. (Other certified configurations include BEA WebLogic and Microsoft IIS.) In our testing, a basic wizard took the knots out of connecting the Web server to Tomcat, and we were up and running quickly enough.

One difference between the other products we reviewed and the Novell portal is that it specifically requires Novell’s e-

Take a Free Ride with PHP-Nuke

As the old saying goes, the best things in life are free. And for small organizations that need a portal, this expression remains true. If you don't mind getting your hands dirty with some code, PHP-Nuke, portal software released under the GNU/GPL license, can be a gateway into managing a small-business or personal portal. Available through <http://phpnuke.org> (and with a popular offshoot, PostNuke, available from www.postnuke.com), it lets a PHP developer build a well-appointed portal replete with news feeds, instant messaging, polling, searching, and wireless access.

At its heart, PHP-Nuke is both an extensible framework and an out-of-the-box portal that offers administrative tools and a set of portlets, or *modules*, in PHP-Nuke jargon, all glued together by the PHP scripting language. At a trim 8MB, PHP-Nuke can run

on any Web server that supports PHP. Its database management system maintains identity profiles and module data. PHP-Nuke can connect to many databases (including Microsoft SQL Server and PostgreSQL).



A SAMPLE PHP NUKE SITE.

Most implementations use the open-source MySQL.

Although the portal installation is reasonably straightforward, we found the configuration of the Apache Web server and MySQL trying, and the documentation didn't help much with these steps. Once we had PHP-Nuke installed, a simple

wizard walked us through the PHP-Nuke database creation.

PHP-Nuke offers several default modules. Among the more useful are basic Web site statistics, site search, polls, and a file repository. Portal users can also access a news and reviews module using a mobile device through an included AvantGo transform engine. Users can choose from several themes and language preferences—especially welcome if your portal users are not all native English speakers.

PHP-Nuke's roots as a content management system show up in its content submission and workflow features. You can submit HTML content straight from the portal with one click. An editor with authoring privileges can then check in, check out, edit, and approve documents before they're released.

An administration console accessible through a Web brows-

er manages all the portal assets. Here you lay out modules with size and position functions. Dozens of different themes, including many Flash animation themes, have been donated to the PHP-Nuke community, but many of them are buggy and require some low-level programming.

To set up permissions, an administrator must assign a user to a group. Based on the group setting, a user is granted access to designated areas of the site, as well as read, write, and edit privileges. Error checking and notification of broken pages are useful, but they require coding.

PHP-Nuke isn't intended for large-scale portal development. Nor does it have connectors for enterprise resource planning or customer relationship management software. But what it lacks in those areas it makes up for in well-executed design and a lower price.—*Sahil Gambhir*



PLUMTREE CORPORATE PORTAL'S capable administrative interface puts you in charge of all portal resources, such as gadgets and crawlers.

Directory for authentication and database functions. This avoids a separate database, and since eDirectory is a licensed part of the portal, you'll save on the cost of a separate database license.

We're happy that Portal Services lets you administer eDirectory users through the browser interface, although it makes sense to model your corporation first in eDirectory using the separate Console-One interface. You'll also want to familiarize yourself with LDAP naming con-

ventions for searching and naming users, since this notation is not shielded by the administrator interface.

Portal Services includes 44 built-in portlets for common tasks such as using Microsoft Exchange, databases, chatting, and publishing file and Web links. Placing components on Web pages is the least visual process among all the portals we reviewed, and seeing what our Web pages would look like after making tweaks was a process of trial and error.

Novell portal users can subscribe to "communities" of links and content. In testing, it was fairly easy to define several communities based on departments. Consuming Web services is accomplished by a gadget that grabs XML. Fur-

ther customization requires a capable IT department digging into Java APIs. The portal's core functions will take you only so far, and then you'll have to roll up your sleeves and do some coding. Although most other portals need customization, too, you will likely reach this point sooner with Novell's.

Despite its dependency on eDirectory, the portal has good cross-platform support, running on Linux, NetWare, Solaris, and Windows. For companies willing to trade a lower sticker price for extra development costs, Portal Services is a bargain portal starter kit.

