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# Integrating the Business Web Experience with Oracle WebCenter Portal

## Introduction

Over the past 15 years, access to information and data has grown exponentially, which has fueled knowledge workers ability to help organizations streamline operations, drive down costs, and grow their businesses. By definition, knowledge workers are business users who work primarily with information or one who develops and uses knowledge in the workplace. Knowledge workers typically spend 38% of their time searching for information. Recently, knowledge workers have expressed that the volume of information and data has become overwhelming and is hindering their ability to do their jobs.

Organizations are turning to their IT group to deliver a more relevant and integrated web experience for business users. However, the highly specific nature of such projects makes them impractical for IT to support directly.

Organizations must enable the business groups to quickly deliver and maintain information solutions without the need for involving IT.

## Business Problem

Business groups within organizations are finding it increasingly important to optimize the business web experience for their users. Given that business groups rarely have software developers and administrators on staff, they rely on the organizations Information Technology (IT) group to implement solutions for their users.

Business groups submit requests to IT, which begins the time consuming and resource intensive process of defining and formalizing the business requirements. IT then scopes the effort, builds a plan, identifies internal/external resources that are needed for the project, and then proceed to implement the solution. Between these lengthy high-touch interactions and the limited number of IT resources available, more and more projects get put into the backlog.

While a comprehensive request process will always be necessary for complex projects, IT groups are finding this approach too inefficient and costly to keep up with the larger number of small projects that the business groups are requesting for their business users.

## Understanding the Information System Value-Chain

All organizations have core business data that is typically stored within a database and/or mainframe. Depending on the nature of the business, this data can contain anything from customer/citizen records, billing details, usage history, employee information, and financial records to scientific research such as environmental or macroeconomic models.

To allow business users to view, modify, and analyze this data, IT implements various information systems which provide discrete and controlled interactions through a business-centric interface. There are four general categories of information system interfaces that a business user would use for their daily job: Content Management, Business Applications, Business Process Management (BPM) system, and Business Intelligence (BI). Each of these systems provide their own individual value to the end user. However, these systems work together to form a value-chain for business users as shown in Figure 1.

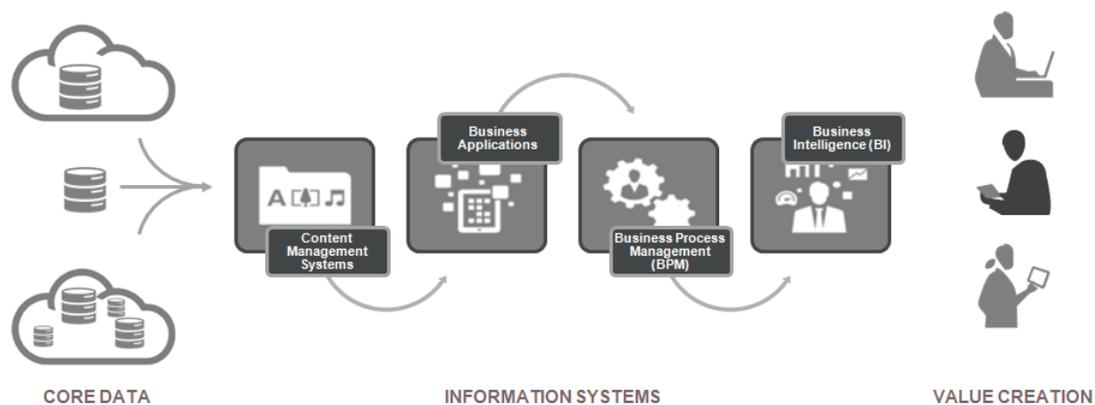


Figure 1. Value-Chain: Information System Interfaces

### Content Management Systems

Core data is stored as structured data, which means data resides in fixed fields within a record or file. Those records and files will often have associated unstructured data in the form of documents and files such as purchase orders, contracts, invoices, surveys, scanned documents, images, etc. That unstructured data is typically controlled by a Content Management System to provide business users a means of accessing and managing those documents and files. A fully featured Enterprise Content Management (ECM) system offers a broad set of capabilities for managing unstructured information through security, version control, metadata, retention as well as document workflow.



Web content publishing is also a major capability of a Content Management System, providing a means of maintaining files (e.g. HTML) which are used for publishing information to a website.

