

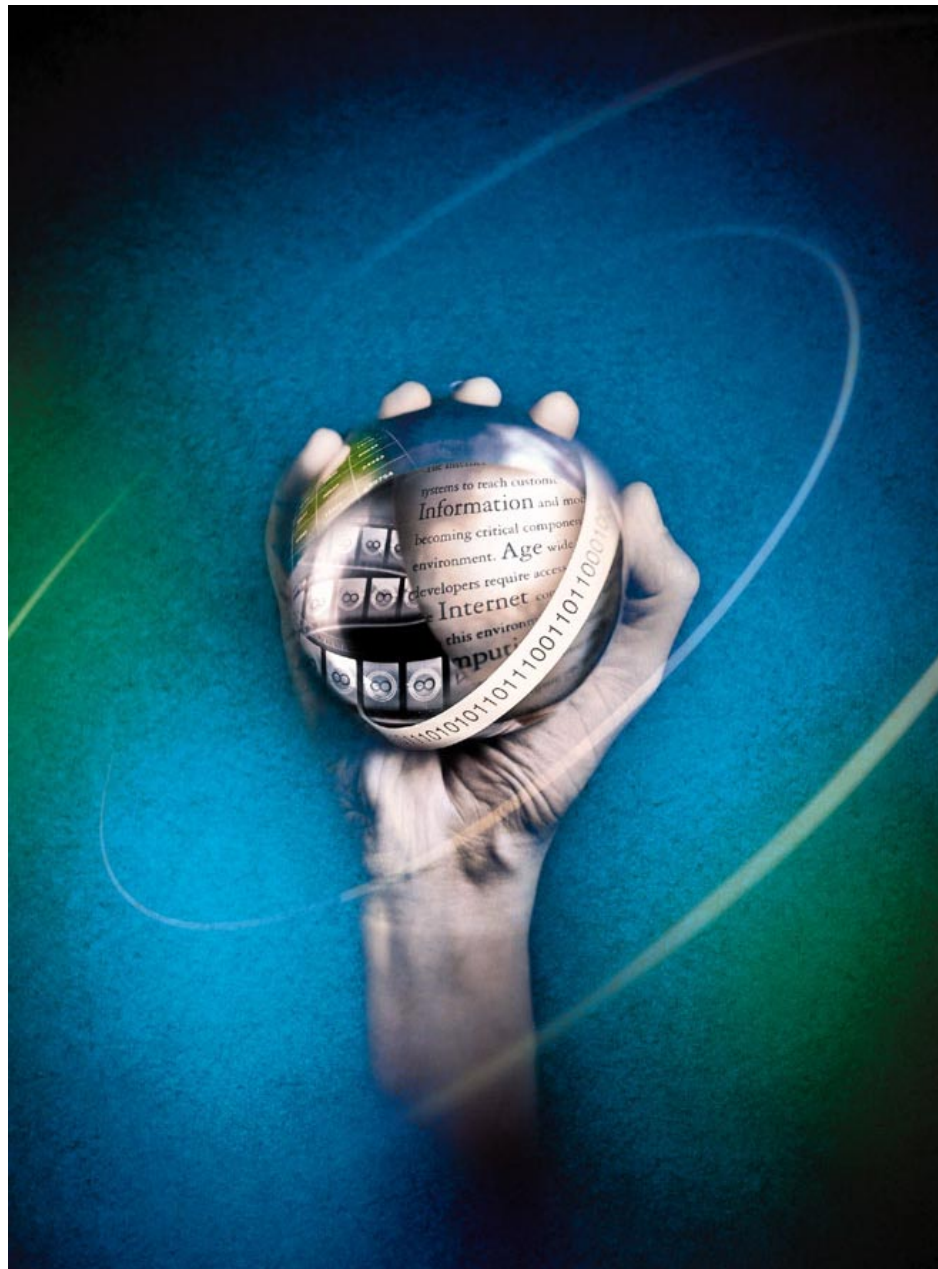


## Oracle8i™ *interMedia*™

*Reliable Data Management Services for the  
Internet and Media-Rich Data*

*An Oracle Business White Paper*

*November 1998*





## Oracle8i *interMedia*

### EXECUTIVE SUMMARY

The nature of Internet and intranet applications is changing. Even in the most traditional companies, systems that were once experiments in electronic commerce are becoming significant contributors to the corporate top line. The Web site has replaced the traditional paper-based and e-mail-based vehicles for disseminating policies, procedures, and communication of other critical business processes. Almost without notice, these homegrown Internet applications have become production systems essential to the core functions of the enterprise's ability to generate revenue and efficiently execute its business processes. A consequence of this is that simple file-based systems are now central to Internet production systems. These file-based systems are similar to ones that enterprises discarded 20 years ago, in favor of more reliable relational data management systems.

Oracle8i *interMedia* allows Internet content to benefit from advanced database technology services. For the first time, the security, administrative controls, performance, scalability, and open access of professionally managed enterprise information technology systems are available to data stored in corporate Websites. *interMedia* adds the native datatype services, metadata management facilities, and operators to support the content and assets found in Internet style applications. It enables Oracle8i to manage text, documents, image, audio, and video in an integrated fashion with other enterprise information. In addition, *interMedia* includes support for popular Web authoring tools, popular Web servers and online Internet-based geocoding facilities for locator services often found in Internet and data warehouse applications.

David Gilmore, chief research officer, Giga Information Group, believes now is the time when enterprises will “*Embrace* the Internet.” He states, “this one driver the Internet – and the corporate transformation associated with embracing it, have broad implications for all the traditional functions of IT, spanning platforms, applications, networks, data management, and services.” Among the many changes that the Internet has caused is the change in the nature of the content that makes up applications and has value to corporations. This content is an asset to the enterprise and therefore requires data management services to assure it is secure, available, and can be used reliably.

