Enterprise Portal Market Trends

by: Nancy Nicolaisen

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Preview

Enterprise Portals offer centralized, role-based access to internal and external business information, enabling users to leverage both structured and unstructured data for content creation and sharing. This report discusses the influence of current portal technologies, emerging standards, and the competitive landscape on this dynamic software market.

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Executive Summary

Enterprise portal technology emerged in the late 90’s and the pace of adoption has been brisk since then.

Initially designed to aggregate Web content, the latest generation of portals is defined by three capabilities: They provide contextual presentation for diverse services and information; they present content in a personalized and customizable fashion, based on the identity of the user; and they offer users a "single sign-on" point of entry to the back-end systems and data they integrate.

From a technical point of view, there are two distinct development trends and toolsets for creating an enterprise portal. Using "pure play" tools from vendors such as Plumtree and Epicentric, the portal is implemented as an application and system neutral presentation layer. "Infrastructure" vendors such as Sun, IBM and BEA Systems advocate implementations that are more tightly bound to underlying systems and mission critical applications. In the last year, market momentum has shifted toward infrastructure approaches.

For large distributed businesses and institutions, portal technology is key strategy for integration and management of "stovepipe" applications. To reap economic and organizational benefits, portals must provide users the ability to act on aggregated data and take full advantage of integrated tools and
applications. Fairly mature tools and technologies make portals more of a cultural challenge than a
technical one. Case studies show that the most successful implementations involve extensive, early
contact with client groups, identification and definition of user roles, and a clear articulation of how portal
constructs will simplify workflow.

Description

The enterprise portal marketplace is both vibrant and crowded. Industry analysts estimate revenues from
portal tools, technologies and services will reach nearly $2 billion in 2005, and up to $3 billion in 2006.
Competition among vendors is predictably fierce, and stakes are high as the overall market consolidates.
Leading players advocate a variety of differing technical approaches, and to date there are no official or
de facto standards for portal implementation or content aggregation.

Given the unsettled and rapidly evolving state of the marketplace, enterprise adoption of portal technology
has been surprisingly aggressive. Motivated by a litany of promised benefits including ease of portal
implementation, demonstrable cost savings and enhanced business process integration, business,
政府和机构已经拥抱门户作为整合来自各种源的结构化和非结构化数据的一种方式，并将其以单个连贯的视图呈现给用户。门户依赖于Web技术，但不仅仅是网站的增强版。门户根据用户的身份或在企业的角色来仲裁内容的显示。例如，一个员工福利门户允许每个员工查看应休假时间。相同的门户将允许经理和HR员工查看其他内容。根据用户身份展示内容是当今门户的一个关键特征。

Another defining quality of portals is that they aggregate content from diverse internal and external
sources, and allow users to immediately act on the information they receive. Assembling content to
enable a business process or transaction creates actionable functionality. For example, imagine a health
care portal that integrates access to patient charts, drug side effect information, pharmacy stocks, and
prescription forms. Health care providers using the portal have all the relevant information in hand when
choosing to prescribe a drug, and can make the prescription on the spot.

Finally, portals offer a relatively low risk, low cost way to buy time when true back-end system integration
is too difficult or costly. The late 90s saw a dramatic rise in corporate mergers and acquisitions.
Combining legacy systems and corporate IT cultures is time consuming, frequently expensive, and
fraught with risk. Creating a portal that unifies access to "stovepipe" legacy systems is often an effective
way to present a coherent view of related information, without disrupting existing functional capability. The
portal interface also provides a single point of user validation and access. "Single point of entry" yields a
productivity advantage, improves user acceptance and makes back end systems easier to secure.
Content, Transactional and Process Portals

Functionally, there are three types of second-generation portals.

**Content portals** display aggregated content, based on the identity or role of the user. An example of this type of portal is Nissan’s award winning dealer information system, which allows dealers to track supply chain status, get training, and learn about upcoming products.

**Transactional portals** are oriented toward commercial interactions. Think business to consumer applications, where users shop at the portal, place orders and track shipments.

The **process portal** is the most sophisticated of the three types, and one that has proved the most compelling to enterprise. Process portals tailor the information and services they present to the needs of knowledge workers, based on business rules and defined user roles in the business process. Process portals are generally linked to powerful content management systems that serve many types of structured and unstructured data.

