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Defining the Enterprise Information Portal

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Enterprise Information Portal Definition Is a Political Process

It is fortunate that the Enterprise Information Portal (EIP) concept was introduced by two analysts with a concern for definition. Else, given the sudden popularity of EIPs, there would be no restraint on the tendency of vendors to try to exploit the label by attaching it to their products. Even so, since the area is in a state of very rapid growth and differentiation, vendors and analysts with an interest in it are adding their own orientations and nuances to the EIP idea every day. Some do this by addressing the term EIP directly, others by defining related terms such as business portal or corporate portal.

Inevitably, the process of definition is a "political" business-an attempt to persuade the Investment/IT and ultimately the user community to define EIP in a manner favoring one's own vendor or analytical interests. If a vendor gets their favored definition accepted, it gets to say that a competing vendor is not really an EIP vendor, or lacks this or that required EIP characteristic. If an analyst or consultant gets its definition accepted, it gets a boost for its mind share and all the rewards that accompany such a competitive advantage over other consultants or analysts.

But if the process of EIP definition is political, it is politics constrained by the reality that any successful EIP definition must offer strategic advantage to the community. It must provide an image of the scope of the EIP area that the community will accept as both providing a clear idea of what an EIP is, and also a vision of what it ought to be. In order to both clarify the developing network of meanings surrounding the EIP concept, and also provide my own view about how the term should be defined strategically, I will:

- survey some of the definitions and characterizations offered by commentators and vendors,
- follow with a classification of types of definitions, and, finally,
- end with a synthesis and proposal on how the term EIP should be defined.

EIP Definitions

Here are some views defining the EIP and related concepts from analysts and commentators. According to Shilakes and Tylman [1, P. 1].

> "Enterprise Information Portals are applications that enable companies to unlock internally and externally stored information, and provide users a single gateway to personalized information needed to make informed business decisions. " They are: ". . . an amalgamation of software applications that consolidate, manage, analyze and distribute information across and outside of an enterprise (including Business Intelligence, Content Management, Data Warehouse & Mart and Data Management applications.)"

- And here are the essential characteristics of EIP's [1, P. 10-13]
- EIPs use both "push" and "pull" technologies to transmit information to users through a standardized web-based interface;
- EIPs provide "interactivity" – the ability to " 'question' and share information on" user desktops;
- EIPs exhibit the trend toward "verticalization" in application software. That is, they are often "packaged applications" providing "targeted content to specific industries or corporate functions;"
- EIPs integrate disparate applications including Content Management, Business Intelligence, Data Warehouse/Data Mart, Data Management, and other data external to these applications into a single system that can "share, manage and maintain information from one central user interface." An EIP is able to access both external and internal sources of data and information. It is able to support a bi-directional exchange of information with these sources. And it is able to use the data and information it acquires for further processing and analysis.

Content Management Systems process, filter, and refine "unstructured" internal and external data and information contained in diverse paper and electronic formats, archive and often restructure it, and store it in a corporate repository (either centralized or distributed). Business Intelligence tools access data and information and through Querying, Reporting, On-Line Analytical Processing (OLAP), Data Mining, and Analytical Applications provide a view of information both presentable and significant to the end user. Data Warehouses and Data Marts are integrated, time-variant, non-volatile collections of data supporting DSS and EIS applications, and, in particular business intelligence tools and processes. And Data Management Systems perform Extraction, Transformation and Loading (ETL) "tasks, clean data, and facilitate scheduling, administration and metadata management for data warehouses and data marts."

The Shilakes and Tylman definition of EIP is an attempt at a comprehensive definition, emphasizing both the basic functions of an EIP, and the subsidiary applications that are presently converging to produce EIP products and applications. It seems to leave little to the imagination, but it does have a stronger decision support rather than collaborative processing emphasis, and it also emphasizes the idea of the EIP as a gateway to wide ranging data, content, and applications. In contrast, Gerry Murray of IDC [3, P. 1] views the corporate portal as more than a gateway.

According to Murray, "portals that focus only on content are inadequate for the corporate market." Corporate portals must connect us not only with everything we need, but with everyone we need, and provide all the tools we need to work together. This means that groupware, e-mail, workflow, and desktop applications-even critical business applications-must all be accessible through the portal. Thus the portal is the desktop, and your commute is just a phone call."