Plumtree Corporate Portal 4.5WS

\$400 direct per user and up (minimum 250 users), Plumtree Software Inc., 800-810-7586, 415-263-8900, www.plumtree.com. ●●●●○

Plumtree Software is the quintessential pure-play corporate portal company. It was the first in the business and offers a

slew of gadgets for connecting to data sources and applications.

Though once decidedly Windows-centric, Plumtree is moving into the cross-platform market and is focused on Web services. With its raft of gadgets and well-thought-out administration tools, Plumtree offers a strong option but falls slightly behind Epicentric's in cross-platform support, content management, and user management. And Epicentric includes important gadgets standard, whereas many of Plumtree's cost extra.

The rich choice of gadgets remains one of the best reasons for considering this portal. Pricing varies for enterprise application gadgets, and an annual license is 10 percent of your base portal cost. We tried the SAP gadget, which offers a set of wizards for drilling down into custom Business Objects Repositories (BORS). These let portal users get directly to the SAP modules they need—a super feature.

Although many of Plumtree's gadgets are simple, having components ready-made for almost every conceivable connection has a lot of appeal. You can install gadgets in one of three ways: downloading them from a Web site, copying scripts manually, or running a setup program.

The portal's administration module, which runs on both IE and Netscape, is robust and hasn't changed fundamentally since our previous review in our issue of June 12, 2001. Permissions are nicely granular, and by default, you assign them to user groups in four basic categories: administrators, content maintainers, content managers, and ordinary end users. You can also easily add more groups of your own.

Crawling files, Web content, and Microsoft Exchange data is easy with the well-integrated Verity search engine. The process can be scheduled as a background job and off-loaded to different servers for improved performance. We also like that imported content can be spidered (and filtered) into separate directories using a wizard. This capability offers approvals, but beyond that, there's not much in the way of content management.

This release of Plumtree Corporate Portal supports Web services, using a wizard to encapsulate SOAP calls. And it can syndicate content using common standards, including raw HTML, HTML with JavaScript, XML Rich Site Summary

The Portal Players

Beyond the pure-play portals we review, here's a synopsis of other major portals.

