



# The IP's guide to the galaxy of portal planning

The galaxy of portal planning

## Part I – drafting a portal vision

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### Abstract

**Purpose** – This article is the first in a four-part series that aims to illustrate the processes involved in planning a portal and creating a portal definition document.

**Design/methodology/approach** – Based on a review of the academic and industry literature and using a case study, the authors share their experience in planning the Florida ExpertNet Research portal.

**Findings** – Portal development is a complex and costly endeavor that requires meticulous planning and design. As with any system development initiative, the time and energy spent in the planning process is reflected in the success or failure of the end product. Creating a portal vision is the first step in developing the portal definition document and includes the following areas: mission statement, objectives, needs assessment, creative layout, benefits, and funding and sponsorship.

**Originality/value** – This series will be useful to the information professional who is contemplating portal development and may be used as a model in developing a blueprint – the portal definition document. Whether the information professional is considering doing the development or outsourcing, it is important to understand the architectural requirements of a portal.

**Keywords** Portals, Project planning, Knowledge management, Information management

**Paper type** Case study

### Introduction

The portal has rocketed upwards to become the most powerful tool for the delivery of customized data to the end-user. Never before have information professionals had such power to deliver information to the right person at the right time, and, more importantly, create a virtual environment where individuals can collaborate, communicate, conduct research, and plan activities based on a common interest. The portal is the ultimate tool for adding value by the way in which it offers a single point of entry through a common interface with information, resources, and business processes based on the end-user's needs and specifications.

This article is the first in a four-part series that illustrates the processes involved in planning a portal and creating a portal-definition document. As with any system-development initiative, the time and energy spent in the planning process is reflected in the success or failure of the end product. Portal development is a complex and costly endeavor that requires meticulous planning and design. This series will be useful to the information professional who is contemplating portal development and it may be used as a model in developing a blueprint – the portal-definition document. The portal-definition document consolidates and prioritizes all the requirements of the portal as defined by the communities of interest. Whether the information professional



is considering doing the development or outsourcing the process, it is important to understand the architectural requirements of a portal. Incorporated in the articles will be a case study of the development of the Florida ExpertNet Research Portal. Part I includes a general overview of portals and the specifics of defining a portal vision, the first component in a portal-definition document.

### **Florida ExpertNet**

The Clearinghouse for Applied Research and Public Service (Clearinghouse) established Florida ExpertNet in 1998: it is a web-based knowledge management system (KMS) that provides a searchable network for users to access experts in hundreds of centers and institutes and to thousands of individual faculty members with proven expertise within the State University System (SUS) of Florida. The Clearinghouse was given the challenging task of developing a system that would capture the applied research expertise contained within the 11 universities that make up the SUS (over 6,000 principal investigators, 60,000 funded projects, and approximately 500 centers and institutes). The logical approach to this task was to develop a KMS that would allow individuals to access a unified system where they could participate in a meaningful way.

Prior to the development of Florida ExpertNet, an individual looking for specific expertise within the SUS would have to go to each university's web site. No single interface existed that would provide the end-user with a comprehensive overview of available expertise within Florida's universities. Florida ExpertNet was the solution to this problem. As a KMS, it has been successful in getting organization members (university principal investigators and center/institute directors) to participate, by populating their records with information about their expertise, and by using a taxonomy to classify their areas of expertise.

In 1998, the Clearinghouse was on the leading edge in developing a fully interactive KMS that utilized the full power of the web. However, because of changes in technology, the Florida ExpertNet system can currently be characterized as a legacy system. The move to a more robust technical infrastructure made the opportunity to transition to the web portal possible.

### **What is a portal?**

The term "portal" is used loosely to describe various types of web sites or systems. For the purposes of this paper, we will define a web portal as a web site that provides the ability to use a secure username/password and to customize the content based on specific interests and needs.

There are various ways of describing portals. Two commonly used terms are "vertical" and "horizontal". Scope and audience differentiate these two portal types. A horizontal portal is a broad, general portal usually aimed at consumer audiences. It typically offers free e-mail, personal home pages, instant messengers, news, weather and more. MyYahoo! is an example of a horizontal portal. A vertical portal (sometimes referred to as a "vortal") provides information and services related to a particular subject or industry. MyFlorida.com is an example of a vertical portal that provides user-customized information about Florida government.