Murray distinguishes four types of corporate portals. Enterprise Information Portals connect people with information by organizing large collections of content on the basis of subjects or themes they contain. Collaborative portals enable teams of users to establish virtual project areas or communities along with the tools for collaboration they offer, and to work cooperatively within these communities. Expertise Portals link people together based on their skills and expertise, as well as their information needs. And Knowledge Portals do everything the first three types do and an unspecified something "more."

So Murray's emphasis is not so much on the corporate portal as a gateway to content, or even decision support, but rather on the portal as an application that may provide comprehensive support for the end user's job role. For Murray, the EIP is only the first and most limited stage of portal development, and it is only a gateway to content of all varieties. Much more important are the collaborative, expertise, and knowledge portals that promise to provide comprehensive job support.

The conflict between the Merrill Lynch and IDC definitions of EIP lies in Murray's restricting his EIP definition to applications providing a gateway to content alone. While the Shilakes and Tylman definition emphasizes decision processing more than collaborative processing, it is clearly meant to include collaborative, expertise and Knowledge Management (KM) applications as part of the EIP. This is implied by their statement that "EIPs provide "interactivity" – the ability to " 'question' and share information on" user desktops." And it is made quite explicit that they mean to include collaborative applications in their ensuing discussion of the content management segment of EIPs. There they explicitly endorse the development of KM applications in the content management segment and also state [Shilakes and Tylman, 1, P. 18] that they believe EIPs "will marry Knowledge Management with structured data management."

Colin White [4, P. 1] defines an EIP simply, as providing "business users with a single web interface to corporate information scattered throughout the enterprise." Within this broad definition, he classifies EIPs into two main categories. Decision Processing EIPs help "users organize and find corporate information in the set of systems that constitute the business information supply chain." This type of information is highly structured and comes from operational data and data warehouse information and from "external systems." Decision processing EIPs use business intelligence tools and analytic applications to create reports and analyses and then distribute them throughout the enterprise using a variety of electronic means. Collaborative Processing EIPs help "users organize and share workgroup information, such as e-mail, discussion group material, reports, memos, and meeting minutes." This type of information is relatively unstructured and comes from individuals and work groups. It is processed with collaborative groupware and workflow tools.

White views decision processing and collaborative processing as connecting within the groupware and workflow systems where collaborative processing takes place, and decision processing reports and analyses are ultimately distributed. Indeed, he sees the distinction between the two types of EIPs as blurring over time. And he blurs the distinction somewhat himself by recognizing that decision processing EIPs employ collaborative processing to track decisions and actions taken based on the use of structured business information. "The combining together of corporate business information, user knowledge and collaborative processing is sometimes labeled knowledge management. Decision processing portals could be described as knowledge management portals, but given the number of different definitions in use for knowledge management, the term knowledge management portal is best avoided here." [4, P. 3]

White is apparently in basic agreement with the original Merrill Lynch definition of EIPs. His overall definition is open to different interpretations depending on how one defines "corporate information." But his: segmentation into decision processing and collaborative processing EIPs, discussion of the process connections between the two types, and discussion of the likely evolution of EIP products to incorporate both classes of functionality, together remove any ambiguity. They suggest that he sees the ideal EIP as providing a gateway to both collaboration and decision support, and also support for knowledge management. That is essentially the Merrill Lynch view as well.

A term closely related to EIP is Business Portal. In a report from The Data Warehousing Institute, Wayne Eckerson defines [5, P. 1] a Business Portal as an application that "provides business users one-stop shopping for any information object they need inside or outside the corporation." He therefore emphasizes the gateway aspect of business portal applications as fundamental to the concept. He also emphasizes the importance of shared services such as "security, metadata repository, personalization, search, publish/subscribe," etc., as well as a common look and feel to the gateway.

Eckerson places very little emphasis on collaboration or work flow applications in either his definition or specification of the business portal concept. He points out that users can publish information to the business portal repository to foster collaboration, and also indicates that document management vendors will have to convert or extend their work flow capabilities [5, P. 2] to enter the portal space. But this is the extent of his emphasis on collaboration as a primary business portal-based function. His business portal seems therefore to be most similar to Murray's concept of the EIP, an information gateway that supplies a variety of structured and unstructured content to users through a web-based gateway for the purpose of decision support. It is not an EIP from the standpoint of either the Merrill Lynch or White definitions, and it is quite distinct from Murray's collaborative, expertise, and knowledge portals.