	Direct price	OSs supported	Authentication standard supported	In a nutshell
BEA WebLogic Portal BEA Systems Inc. www.bea.com	\$57,000 per CPU	AIX; HP-UX; Linux; Solaris; Windows NT 4.0, 2000 Pro, 2000 Server	LDAP, X.500; JNDI 1.2	Offers integration with the number-one app server; strong on Web services.
Brio Portal 7.0 Brio Software Inc. www.brio.com	100 users, \$60,000	AIX; HP-UX; Solaris; Windows NT 4.0, 2000	LDAP	Integrates with the leading business intelligence software.
Citrix NFuse Elite Citrix Systems Inc. www.citrix.com	\$67 per user (75-user minimum)	Windows 2000	Microsoft Active Directory	Ties in with Citrix MetaFrame server-based computing.
CleverPath Computer Associates International Inc. www.ca.com	For a small to medium-size business, \$21,000	AIX; HP-UX; Linux; Solaris; Windows NT 4.0, 2000	LDAP, Microsoft Active Directory, NDS, NIS	Ties in with CA's business-intelligence and supply-chain software.
Hummingbird Portal 5.0 Hummingbird www.hummingbird.com	\$90,000 per server, \$199 per user	AIX; HP-UX; Windows NT 4.0 Server, 2000 Server	Microsoft Active Directory, LDAP, NDS, NIS, NTLM	Strong on business intelligence.
IBM WebSphere Portal 4.1 IBM Corp. www.ibm.com	\$55,000 to \$580,000 per implementation	AIX; Linux; Solaris; SuSE; Windows NT 4.0, 2000	Domino, iPlanet Directory Server, LDAP, Microsoft Active Directory	Excellent scalability, personalization, and collaboration.
Microsoft SharePoint Portal Server Microsoft Corp. www.microsoft.com	\$3,995 per server and up	Windows 2000 Server	Microsoft Active Directory	Currently a partially scalable solution, but Microsoft is integrating it with SharePoint Team Services in the .NET strategy.
One-To-One Portal BroadVision Inc. http://broadvision.com	\$60,000 per CPU	AIX, HP-UX, Solaris, Windows 2000	LDAP	Strong on personalization; ties in with BroadVision's e-business products.
OptimalView Compuware Corp. www.compuware.com	\$40,000 to \$70,000 per implementation	Solaris; Windows NT 4.0, 2000	LDAP, Microsoft Active Directory	Geared toward software developers, for building in business logic.
Oracle 9iAS 2 Portal Oracle Corp. www.oracle.com	Standard edition, \$10,000 per CPU; Enterprise edition, \$20,000 per CPU	AIX; HP-UX; Linux; Solaris; Tru64 Unix; Windows NT 4.0, 2000	LDAP	An add-on to the Oracle 9iAS application server; offers a portlet development kit.
PeopleSoft 8.4 Enterprise Portal PeopleSoft Inc. www.peoplesoft.com	\$65,000 to \$90,000 per server	AIX; HP-UX; Linux; Solaris; Windows NT 4.0, 2000	iPlanet Directory Server, LDAP, Microsoft Active Directory, Novell eDirectory	Ties in with the leading HR package.
Portal-in-a-Box Autonomy Corp. www.autonomy.com	Average price, \$380,000	Unix; Windows NT 4.0, 2000	ADO, LDAP	Strong search features.
SilverStream eExtend Director SilverStream Software www.silverstream.com	Developer edition, \$1,295 per CPU; Enterprise edition, \$65,000 per CPU	AIX; HP-UX; Solaris; Windows NT 4.0, 2000	LDAP, Microsoft Active Directory, NIS+	Strong development tools and support for J2EE.
Sun ONE Portal Server 6 Sun Microsystems www.sun.com	\$25,000 per CPU and up	Solaris, Windows 2000 Server	LDAP, Microsoft Active Directory, Sun ONE Identity Server	Strong identity management and support for J2EE; excellent scalability.
Sybase Enterprise Portal 2.5 Sybase Inc. www.sybase.com	Developer edition, \$4,000, plus \$85,000 per CPU; duplicate CPU, \$21,250	Solaris, Windows NT 4.0	LDAP	With the acquisition of OnePage, this is a strong solution with J2EE and XML integration and superior scalability.
Viador E-Portal Suite Viador Inc. www.viador.com	\$50,000 and up	Solaris; Windows NT 4.0, 2000	LDAP	A highly customizable cross-platform solution.
Yahoo! PortalBuilder 4.0 Yahoo! Inc. http://enterprise.yahoo.com	\$100 per seat	Solaris; Windows NT 4.0, 2000	Novell eDirectory, Sun ONE Directory Server	Based on TIBCO's portal technology; adds Yahoo!'s extensive content sources.

(for headlines), and XML News (for packaging entire content feeds).

Plumtree's options for placing gadgets on the pages for layout design are nothing special; they simply let you choose a column for the content. Other portals, like Netegrity's, are better than Plumtree's in this area.

Though a Unix version is now available, we tested on Windows 2000 using Microsoft IIS as our Web server and SQL Server 2000 for the database. (Oracle is also a database option.) Plumtree's underlying Massively Parallel Portal Engine

supports round-robin DNS load balancing. The documentation for installing Plumtree on up to six servers will also help you scale up.

Although an industry move to an open Web-service infrastructure will make Plumtree's excellent gadgetry less compelling, the portal is moving in the right direction and building on a broad, established set of components. Plumtree's commitment to Web services and new cross-platform compatibility shows that the company is not sitting on its laurels as a portal pioneer.

TIBCO ActivePortal

\$85,000 direct per server, plus \$120 per user (minimum 300 users). TIBCO Software Inc., 800-420-8450, 919-969-6503, www.tibco.com. ●●●●○

As portals mature from simple cosmetic enhancements toward deep functionality, TIBCO ActivePortal is in the right place at the right time. This Java-based software comes with excellent Web services support, real-time messaging, and a wide range of connectivity options. But it does not have the visual pizzazz of some of the other solutions.