### Business Applications

Business Applications are the most common type of web interface for business users, they execute business functions such as order processing, procurement, production scheduling, customer management, accounting, etc. Business Applications contain the business logic which enforces the structure and policies of how the core data is maintained and utilized throughout the organization.

These interfaces can vary depending on the job role of a business user and the type of interaction they need. For example, a business user within a supply planning job role may use a Supply Chain Management (SCM) application to monitor inventory levels and update physical supply counts. Whereas someone in an accounting or finance job role may use a Financials application to update the department codes which are used to allocate costs of those supplies to the appropriate group. Ultimately, they are working with the same core data, but their roles have considerably different needs.



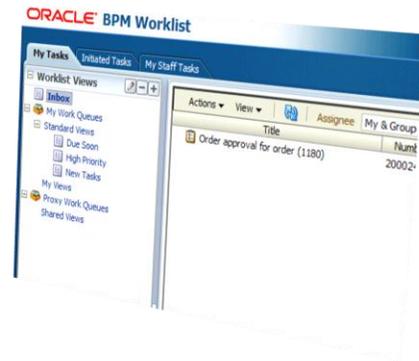
Most organizations utilize commercial off-the-shelf (COTS) software packages for their primary Business Applications i.e. Customer Relationship Management (CRM), Human Capital Management (HCM), Enterprise Project Portfolio Management (EPPM), etc. Oracle examples include: Oracle E-Business Suite, Siebel, JD Edwards, Peoplesoft, Oracle Sales Cloud, Primavera, and Fusion HCM to name a few.

In addition, organizations will often have a large number of custom "homegrown" business applications which are used to address unique business or technology requirements. These custom

Business Applications are built using a variety of different tools and frameworks, but the most commonly used technologies include Java, .NET, and database-centric form building tools like Oracle Forms.

### Business Process Management (BPM)

Business logic and processes are often hardcoded into Business Applications, which makes it difficult for organizations to adapt and overlay processes to accommodate changing or possibly mandated process controls. BPM provides organizations an explicit means of designing, deploying, optimizing, and managing sophisticated processes which span multiple departments, users, business applications, and data/information sources.



An individual business user's interaction with a given process may seem fairly simple e.g. form submission, approve, deny, assign, review, etc. However, business users are often part of multiple projects at different stages within a process and have different roles within other processes. To address this, BPM solutions typically provide tools to simplify routing of the appropriate task to a given business user. In some cases, a business user will manage their process actions through a worklist style interface, but many process actions are embedded into custom Business Applications interfaces.

### Business Intelligence

Many organizations use Business Intelligence (BI) systems to gather and analyze information from disparate sources across various lines of businesses for the reporting and monitoring of business activities. Business users gain valuable business insights through the BI systems reporting of historic, current, and predictive information in the form of key performance indicators (KPI's), scorecards, charts, and graphs.



### Disjointed Information Systems

Studies have found that 80 percent of business users utilize only 20 percent (or less) of a software systems capabilities. However, a typical business user needs to access 3 or more systems to do their job. Between searching for relevant information and tasks, switching contexts between systems, and filtering the massive volume of information presented to them on a daily basis - it's no surprise that 66% of knowledge workers feel they don't have enough time to get all of their work done.

Many information system interfaces are built and deployed for specific business groups, functions, or to address a particular business need. Each system provides business users invaluable ways of interacting with the business data which they are responsible for. However, each of these systems

provide their own interface and effectively silo the business users experience into multiple disjointed interactions.

