Start at the Very Beginning

Performance-Centered Portals

by Gary Elsbernd

Let's start at the very beginning,
A very good place to start,
When you read you begin with ABC,
When you surf you begin with...what?
—with apologies to Rodgers & Hammerstein

Many technologies cause designers to lose all sense of moderation. When fonts became widely available, newsletters became ransom notes, with upwards of a dozen fonts on each page. Looking at the World Wide Web today makes one wonder how we ever got by without animated graphics. Now that the technology is in place to link resources around the company and to the Internet, the same lack of rigor is being applied to the design of intranet portals. Vendors and consultants will extol the virtues of commercial portals, corporate portals, enterprise information portals, and learning portals with all of the latest functionality, but designing a portal that works is more important than having one with all the possible bells and whistles.

Jakob Nielsen estimates "the world economy will lose roughly $100 billion because of bad intranet usability" (Nielsen, 2001). Performance-centered portals offer the opportunity for companies to reduce this loss by providing just-in-time access to knowledge, task structure, and data; centralized access to information; and communications.

What Are They?

Let's start by making sure we are talking about the same thing. Portals are gateways from your desktop computer to connected resources. They provide a centralized place from which people can access company files, locate information on the Internet, and communicate with a community of users. Portals are not intended to be a destination on the Web; rather, they are a starting point that funnels users into the useful resources amidst the cacophony of available websites.

There are several types of portals in use today. Each type has its own goals, as described in Figure 1.

PORTAL TYPE	GOALS
Commercial	Widespread popularity is the goal, because the number of viewers directly impacts the advertising revenue for the site. This focus on widespread popularity leads to information that appeals to a broad range of people but that ultimately offers little depth in any specific topic.
Learning	The goal of learning portals is, appropriately enough, individual development or learning. Learning portals provide navigation, tracking, and training modules, as well as communication toward that end.
Corporate	Companies have implemented corporate portals for a variety of reasons, but most commonly the goal is to organize content and give users access. In addition to organizing and providing access to content, companies have the goal of providing interactive applications such as benefits administration.
Performance-Centered	Individual competence is the goal, with the overarching goal of enabling the organization to react faster, more efficiently, and with better information.

Figure 1. Types of Portals.

Commercial Portals

Large commercial portals such as Yahoo! and Excite are intended for the general public. They follow a traditional broadcasting metaphor involving little customization other than online searches and limited capabilities for content selection. Commercial portals are often referred to as channels, since they tend to aggregate Web information into a single visual presentation.

Think of commercial portals as the midway at the carnival. Everyone is shouting at you and wanting you to spend your time and money with them. There is chaos and information overload, and everyone is promoting his or her own agenda with no regard for what you really want. This makes sense. Because they are built for the general public, they are not specific to any audience group. Advertising money is spent to ensure some sites are featured more prominently than others, regardless of user needs. What commercial portals do well, however, is bring together diverse information across a broad spectrum of topics.

Learning Portals

Learning portals centralize and coordinate learning tasks and administration in an easy-to-use location. Users can log on to find out where they stand in the curriculum, search for new training opportunities, and navigate to online learning experiences. Learning portals can make the chores of communicating schedules, registering learners, and administering performance tracking systems easier. They can also develop and support learning communities easily by combining access to learning with real-time chat rooms and discussion forums.

The problem with learning portals, as they are envisioned most often, is that they isolate training. Users must identify a situation as having a training need, leave the work context to enter the learning portal, complete the learning experience, and apply the learning when they return to the task. Learning portals also support the view that training is the best intervention for any performance issue. Just as learning is a necessary but not sufficient condition for performance in organizations, a portal that ignores performance interventions and resources other than training is not complete.

Corporate Portals

Most corporate portals, as implemented today, coordinate rich content within a narrow community. These portals are often developed from large enterprise intranet applications to support documents and information sources from the individual departments. The content is much broader than a commercial portal, because there is far greater complexity to the information used to make organizational decisions.

