

Actionable Portal

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A white paper on the next generation enterprise portals, their features and characteristics

Introduction

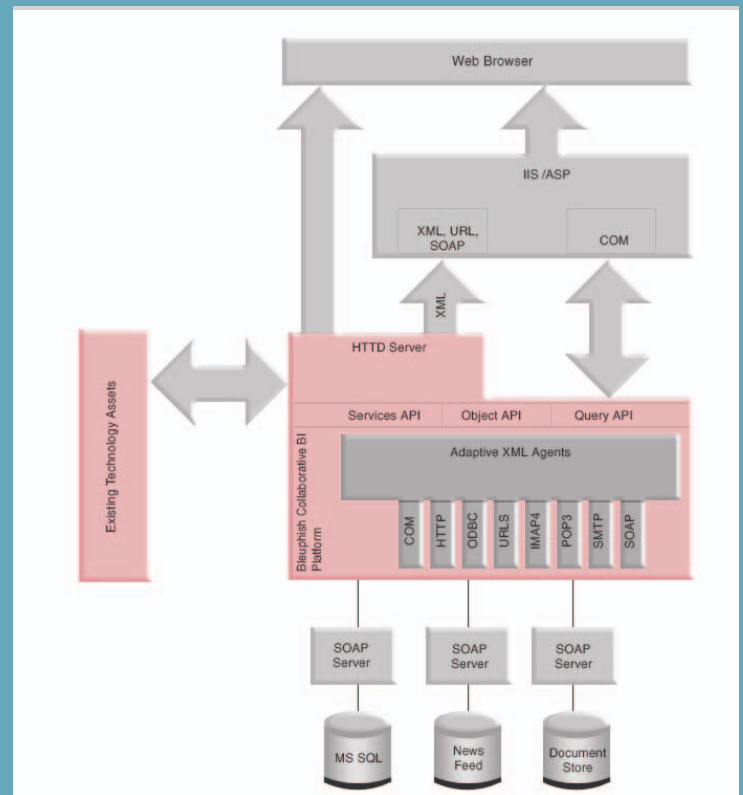
Corporate portals have evolved more rapidly than what the market expected – from being a gateway to the electronic information space to an interactive, personalized, and platform independent desktop with consistent user experience independent of whether the user is interacting with an operational system, applications, decision support system or a project management system. This kind of market change has been largely driven by end user expectations that corporate portals will integrate with the business processes and support various wireless computing appliances and act as the integrated solutions delivery channel.

Active Portal is a framework and a platform for developing solutions and enables consistent user interaction with the various information resources in the context of the cooperative processes and activities that achieve the strategic goal of the enterprise. The framework is based on the following:

- Enterprise is made up of a set of independent business objects – for example, people, divisions, initiatives, projects, activities and information resources – and relationships among them.
- Associating a set of independent business objects with well-defined business rules and events can develop solutions to business problems.
- The identification and specification of the set of independent business objects will evolve over time, as more solutions are developed to address different business problems and the rate of growth of these objects will decrease substantially with increase in the number of solutions due to re-use.

Active Portal supports:

- Interactive information flow – portal interface should provide a way for the users to interact with the operational and backend systems as they would through the client-server or the application's web-based interface. Users should have the capability to update the structured and unstructured information repositories instead of just being able to publish documents through the portal interface into a content management system.
- Ease of integration – the portal should integrate with the data and the functionality of the different information systems in the enterprise easily – without having to spend months writing scripts to the published APIs of the various applications all the time.



- Presentation options – users should be able to access and interact with the portal through any platform/device – network PC with a browser interface, web-enabled mobile phones, windows CE devices, PIM etc.

- B2B/Extranet – the audience for the portal should include all the stakeholders in the enterprise's extended value-chain. This includes the employees, customers, partners and suppliers. It is no longer the case that customers interact with only the sales and customer support team. The portal should provide the technology and the mechanism for the customers to work with the appropriate members of the extended value chain whether they are part of the sales and customer support team or not.

Solution Development Vs Integration

The advances in Internet technologies have been leveraged by the leading portal vendors and EAI vendors to focus on performing the application and data level integration at the back end and using the portal infrastructure to present the different sources of the information on a unified easy-to-find directory or catalog based structure. Active portal, on the other hand, leverages the EAI technologies and develops the abstraction necessary in the context of the enterprise's objectives, initiatives, business processes, and end users' work practices to build solutions for business problems and deploys the solutions using the portal infrastructure.