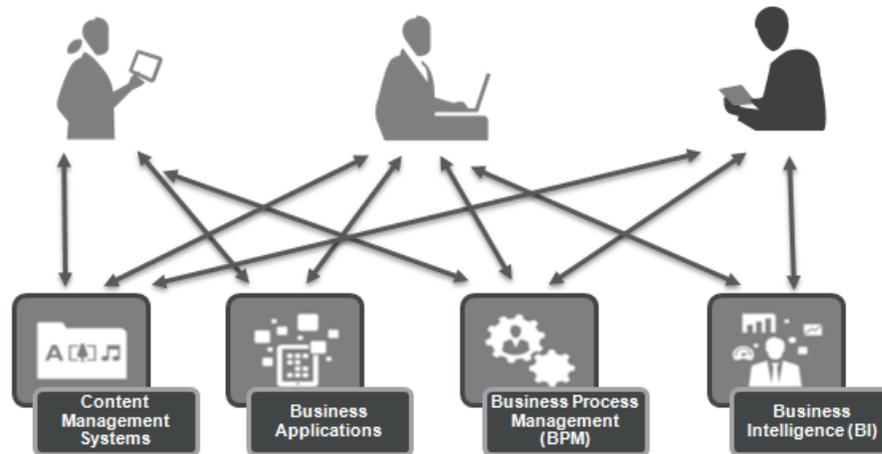


Figure 2. Disjointed Interactions

Business groups look to IT to build information systems which streamline their business users web experience to improve productivity and minimize the opportunity for processing errors. Unfortunately, these projects often never get addressed because with the limited number of resources, IT prioritizes the projects which will have the largest impact and touch the most number of business users. However, while the individual projects may only address the needs of a small number of business users within a given group, the combined business impact of all the projects which are not being addressed becomes substantial.

### Maintaining Information Systems

One of the biggest challenges for an IT department is balancing resources between new projects vs improving of existing systems. While business groups are ramping up the number of IT project requests, they sometimes underestimate the effort involved with maintaining the ones which they are already using.

IT groups struggle with inefficiencies caused by having a wide variety of technologies and systems which they support. Each information system requires ongoing maintenance, whether it be service patches, platform/dependency updates, or full system upgrades, IT must have resources on staff that are knowledgeable enough about each system to keep them operating normally. When maintenance of a system is neglected, extensive unplanned downtime occurs which can severely disrupt the business.

While IT standardization policies can help limit unsupported technologies from being implemented for new projects, exceptions will often occur. Whether based on the justification of a critical business need, or brought into the environment through an acquisition or merger, the IT staff is often faced with supporting a large number of systems which they do not have deep knowledge of.

Cloud-based information systems have grown exponentially over the past 5 years. While Cloud-based approach for information systems can eliminate some of the IT operations overhead, it does not address the siloed business users experiences.

Most commercial off-the-shelf (COTS) information systems provide native capabilities which allow IT to customize the business users interface. The level of customization that a software vendor officially supports out-of-the-box for a given system can range from basic skinning (look/feel) to adding/removing capabilities. However, customization not only requires deep specialized understanding of a particular system, but can also introduce complexities by creating unpredictable behavior when patching and upgrading an environment.

## Architect for Flexibility

Savvy IT groups decouple the user interaction layer from the business logic and data layer (Figure 3), providing a single entry point for business users to access and interact with the most relevant data and information systems. The business logic and data layer includes both core data as well as information systems sources. The user interaction layer is used as the common interface for constructing and delivering the experience to the user.

This decoupled approach allows IT to reduce the complexities of maintaining customizations for individual systems while gaining ultimate flexibility in how they build web interfaces for the business users.

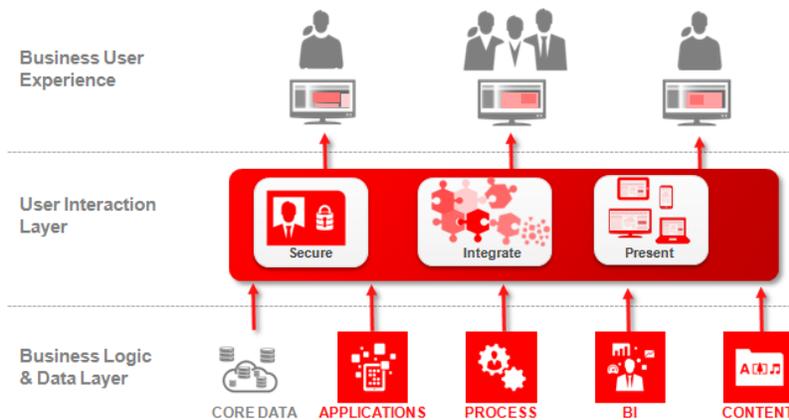


Figure 3. Layered Approach for Delivering Information System Interfaces

### Characteristics of a User Interaction Layer

Presentation, Integration, and Security are the three primary characteristics of any information system interface. Presentation is needed for controlling how the page is structured and what it looks like for a given user, integration enables users to view and interact with a data source, and security for access control and authorizing what a user can see and do.