The Florida ExpertNet portal will be a vertical knowledge portal focusing on research within Florida's universities. It will provide information, collaboration, and research tools, and access to expertise will be user-customized via content filters based on subject areas.

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Functionality is another means of categorizing portals. Dias (2001) describes several types of portal based on function:

(1) *Decision support*:

- information (organizes collections of information by subject);
- business (facilitates access to internal documents and information); and
- decision processing (provides value-added information on demand).

(2) *Collaborative processing*:

- collaborative (provides groupware tools and work-flow systems); and
- expertise (facilitates access and connection to individuals based on expertise).

(3) *Decision support and collaborative processing*:

- knowledge (is a combination of an information, collaborative, and expertise portal); and
- enterprise information (uses metadata and XML to integrate unstructured data to structured data through a personalized intranet interface).

*Why transition to a portal?*

The decision to transition to a portal was based on the desire to expand the scope and capabilities of ExpertNet. A portal would provide the ability to connect end-users to a single gateway of customized, personalized, consolidated, integrated, and enhanced information. A portal would also provide the ability to incorporate external data from outside of the KMS to provide for the most comprehensive access possible to needed information.

The primary objective in creating a portal is to provide a seamless view of the Florida university research environment, which logically presents information by interest groups with enhanced delivery. Every registered user should be able to access and organize a broad range of customized information, collaboration, communication, planning, and research tools.

Transitioning to a portal also provides the opportunity to add new resources. For example, there are various sources of information about research expertise in Florida's universities that currently are not published on the Florida ExpertNet web site. Some of these sources include the media relations and sponsored research offices at each university. These content providers publish and disseminate research information on a daily basis that is not currently captured in Florida ExpertNet. Through the portal, a registered user will be able to receive pertinent updates from these providers based on content-filtering preferences.

*The role of knowledge management*

If a portal is to be successful, it must have as its foundation a comprehensive knowledge management system (KMS). The portal is the tool that links the various silos of KM (internally and externally), in a meaningful way, into one unified source to facilitate policy making and decision making. "The portal is the interface, the place where information exchange and knowledge transfer takes place, but it is only one component of successful KM" (Cloete and Snyman, 2003, p. 237).

It is important to understand that a portal does not replace a KMS, but instead is a tool that interacts with it to serve data based on the specifications of the end-user. The

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information industry frequently uses the terms “KM” and “portal” interchangeably, as if one replaces the other. Often the promise of what a portal can deliver is not provided by the technology, therefore setting the customer up for disappointment and possible failure. As stated by Cloete and Snyman (2003): “[T]hrough clever software vendor marketing, companies might be misled to think that implementing a portal is equal to implementing KM” (p. 236).

The reason for transitioning Florida ExpertNet to a portal is due to its huge success as a KMS. In fact, its success in collecting and organizing a multitude of rich data that describes expertise in Florida’s universities forced the Clearinghouse to develop a better solution for mining and delivering the data in a more meaningful and personalized way. If your KMS has not been successful, do not make the mistake that the portal is the magic tool that is going to fix it all. Before transitioning to a portal, it is important to take the time to evaluate properly whether the problem is with the KMS or is simply related to the method of delivery and access. If the problem is inherent in the method of delivery and access of the KMS, then a portal may be a solution.

#### *What is a portal-definition document?*

A portal-definition document is the blueprint that outlines the overall portal structure and includes the following components:

- vision;
- content-management strategy;
- management framework; and
- development and implementation strategies.

The definition document consolidates and prioritizes all the requirements of the portal as defined by the stakeholders.

Although much of the process in defining the vision of a portal parallels the process of designing a web site, the level of complexity and required resources cannot be compared. Like most development projects, the planning and design phase can require a significant number of resources. It is just like building a custom house. For production, the builder needs a blueprint with accurate and detailed specifications. If the blueprint is correct and the builder implements it correctly, the end product is what the customer wanted. The same is true when designing and building a portal – without the planning and documenting process, the chance of portal success is reduced.