The drawback of the corporate portal evolving from department databases is that the documents included were developed over time with no thought to standards or integration. The structure of the information for search and navigation tasks, and the focus of the tool itself, are splintered. Perhaps worst of all, most corporate portals today are data centered. They are developed around the information that is easy for the company to incorporate and stored in the way that is easiest to store the information. Users are forced to structure their own task and determine, based on the information they think they need, how best to find and apply it.

Performance-Centered Portals

Performance-centered portals provide access to knowledge, data, task structure, job aids, and tools that support the organizational goals. Performance-centered portals go beyond navigation and centralization of information to directly promote organizational values and individual performance by presenting focused and customizable corporate resources at a click. Performance-centered design can be an attribute of commercial, learning, or corporate portals, but few portals have taken the design steps to enhance individual performance.

How Can I Recognize Them?

Performance-centered portals are the result of extensive analysis and iterative design. Designers must study the goals of the organization, from the guiding mission and values down to the individual workgroup and individual performer. Organizational goals and values help determine the tone and scope of the tool. Traditional design tools such as audience, environment, and task analysis generate requirements for tools, integration, and specific portal functions. Designers will evaluate the results using the true measure of

CHARACTERISTIC	PORTAL DESIGN IMPLICATIONS
Establishes and maintains a work context	Instead of making the portal a reference or navigation tool only, allow and support users to accomplish tasks directly. Design the portal as a primary work interface to support business objectives.
Aids in goal establishment	Represent task structure and heuristics to suggest and support task performance.
Structures work process	Embed workflow into the portal, so one task flows into the next.
Contains embedded and accessible integrated knowledge	Provide seamless access to support and knowledge through search and structured access tools such as a directory and direct links.
Institutionalizes best practices	Maintain the tasks and workflow embedded in the portal. Use the portal to collect suggestions, discussions, and changes to best practices.
Exemplifies usability factors: • Using natural language that reflects the workplace and customers • Visualizing information using metaphors • Providing alternative views of the application interface and/or data • Providing evidence of task progression	Display information in the easiest and fastest representation that accomplishes the objectives. Continually involve the users to ensure that jargon, shortcuts, and tacit knowledge are not left out of the tool.

Figure 2. Characteristics of Performance-Centered Portals.

performance-centered portals, impact on the individual and on the organization.

Impact on the Individual

Grudin's Law states, "When those who benefit are not those who do the work, then the technology is likely to fail or, at least be subverted" (Norman, 1993, p. 113). In portals, even the best design is destined to fail unless the individual is motivated to use the tool. From an individual's perspective, the portal must be accessible, capture attention, be personally relevant, and inspire confidence to perform tasks.

Performance Centered. An article entitled "Granting Three Wishes through Performance-Centered Design," defined the characteristics exhibited by performance centered systems (Gery, 1997). Portals designed with performance in mind can exhibit each of these criteria, as described in Figure 2.

Customizable. To support individual performance, the portal must support individual needs. Customization to the individual, task, or role level can provide additional focus on the skills required and the information needed without overwhelming the user with irrelevant information.

At the task-customization level, the portal delivers personalized content based on what each user is actually doing. Based on the task selected by the user, the portal can present information, guidance, and relevant data in different representations and related tasks such as approvals, routing, or followup.

At the individual customization level, users can select from a set of predetermined "panels" of related tools, data, or other resources to develop the portal that best meets their immediate requirements. The power of the tool lies in making it customizable by the individual to mix and match suitable panels for the task at hand at the moment of need.

Customization for role occurs over time, as project groups and work teams request or create unique panels incorporating their best practices and most likely sources of information. Individuals and project teams can also contribute new processes, procedures, and information to this dynamic resource.

Cohesive. The portal must incorporate and provide seamless connections to all relevant systems for the user. If the portal has to be invoked by the user, it won't be. If the portal is a tool bolted on top of the real work and makes the task more complex or gets in the way, it will be turned off. If users are forced to access the sources, tools, and support necessary for their jobs in other ways, the portal becomes just one more tool in a long list and workers will forget it.

