

# White Paper

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## IBM WebSphere Portal 4.2 & WebSphere Portal – Express 4.1

An Analysis of the  
Outperforming Enterprise  
Portal Products

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## ► INTRODUCTION

Butler Group, as Europe's leading IT Analyst Group is truly independent in both its operation and research. It generates the majority of its revenues through conducting research, providing analysis, and writing reports on behalf of its subscribers.

Between November 2002 and February 2003, Butler Group Analysts conducted in-depth research into the rapidly maturing Enterprise Portals market. Research was conducted with end-users, IT Managers, and Business Managers across both business and the not-for-profit sectors. The team also spoke with Systems Integrators, Independent Software Vendors, and the portal vendors themselves. Of the 30 or so products that Butler Group categorised as Enterprise Portals, 19 were analysed in detail, to arrive at objective functional and operation comparisons.

This paper provides Butler Group's synopsis of the findings of the Report and its analysis of IBM WebSphere portal 4.2 and WebSphere Portal – Express 4.1, detailing why Butler Group believes WebSphere Portal to be the best of the Enterprise Portal products available.

## ► ENTERPRISE PORTALS

In describing the business case for Enterprise Portals, there are two paradoxical statements that for Butler Group exemplify the issues:

1. "We are drunk on gallons of information."
2. "It must be wonderful to have so little knowledge that you can be that certain."

Whilst the various systems and processes used in all types of business deliver ever-greater volumes of structured and unstructured content, it is a reality that greater information does not always aid decision-making, neither does it aid certainty. This is where Enterprise Portals offer the benefits of pertinence, focus, automation, and control of content and access.

An Enterprise Portal, at its simplest, is just a delivery and access mechanism, with the objective of providing through any device, whether PC, mobile computer, or phone, and using standard Internet protocols, information, or applications to the people that require them to undertake a task. At its most complex, it can be tightly integrated with a range of applications to provide collaboration, Content Management (CM), and Business Process Management (BPM), facilitating the creation of 'composite' applications to support specific user roles.

Heterogeneity of systems and sources of information is the reality in organisations of all complexions. As organisations become more interdependent, for example, in a business supply chain, this includes sources outside the organisation. Providing a single point of access is not just a matter of ease of use, it is key to higher productivity.

People perform roles that involve repeated processes across many systems. Enterprise Portals are increasingly providing integration with workflow and rules engines to automate such processes to both reduce the cost and improve the accuracy.

It cannot be emphasised enough that the key message for those currently investigating Enterprise Portals is their strategic nature, and that they must address the individual organisation's business goals. The reality is that there is no 'silver bullet' in deploying an Enterprise Portal – one-size does not fit all. There has to be a balance between functionality and the price that the organisation can afford, both in cash and other resources.

## **Business Issues**

Butler Group has long argued that a decision on an Enterprise Portal should be taken in light of the long-term business aims of the organisation, but the new realities mean that organisations expect short-term Return On Investment (ROI), increasingly within the first year. This is a conflict that must be addressed in any investment strategy. Enterprise Portals have been used to facilitate both reduction in staff through consolidation of roles, or to minimise the need for additional recruitment by increasing automation, making existing staff more productive. The opportunity for Small to Medium-sized Enterprises (SMEs) to exploit the benefits of portals will be assisted as lighter, scalable, and more affordable versions of existing products are developed and more managed options become available. The convergence of standards for portlets and Web services providing the connectivity and integration functions will, Butler Group believes, lead to greater choice and less expensive products in the medium-term.

Implementation of an Enterprise Portal is not a 'fire and forget' action. Butler Group research has established that the most successful deployments are those which start with low functionality by widest access, and are actively marketed and monitored to ensure acceptance. New functionality is introduced on an incremental basis, targeting both business 'pain points' that deliver the quickest returns and establishing a 'buy-in' by the users. It is necessary also to recognise that greater access to systems and information can fundamentally change both individual roles and organisational dynamics. Butler Group strongly recommends that the implementation of an Enterprise Portal has a board-level champion and a parallel change management programme to ensure success.