#### **Portal vision**

Creating a portal vision is the first step in developing the portal-definition document. The portal vision presents the “big picture”, showcasing who it will serve, what it will provide, and how it will be used. The vision also outlines the benefits and return on investment (ROI). The vision plays an important role in helping stakeholders focus on the major objectives of the portal and facilitates critical decision making during the definition and development processes.

The portal vision includes the following sections:

- mission statement;
- objectives;
- needs assessment;

- creative layout;
- benefits; and
- funding and sponsorship.

### *Mission statement*

The mission statement is a general statement of purpose and scope and should address the following questions:

- Who will the portal serve?
- What information or services will the portal provide?
- How will the information be delivered?

The following example is the mission statement for Florida ExpertNet:

The Florida ExpertNet Research Portal (Research Portal) will provide a Web interface where the public and private sectors in Florida and throughout the world can gain access to information about Florida's university-based research in one central place. It will be a customized and personalized entrée to useful research information and resources available throughout the state of Florida.

The Research Portal will transform the way end-users access valuable information about Florida's university-based researchers and their activities across disciplines. For example, from any Internet-connected device, registered users will be able to access information about research and expertise within Florida's universities, based on filters they have selected (i.e., subject areas, universities). The Research Portal will provide access to tools such as calendars, links, publications, federated search engines, etc., that allow users to create and organize their research information. Visitors (or guest users) will have access to general information spanning all the universities in Florida.

The Research Portal will enable each university office of media relations, technology transfer, and sponsored research to populate the portal with relevant data in real time. This symbiotic relationship will help all groups accomplish the goal of promoting university research by creating a unified foundation for distributing information to thousands of potential users.

### *Objectives*

Clearly defined objectives are key to the success of any project. Although there are many possible objectives for portals, it is important that they support user goals. Portals can be built to achieve some or all of the objectives specified in the design. However, there may be limitations to what can simply be "added" incrementally. Therefore it is important to ask those critical questions during the planning phase. When setting objectives for a portal, it must be remembered that an integrated work space is far more valuable than simply aggregating content.

The objectives for the Florida ExpertNet Research Portal are as follows:

- promote university-based research activities and opportunities;
- collect and aggregate resources;
- provide value-added information;
- implement a robust and effective content-management strategy;
- deliver relevant and up-to-date information through user-defined filters;

- provide easy, reliable access to a variety of disparate information services;
- provide access to expertise within Florida's universities;
- create opportunities for collaboration;
- facilitate community building based on research interests; and
- provide an environment where users can create, store, and share information.

### *Needs assessment*

After defining the mission statement and objectives, the next step is to determine the needs of the target audience. The tools for determining user needs are the same ones used for conducting a needs assessment for any user-centered product, such as focus groups, surveys, interviews, and questionnaires. However, in the general literature, focus-group sessions are the most commonly used method for portal design. All major stakeholders (end-users, administrators, content providers, and so on) must be included in the assessment process to ensure portal design success.

Table I shows a list of standard technical and user requirements that should be taken into consideration during the needs-assessment process. The need or level of specific requirements will be determined by the scope and objectives of the portal.

Requirement	Description
Capacity	The number of users and concurrent users who need to be supported by the portal system
Customizable	Ability for a user to customize their view into the portal by providing specifications for views and content filters for present and future use
ADA-compliance	Requirements for accommodating individuals with handicaps as per section 508 of the Rehabilitation Act (29 USC 794d), as amended by the Workforce Investment Act of 1998 (PL 105-220), August 7, 1998
Security	Protection for stored profile and personal information
Search tools	A robust search engine to locate information through multiple paths, including topic, category, direct link, service, function, etc.
Interoperability	The ability to support the linking and data transport of formatted information across applications
Scalability	The ability to expand scope and capabilities
Content management	A system that facilitates the collection, organization, and distribution of information by portal content managers
Collaboration tools	Tools that allow users to communicate between sites, individuals, and applications (i.e. forums, blogs, web meetings)
Research tools	Tools that allow users to identify, acquire, organize, and store information (i.e. federated search engine, Research Clipboard, Ask a Librarian, and Ask an Expert)
Feedback tools	Mechanisms for user feedback on the use and value of the portal to facilitate continuous improvement
Administration tools	Mechanisms for portal management

**Table I.**  
General portal  
requirements

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Understanding the needs of the end-users is paramount to the success of the portal. All web-based applications are dynamic and require continuous evaluation and enhancement. Integrating quick and easy feedback mechanisms within the portal provides real-time assessment in order to monitor trends, activities, and functionality requirements.