## Integrating the Business Web Experience with Oracle WebCenter Portal

Oracle WebCenter Portal is the ideal platform for organizations to quickly and easily create an integrated business web experience for intranets, extranets, and self-service portals. It allows IT to focus on projects that deliver higher value and reach a broader audience, while maintaining and leveraging the information systems which are already in place. Providing a common platform across a variety of projects accelerates the time it takes for IT to build and deliver new information solutions. By empowering the business groups with a customizable platform that is tightly integrated into the environment, WebCenter Portal enables IT to implement a scalable self-service model that empowers business groups to streamline the business web experience for their users.

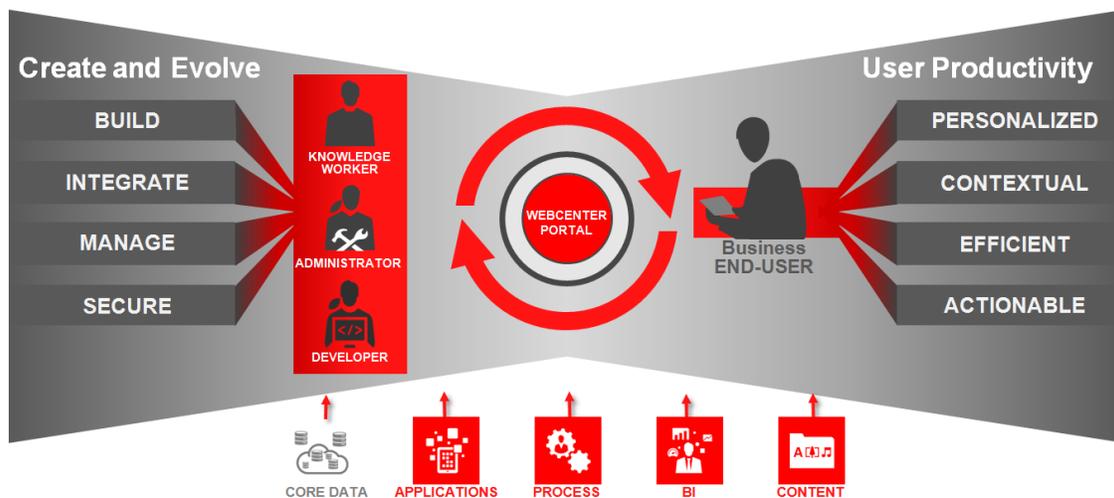


Figure 4. Oracle WebCenter Portal

### WebCenter Portal Improves User Productivity

WebCenter Portal delivers a secure and efficient means of consuming information and interacting with content, applications, processes, and other users:

- **Personalized:** WebCenter Portal can personalize the business users experience by who they are and/or their associations. Look and feel, page layout, components shown, and navigation can be defined based on user attributes (dept, group, geography, etc.) and/or security (permissions, roles, policy).
- **Contextual:** ensures business users make informed decision by bringing together disparate information and data sources into a single view and eliminating the need to switch interfaces to find related information or assets.

- **Efficient:** present only the information that the user needs; thereby, eliminating wasted cycles involved with digging through multiple information system interfaces.
- **Actionable:** business users can directly interact with transactional business applications and process from within the same interface - streamlining execution and enabling business users to make informed decisions.

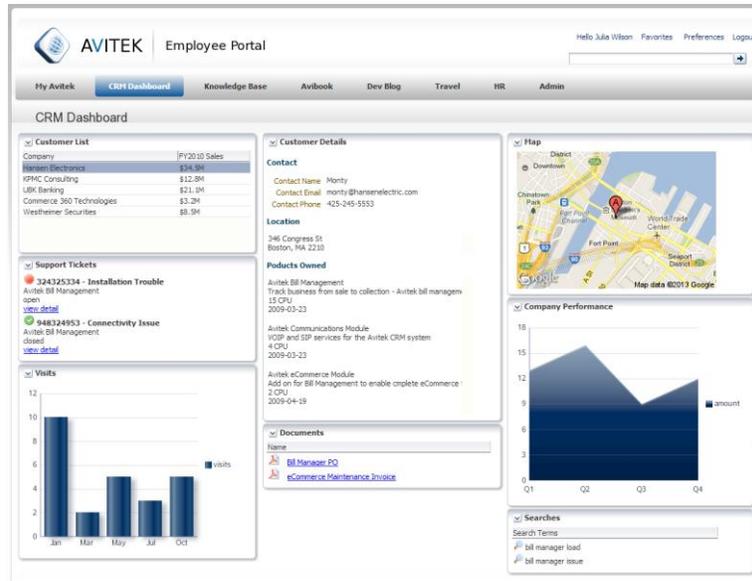


Figure 5. Example of an integrated business web experience.

