



BRIO.PORTAL

How to Choose an Enterprise Information Portal Solution:

Seybold's 10 Keys to Enterprise Portals

A Brio.Portal White Paper from Brio Technology



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SELECTING THE RIGHT ENTERPRISE PORTAL

In a remarkably short period of time, the enterprise portal model has been embraced by both IT professionals and leading industry analysts as the most promising answer to the problem of connecting users with the business information they need to make decisions.

Based on familiar browser technology, enterprise portals offer end users "one-stop shopping" for business information. Through a portal, end users can easily access a broad range of structured and unstructured information from within an organization or available on the Web. Users search, browse through categories, or "subscribe" to dynamic information based on content. Portals also give users access to analytical tools that help them make the data meaningful for better decision making. There is no learning curve for users familiar with popular Web portals such as Yahoo or Lycos. By empowering end users to retrieve and analyze data, enterprise portals reduce the burden on support staff, improve corporate decision making, and extend access to business information to users beyond the firewall, including customers, business partners, and suppliers.

According to a forecast by Merrill Lynch, the enterprise portal market, essentially non-existent a year ago is expected to grow explosively. Not surprisingly, software vendors of all stripes have been racing to enter this emerging market. While start-ups race to develop new offerings, existing business intelligence (BI) tool vendors and vendors of document management solutions have been re-vamping and re-positioning their products to compete in the enterprise portal space. A number of products are already on the market, and many more are on the way—each claiming to offer the optimal implementation of the enterprise portal model.

In the current chaotic climate, IT executives need a way to cut through the hype and evaluate the various offerings based on necessary functionality. To assist them in this task, the Patricia Seybold Group recently published a comprehensive report entitled Corporate Portals: Next-Generation Business Intelligence (April 1999). The report examines first- and second-generation enterprise portal technology, and identifies ten keys that define the "essential requirements" for enterprise portal solutions. It concludes: "Vendors... need to demonstrate how they support these characteristics today, or how they will, in the near future."

Brio.Portal™, the Enterprise Information Portal from Brio Technology, currently offers the only solution to meet all ten of the Seybold Group's "essential requirements." Engineered from the ground up as an open, dynamic enterprise portal solution, Brio.Portal comprises a robust, multi-tier-distributed architecture and a family of tools to help organizations realize the promise of the Web. Brio.Portal provides users with broad access to information, regardless of where it is stored, and enables timely and reliable delivery of that information to all users, regardless of location. This white paper will describe how Brio.Portal conforms to the Seybold Group's requirements to offer complete, best-of-breed enterprise portal solution.

BRIO.PORTAL™, THE ENTERPRISE INFORMATION PORTAL FROM BRIO TECHNOLOGY, CURRENTLY OFFERS THE ONLY SOLUTION TO MEET ALL TEN OF THE SEYBOLD GROUP'S "ESSENTIAL REQUIREMENTS."

SEYBOLD'S TEN ESSENTIAL REQUIREMENTS FOR A ENTERPRISE INFORMATION PORTAL:

- 1 EASY TO USE
- 2 UNIVERSAL INFORMATION ACCESS
- 3 DYNAMIC RESOURCE ACCESS
- 4 EXTENSIBLE
- 5 COLLABORATIVE
- 6 CUSTOMIZABLE
- 7 PROACTIVE
- 8 SECURE
- 9 SCALABLE
- 10 MANAGEABLE

KEY #1: EASY TO USE

One of the greatest benefits of an enterprise portal, and the most important requirement for its success, is the ability to make decisional information easily available to untrained users. In a typical corporate environment, useful information—such as documents, reports, spreadsheets, and pictures—may be located anywhere on the network, on local hard-drives, even on end user desktops, or on departmental Web sites or ftp sites. Some of the most useful information is contained in corporate databases or output from a business application such as a mainframe legacy system or an ERP environment. Information is also often distributed via e-mail or groupware. Unfortunately, in the absence of an intuitive tool for accessing this information, users are unlikely to benefit from it.