#### *Portal needs matrix*

After successful completion and review of the needs assessment, the next step is creating a portal needs matrix that shows the decisions made based on the survey results. Creating a needs matrix allows you to see the results of your survey quickly and assess the scope of the future portal.

Table II outlines the needs and solutions, delineated by functional categories and subcategories, of the Florida ExpertNet Research Portal. The scope of Florida ExpertNet is relatively small when compared with an enterprise portal. For a more comprehensive outline of portal functions, see Raol *et al.* (2003).

#### *Creative layout*

A portal is often a misunderstood concept. Unless the audience has direct experience in using and/or knowledge of portals, the ability to conceptualize one based on a written narrative or discussion is very difficult. A creative layout is a powerful and essential tool for helping stakeholders conceptualize the end product and its purpose. It is a visual mock-up of splash pages that reflects the look and feel, as well as the functional categories and content.

Generally, after the first draft of the needs-assessment matrix is completed, a creative layout should be set up. The creative layout is often helpful in identifying useful information that was not identified in the needs-assessment process.

Figures 1 and 2 show two preliminary creative layouts. The guest user page is openly accessible to anyone who visits the URL. This page provides the general overview of research information across disciplines. The registered user page will appear once the user has logged in, and will display research information and applications that have been filtered based on the specifications of the user. These samples reflect the baseline content and design characteristics, and are a starting point for defining the look and feel of the research portal as well as its functionality and content.

The creative layout is not a fully functioning prototype. A full prototype should be created before production begins in order to avoid confusion and disappointment in the design and functionality of the end product. It is much easier, as well as time- and cost-efficient, to correct mistakes or request changes before the actual coding begins.

#### *Benefits*

Outlining the benefits is an important strategy in promoting and gaining acceptance of any new idea or product. Do not assume that the stakeholders automatically understand the benefits of the portal. Whether educating stakeholders on the value of the portal to gain their participation, or securing funding from sponsors, the benefits must be clearly and powerfully stated.

The following were identified as key benefits to each stakeholder group of the Florida ExpertNet Research Portal. To institutions:

Needs	Functional categories	Solutions Subcategories
	<i>General</i>	
Access to documentation specific to system use		Help
Alerts for any system changes or issues		System announcements
Ability to provide feedback regarding the system		Feedback
	<i>Research tools</i>	
Identify resources from disparate systems through one interface		Federated search engine
Identify and connect with subject-specific experts and expertise and resources within Florida universities		Expertise (experts, speakers, proposals, centers/institutes, news)
Identify patents available for licensing from Florida universities		Technology licensing opportunities
Directory of relevant organizations and agencies		Links to external sites (associations, federal, state, and local government, etc.)
Information about recent publications and access to publicly available copies		Publications
Ability to store bookmarks for later retrieval		Clipboard
Ability to store and organize selected information		My Folders (publications, contacts, organizations)
Ability to search outside the filtered information but within the portal		Search portal (keyword, advanced)
Ability to re-execute a previously formulated search to identify new information		Saved portal searches
Ability to survey any population via the web		Survey
Ability to submit questions to an expert in a specific subject and receive an answer in a timely manner		Development/deployment/results
Ability to submit questions to a librarian on research subjects and receive an answer in a timely manner		Ask an Expert
	<i>Collaboration/ communication</i>	
A place to post messages to a specific community of users		Ask a Librarian
Ability to host meetings, conduct training, and participate in collaborative efforts via the web		E-forums
Ability to publish an online journal		Web meetings
		Blogs

**Table II.**  
Florida ExpertNet portal  
needs matrix

(continued)



Needs	Functional categories	Solutions Subcategories
Ability to communicate with users online in real time	<i>Planning tools</i>	Chat
Ability to share files with other users		Briefcase
Ability to maintain a personal calendar as well as access to a global calendar of events	<i>Profile</i>	Calendar
Ability to create a list of activities specific to the user		Tasks
Ability to register the user		User profile
Ability to customize content based on subject areas and functions	<i>Portal administration</i>	User preferences
Ability to manage portal components		Management tools
Ability to provide secure user profiles and information	<i>Content administration</i>	Security
Ability to support and streamline workflow processes		Workflow tools
Ability to collect and categorize resources		Content management tools

Table II.