ActivePortal comprises three products:

SUMMARY OF FEATURES

Corporate Portals

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■ YES □ NO	Corechange Coreport 5.1	Epicentric Foundation Server 4.0	Netegrity Interaction Server 5.1	Novell Portal Services 1.5	Plumtree Corporate Portal 4.5WS	TIBCO ActivePortal
Direct price per server	None	\$45,000	None	\$49,000 per CPU	None	\$85,000
Direct price per user seat	\$250	\$400 (250 minimum)	\$240 (1,000 minimum)	\$59	\$400 (250 minimum)	\$120 (300 minimum)
OSs supported	Windows 2000 Server (with Active Directory)	AIX; HP-UX; Linux; Solaris; Windows NT 4.0, 2000	Solaris, Windows 2000 Server	Linux, NetWare, Solaris, Windows 2000	Solaris; Windows NT 4.0, 2000	AIX; HP-UX; Solaris; Windows NT 4.0, 2000
Web servers supported	Microsoft IIS	Apache, BEA WebLogic, IBM HTTP Server, Microsoft IIS	Apache, Microsoft IIS	Apache, BEA WebLogic, Microsoft IIS, Sun ONE Web Server	BEA WebLogic 6.0, IBM WebSphere 3.5, Microsoft IIS	Sun ONE Web Server
Application servers supported	None	BEA WebLogic, IBM WebSphere, Macromedia JRun, Tomcat	BEA WebLogic, IBM WebSphere, IONA Orbix E2A	BEA WebLogic, Macromedia JRun, Sun ONE, Tomcat	BEA WebLogic, IBM WebSphere	BEA WebLogic, IBM WebSphere, Sun ONE
Web clients supported	IE 5.x, Netscape 6.x	IE 4.0, 5.x, 6.x; Netscape 4.7, 6.x; WML-enabled devices	IE 5.x, 6.0; Netscape 4.76 or later	IE 5.x; Netscape 6.x	IE 5.x, 6.x; Netscape 4.08 or later	IE 5.x, 6.x; Netscape 5.x, 6.x
Databases supported	SQL Server	IBM DB2, Oracle, SQL Server, Sybase	Oracle, SQL Server	None required	Oracle, SQL Server	Oracle, SQL Server
Authenticates against LDAP/AD	■ ■	■ ■	■ ■	■ □	■ ■	■ ■
SEARCHING/INDEXING/CRAWLING						
Taxonomy engine	Autonomy DRE	inktomi	Convera RetrievalWare	AltaVista	Plumtree (Verity optional)	Verity K2 Enterprise
Knowledge management engine	□	■	■	□	□	■
Filter search	■	■	■	■	■	■
Unique indexable file types	60	20	265	225	> 200	30
Crawls Web sites, mail, databases	■	■	■	■	■	■
Scheduler	■	■	■	■	■	■
CONTENT MANAGEMENT						
User can check documents in and out	□	□	■	□	□	□
Version control	□	□	■	□	□	□
Approval routing	□	■	■	□	■	□
ADMINISTRATION						
Delegated management of multiple portals	□	■	■	□	□	■
Taxonomy management	■	■	■	□	■	■
Administrator can assign rights and permissions to users and groups	■	■	■	■	■	■
PRESENTATION						
Layout and design wizards	■	■	■	■	■	■
WYSIWYG page layout	□	□	■	□	■	□
Wizards for new sites	■	■	□	■	■	■
User preferences for color schemes, art, text, and layout	■	■	■	■	■	■
COLLABORATION						
Document sharing	■	■	□	■	■	■
Calendaring	■	■	■	■	■	■
Threaded discussions	■	■	■	■	■	■
Wizards for gadget setup	■	■	■	■	■	■
Included/extra-cost portlets	250 / None	78 / 22	150 / None	44 / None	250 / 53	120 / 334

RED denotes Editors' Choice.

Portable Portals



Corporate portals are great for organizing all your business information in one Web browser window, but what if you're on a plane or somewhere else with no connection to the Internet? Salespeople may want to check the most current prices or inventory just before going into a sales meeting, and field engineers checking on a faraway project may need to see what's going on at their headquarters. Two technology companies have come up with solutions for the disconnected portal user.