## **Technical Issues**

Portals, being browser-based, were first developed using the Internet standards of HTTP and HTML. It was obvious, therefore, that the design and enhancement would be both drivers for adoption of standards, and they would be driven by newer standards such as XML. The proprietary portlets, previously seen in the early adoption phase, are now standardising around the specifications of Java Specification Request (JSR) 168 in Java 2 Enterprise Edition (J2EE)-based portals, and Web Services for Remote Portals (WSRP) for those based on Microsoft .NET technologies. These specifications define a set of Application Programming Interfaces (APIs) for portal computing, and address the areas of aggregation, personalisation, presentation, and security. This will enable interoperability between portlets and Enterprise Portals. There is also a convergence with the emerging Web services standards and many portals can already display Web services as portlets. The standards for portlet specifications will be good for the industry and customers alike. Third-party developers will be able to create a single, widely deployable portlet, thereby reducing development effort, and customer investments will be protected. JSR 168 goes further than just specifying access to systems.

A further benefit of this convergence to businesses should be that the time and cost for the deployment of Enterprise Portals will be reduced, and thus the ROI to be gained by the exploitation of a portal installation should be much higher. The common API will enable portlets to interact and share information with each other and Web services, creating a common integration layer below the presentation of the portal itself. This further positions the Enterprise Portal as a core business infrastructure.

**Market Analysis** Since July 2001, when Butler Group produced its first Report on Enterprise Portals, we have seen the global economic downturn, the burst of the dot.com bubble, and the confidence-hitting events of 9-11. This has contributed to company failures in the portals market place, and has forced increased levels of co-operation and consolidation between portal vendors and other Independent Software Vendors (ISVs). The ISVs have been providing additional functionality, either on an Original Equipment Manufacturer (OEM) or partnership basis, and we have seen the acquisition of two out of the three so-called pure-play vendors since October 2002.

Despite the downturn, it is apparent that interest in portal technologies has remained strong. Although decision-making and sales timescales have increased, and the prices charged by the vendors have dropped, some of the largest implementations have been agreed in the last 12 months. With Enterprise Portal products being less *de rigueur*, we believe the market will be valued between US\$2.5 billion and US\$3.1 billion in 2006, with potentially 3% of those revenues from managed deployments.

Butler Group expects to see further consolidation in the market place, with the major application platform vendors coming to dominate, and replacing the 'best-of-breed' pure-play vendors. The existing customer base of the best-of-breed will be well supported into the medium and long-term. On one level the loss of the pure-plays is disappointing, because they have always been required to 'raise the bar' and have been responsible for the rapid development of technologies. However, the closer integration with other applications, by larger organisations, gives greater security both to the users and the technology itself.

The emergence of e-Government as a major area of IT investment has further helped the drive towards standards within Enterprise Portals, particularly around accessibility. Despite common perceptions, Butler Group believes that the e-Government drivers are just the same as those in business – to deliver greater service to the customer, at the same (or preferably lower) cost. Enterprise Portals offer benefits internally within government and will be an essential tool in helping to deliver self-service for the public, meeting targets for electronic service delivery.

Butler Group believes that application platform vendors such as IBM, Oracle, BEA, SAP, and Microsoft will take by far the most significant share of the Enterprise Portals market in the future, both in terms of volume of seats and revenues. Integration vendors, such as Computer Associates and Sybase, will be favoured in highly heterogeneous IT environments, which do not have a 'loyalty' to a particular application platform vendor. All have realised that using a portal as a ubiquitous interface to applications not only provides a significant value-add, which can also be described as 'lock-in', for existing customers, it also provides a delivery mechanism, and thus a driver for hosted application services.

Specific Enterprise Portal products will be difficult to identify by the end of the decade, as they become more closely integrated with other enterprise applications. Despite this, Butler Group continues to believe that an Enterprise Portal is the most strategic IT investment that an organisation can make.