- promotes Florida-based expertise and resources to the public sector, business, and industry;
- advertises special research strengths of the university;
- facilitates partnering between universities for funding opportunities;
- facilitates cooperation and sharing among researchers;
- establishes a portal for each university, regardless of resources, thus providing cost savings in terms of reductions in budgets as well as human and material resources, and thereby, reduces the opportunity costs related to building and maintaining traditional web sites;
- reduces or eliminates redundancy of resource development by sharing applications; and
- identifies facilities and equipment available for use within institutions.

To content providers (faculty, centers, institutes, technology transfer, sponsored research, and any other group that contributes content to the portal):

- provides a standardized data framework that is adopted by all universities;
- reduces or eliminates redundancy by sharing applications;
- reduces or eliminates redundancy of data entry and management;
- provides additional avenues for advertising and marketing;
- advertises special research strengths of the university;

**Florida ExpertNet**  
A network of applied research expertise in Florida's universities.

Build your custom **Research Portal** today.

**Custom Research Portal Login**  
Username:   
Password:   
 I'm a new user.

**Search**  
Search by Keyword    
Advanced | Search on Request

News/Events | Publications | Links | Technology Transfer | Experts | Speaker's Bureau | Centers/Institutes | Virtual Forums

**Technology Transfer (patents)**  
New Patents

**Hot Topics**

**Library of Congress Online**  
New interface allows advanced searches and custom portals.  
... More

**Medical School Online**  
FSU's new medical school completes its online portal for medical research.  
... More

**President's Scholarship Awarded to Tallahassee Student.**  
Andrea Dwyer received the president's scholarship which she will endorse for full-tuition at FAMU.  
... More

**Events**

**3/10/04—National Magnet Lab Open House**  
Florida State University.  
... More

**3/10/04—Physics Symposium**  
Special Guest Joe Doe.  
... More

**3/10/04—Shuttle Launch**  
First plasma telescope released over Antarctica.  
... More

**Features**

**FSU and FAMU Collaborate on Alzheimer's Research**  
John Doe is working to short circuit Alzheimer's and other neurological maladies that inflict the aging population.  
... More

**Recent News**

**Environmental Expert**  
UCF—New breaking story about water quality.  
... More

**Mag Lab and Intel Create Chemical Computer Processor**  
UF—New chemical processors will be thousands of times faster than silicon processors, but require strong magnetic fields.  
... More

**President's Scholarship Awarded to Tallahassee Student.**  
FSU—Andrea Dwyer received the president's scholarship which she will endorse for full-tuition at FAMU.  
... More  
More News

**Awards of Distinction**

**Chavda wins Altrusa**  
UF—Albert Chavda given top award in literature.  
... More

**Smith wins Chair**  
USF—Rachel Smith wins Distinguished Chair for chemical switch research.  
... More

**John Doe—Neuroscientist**

**Speaker's Bureau**  
Find Public Speakers on a variety of Topics.  
F. Smith on Environmental Issues  
Longtime expert in the field os Environmental Issues ... More  
Find a Speaker

**Experts in Print**

**Guide to Everything**  
November 21 release.  
... More

**Legislative Summary from 2003**  
Published by UCF, department of governmental relations.  
... More

**Book**  
Joe Doe releases the much anticipated sequel to Book.  
... More

Comprehensive List of Publications

**Figure 1.**  
Florida Research Portal – public site

- creates communities of mutual interest within and among universities;
- disseminates information in real time; and
- has the ability to add value to content in order to target end users more efficiently.

The screenshot displays the Florida Research Portal interface. At the top, there is a navigation menu with links for News/Events, Publications, Links, Technology Transfer, Experts, Speaker's Bureau, Content/Articles, and Virtual Forums. The main header includes the site title 'John Public's Custom Research Portal Florida ExpertNet' and a search bar with the text 'General Search by Keyword' and a search button.