BackWeb Technologies, long known for its "push" technology products, has shifted its efforts toward a polite way for enterprises to sync up portal contents for off-line use. **BackWeb Proac-**

tivePortal Server (\$100 direct per user) lets people subscribe to specific content areas in the portal. When a scheduled polling of those areas shows a change, BackWeb Polite Communications System uploads the new information to the remote user's laptop in the background. The upload occurs during the in-between moments when the connection isn't in use, and only the changed bytes of data are sent. ProactivePortal compresses data using ZIP to speed transfers further, and it can pick up where it left off if the connection is interrupted.

Because the design of a portal can change at any time, BackWeb uses proprietary OTML (Offline Tagging Markup Language) tags on the portal page

to mark the content you want updated. The browser ignores these tags.

The system works with any portal product since it uses only the generated HTML to do its work. BackWeb ProactivePortal Server Version 2 runs on Windows NT 4.0 and 2000 and Solaris 2.7 or later. (BackWeb Technologies Ltd., 800-863-0100, www.backweb.com.)

iOra's mobile solutions let you take your portal off-line to Pocket PC devices, as well as to notebooks. **iOra Mobile Intranet** consists of the Publisher and Client pieces. The Publisher looks for content changes at scheduled times, compresses and encrypts the changes, and sends them to your Web server as a file amendment. The Client

automatically downloads the compressed changes when it detects an Internet connection. Like the BackWeb products, iOra's can resume interrupted downloads.

iOra Mobile Portal Toolkit adds off-line searching, personalization, and two-way off-line collaboration, which means you can make updates to the portal that will take effect at your next connection.

iOra Mobile Intranet works on Windows 9x, NT 4.0, and 2000 or later. The price is \$7,500 direct per server; laptop version, \$180 annually per user; Pocket PC version, \$90 annually per user. Portal Toolkit costs an extra \$7,500 per server. (iOra Inc., 866-505-4672, www.iora.com.)
—Michael W. Muchmore

PortalBuilder, AlertServer, and PortalPacks. We focused on the first, which IT will use to build your portal. AlertServer delivers portal information to wireless devices, and PortalPacks are sets of portlets.

TIBCO takes the approach of assembling content from multiple sources within a frame without changing much of the visual presentation. To demonstrate how this works, TIBCO throws in a sample site showing news, weather, and stock feeds, and collaboration necessities like e-mail and chat (using Jive). The helpful sample site also shows how to set up multiple roles for finance, HR, and IT.

One powerful metaphor TIBCO uses is the *pass-through* source of content, which lets PortalBuilder incorporate any existing site's output. If this code breaks because of a changed online source, ActivePortal can automatically send e-mail alerts to administrators—a welcome touch.

On the downside, the administrative module is short on extras, but it's functional. We could add users and groups and define pages and page sets with content. You won't find traditional content man-

agement features. The handful of default color schemes are no match for those available in the other products. Nor is there a visual way to align controls. (You can, of course, attach custom HTML to present content any way you want.)

Instead, TIBCO concentrates on corporate content. You'll want to watch pricing for the numerous PortalPacks that get ActivePortal connected to different data streams, including Microsoft Exchange and Siebel. Tools for consuming Web services are among the best we saw anywhere.

A licensed feed from Reuters illustrates the natural suitability of TIBCO for financial firms. And we successfully tried Web services for weather and traffic reports. TIBCO's traditional strengths in messaging carry over to its portal, with real-time "push" content available through Rendezvous, the company's messaging middleware.

ActivePortal is based on J2EE and has some of the best cross-platform support we saw. It can use a

wide variety of directory servers, operating systems, databases, and application servers, and its support of SOAP and UDDI adds further versatility.

In ActivePortal, TIBCO combines its messaging prowess with live data feeds to create an appealing solution that's also resold to enterprises by Yahoo! Although you'll have to pay extra for some key portlets, TIBCO's solid set of tools and leading support for Web services can power most any portal site. ☰

TIBCO ACTIVEPORTAL's standard set of data streams includes news, stocks, and weather. It offers excellent access to Web services and real-time messaging.