To be cohesive, the portal must package task structuring (job aids, checklists, workflow communication) and projects (data, information, reports, outputs) together. The portal provides one place to access communications, search for precedents, propose new standards, complete tasks, and contribute to the organization. In such an environment, the portal is the only logical starting point to complete tasks.

Collaborative. A rarely discussed feature of portals is synchronous and asynchronous communications. The performance-centered portal can build communities of interest within an organization, connecting people and information, enabling sharing and collaborative work based on people's knowledge, skills, abilities, and interests. People can ask for help from others in different departments, locations, and even divisions, using real-time chats or offline discussion groups. Providing forums for workers in diverse departments or locations can generate new ideas or applications that isolated workers would never come up with. Capturing and replicating past successes without having to experience the same learning curve can lead to even greater accomplishments, as workers are able to build on what is known anywhere in the organization and share expertise on an enterprisewide level.

Coordinating. Performance-centered portals can coordinate efforts inside and outside company walls. Integrating communications tools such as e-mail, synchronous and asynchronous discussions, communities of practice, and bulletin boards can make the portal the rough equivalent of the water cooler. Users can communicate to ensure alignment on projects and practices. Project status and resource

allocation become panels available to all project members at a glance. Approvals, routing, and documentation become routine, allowing employees to focus on the task at hand instead of administrative bureaucracy.

And it goes beyond one company. Imagine having direct links to and from supply vendors, transportation and delivery companies, and service contractors. Project members can use these links to search for and request service or supplies. What's more, a company can allow these partners access to your portal so they can track supply levels, verify delivery information, and proactively monitor service calls.

Impact on the Organization

Individual needs aside, designers must ensure that performance-centered portals exhibit the following requirements from an organizational perspective.

Value. To be used and to reach their potential, performance-centered portals must show enduring value to the users. Portals combine external and internal content into a single place, allowing employees to find and get connected to anything or anybody, so that they will want to return to the site. If people don't have a reason to come back, they won't, and the company has wasted time and money, let alone the efforts to collect the best practices and resources available.

Cost-effectiveness. The idea of a portal is to have a self-sustaining organism that grows with the company. In pursuing company objectives, it can't cost more to build and maintain than it provides in value. Ideally, portals must be able to be maintained by internal resources. This is possible only with open and automated system utilities for suggesting and adding new task structures, job aids, panels and other resources. The people who are involved in the work provide new information directly, using templates and guides. These suggestions are subject to review and modification by the workgroup and community of users before being added to the collective knowledge. The workload is distributed and performed by the people who will directly benefit from it.

Updated Status. The portal can be updated either automatically or manually, but it must be updated so there is new content to keep performers interested. "Spiders," or automated programs on the Web, can be used for indexing and searching new information, reports, and data. Dynamic links to subscription services such as the weather, stock prices, and press releases can provide up-to-the-minute information directly on the desktop. Information is refreshed regularly, providing incentive for continued use.

Consistency With Organizational Values. Perhaps most important from a top-down perspective, portals can be used to promote the culture of an organization by providing resources and benefits to individuals that are in line with organizational values and principles. Organizations can provide easy access to Internet resources and partners with proven value to the company on the portal. The representations, tone, voice, and many other aspects of how the information is delivered contribute to the experience the user has and the resulting feelings toward and about the organization.

Where Do I Start?

The promise offered by the corporate portal to capture and share knowledge is very appealing, especially for the knowledge-based enterprise suffering information overload. However, the reality is overwhelming. How do you design and build a portal that provides not only access, but also productivity to an organization?

1. Collect What You Have

If you were to index all of the company's intranet pages (with an in-house spider or webcrawler) and if you could design a simple, yet effective, home page that offered search and drill-down menus by topic, maybe you could get all employees to use it as their home page when they load their browsers. Now you have a static repository of explicit knowledge used as an external tool. That is a good start, but don't stop there.