The 'My Profile' section for user 'John Public' shows:
 

- Occupation: Chemist - optional
- Employer: Department of Environmental Protection - optional
- Education: MS
- Available for Contact: Y
- Receive Newsletter: Y
- Contact Information: 850-555-1212, darla\_b@cites.fsu.edu
- Profile Viewable by Other Users: Y
- Content/Filters: Marine Biology, Biomedical

The 'Recent News' section features several articles:
 

- New Species of Scorpionfish Discovered**: UF—found in the Indo-Pacific area, one of a rapidly growing list of more than 15,300 marine fish species now logged.
- Environmental Expert**: FSU—New breaking story about water quality.
- Radium Contamination**: USF—Study of radium levels in water, and which wells have possible contamination in Florida.
- Offshore drilling Postponed**: FAMU—Article about recent offshore drilling plans in the gulf coast.

The 'Awards of Distinction' section highlights:
 

- Patricia Max**: UF—Patricia Max, author of Ancient Civilizations, recently received the Pulitzer Prize in Literature.

The 'Patents' section lists:
 

- Recent Patents**: The wheel, Radio Phase Shifter, Chemical Processor, A "Better" Mouse Trap, Coldol—cure for common cold, Taxol, Partical Accelerator.

The 'Expert Connection' section lists:
 

- Experts**: Joe Bloe—UCF, Joe Shmoe—FSU, Doug Culpepper—UCF, Arnold Fisher—FSU.
- Honors**: Chavda, Albert—UF, Rachel Smith—USF, Patricia Max—UF.
- Labs and Centers**: Census of Marine Life—UF, Marine Life information Network—USF, British Divers Marine Life Rescue—UCF.
- Peer Reviews**: Journal Name—Expert086, Journal Name—Science77.
- Virtual Forums**: ExpertNet Biomedical Forum, Environmental Studies.

The 'Calendar' shows the month of March with dates 1 through 31. Below the calendar, there are event listings:
 

- 3/10/03—Science Convention**: New technology this year.
- 3/25/03—Laser Surgery Demonstration**: Latest technology for laser surgery.
- 03/26/03—Aqualung Showcase**: A showcase of diving gear presented by Aqualung.

Figure 2. Florida Research Portal – registered user site

To end users:

- provides customized data delivery through the use of content filters, thus engendering efficiency, cost and time savings;
- eliminates institution silos, thus creating a seamless interface for users;
- increases access to research expertise and resources;
- facilitates cooperation and sharing among researchers;
- creates communities of mutual interest within and among universities;
- identifies in-depth strengths of researchers and research units;
- provides a single sign-on to all applications; and
- provides real-time information for users.

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*Funding and sponsorship*

*Funding.* A great idea cannot be realized without the fiscal support to design, develop, implement, and, most importantly, provide ongoing development and support. To secure funding, it is necessary to have a well-developed plan and the resources to accomplish your goal. The following is a list of the types of information generally requested for funding consideration:

- mission statement;
- needs;
- results of needs assessment;
- creative prototype;
- benefits;
- estimated time-lines;
- estimated costs; and
- estimated resources required.

*Sponsorship.* Although fiscal support is critical, executive sponsorship (having a champion) is also paramount to portal success. The executive sponsor is the champion that assures support by promoting the site as the one portal of its kind supported by their organization. The right champion has the power and prestige to make this happen.

In the case of Florida ExpertNet Research Portal, the logical sponsor is the Florida Department of Education, Division of Colleges and Universities (DOE/DCU). The DCU is responsible for oversight and coordination of Florida's universities. The DCU has agreed to sponsor the Florida ExpertNet Research Portal and has promoted the portal as the official source for university-based research data.

### **What's next?**

This article has illustrated the intellectual and technical processes involved in defining the vision of a portal, using the Florida ExpertNet Research Portal as a case study. The components of a portal vision discussed and exemplified are the mission statement, objectives, needs assessment, creative layout, benefits, and funding and sponsorship.

The next article in this series will discuss the keystone of a portal – content management.

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