Another term closely related to EIP is Corporate Portal. Hadley Reynolds and Tom Koulopoulos emphasize the user-centric focus, and work flow and task integrative functions of corporate portals. They see corporate portals as centralizing "enterprise information access in a graphically rich, application-independent interface that mirrors "knowledge-centric" work flow," and as providing a single point of integration through the enterprise." [6, Pp. 28-29] They also see corporate portals as integrating the "islands of automation" formed by today's application-based desktops, and eventually creating an integrated business environment "providing information access, delivery, and work support across organizational dimensions."

The corporate portal and the public portal have fundamentally different purposes. [6, P. 32] Public portals have a unidirectional relationship with their viewers. Their purpose is to attract large numbers of repeat visitors and to build online audiences with compelling demographics and tendencies to buy what portal advertisers are selling. But the purpose of corporate portals is to "expose and deliver business-specific information-in context-to help today's computer workers stay ahead of the competition. Being competitive requires a bi-directional model that can support knowledge workers' increasingly sensitive needs for interactive information-management tools."

Reynolds and Koulopoulos provide the least emphasis on the decision processing/business intelligence, structured data aspects of portal applications, and the strongest emphasis yet on the concept of the portal as support for tasks, work flow, implicitly collaboration, and the creation and integration of knowledge. Some emphasis on this aspect is included in Shilakes's and Tylman's analysis, and also in White's collaborative processing portals. But Reynolds and Koulopoulos provide center stage to the user-centric, work flow view of portals.

Just as analysts and commentators define the EIP with differing emphases on decision versus collaborative processing, for the most part vendors also vary along this spectrum. An important vendor in the EIP space not conforming to this pattern, Plumtree Software, has treated the Corporate Portal extensively in a White Paper [2, P. 5]. It lists seven "defining characteristics" of corporate portals in relation to "Internet Portals" including:

- Integrating access in a wider variety of data formats than a web portal (comprehensive);
- Organizing access to information for users to browse (organized);
- Assembling personalized views of key information and notifying users of the availability of new material via electronic mail and other media (personalized);
- Organizing access to data, but not storing the data itself (location-transparent);
- Supporting extensions for cataloging new types of information (extensible);
- Automatically identifying and organizing access to new content (automated);
- Selectively brokering access to internal corporate information (secure).

This definition is clearly oriented toward distinguishing corporate portals from public portals on the basis of the kind of access available in corporate portals. It is not focused on the types of applications supported by such access, however, and is consistent with decision processing portals with or without collaboration, collaborative/work flow processing portals, expertise processing portals and knowledge portals.

Viador, another prominent early portal vendor, defines EIPs in a manner that is on the surface similar to Colin

White [7, P. 2]. EIPs, according to Viador, are "applications that enable companies to provide access to internally and externally stored information, and offer users within and external to the enterprise a single window to personalized information needed to make informed business decisions. An Enterprise Information Portal is a browser-based system that provides ubiquitous access to vital business information in the same manner that internet content portals like Yahoo are the gateway to the wealth of content on the web." Though on the surface similar to White's portal views, in fact the Viador view, as expressed in its product specification, is closer to Wayne Eckerson's business portal formulation, since, unlike White, it provides little role for collaborative processing applications in its EIP concept. In effect, Viador takes the business portal concept and applies the EIP label to it.

According to Information Advantage [8, P. 2], Business Intelligence Portals should provide comprehensive intelligence for decision-makers, allow an unprecedented level of accessibility, adapt to a changing and larger user population, deliver the right solution for your needs, and have a long record of success. Neglecting the last two requirements that are clearly non-definitional in character, there is again the same emphasis on business intelligence, broad accessibility, and adaptability seen in some of the other definitions. And there is also a similarity to the Eckerson and Viador views in that Information Advantage is strictly focused on decision processing without emphasis on the collaborative or work flow capabilites of portals.

Sqribe, Inc. defines the EIP as an "automated information gateway that delivers information to users based on their level of security, job, and interests. [9, P. 4]." Sqribe also views the EIP as able to provide access to any information, any time, regardless of the content of that information, and as providing the single point of access for all of the information in the enterprise. As with Eckerson, Viador, and Information Advantage, Sqribe places little or no emphasis in its portal definition on collaborative, or work flow processing. To Sqribe, an EIP is a decision processing EIP, excluding it's collaborative component.

Types of Definitions and Synthesis

The positions on defining business-specific portals just reviewed can be categorized into a few types.