## Create and Evolve the Experience

WebCenter Portal picks up where traditional portal solutions have failed, not only providing powerful capabilities for administrators and developers, but offers tools aimed at empowering the business:

- **Build:** enables non-technical users to quickly create new portals through predefined portal templates and easy-to-use browser-based tools - empowering business groups to deliver tailored information solutions without the need for involving IT. Over 100 prebuilt reusable components and tools to create the portal experience e.g. navigation, search, members, RSS reader, content presenter, etc.
- **Integrate:** reduce the amount of time and effort needed to implement portals. WebCenter Portal provides prebuilt and certified integrations for key Oracle middleware and applications products, as well as a broad set of options for developers to construct custom application components.
- **Manage:** WebCenter Portal makes managing Portal resources simple. Administrators or business users with appropriate privileges can create and edit pages, page templates, site navigation, resource catalogs, and various other elements of the site.

- **Secure:** WebCenter Portal offers fine-grained permissioning for access and administration of the entire site including portal specific services and components. Tightly integrated with enterprise identity management technologies makes it easy

## WebCenter Portal Empowers Business

To keep up with the growing number of project requests, IT must find a more systematic way to deliver new capabilities and reduce the effort of creating and maintaining the environment. Using WebCenter Portal as the common user interaction layer ensures IT has a consistent means of exposing information and data to business users. To address the high volume of variations that the end users require, WebCenter Portal delivers a rich set of browser-based tools that non-technical users can use to create and evolve the portal experience.

WebCenter Portal's capabilities are extensive, this section of the whitepaper will highlight only a few key features and capabilities which are relevant to empowering businesses to deliver their own information solution interfaces for their users.

### Delivering Rich and Compelling Multi-Channel Web Presentation

WebCenter Portal offers a Portal Builder (Figure 5) capability to enable delegated administration of the site, allowing business groups to utilize non-technical knowledge workers to manage the business web experience for other members of their group or a specified target audiences. Knowledge workers can create new portals and pages, as well as customize page layouts, navigation structure, look and feel, and drag-and-drop reusable components onto the page.

Mobilizing the portal using Portal Builder is simple, knowledge workers can define client device specific experiences for virtually any client device type or group: desktop, smartphone, tablet, kiosk, etc. WebCenter Portal includes over 20 device profiles for some of the most popular devices (e.g. iPhone, iPad, Galaxy S, etc.) and makes it simple to create custom device profiles.

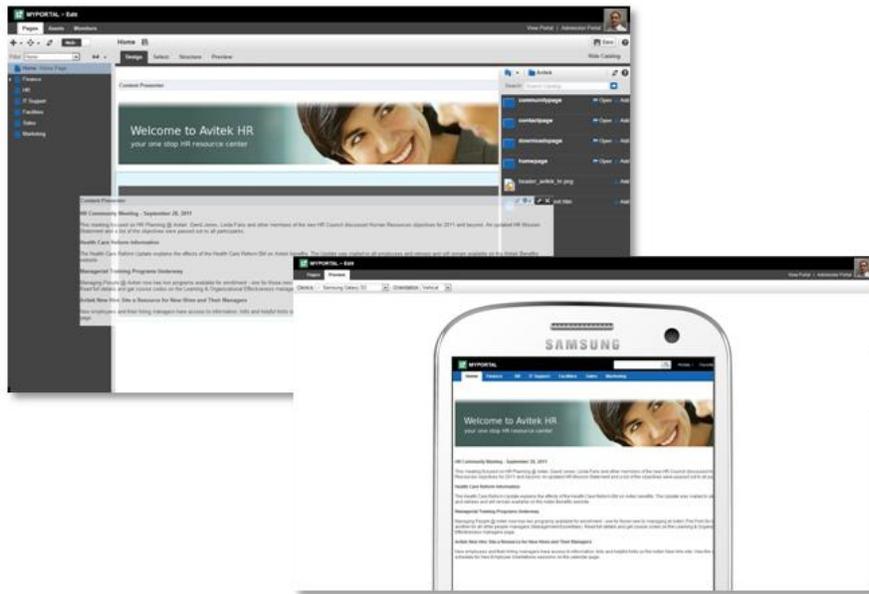


Figure 6. Knowledge Worker Tools - Portal Builder and Mobile Page Preview

## Integrate Key Information Systems and Data Sources

To surface disparate information systems into a unified interface, development tools and frameworks are often needed to create custom components. WebCenter Portal provides a comprehensive integrated development toolset and several options for developers to build, deploy, and share custom developed integrations across the portal environment - offering support for JSR168/286 Portlets, Web Services for Remote Portlets (WSRP) 1.0/2.0, Pagelets, gadgets, and Oracle Application Development Framework (ADF) task flows. However, while WebCenter Portal's component development capabilities offer significant advantages, Oracle customers expect more.