## ► THE ENTERPRISE PORTAL VENDORS

In the short to medium-term, Butler Group rates the respective vendors and their offerings in the following Product Performance Table (vendors are listed alphabetically within each category):

## Product Performance Table

Rating	Company/Product	Butler Group Opinion
<b>Outperform</b>	<b>BEA Systems</b> WebLogic Portal v8.1	Exploits BEA's integration and middleware heritage. The development tools are the key strength of the offering.
	<b>IBM</b> WebSphere Portal 4.2, WebSphere Portal – Express 4.1	WebSphere Portal is available in four versions, with a clear migration path from 50 to 100,000+ users. It is highly functional, being built upon IBM's range of software technologies. Overall, Butler Group believes WebSphere Portal to be the best of the Enterprise Portal products available.
	<b>Microsoft</b> SharePoint Portal Server v1	With a highly accessible price and good integration with standard desktop products, this is seen as an entry route into portal deployment.
	<b>Oracle</b> Oracle9iAS Portal	This is a comprehensive offering, well engineered, with good tools and a clear road-map, but will continue to be of most benefit to those using other Oracle applications.
<b>Perform</b>	<b>Autonomy</b> Portal-in-a-Box™ 4	Utilising the Autonomy technologies of automated navigation and taxonomy, it is ideal for discovering pertinent information from structured and unstructured content.
	<b>Computer Associates</b> CleverPath Portal 4.5	An integrating portal with good security based on eTrust, with the most comprehensive out-of-the-box monitoring tools.
	<b>Hummingbird</b> Portal	A highly competent offering, which adds significant value, but obviously can leverage Hummingbird's other products most effectively.
	<b>Open Text (formerly Corechange)</b> Coreport 5.2	A framework portal with its strength in its use of Microsoft Active Directory to ensure roles-based access, single sign-on, and provisioning.
	<b>PeopleSoft</b> Enterprise Portal v8.4	Has good strengths and horizontal applicability, but will be best at exploiting the PeopleSoft range of enterprise applications.
	<b>Plumtree</b> Corporate Portal 4.5WS	Long regarded as the market leader for Enterprise Portals, without the large company support.
	<b>SAP</b> Enterprise Portal	Highly regarded technology, particularly for integrating enterprise applications, especially other SAP offerings.
	<b>Sun Microsystems</b> Sun ONE Portal Server V6	A comprehensive J2EE-based offering, but late to market and regarded as proprietary.
	<b>Sybase</b> Enterprise Portal	The key strengths are Sybase's integration technologies and the open architecture.
	<b>Vignette (formerly Epicentric)</b> Vignette Application Portal 4.1	A technically elegant J2EE-based portal that will become increasingly tied to Vignette's V7 Content Management.



Rating	Company/Product	Butler Group Opinion
Under-perform	<b>Compuware</b> <i>OptimalView</i>	An offering with strength in integration and technical purity, but suffers through lack of brand awareness.
	<b>Fujitsu</b> Interstage Portalworks V5	A comprehensive and scalable Enterprise Portal, which compares well with the Outperforming products but also lacks brand awareness.
	<b>Mediapps</b> Net.Portal	An informational product with a rich range of third-party information feeds delivered as Web services.
	<b>Novell</b> exteNd Director version 4.1	An access portal product, with strength in Web services access.

## ► KEY FINDINGS

- An Enterprise Portal is both a delivery mechanism for actionable information and can be a key tool for increasing productivity through automation.
- Enterprise Portals will provide the ‘active layer’ for BPM, Collaboration, and Knowledge Management, and increasingly they will incorporate intelligence and automation, to exploit the underlying applications and assist the user.  
Enterprise Portals will become the preferred access route for Web services, the emerging standard integration layer, and facilitate the construction of composite applications.
- Chief Information Officers (CIOs) need to identify and deliver quick ROI from a portal deployment to support the business case, but recognise that the greatest benefits will come in the medium-term as the organisation can extend and operate in different and more flexible ways.
- There needs to be active use of metrics, and analysis of them, to establish if the content of a portal is effective, and whether it is delivering value to the organisation. This is key to the establishment of ROI.
- The rapid roll-out of an Enterprise Portal to the whole organisation is vital, even with limited functionality. This will establish the buy-in of staff and ease the addition of greater functionality later.
- Whilst there is still a need for ‘best-of-breed’ portals in a heterogeneous IT environment, the application platform vendors will come to dominate the market.
- ‘Build your own’ is not a viable proposition for an Enterprise Portal. Such effort would be better spent improving the end-user experience.