State of the Marketplace

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From the consumer’s point of view, there are two basic vendors camps in the portal business. The pioneers belong to a group called the "pure play" vendors. The most prominent pure play vendors are Plumtree and Epicentric. Pure-play portal tools essentially combine device and application independent middleware with a similarly portable presentation layer. The middleware component connects to existing data base and content repository systems, retrieving and formatting content on demand. The presentation layer handles display of the content served to it, and relays user requests to the middleware layer. The advantage of this approach is that an enterprise can launch a portal without disrupting existing systems. The disadvantage is that less expensive pure play solutions tend to create "look but don’t touch" portals, where users can see a collection of related data, but can’t directly manipulate it. The more expensive approach can be very, very much more expensive. Creating fully functional, bi directional connectors between many "stovepipe" legacy apps and a portal may require considerable custom programming effort.

More recently, the portal niche has been invaded by a pack of familiar names, long associated with enterprise computing. The members of this group are known as "infrastructure" vendors, and include players such as IBM, Sun, and Oracle. This group advocates a portal technology that more aggressively seeks to integrate applications and the portals that they serve. Except for fairly trivial cases, infrastructure vendors bring both more numerous and more powerful tools to the portal development process and to the task of managing them after they are deployed. These vendors position portals as a link in the chain of infrastructure, which also includes servers, operating systems, and enterprise application software. Scalability and reliability are key strategic advantages of their approach.

Pagelets, Portlets, Gadgets

Fundamentally, the presentation layer of a portal is an aggregation of components that manage screen real-estate, display formatted content, and receive user commands. As of today, most of these are proprietary or custom, and don’t interoperate with other vendors’ components.

Predictably, the components are known by a variety of names, and subtly differ in functionality. At a high level, however, one can consider the terms **pagelet**, **portlet**, and **gadget** to be equivalent names for content serving components contained by a portal. In shopping for portal development tools and services, one of the chief concerns is determining how closely a vendor’s set of components matches existing content repositories systems on one side, and the ways in which the organization plans to serve content through the portal on the other side. The current lack of interoperability means that it will be difficult and
expensive to change vendors after development begins.

**Content Management**

Portals are all about creating synergies that make use of the full range of enterprise content. It is not surprising, then, that leaders in the content management niche figure prominently in the successful deployment of enterprise portals. Global healthcare, manufacturing, transportation and banking interests have leveraged successful content management operations into portal based interfaces with relative ease. The lesson here is that the key job was managing the content, not creating the portal that served it. For this reason, established content management vendors such as Documentum and Vignette have a big stake in the emerging spin of portal technology.

Both Documentum and Vignette offer tools that allow enterprise to intelligently create and manage a variety of types of content, including documents, Web pages, XML files, and rich media. Content management systems use a common repository, and offer seamless access to relevant, accurate, searchable content. Significantly, Vignette recently acquired Epicentric, a leading pure play portal vendor. Together Vignette and Epicentric offer an integrated content management / portal solution that blurs the distinction between the pure play and infrastructure approaches.

**Standards Emerge**

One might wonder how the portal market could be heading for the $3 billion mark while still completely innocent of standards. That is understandable. With that kind of volume, enterprise is demanding an organizing philosophy and defined growth path for portals and their constituent parts. The good news is that standards are beginning to emerge. The not-so-good news is that they are neither complete nor broadly adopted today.

**Emerging Web Services Standards: Plug And Play For Content?**

The Web Services for Remote Portals (WSRP) will enable the development and distribution of portal "plug in" components that contain content. The WSRP standard defines how services are invoked between components, how to publish, find and bind WSRP services across a network, and defines the semantics WSRP partners use in their conversations. WSRP compliant parts will easily and interactively "plug into" portals, and make "user facing " Web services simple to publish. A user facing Web service can be either an application or content. Because WSRP parts advertise their existence, system administrators can browse for them, then plug them into portals with no programming effort. WSRP essentially opens an Internet-based market for plug and play portal components that deliver content or applications to users. WSRP is an open standard, so expect lots of activity from the after-market when the standard is finalized.

Backers include BEA Systems, Bowstreet, Divine, Epicentric., Factiva, France Telecom, Fujitsu, HP, IBM, Interwoven, lexis-Nexis, Lotis, Moravia IT, Netegrity, Oracle, Peoplesoft, Plumtree, Silverstream, Sybase, Sun, Tibco, Web Collage, SAP Portal and SeeBeyond.

**Java’s Portlet Standards Promise Interoperability**

The lack of a standard API for attaching portlets to portals is one of the most glaring shortcomings of current portal technologies. Few large enterprises want to be indefinitely locked into a single vendor’s portal solution. Consumers are demanding standards for interoperability between portals and components. Java Specification Request 168 may deliver just such a standard for interoperable portlets soon. The initiative has strong momentum, and benefits from large pool of enterprise Java programming expertise.

JSR 168 proposes a common API for attaching portlets to portals and underlying applications. It will also enable components to interact with one another, creating a functional layer below portal’s presentation layer. The proposed standard includes an API, as well as a mechanism for communicating portlet modes
and window state. The last two are important because they tell the portlet whether it will receive rendered data or must render data and manage display on its own.