Brio.Portal is designed for the untrained user, and makes finding business information as simple as using a Web browser. It employs standard browser technology with an interface as familiar as 'Yahoo.' Brio.Portal lets users browse categories or perform simple word searches to navigate to the information they need, without having to know which application or user generated it, or where it is located physically on the network. Moreover, users see only the information they are authorized to see, reducing the clutter of irrelevant information. Navigating between related business intelligence objects is as simple as clicking on a link.

Finally, Brio.Portal is the only product utilizing a true adaptive interface that automatically adjusts for the browser's capabilities so the user can access the system through whatever browser he or she is comfortable with, whether it uses plain HTML, JavaScript, or the latest cascading style sheets.

KEY #2: UNIVERSAL INFORMATION ACCESS

For an enterprise portal to serve as a window into an organization's vital information, it must provide broad access to any and all information resources that end users might require. Brio.Portal is engineered to support the broadest possible array of business intelligence objects, from reports, Word documents, spreadsheets, and data cubes to video and audio files, e-mail, live feeds, and information resources located beyond the firewall. Users have full access, subject to authorization, to both structured information (such as information stored in data marts, data warehouses, multidimensional databases, and relational databases) and unstructured information (such as Word or PDF documents) created anywhere in the enterprise. Brio.Portal also enables universal information access to content within Brio.Portal. In other words, applications or Web sites can display content driven by Brio.Portal with embedded logical URLs that point to Brio.Portal. To maintain security, Brio.Portal manages the content so application users are limited to only authorized information whether accessing it directly from Brio.Portal or through another application. (To learn more about Brio.Portal's security features, visit www.brio.com to download a white paper on the subject).

KEY #3: DYNAMIC RESOURCE ACCESS

In addition to providing end users with the broadest possible range of information objects, an effective enterprise portal must ensure that the information users receive is up to date. With Brio.Portal, users can dynamically create and view the most current reports simply by clicking on links, without any knowledge of the underlying application, as easily as if they were merely

opening a previously generated report. This powerful technology surpasses what is currently offered by vendors of report management software, which can offer dynamic access only to reports created within that particular reporting environment. In contrast, Brio.Portal enables end users to generate refreshed, real-time information from any application that can be accessed via a command-line interface (e.g., reports from ERP applications as well as other reporting systems such as Crystal, or business intelligence tools such as Brio.Enterprise or Business Objects). Brio.Portal provides dynamic access to the reporting capabilities of third-party applications via a Job Factory. The Job Factory is a small and highly portable Java program that is responsible for executing reports and queries. Moreover, Job Factories can be installed where the data resides and can receive parameters, such as username, password, date or time restrictions, along with the report request. From their browsers, end users can even schedule report updates to execute automatically based on parameters they define, and receive notification when execution is completed.

KEY #4: EXTENSIBLE

Typically, vendors make enterprise portal services "callable" by enabling third-party developers to either incorporate custom or OEM applications that call outside services or embed such services (or even another enterprise portal) into a Web site. Brio.Portal is an entirely standards-based product, requiring no desktop software other than a browser. Brio.Portal provides programmatic interfaces such as a Java API as well as utilizes the Extensible Markup Language (XML) as the open standard for integrating enterprise portals with third-party applications and data.

Brio's strategy is to bridge the gap between groupware and business intelligence applications. For example, Brio's integration with Lotus Notes brings together the largest enterprise collaboration and messaging system with the industry's dominant enterprise portal solution, enabling users to more easily share decision support data and business intelligence information. Most large organizations already have workflow management technology in place, from established vendors such as OpenText, Lotus Notes, or Documentum. Rather than reinvent the wheel, Brio's strategy calls for providing API-level integration with these products to offer a best-of-breed, integrated solution.

KEY #5: COLLABORATIVE

To get the maximum value from business information, end users must be able to share that information collaboratively with others in the organization. This means that they must be empowered both to "publish" information to selected users or groups, and to "subscribe" to relevant information that is posted by others. Brio.Portal provides robust functionality for both publishing and subscribing.