## ► IBM WEBSPHERE PORTAL 4.2 AND PORTAL EXPRESS 4.1

### **Butler Group Summary**

IBM WebSphere Portal is a fully functional Enterprise Portal offering, which exploits IBM's range of security, integration, management, and collaborative technologies to the full. There are three enterprise class variants of the portal, and the Portal Express version provides an entry-level solution for smaller organisations, or departments, with a migration path to the largest of deployments. Portal deployments supported by WebSphere Portal can be internal or external Web sites, for employees, customers, or partners.

It was generally considered that whilst Version 4.1 was an accomplished product that provided the deepest integration through the application stack, the interface was somewhat lacklustre. Version 4.2 corrects this, with the themed sub-portals labelled Places, and skins for the portlets. The 'click to action' capability, synchronising portlets, and automatically passing data between them, potentially invoking actions, should give clear productivity gains.

The announcement of Collaboration Centre and the integration of Lotus technologies into WebSphere Portal from Q2 2003, will further enhance the collaborative functionality available.

WebSphere Portal has all the bits, all the functionality, and a comprehensive roadmap and delivery strategy to match. The pricing of the Portal – Express version with its simplified install and highly aggressive pricing makes the portal accessible to the smallest of companies.

Butler Group believes that IBM has the clearest message and strategy of all the current vendors of Enterprise Portals, and would strongly recommend organisations of all complexions consider the four previously mentioned offerings.

## ► PRODUCT OPERATION

WebSphere Portal provides a browser-based single point of access to all applications and content. It is designed to add business value by funnelling and filtering the overwhelming volume of information, whilst providing a consistent and unified desktop with appropriate tools for respective tasks, thus enabling users to be more productive.

Each portal is organised into 'Places' of associated applications and content, which can be related to business functions, organisational divisions, or even different companies. Each Place can have one or more pages, and each page can have one or more portlets. Available Places can be presented in the form of a drop down menu or as a list on a side bar.

WebSphere Portal comes with sample templates of pre-defined themes, which can be applied to Places to deliver an overall look and feel to portal pages. Skins can be applied to portlets, again to give a unified look and feel. Themes and skins can be created using WebSphere Studio Application Developer. Thus a single 'branding' can be applied across the whole Portal, or each of the individual Places can have its own. Places within a WebSphere Portal can also have different URLs to assist the users in their access, particularly in a customer-facing scenario on the Internet. This offers the delivery of multiple virtual portals within a single portal architecture.



## ► GENERAL FEATURES

In WebSphere Portal, IBM has combined its ‘best-of-breed’ technologies including security, collaboration, management, and integration, to deliver a highly functional, ubiquitous access and delivery mechanism for content and applications. There are three ‘enterprise’ variants of WebSphere Portal with increasing functionality for the respective organisation:

1. **WebSphere Portal Enable** – An information portal providing customisable portlets, personalised content, and Web content management. Components within WebSphere Portal Enable include:
  - WebSphere Portal Server.
  - WebSphere Application Server 4.0.4.
  - DB2 7.2 with fixpack 7.
  - IBM Directory Server 4.1.
  - Websphere Studio Application Developer.
  - WebSphere Portal Content Publishing.
2. **WebSphere Portal Extend** – With the addition of collaborative tools such as Instant Messaging and Team workspaces. It also provides aggregated search and site analytics. WebSphere Portal Extend adds:
  - Lotus Collaborative Components 4.2.
  - Lotus Collaborative Portlets 4.2.
  - Lotus Sametime 3.0 (limited license).
  - Lotus QuickPlace 3.0 (limited license).
  - Tivoli Site Analyzer 4.2.
  - Lotus Extended Search.
3. **WebSphere Portal Experience** – Includes advanced security, whiteboarding and application sharing. WebSphere Portal Experience adds:
  - Tivoli Access Manager for e-business.
  - IBM Content Manager 8.1.
  - Lotus Sametime 3.0 (full license).
  - Lotus QuickPlace 3.0 (full license).