A broad third party selection of Java portlets may make the pure play strategy much more powerful, flexible, and cost effective. JSR 168 reference implementation was delivered in Dec 2002, and is managed by IBM at Apache. The JSR committee includes Sun, IBM, SAP, BEA, Citrix, Epicentric, Broad Vision, Oracle and Tibco and others. The first version won’t address messaging between portal applications. This is viewed as a serious omission, as messaging between components enables workflow functionality.

**Market Leaders**

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**Who’s Winning?**

In the last year, the portal market has seen significant shifts in leadership. Most recently published industry rankings tend to place vendors in four categories: Leaders, Challengers, Visionaries and Niches Players. Leaders include IBM, SAP, Sun, BEA Systems, Plumtree and Sybase. Of the six, all are infrastructure vendors except Plumtree. Plumtree was probably ranked with this group because of its large installed base of highly capitalized global businesses. The pioneer of the portal, they benefit from mature products and an early lead. The rest of this group is succeeding by convincing enterprises that scalability, reliability and powerful development tools count for more than device and application independence.

The Challengers include Microsoft, Computer Associates, and PeopleSoft. Microsoft is in this group simply because it’s never wise to count them out. The rest have significant penetration of enterprise mission critical application markets. All have sufficient cash and technical resources to "portalize" their flagship products, should they see a reason to do so. Visionaries are essentially companies that have proven technology but may not have the financial resources to play a dominant role in what is shaping up to be a ruthless competition. This group includes Epicentric, a pure-play vendor recently acquired by content management powerhouse Vignette. Some analysts place Vignette in the Niche player category, but competing prognosticators rank Vignette highly. Expect to see many of the "Visionaries" acquired by deep pockets in the infrastructure group.

- Infrastructure vendors, whose main products are hardware or industrial strength data management offerings, envision a world in which support for portals is seamlessly woven into back end applications, operating systems and even hardware.

- Pure Play vendors see the portal as an outward vestige of an application and system independent compatibility layer that preserves underlying legacy systems while giving users seamless access to stovepipe app data and functionality.

- Finally, Microsoft sees the portal phenomenon as a trend that is largely incompatible with their vision of a diffuse, minimally structured, user-centered model of computing, based on the Windows Operating System.

**Infrastructure Vendors Play Hardball**

By mid 2002, infrastructure vendors such as IBM, Sun and BEA were outspending upstart pure play vendors 100 to 1 in marketing their portal solutions. This marketing blitz was largely a bid to own the "single user sign-on" piece of the portal puzzle, and it was undertaken with clear intent to win back share from Microsoft. Dominating the initial point of user access is the best chance big iron has had to get back in the game on the desktop in a long time. Infrastructure vendors are spinning their portal offerings as
single but vital links in the larger chain of application/server/network services. They emphasize that industrial strength portals need scalability and server side resources like clustering and load balancing.

IBM, Sun and BEA see the portal as the emergent desktop for enterprise. Conversely, Microsoft flatly dismisses the portal as a significant competitor for its ubiquitous Windows operating system. "The cynical view," says Charles Fitzgerald, General Manager of Platform Strategy for .NET, "is that it’s really just an expensive Website. Fundamentally, we’re on a different planet than the big iron, big brother guys." Microsoft, however, is an entrant in the portal business, Fitzgerald's comments to the contrary notwithstanding. Microsoft’s SharePoint is a collaboration and content server, which leverages Microsoft’s existing star productivity suite, Microsoft Office. In contrast to other portal strategies, SharePoint is more of a "bottom up" tool, encouraging ad hoc user collaboration and Website creation.

Proponents of the managed content approach see SharePoint as something less than a true portal solution. The META Group’s David Yockelson says "I think the name SharePoint Portal Server is a misnomer. It doesn’t give you application integration, it gives you a document repository and a search engine with a Web interface." Others disagree, disputing the Microsoft assertion that portals are regressive and rely on old, centralized mainframe computing strategies, claiming instead that integration features of many leading vendors associate what used to be stovepipe applications, including those from Microsoft. The portal integrates users to systems, applications, content, and data.

Why Portals Fail

Everyone touts the great successes of portal technology. What is really worth understanding before one takes the plunge, however, is how and why enterprise portals have failed to deliver on their promises. And rest assured, there have been some spectacular and expensive failures in the rush to create and deploy them. Overall experience shows that there are a predictable handful of mistakes that will almost certainly spell portal doom.