On the publishing side, end users can post information to the Brio.Portal repository, define restrictions on which users or groups are authorized to access the information, and place a priority on the document. Authorized "subscribed" to the appropriate group (i.e. Northeast Regional Sales) or report (i.e. Inventory) would then receive notification that an object had been posted. They would receive the information either as an embedded link directly to the object or receive the object itself as an attachment (if the notification were via e-mail). Subscription can also be based on priority. For example, users can request that they

only be notified of new documents with 'urgent' priority. Authorized end users can create their own groups to facilitate information sharing, using a Web-based administrative applet retrievable via the browser.

On the subscribe side, users can subscribe to groups or to individual reports for which they are authorized, receiving notification when the relevant business intelligence objects are posted to the repository. Moreover, the integrated reporting functionality of Brio.Portal enables exception-driven notification based on data values within the published report. For example, a user might request notification only if a daily scheduled report included a value within a certain range (such as inventory below x amount). Furthermore, users can define how they want to be notified (i.e. e-mail, pager, phone, etc.).

KEY #6: CUSTOMIZABLE

The enterprise portal must be customizable to meet the needs of each specific organization, and of each specific end user. With Brio.Portal, the concept of customization goes beyond the notion of simply creating a personal environment for users where they can arrange contents in the browser (e.g., corporate headlines). In fact, Brio.Portal enables mass-customization—that is, the ability to provide end users throughout the enterprise with personalized content based on their user name and password. Brio.Portal offers developers and administrators tremendous flexibility in customizing the enterprise portal solution for the enterprise. They have the ability to:

- Offer custom views to different groups of users (arranged by department, geographical region, etc.)

- Customize the categories and hierarchies used for organizing the information stored online
- Define keywords used for document search-and-retrieval.

Once an administrator (or user) defines permissions, Brio.Portal dynamically generates customized Web pages based on a user's security and access control. Developers can also customize the look-and-feel of the browser interface and add graphics to create a common corporate or departmental look-and-feel. They can also create a separate view for customers or suppliers accessing the system from beyond the firewall.

End users have the ability to personalize their own views at the functional level. Users can define their own filters for which business intelligence objects appear on their personal screens, "subscribe" to reports, or receive notification of available reports based on criteria they define. Established "favorite" categories or reports are one click from their startup screens. Brio.Portal's personal page capabilities allow users to construct, in a familiar browser/portal format (much like Yahoo and other popular Web portals), personalized views of the information they need. Unlike portals that simply offer report output and static objects, Brio.Portal lets users create personal views, subscriptions, and notifications of new content and/or critical data. End-users have dynamic point and click control over content and layout control over placement of content. In addition, end-users can enter URLs to link in Internet or Intranet content. They can include logos and images for URL links, as well as embed "smartcontent objects" (such as applets, tickers, etc.) in their personal page.

KEY #7: PROACTIVE

An empowering enterprise portal provides an infrastructure that enables users to be proactive in keeping informed with the latest news and information that will help them do their job better. Brio.Portal's ONE/EventServer provides subscription services for users to subscribe to and receive notifications. Distribution and event notifications notify users when relevant events occur. Using the ONE/EventServer, users can request to be notified when scheduled jobs or reports complete execution, when the contents in a category change, when a new version of an item is published, and when an existing item is updated.

In addition to using the ONE/EventServer, Brio.Portal's category-based browsing capabilities can keep a user proactive without much effort. Just as consumer Web portals offer users different options for finding information on the Internet, Brio.Portal provides the same flexibility to consumers of internal business information. On the opening screen, users navigate to the information they need through a Yahoo-like hierarchical directory structure with categories and sub-categories defined by the administrator. Brio.Portal can also extract the category hierarchies created in an ERP application (such as PeopleSoft), and use them as a framework for cataloging information objects within Brio.Portal. Using an existing hierarchical framework is likely to simplify navigation for end users familiar with the ERP application environment.

Finally, users of Brio.Portal can perform keyword searches that quickly generate lists of pertinent business intelligence objects in their fields of interest. As part of their search, users can filter the objects they

retrieve according to metadata classifications such as the type of object (i.e. spreadsheet, report, Word document, picture file, etc.), the date created, and its Brio.Portal category. As described above, some filtering is performed automatically based on user permissions and the group(s) to which the user belongs. Users can also define their own custom filters. By viewing the descriptions of each business intelligence object in the database, users can proactively make the final determination on the relevance of a particular object.