By leveraging these components, IBM argues that it is ensuring the most up-to-date and comprehensive capabilities are available in the portal without duplication of development effort. For the customer this should mean that they could deploy the appropriate technologies in the portal framework to meet the business needs. Each of the variants can have appropriate functional extensions to fit customer needs including:

- Business Partner Offerings.
- WebSphere Everyplace Access.
- Lotus Discovery server.
- Enterprise Information Integration.
- WebSphere Edge Server.
- Enterprise Application Integration.

## WebSphere Portal – Express

*WebSphere Portal – Express 4.1* for Windows is an entry-level portal for Small to Medium-Sized businesses, with simplified installation, customisation, and administration. Businesses can trade up from WebSphere Portal – Express to WebSphere Portal Enable and Extend delivering the same portlets and content.

It is an out-of-the-box solution designed to run on a single server, running Microsoft Windows 2000. It has the same unified and customisable desktop as the enterprise variants. Portlets for the most frequently needed applications such as Lotus Notes and Microsoft Exchange are included, as are:

- WebSphere Application Server Advanced Edition.
- A plug-in for WebSphere Studio Application Developer.
- DB2 repository.
- Secureway LDAP server.

Additional directory support is provided for Microsoft Active Directory and customers can choose to use Oracle as their preferred database.

*WebSphere Portal – Express Plus* provides all the same functionality plus a suite of collaborative tools:

- Project team rooms.
- Task management.
- Document libraries.
- Team calendaring.
- Instant messaging.
- On-line awareness.

WebSphere Portal offers Dynamic Page Sequencing, essentially a defined workflow across pages and actions to create complex portal applications that align user interactions with business processes.

## ► PRESENTATION

Version 4.2 of WebSphere Portal can be accessed either through Web browsers such as Microsoft Internet Explorer or Netscape Navigator, or a range of mobile devices, such as PDAs, by using mobile viewers. The portlets displayed within each place can have pre-configured content, ensuring that users are presented with key, pertinent information irrespective of their personal preferences. If required, portlets can have no borders, skins, or themes, and occupy a full page.

The *Quick Customizer* tool enables business professionals to create new Places and pages, modify the content and layout of a page, and manage Places and pages including deletion. Quick Customizer will, for example, allow the change of a theme for a place with five mouse clicks.

## ► INFORMATION SERVICES

As would be expected, WebSphere Portal's content publishing component supports IBM's Content Manager repository and DB2 for both repository and versioning. But in addition, it supports ClearCase, Oracle (9.01 and 8.1.7), and Microsoft SQL server. WebSphere Portal includes a single user interface for Content Publishing and personalisation components, which is similar to that of the Portal User Interface (UI). The Content Publishing UI has a built-in, integrated approval process manager.

Besides IBM's own technology, a wide range of search and taxonomy technologies are supported, some providing automatic categorisation and summarisation, including Autonomy and Verity.

WebSphere Portal supports the clipping of Web pages to be brought into the portal. There are three options available:

1. **Manual clipping** – Selecting one or more objects on the Web page.
2. **Take all content** – Capturing the whole Web page.
3. **Start and finish points** – Selecting a section of the Web page.

A single WebSphere Portal deployment can support multiple languages simultaneously in the portal, including double-byte character sets. The portal detects the user's language from the browser or references the user's profile settings.

## ► APPLICATION INTEGRATION AND ACCESS

All application integration and access is provided by portlets. IBM released 450+ portlets in 2002, only 150 of which were written by IBM. The remainder were written by other vendors for their respective applications, and IBM partners. There is an on-line catalogue for IBM WebSphere Portlets at <http://www.ibm.com/software/webservers/portal/portlet/catalog>. Application portlets for enterprise packages such as SAP, PeopleSoft, and Siebel are available and transactions can be executed through the APIs of other back-end systems. New, pre-configured portlets included in WebSphere Portal Version 4.2 include News, Stocks, and Weather. WebSphere Portal also supports Java Connector Architecture (JCA) 1.0 adapters and non-Java programmers can develop additional portlets.