2. Bring In New Information

Add commercial services and subscription information to the portal, transforming it into a dynamic tool for gathering and presenting real-time information that can impact your business decisions. Now the portal is becoming a living tool. Keep going.

3. Integrate With Internal Tools

Include access to employee self-service benefits and internal databases. Include scheduling and electronic forms. Ensuring that the portal is a working tool that allows individuals to accomplish tasks makes it central to your objectives. Users no longer have an option to access the portal; it is required.

4. Make It a Tool for Collaboration

Add communications tools such as chat, threaded discussion groups, and surveys. Now your portal is a two-way tool for collaboration within and outside the organization. People can find information, challenge assumptions, and interact to devise creative solutions to problems. Connecting people allows the portal to become a growing resource that learns as the organization grows.

5. Provide Focus

Finally, provide the overall focus on performance that the organization needs. Create work flows, task structuring, wizards, and assistants that not only support the tasks, but are tasks in themselves. Reviewing benefits information, approving project plans, or contributing to a discussion of

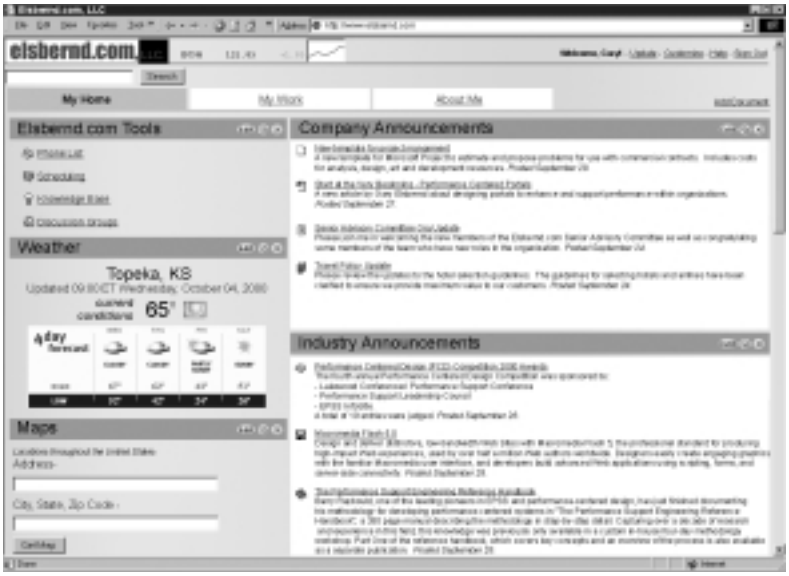

Figure 3. Entry Portal Page Supporting Organizational Goals.

the budget could all be accomplished through a properly designed portal, without requiring users to go to another application. Using embedded and extrinsic support such as cue cards or help, users could inhabit an environment in which they learn as they accomplish the tasks in their job. An integrated approach allows users to concentrate on organizational needs instead of spending time trying to figure out what application to use. The portal ceases to be a separate tool and becomes part of the work itself.

What Does It Look Like?

What would this all look like? Imagine an entry portal page that collects information from internal and external sources and presents it in a snapshot. The page is customizable for the individual, but it generally supports organizational objectives and provides a bulletin board for important information that impacts the company. The page provides links to communications, support, and productivity tools. The page serves as a "dashboard," collecting goal- and performance-oriented information into one concise picture for employees. The initial page may look like Figure 3.

Then imagine a page devoted to the individual's project and specific tasks. The user gets a prebuilt project page or selects from a series of performance interventions (job aids, templates, tasks, reference information, etc.) available on a menu. Panels that can be customized allow users to select information sources and project-specific resources as well as scaffolded support. Employees can use the tools as long as they are necessary or useful and then move them down on the page or turn them off altogether (removing the scaffolds) in favor of more advanced panels, as shown in Figure 4.