Lack Of Actionable Functionality

Portals are designed to integrate content from disparate sources. This can be a technically demanding task, especially in a climate of reduced IT staffing and resources. For this reason, deploying a "first cut" portal that functions as a presentation layer for related stovepipe apps might seem like an obvious initial step, but it’s a mistake. Without the ability to interact with the information, users will avoid the portal and use the underlying apps. Keeping people at arm’s length from the tools and content the portal serves detracts from productivity, and appears to have no useful purpose other than centralization of control.

Brittle Connectors Between Portals and Content

In the rush to deploy portals, IT departments may find themselves the custodians of explosively growing populations of portlets, pagelets, and gadgets. These connectors between portals and content are inherently subject to the same versioning, quality assurance and compatibility issues as other software objects. In the case of portals, though, they occupy an ill-defined region in the overall software architecture, the exact nature of their roles and behaviors highly dependent on what surrounds them. This makes management of deployed portals complex and unpredictable. For example, if a connector displays data from a stovepipe application, must the connector be revised when the app is upgraded? What about the connectors to which it connects? How does one track the version status of the portal as a whole? The inherent difficulty of synchronizing versions of applications, connectors and the portal itself may mean users get a lower quality of service than they did using standalone systems.

A related problem is that a portal may coalesce dozens of connectors, applications and content sources. Every one of these is a potential point of failure. Diagnosing and correcting problems is complicated by the sheer number of components, and the lack of a definite architectural standards makes it difficult to create effective diagnostic tools. Finding and fixing problems relies mostly on the institutional knowledge of an already overtaxed IT staff. As the portal ages, maintenance burdens for generations of connectors
may overwhelm support resources.

Content Management Is Key

In a study conducted by leading pure play vendor Plumtree, organizations overwhelmingly reported that they had two main interests in portal technology. First, they wanted to effectively manage enterprise content; and second, they wanted a tool to support and manage collaboration. These two objectives are closely related. Most collaboration is based on content, and collaboration results in the creation of yet more content. In essence, then, preserving, expanding and leveraging content is the most important motivation for the adoption of portal technology.

Given this objective, it is certain that when enterprise managers use the term "portal" they expressly don’t mean the presentation layer of a software application. Instead, they envision synergistic interpersonal cooperation, informed by access to a complete picture of relevant information assets. With this in mind, its clear that creating an effective portal is not a software project; It’s a corporate communications project that has a software component. For a portal to be effective, it must proceed from an understanding of the roles of people who are collaborating, what constitutes appropriate and effective communication between them and, finally, what content they require.

Market Trends

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To Play or Not Play

This year’s trend clearly favors big computing, at least partly in response to the huge marketing investment infrastructure vendors made in early 2002. Emerging standards for plug and play content and Java based interoperable components could shift the momentum away from single vendor solutions. For portal technology consumers, it is a good time to keep options open. Broad adoptions of JSR168 and WSRP will dramatically reduce development times and costs, as well as delivering innovation.

The portal market is ripe for some consolidation, and soon. Enterprise simply will not tolerate a broad spectrum of incompatible approaches indefinitely. Ignoring companies that will occupy niche support roles, there are three vendor constituencies that will have to fight for a share in the evolving landscape of the new enterprise desktop. Currently, each of the three advocate mutually exclusive development paths for portal technology.

The chief advantage of portals is integration of content. The first order of business is evaluating the state of content management in the organization. There are some clear-cut cases where a portal will provide benefits at a minimum risk to existing operations. Here are some of them:

- An existing content management system is in place and functioning. It manages the information the portal will serve
- Important business processes or transactions require users to access two or more systems in order to carry out their roles
- Recent mergers or acquisitions require the operation of two or more redundant systems, which cannot be disrupted or decommissioned immediately
- Business is conducted in two or more languages and managing and synchronizing content is a key concern.
- Institutionalizing collaboration is a strategic objective.
It is All About Enterprise Culture

Telephones offer a useful analogy here. Telephones systems have end user hardware, a software-based control system, and network infrastructure. Business never installs telephones with two inch cords. Even though this would significantly reduce cable costs and installation time, it’s intuitively obvious that no one would be willing to lie on the floor next to the wall in order to talk on the phone. Preserving the phone’s cultural role as a communication tool is far more important than technical details of installation and management.

Similarly, sophisticated portals, those that support collaborative business processes, are fundamentally interpersonal communication tools, and not primarily information technology products. The design and implementation of a successful process portal is entirely dependent on understanding the roles of collaborators, how they communicate, and what content they share. To create a successful process portal, place human engineering at the top of the priority list and center efforts on enhancing human cooperation.

About the Author

Nancy Nicolaisen is an author, researcher and former Computer Science Professor. Her latest book, Making Win32 Applications Mobile: Porting to Windows CE, was published in 2002 by John Wiley and Sons.

Web Links

Actuate: http://www.actuate.com/
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