The content of each portlet can be defined and customised to an individual user, based upon business rules. Such rules are constructed by business staff that are 'domain experts' for a particular subject, using the *Graphical Rule Editor*. This, IBM argues delivers greater business value in that users will have the most relevant content directed towards them, without having to search for it.

A feature labelled '**click to action**' enables data to be transferred among portlets, from multiple applications, effectively synchronising them. For example, in a hospital deployment, changing the patient identifier in the Administration System portlet will automatically initiate the update of the Pharmacy portlet and the Lab Results portlet, displaying the drugs and findings respectively, for the new patient, without the user having to query in each. The portlets need not be displayed, and where portlets handle more complex transactions, this also facilitates a high level of automated data transfer and update. Such automation will not be prone to human error and will deliver more accurate records.

**Dynamic Page Sequencing** allows the creation of complex portal applications by enforcing a sequence of pages and actions. This aligns the user with the business processes.

## ► COLLABORATION

An enterprise portal is, by its design a shared workspace that is not constrained by time or geographical boundaries. WebSphere Portal provides collaborative tools to facilitate activity using the portal. Out-of-the-box WebSphere Portal includes a range of collaboration portlets, some grouped into applications:

- **Lotus Discovery Server** – Allows users to browse or search the Discovery Server Knowledge Map. This portlet application contains the following portlets:
  - Lotus Discovery Server Knowledge Map.
  - Lotus Discovery Server Mini-Search.
  - Lotus Discovery Server Search Results.
- **Lotus iNotes** – Provides access to a Lotus iNotes server offering Welcome, Mail, Calendar, and To Do List.
- **Contacts and Notebook functions.** This portlet application contains the following portlets:
  - iNotes Mail Portlet.
  - iNotes Calendar Portlet.
  - iNotes ToDo Portlet.
  - iNotes Contacts Portlet.
  - iNotes Notebook Portlet.
- **Lotus Notes** – Provides access to a Lotus Notes server offering Mail, Calendar, To Do List, Contacts, and Journal. This portlet application contains the following portlets:
  - Lotus Notes View – displays the contents of any Lotus Notes database.
  - Lotus Notes Mail – displays the contents of a user's Lotus Notes mailbox mail database. This portlet can be configured to show mail, calendar, and to do views of any mail database the user can access.
  - My Lotus Notes Mail – looks up the user's mail database and displays the contents of the user's inbox.
  - My Lotus Notes Calendar – looks up the user's mail database and displays the user's Calendar.
  - My Lotus Notes To Do – looks up the user's mail database and displays the user's To Do view.
  - Lotus Notes Discussion – views Notes databases built with the Discussion Database Template.
  - Lotus Teamroom – views Notes databases built with the Team Room Database Template.
  - Lotus QuickPlace – Displays a Lotus QuickPlace view inside the portlet.
  - Lotus Sametime – Displays a Sametime chat window inside the portlet.

**Collaboration Center**, announced in January 2003 and to be delivered in Q2 2003, is a series of pre-configured Lotus collaborative applications, which will form part of WebSphere Portal. Based upon capabilities developed by IBM for use as part of its internal "Bluepages"/Employee directory, it consists of three packages:

1. **People Finder** – An on-line corporate white pages and organisational navigation tool.
2. **My Lotus Team WorkPlaces (QuickPlace)** – To create, search, and manage multiple Team WorkPlaces that a user may belong to in a single view.
3. **Lotus Web Conferencing (Sametime)** – Allowing users to create, view, and participate in on-line meetings that they are associated with.

All three include Lotus Instant Messaging (Sametime), identifying whether users are on-line and facilitating direct communication.

## ► SECURITY/IDENTITY MANAGEMENT

Single-Sign On (SSO) is supported through the portal's 'credential vault', and WebSphere Portal has support of Novell e-Directory and other Lightweight Directory Access Protocol (LDAP) compliant directories.