The ability to customize allows users to line up their most useful tools in an order that makes sense to them, and to leave less desirable panels off.

The most important part of designing a performance-centered portal is asking the right questions. You must know what the organization needs, from the overall mission to the work team and individual goals, what the task flow is and how it determines what information goes together in a panel, and how to support performers in using and customizing the portal to maximize productivity. Anticipating questions and providing answers and tools supports performers immediately.

Summary

While portals are almost mandatory in companies these days and everyone is trying to get into the act, true performance centered portals are rare. According to a Merrill Lynch report in *InfoWorld*, revenues from the Enterprise Information Portals market could top $14 billion by 2002 (Fitzloff & Gardner, 1999). Articles about how to build an intranet portal are popping up in information technology magazines, and Web consultants hoping to cash in on the latest tool are circling. Unfortunately, the technology has developed much more quickly than the thinking about portals.

As instructional and performance technologists it is up to us to determine why portals will be built and what they will bring to our organizations. Creating a portal that exemplifies performance-centered design benefits the individual and the entire organization.

Figure 4. Project Page Supporting Communications and Best Practices.

References

Fitzloff, E., & Gardner, D. (1999). Web opens enterprise portals. *InfoWorld* [On-line]. Available: http://www.infoworld.com/cgi-bin/displayStory.pl?/features/990125eip.htm

Gery, G. (1997). Granting three wishes through performance-centered design. *EPSS.com* [On-line]. Available: http://www.epss.com/lb/artonlin/articles/gg8.htm

Nielsen, J. (2001). Intranets save time—But for whom? *Business 2.0* [On-line]. Available: http://www.business2.com/articles/mag/0,1640,14628,00.html

Norman, D. (1993). *Things that make us smart*. Reading, MA: Addison Wesley.

Related Readings

Berst, J. (2000). Yahoo schmahoo! Why corporate America is disowning consumer portals. *ZD Net* [On-line]. Available: http://www.zdnet.com/anchordesk/story/story_3138.html

Brown, E., Dolberg, S., Walker, J., & Boehm, E. (1998). Searching the Intranet. *Forrester*. Available: http://www.forrester.com/ER/Research/Report/Excerpt/0,1338,3804,FF.html

Finkelstein, C. (2000). The emergence and potential of enterprise information portals. *TDAN.com* [On-line]. Available: http://www.tdan.com/i010fe02.htm

Firestone, J. (1999). Defining the enterprise information portal. *Executive Information Systems, Inc.* [On-line]. Available: http://www.dkms.com/EIPDEF.html

Firestone, J. (1999). Benefits of enterprise information portals and corporate goals. *Executive Information Systems, Inc.* [On-line]. Available: http://www.dkms.com/EIPBenefits.html

Stultz, D. (1999). *Latest fad–Corporate portals* [On-line]. Available: http://it.about.com/compute/it/library/weekly/aa062399.htm

Walker, J. (1999). Building an intranet portal. *Forrester* [On-line]. Available: http://www.forrester.com/ER/Research/Report/Excerpt/0,1338,5462,FF.html

Gary Elsbernd is a Senior Consultant and Retail Practice Lead with Ariel Performance Centered Systems, Inc., the leading provider of consultation and design for performance support and performance-centered system design. At Ariel, Gary specializes in intuitive system designs that create and support organizational performance. Prior to joining Ariel, Gary was Project Manager for the award-winning Retail Performance Support System at Payless ShoeSource. This experience designing highly integrated performance solutions led to Gary start his own firm and eventually join Ariel, where he practices his skills with Global 2000 clients. Gary maintains a keen appreciation for diversity challenges facing global retailers.

Gary is currently in the Instructional and Performance Technology graduate program at Boise State University, developing additional insights into electronic learning and support options. His undergraduate degree from Washburn University of Topeka is in Public Administration. He may be reached at gelsbernd@arielpcs.com.