KEY #8: SECURE

A crucial feature of an enterprise portal is the ability to enforce security across all of the business intelligence objects available for access. While the need to individually assign security to objects has the potential to create an administrative headache, Brio.Portal solves the problem by integrating with an organization's existing authentication schemes (for example, those established for an ERP application). Objects can be automatically assigned security levels at the time they are generated by the external business application. Brio.Portal enables administrators to assign two classes of permissions: levels (owners, groups, individual users) and permission types (read, write, execute). Security enforced at the browser level eliminates unauthorized objects from view so the user does not know they exist.

Brio.Portal includes an authentication server that provides IT with control and flexibility to implement powerful enterprise-level security. The authentication sever can either be native or external. A multi-threaded server that is the source for all user and group definitions and for user subscriptions and preferences, it is the gateway to achieve a single sign-on integration with

BRIO.PORTAL FEATURES:

SELF-SERVICE ACCESS

Information access through standard Web browsers

CENTRALIZED MANAGEMENT

Control of ALL enterprise information

SEAMLESS INTEGRATION

Leverages existing technology and information assets

SCALABILITY

Distributed, multitier architecture

SECURITY

User-specific permissions for each content object

EXTRANET SUPPORT

BRIO.PORTAL OPERATES ON BOTH SIDES OF THE CORPORATE FIREWALL. THIS ENABLES MOBILE WORKERS TO ACCESS THE DATA THEY NEED. AND IT ENABLES CUSTOMERS, SUBSIDIARIES, PARTNERS AND SUPPLIERS ACCESS TO THE INFORMATION THEY NEED TO WORK WITH YOU.

LDAP, NT domains, and other applications. The authentication server includes a native user authentication driver, a sample driver for LDAP, and a software development kit for user development of drivers to support additional schemes.

In addition to enforcing permissions at the business intelligence object level, the enterprise portal must be able to prevent unauthorized access to corporate information by enforcing security across the network. Brio.Portal meets this requirement, incorporating a kerberos-like authentication scheme in addition to session management and network-level security.

As the Seybold Group report notes, security becomes particularly important when the enterprise portal moves outside the firewall to support customers, suppliers, and end users on home computers, notebooks, or hand-held units. Brio has placed significant emphasis on supporting these users, incorporating secure HTTP for sending encrypted information to and from browsers outside the firewall.

KEY #9: SCALABLE

The Seybold Group report specifies that, in order to ensure scalability to support "thousands of users and high volumes of concurrent requests," an effective enterprise portal solution must be based on a multi-tier architecture "in which the majority of processing occurs on a mid-tier application server running on UNIX or Windows NT servers." Brio.Portal surpasses this requirement with a multi-tier architecture that pulls information from across the enterprise, stages it in a middle tier, and delivers it via the Web browser. This architecture enables Brio.Portal to scale to support hundreds of thousands of users and a virtually unlimited number of business intelligence objects.

Brio.Portal's architecture "uses native Web server interfaces" (a Seybold Group portal requirement) to link with the Web server, and supports native connections to information sources on the back end. As described above, Brio.Portal dynamically generates Web page views based on the user's existing browser technology, and provides a standard service for interfacing at the command-line level with information-generating applications. Brio is also working closely with ERP vendors to offer seamless integration, using these integration capabilities as well as a recently introduced utility called ONE/QuickConnect to integrate specifically into PeopleSoft's existing security, categories, and content.

Brio.Portal provides a robust, distributed, multithreaded architecture with load balancing, as required by customers to meet the needs of their enterprise. Each of Brio.Portal's multithreaded services can be replicated to support increased demand, making the system almost infinitely scaleable. Replication of services also enables dynamic load balancing, and improves the fault tolerance of the Brio.Portal solution by eliminating any single point of failure. Brio.Portal's architecture addresses the multiple scalability dimensions of:

- Supporting tens of thousands of end users
- Creating content from thousands of sources (OLTP, data warehouse, and data mart servers)
- Processing terabytes of data
- Integrating across geographically dispersed servers and user communities

KEY #10: MANAGEABLE

An effective enterprise portal must be manageable. Brio.Portal's administration facilities provide dynamic, centralized management of all enterprise information. Using a Web-based publisher, administrators

can organize and manage categories and publish content to the portal. To do this, an administrator organizes and rearranges information into dynamically evolving categories with simple 'drag and drop' execution. Administrators can easily assign permissions and privileges at group and user levels to control what information end users can view, modify, or delete. They can also assign user-specific permissions for each content object in Brio.Portal, to permit users to view or add content. In addition, Brio.Portal's time-to live and versioning capabilities enable administrators to ensure that users are basing decisions on current rather than obsolete content.