## ASSETS IN INTERNET APPLICATIONS

Business valuation was once measured, primarily, by the amount of physical property and fiscal assets a corporation owned, produced, or could be expected to produce. These assets include land, facilities, capital, inventory, cash and securities, and other tangible items. One of the primary purposes of data management systems has been to account for, manage, and secure these valuable holdings.

With the advent of the information age, less tangible items have greatly increased in value. Some intangibles, like brand identity, have long been recognized to have independent value. Companies in the consumer goods market like H.J. Heinz, Perrier, Guinness, and Nestle have derived substantial value from the brands that have existed for generations. Over the past decade, there has been a shift toward placing even greater value on brand equity and intellectual property. This is due to the increasing value of information and the ability to consistently present and manage the representations of brands through new channels, to new audiences, in new markets. Intellectual property, identity, image, and brands can be represented as digital or media assets and licensed to a variety of users. As information has become a licensable product, market value has been increasingly measured by the brands a corporation controls and the intellectual assets they embody.

This content, assets represented using digital media and formats, are core to Internet services. The information content of Websites, and the control and access to this content is what defines and differentiates enterprises on the Internet. The security, control and management of this information is no less important than the control and management of the traditionally managed infrastructure assets.

### Assets in Internet Applications

Infrastructure Assets	Investment Assets	Intellectual Assets	Media Assets
LAND FACILITIES CAPITAL INVENTORY	FINANCIAL PORTFOLIOS  ECONO-METRIC DATA	DOCUMENTS DRAWINGS BLUEPRINTS LAB IMAGES ALGORITHMS (CODE)	LOGOS JNGLES PHOTOS ANIMATIONS VIDEOS
Physical Property	Fiscal Assets	Intellectual Property	Brand Equity

Figure 1: The breadth of information assets in Internet applications

## CHALLENGES WHEN MANAGING INTERNET DATA

The Internet has changed the nature of data management. Internet applications typically contain multimedia content (documents, text, images, maps, audio and video clips), locator facilities and links into online services, e.g., ticker information. Electronic commerce and intranet applications include traditional inventory, pricing, sales information, customer data, and the like in addition to this multimedia content.