- First, there are definitions of decision processing portals without significant emphasis on work flow, task integration, or collaborative processing. Eckerson's Business Portal, Murray's, Viador's, and Sqribe's Enterprise Information Portal, and Information Advantage's Business Intelligence Portal all fit comfortably within this category.
- Second, there are definitions that define portals generally in such a way that both decision processing and collaborative processing portals, as well as syntheses of the two, would fit the general category. The original Merrill Lynch definition of EIP, Colin White's, and Plumtree Sofware's definition of the term Corporate Portal all fit into this category. Murray's definition of Knowledge Portal also fits as it involves a combination of Decision Processing and Collaborative Portals (including Expertise Portals as explained just below).
- Third, the Murray Collaborative Processing Portal, and the Reynolds and Koulopoulos Corporate Portal concepts comprise a category of Collaborative Processing Portals that don't emphasize decision processing. Add to this type, Murray's Expertise Portal. It is distinguished from other collaborative portals because it ties together the skills of those who participate in it, with their information needs. Nevertheless it is still a sub-type of the collaborative processing portal, rather than an independent type.

The variations in thinking represented in these types provide perspective on the question of how Enterprise Information Portals should be defined, as well as on the question of how the term is currently being used. The original definition of Shilakes and Tylman envisioned a category of application that would integrate business intelligence based on structured data with collaboration, work flow, unstructured data and knowledge management. The term "information" in Enterprise Information Portals is being used here in a very broad way to encompass all kinds of structured and unstructured content, and the EIP was envisioned as an application that would also make available a broad range of applications, both analytical and collaborative, to end users. In spite of this comprehensiveness, the original definition of EIP does not lack clarity. Shilakes and Tylman

specify EIPs in some detail, as does Colin White in taking a position similar to the Merrill Lynch report.

While the original EIP definition is specific and comprehensive, it also provides a vision. It makes clear that ideal EIPs synthesize both decision and collaborative processing orientations. It may not be clear at present what the full ramifications of such a commitment are. But this openness of meaning is an argument in favor of retaining the original definition of EIP as a useful strategic concept that can give rise to innovation. Developments in information technology may allow novel syntheses of these two areas. The possibility that this may happen is a good justification for continuing to adhere to the Merrill Lynch EIP definition as strategic. Since the Merrill Lynch EIP concept is clear, comprehensive, and provides suggestions for future development, why should we accept using it in a different sense?

The use of the term EIP by Viador, and Sqribe is a case of vendor's license, at least at this writing. The definitions offered by these vendors are just departures from the original use of the term, and they are departures made without benefit of strategic justification, or complaint that the original EIP definition lacks clarity, or has some other significant shortcoming. Murray's use of the EIP term also represents a change from the original definition. Clearly he wanted to distinguish business portals from collaborative, expertise, and knowledge portals, and he used the term EIP-rather than the term business intelligence, or business portal-as part of the process of making the distinction. In fact, the Viador, Sqribe and Murray EIP definitions actually correspond to the concepts of Business Portal offered by Eckerson and Business Intelligence Portal offered by Information Advantage. The use of either term by Viador, Sqribe and Murray would have maintained a useful distinction between these terms and EIP.

Reynolds and Koulopoulos use the term Corporate Portal to describe the same concept Murray calls a Collaborative Portal; but not the same concept used by Colin White when he uses the term Collaborative Processing Portal. White's portals are viewed as EIPs with some decision processing capability and as adding more of this capability over time. This brings us again to Murray's Expertise Portal. As I indicated earlier, Murray's Expertise Portal is a type of Collaborative Processing Portal. That it ties together skills and information needs of users doesn't change its collaborative character. Finally, Murray's Knowledge Portal, since it combines decision and collaborative processing (including expertise processing) in the same portal is actually a type of EIP. He should have used that term to describe it.

Summary

We have the following situation based on analysis of these definitions. There are three major categories of constructs used to describe EIPs: Business Portals, Corporate Portals, and Enterprise Information Portals. Business (or Business Intelligence) Portals were defined by Eckerson, Viador (their EIP), Sqribe (their EIP), Information Advantage, and Murray (his EIP). Corporate (Collaborative) Portals were defined by Reynolds and Koulopoulos, and Murray (his Collaborative and Expertise Portals). EIPs were defined by Shilakes and Tylman, White, Plumtree (their Corporate Portal), and Murray (his Knowledge Portal).

In addition the analysis suggests the following sub-types within the major categories.

- Business Portals: None
- Corporate Portals: Collaborative Portals tying together peers, Collaborative Portals tying together skills and information needs
- Enterprise Information Portals: Decision Processing Portals, Collaborative Portals, Knowledge Portals.

This White Paper is an excerpt from a longer forthcoming report (available for purchase from EIS) entitled "Approaching Enterprise Information Portals."

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Biography

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