## ► DEPLOYMENT

**Administration** All administration is undertaken through the portal interface. Administrators within WebSphere Portal can create multi-level navigation menus for pages using tabs, pull-down menus, or Windows Explorer-like trees to assist user navigation. This can include navigation to URLs outside the portal.

Assignment of the navigation interface can be delegated by role through the directory. Portlets can have content pre-configured by the administrator(s), and administrators can also create unifying themes for Places in the portal.

Standard reports that can be delivered for WebSphere Portal include:

- Page Ranking.
- Page Trend.
- Portlet Ranking.
- Portlet Trend.
- Login Trend.
- Login by User Ranking.
- Command Trends.
- Summary.
- Summary Trend.
- Page Edit Ranking.
- Page Edit by User Ranking.

Integration of Tivoli SiteAnalyzer delivers a comprehensive picture of the portal's usage and performance, enabling administrators and business managers to focus enhancements to reflect business needs.

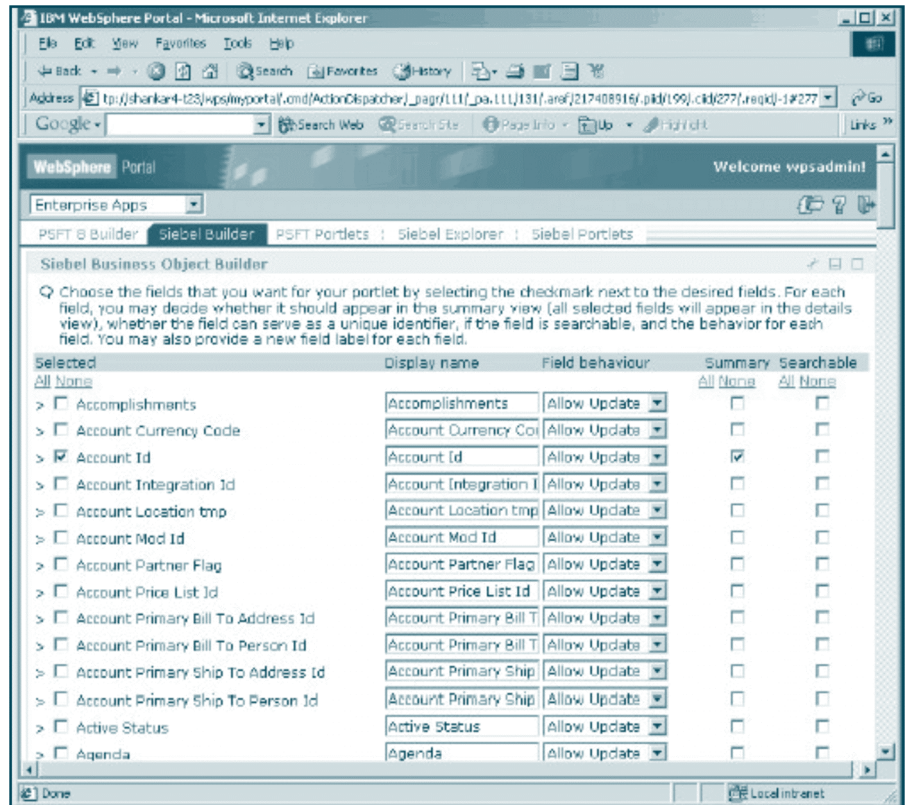
**Infrastructure** WebSphere Portal 4.2 can be deployed on multiple operating systems including Windows, AIX, Solaris, Linux and zOS, and zLinux on the zSeries platforms. Portal – Express can only be deployed on Microsoft Windows 2000. Supported repositories for content are DB2, Oracle 9i (9.0.1), and Oracle 8.1.7.

**Support and Standards** IBM is committed to many industry standards, including JSR 168 and WSRP, etc., and as an organisation, sits on most of the industry standards bodies. Positioned as a ubiquitous access framework and infrastructure, WebSphere Portal conforms to both existing and emerging standards. Of particular note is support for the open source Apache Struts framework for building Web services.