Unlike other portal suppliers, Oracle offers products which span the entire information system value-chain. Other portal suppliers find it too costly and complex to productize and support integrations for information systems which they do not own, so they settle for providing a general purpose development platform to allow customers or partners to build custom. Oracle delivers key integrations as part of the product release process thereby ensuring they are maintained and supported with each new release.

## Content Management

WebCenter Portal leverages WebCenter Content for delivering document and content services for the portal. Prebuilt components such as Content Presenter, Document Manager, Document List View, and Recent Documents enables end users to view and manage documents and other types of content in your organization's content repositories directly from the portal interface. These prebuilt reusable components can be easily configured to display the documents and content in a number of ways.

## Applications

Extend the reach of your Oracle Enterprise Applications by leveraging certified integrations with Oracle E-Business Suite, PeopleSoft, JD Edwards, Siebel and Oracle Service Oriented Architecture (SOA) Suite. Applications can be surfaced with the portal a variety of different ways depending on the type of interactions that is needed. In fact, application data can be indirectly integrated into the portal via Business Intelligence reports; application process interactions can be integrated through Business Process Management (BPM) tools. However, when user requirements dictate a high degree of application logic and interaction to be performed within the portal context, then more direct integration options must be considered.

## Business Process

WebCenter Portal's worklist service allows users to monitor and manage business process assignments which they are responsible for. It can be wired to multiple Business Process Execution Language (BPEL) connections to enable aggregation of worklist items from multiple BPEL servers.

Additionally, WebCenter portal is tightly integrated with Oracle Business Process Management (BPM) and can be combined to deliver Business Process Spaces. The process space is built to allow business users to collaborate on relevant processes and instances based on their roles.

## Business Intelligence

WebCenter Portal's prebuilt integration with Oracle Business Intelligence Enterprise Edition (OBIEE) allows dashboards, scorecards, and other business reports to be easily drag-and-dropped onto a page. Once configured with the OBIEE environment, all the reports that a business user is authorized for will show up as an available component in the Portal Builder resource catalog palette - making it simple to deliver key business metrics into a users interaction.

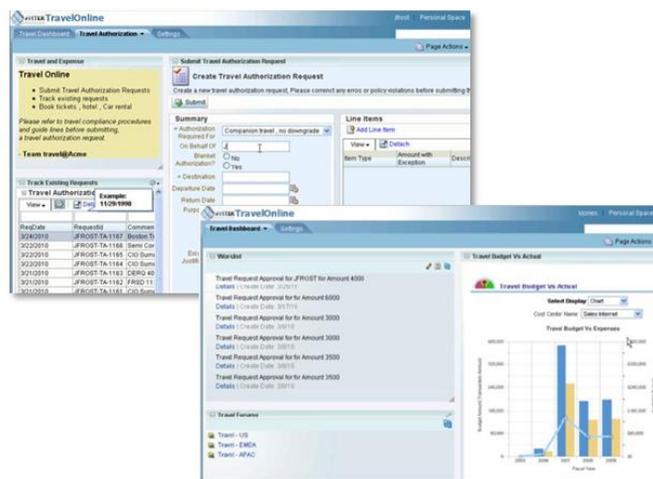


Figure 7. WebCenter Portal integrating OBIEE and Oracle BPM

## Conclusion

With deep roots in database technology, Oracle consistently strives to help customers reduce cost and complexity of connecting business users to core business data. Through R&D as well as acquisitions, Oracle has built the most comprehensive portfolio of enterprise software products available from any other vendor in the market. Offering best-of-breed products in virtually all information system categories allows Oracle to address key integration points across the environment, as well as build capabilities which streamline implementation of information solutions across the organization.

Oracle WebCenter Portal is the ideal platform for organizations to quickly and easily create an integrated business web experience for intranets, extranets, and self-service portals. It can empower the business and allow IT to focus on projects that deliver greater value to the organization.



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