Brio.Portal operates on both sides of the corporate firewall, enabling administrators to integrate with other resources, enabling workers to access needed data, and enabling an e-enterprise's customers, subsidiaries, partners, and suppliers to access the information they need.

While the majority of end users will be content with the ability to easily navigate through up-to-the-minute, dynamic information, advanced users will require more powerful tools for reporting and data analysis. Brio Technology offers the most powerful and comprehensive business intelligence products of any vendor. For production reporting, Brio.Report™ with SQR Server provides an industrial-strength engine for extracting, transforming, and distributing data throughout the enterprise, offering native access to over 125 combinations of databases and operating environments. Brio.Report offers: report output in a range of formats, including interactive HTML, Adobe's PDF, text, and postscript files; multiple output files and transactions from a single pass of the database; and a powerful, graphical report-building environment. In addition, a Brio.Portal Job Factory enables it to integrate with reporting tools from third-party vendors.

The Brio.Portal solution is further fortified with Brio.Enterprise, a suite of powerful query, analysis and reporting tools that

enable users to perform business intelligence functions from basic status reporting to sophisticated, interactive OLAP. Via the Web, users can drill down into a report or OLAP dataset to view the underlying data for more detailed analysis. This toolset offers industry-leading business intelligence functionality that spans the enterprise. Furthermore, Brio.Portal's open technology gives users transparent access to business intelligence tools and data from third-party vendors (i.e. Cognos, Business Objects) so that companies can leverage their existing investment in other solutions.

CONCLUSION

Introducing its Ten Keys to Enterprise Portals, the Seybold Group notes: "Today there are a handful of vendors selling [enterprise] portals. By the end of 1999, there will be dozens of products...competing for your interest and IT budget." Brio believes that the keys set forth in the Seybold Group report offer a valid starting-point for performing a comparative evaluation of enterprise portal implementations.

The optimal enterprise portal solution for a given organization will depend on that organization's IT environment and its business needs. However, as the Seybold Group report makes clear, certain essential functionality underlies all successful implementations of the enterprise portal model. Brio Technology, the leader in the enterprise portal space, has demonstrated its ability to provide this essential functionality—not in theory, or in a future generation of its product, but in practice at numerous client sites currently in operation. While competing vendors struggle to bring their enterprise portal implementations to market, Brio.Portal provides a powerful, flexible, and scalable architecture capable of delivering the promise of the enterprise portal model today.

FOR MORE INFORMATION

To find out more about Brio Technology and its enterprise information portal technology, please visit our Web site at www.brio.com or call us at 1-877-289-2746.

ABOUT BRIO TECHNOLOGY

Brio Technology, Inc. [Nasdaq: BRYO] is the only business intelligence software provider to offer a complete platform that addresses the decision processing needs of today's Web-enabled e.enterprise. The Brio ONE platform—which includes Brio.Enterprise, Brio.Report, and Brio.Portal—enables organizations to build and deliver business intelligence, enterprise reporting and analytic applications to users in intranet and extranet environments, all with unmatched ease of experience. Brio ONE also enables customers to derive higher business value from all of their enterprise information sources, including enterprise resource planning (ERP), sales force automation (SFA) and customer relationship management (CRM) applications as well as data marts, data warehouses and others. Brio products are available through direct sales and professional services organizations located in the United States, Canada, the United Kingdom, France, Germany and Australia, and more than 40 countries worldwide through VARs, resellers and distributors. Brio has commercial relationships with companies such as Hewlett Packard, IBM, Microsoft, Oracle, PeopleSoft, SAP and Sun Microsystems.

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