**Development Tools** IBM provides a range of tools for WebSphere Portal to meet the requirements of both developers and end-users:

- WebSphere Studio.
- The Portal Toolkit.
- Web Clipping.
- Portlet Builders.

The latter is a 'Wizard'-driven tool for business power users to create both new portlets and to configure and customise existing portlets. Portal Builder will display the fields of an application or database, and the user selects those appropriate for the portlet, whether they should be searchable, and the required behaviour. New field labels can also be added. Once rights are assigned to the portlet it can be published to the portal and thus available to authorised users.



### A Portal Builder Screen Shot

There are also significant developer resources available from the IBM Web site including articles, tutorials, hints and tips, and IBM's Redbooks.

## Deployment Options

The breadth of the WebSphere Portal offerings gives user organisations wide flexibility in deployment, and IBM Global Services will provide WebSphere Portal on a managed basis. For existing users of WebSphere Portal 4.1 there is a simple migration path to Version 4.2. IBM provides a WebSphere portal kit with downloadable demonstrations from its Web site. ([www.ibm.com/e-business/uk/websphere](http://www.ibm.com/e-business/uk/websphere)).

## ▶ MARKET STRATEGY

Version 4.2 of IBM WebSphere Portal was released on 6 January 2003. WebSphere Portal Express 4.1 was released on 31 October 2002. With the Portal – Express product, IBM now has a range of portal offerings that are accessible to even the smallest of organisations, utilising the same technology, including portlets, which can also be deployed to the largest. WebSphere Portal is more than horizontal in its applicability – it could be described as ‘flat earth’. Whilst the Portal – Express product will be principally marketed by channel partners, the Enable, Extend, and Experience ‘enterprise’ variants are being marketed to all verticals, with ROI justification based upon greater automation of business process and greater productivity of staff, by more closely aligning their working tools with their roles.

Pricing for WebSphere Portal Enable, Extend, and Experience, will be dependant upon the individual deployment and optional features required. Pricing for an Intranet deployment of Portal – Express is US\$4,000 for a 50-user licence i.e. US\$77 per user when licensed for use by employees of an organisation. Portal – Express Plus is US\$122 per user on the same basis. The Extranet deployments are priced per processor (up to four) and are US\$30,000 and US\$47,820 per processor respectively.

WebSphere Portal Version 5 will be released later in 2003.



## ► STRENGTHS AND WEAKNESSES

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>• Comprehensive and scalable solution.</li> <li>• Utilises 'best-of-breed' components.</li> <li>• Highly competitive entry price (Portal Express).</li> <li>• Integrated portlet Builder.</li> </ul>	<ul style="list-style-type: none"> <li>• Perception of 'lock-in' to IBM technology.</li> </ul>

## ► VENDOR PROFILE

International Business Machines (IBM) is one of the world's leading e-business companies, with operations in 164 countries. IBM was incorporated in the State of New York on 15 June 1911, as the Computing – Tabulating – Recording Co. (C-T-R), a consolidation of the Computing Scale Co. of America, The Tabulating Machine Co., and The International Time Recording Co. of New York. In 1924, C-T-R adopted the name International Business Machines. The corporate headquarters are in Armonk, New York, US.

IBM makes a broad range of computers, including PCs, mainframes, and network servers. It also produces software and peripherals, and has a Global Services arm. Nearly 60% of the company's sales are to non-US customers. IBM continues to focus on the Internet and e-business. The company has over 300,000 employees worldwide. Key acquisitions in 2002 included PricewaterhouseCoopers Consulting and Rational.

IBM common stock is listed on the New York Stock Exchange (NYSE: IBM), and on other exchanges in the United States and around the world.

Revenues and Net Income for the last three financial years ending 31 December were as follows:

	2002 (US\$ billion)	2001 (US\$ billion)	2000 (US\$ billion)
Revenue	81.2	83.1	88.4
% Change on quarter last year	-2.3%	-6.0%	1%
Net Income/(Loss) before tax	3.6	7.7	8.1

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