Architecture

Active Portal's platform is designed to scale in user volume and functionality and uses n-tier architecture. The platform is made up of loosely coupled cooperating modules that can be distributed over a network of servers. The purpose of the platform is to

- Support the definition of the business objects – be it process sub-components, people or information resources – and wrap them with the appropriate interfaces
- Support the definition and automation (agents) of repetitive steps in processes and work practices
- Provide collaborative services – for example, indexing and search, notifications, and events – to build collaborative solutions

The platform implementation is based on open standards and adaptable to advances in technology in general and customer-specific standards in particular. The platform projects open interfaces to

- Connect to the different directory services and information systems and sources
- Implement consistent solutions by associating business objects and agents along with the specific business rules

The architecture of the platform also addresses the challenges in the areas of scalability, extensibility and flexibility as is evident from Figure 1.

Integration

Considering the fact that corporate portals will evolve into the business desktop of the future, enterprise level application integration, data integration, process integration and platform integration are critical to creating an 'Active Portal'. The technological advances in the recent years in general, and XML in particular, drive the creation of 'active portal' as a definite possibility. The platform includes an extensible and dynamic model to represent the business entities/Engenia agents and objects – people, process steps and activities, work practices, information resources, initiatives, goals, etc - in an enterprise, the

relationships among agents and the business rules and events that instantiates the processes, changes the state of the business objects or drives the information flow among them. The abstraction contained in the model is complemented with a set of collaborative and management services as part of the platform. Agents also have the ability to accept behavioral changes in real time providing the ability to adjust business rules and processes to meet specific needs.

Based on market research done by the different organizations like Delphi, the users spend only a fraction of their time, typically less than 25%, in the corporate portal environment and spend the rest in the application environment more suitable to their tasks. To integrate and provide a consistent working environment, Active Portal should integrate the applications and other backend systems with bi-directional informational flow. This is achieved in the Active Portal by developing and configuring 'Active Portal Connectors' to communicate directly with the backend information systems like SAP, PeopleSoft, etc. or integrate with the middleware products like Tibco, C-Beyond, Vitria, etc. Active Portal uses the XML based integration agents to provide bi-directional information flow and indexing capabilities for the information. This is a more robust and powerful way of integrating because the XML vocabulary can be leveraged to build a consistent metadata and metadata based rules driven workflow processes.



Presentation Options

With the advent of wireless and mobile computing devices, the need to support such platforms has grown substantially over recent years and studies indicate an exponential growth in the number of users working with such devices. To provide support to such varying platforms, the separation of data from the presentation of it is critical. XML along with the supporting standards-based technologies in XSLT, Xpath, and WML will enable Active Portal to be presentation platform independent and use the philosophy of 'write once and reuse many.' Active Portal associates the business agents and objects – for example, roles, activities - to provide an initial layout that can be customized by the appropriate users. Such customizable user interaction environment along with the abstraction in the platform provides the unique capability to not only find and use the relevant information but also capture the insights of the users for re-use in a contextual manner and aid in decision-making. The presentation of the information also is not organized around an enterprise-wide taxonomy; instead, the information is organized in the context of a network of relationships. This technique uniquely leverages the end user's inherent understanding of the context of the information along with the search functionality of the system to quickly find relevant information.

Security

Security in Active Portal is very complex because of the need to integrate with various information systems and applications and the users in the extended value chain. LDAP is the de-facto standard that is used in integrating with the various directory systems. There is no specific standard for specifying the access control lists associated with the information objects in various repositories and applications. Similarly, the auditing process is quite different in different environments. This section elaborates on security in the three areas of authentication, access control and auditing.

Authentication is accomplished using an open security architecture. The platform has an authentication module that synchronizes with LDAP directory services, NT or custom SQL based directories. There is administrator driven access control to visual objects at the presentation layer. The platform also provides granular access control at the business objects level by allowing users and roles to be mapped to access privileges.

Audit trails for all administrative functions, any change to access control lists, user log-ins are maintained. The platform also provides a query builder that administrators can use to generate reports.

Search

Contextual (XML-based) and full text indices of information flowing through the platform is maintained in addition to indexing of the content from many data sources including web sites, document repositories, file servers and external information feeds that have specific search protocols. Robust search options like natural language, fuzzy, phonic, stemming, and the platform allows XML content to be contextually indexed for precise search results.

Conclusion

While all the corporate portal products support a multi-tier architecture and a component model for integration with other information systems and applications, Active Portal is unique in supporting a flexible and dynamic taxonomy that relate more closely to the work practices of the end user in addition to provide a concept based categorization across the enterprise. Active Portal's support of XML for integration and presentation provides a more powerful mechanism and solution for business process integration and workflow solution within the corporate portal environment in addition to providing open standards based extensible corporate portal platform. Information resources, business objects and agents relationship model and management of the relationships is also unique to Active Portal in the portal products continuum. Active Portal includes the capability for corporations to communicate and associate the strategic initiatives and objectives with the work activities of the employees.



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