This multimedia content brings with it a new set of datatypes and formats not previously found in production applications. While many current applications include text, the ability to query, search, analyze, and evaluate the text in documents and presentation materials has not typically been supported in these applications. The image, audio, and video content used in Internet applications are assets that are represented in formats like WAVE, AVI, QuickTime, RealAudio, RealVideo, TIFF, GIF, JPEG, etc. These formats include a wealth of metadata (information about the media content) that is critical to the way this data is queried, indexed, and optimized for retrieval and rendition, which is different from that of traditional data.

The conventional way to support multimedia data has been through the use of file-based specialty servers that have been designed to manage a single, special type of data. These systems support the formats and the rendition of the formats associated with the data, the administration of the system, the indexing and retrieval of the data, and the creation and analysis of the metadata associated with the data.

When only a small number of people need access to this information, the specialty server is a reasonable solution. The information or asset stored in these servers is important, but do not require constant availability. In many cases, only a few dozen people are affected by these systems. When product specifications or photos are part of an electronic commerce system, thousands of customers and prospects are affected. A few brand managers or sales analysts may use a specialty server to manage advertising usage and royalty tracking of images. When those same images are used in an extranet for supply chain applications, they must be tied to price files, inventory systems, and distribution systems.

The problem with specialty servers in this environment is;

1. They require special administration and management.
2. They require users to be trained on multiple systems.
3. Integration with mainline business systems is costly, complex, and difficult to maintain.
4. They are not designed for large volumes of data and large numbers of simultaneous users.

## The Problem: Proprietary Systems

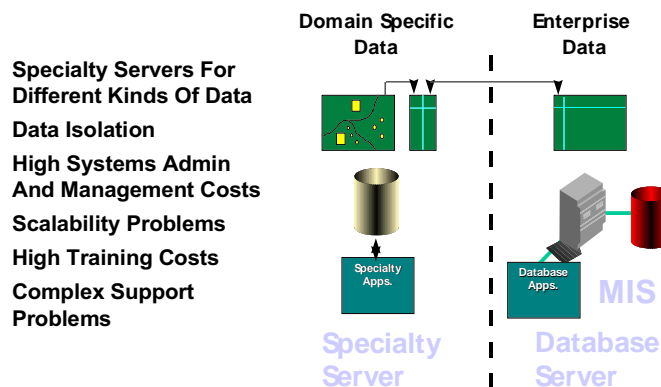


Figure 2: The problems with proprietary media management systems

### Integrating Many Types of Information

The situation becomes even more complex when the information used in the applications includes many types of multimedia, text, and other non-traditional data, as is typical in Internet applications. For each specialty server or file-based system, the underlying structure requires a separate management infrastructure. This can mean a separate index server for indexing and querying the datatype, a separate data loading facility to load the information, a separate language parser to manage the queries, and a separate set of utilities to back up, restore, and secure the data. With each additional type of information, the collection of *systems* becomes increasingly complex to administer and maintain.

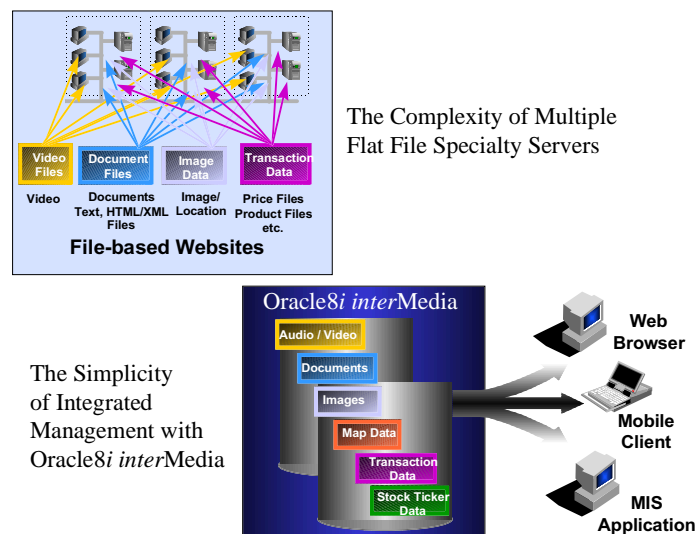


Figure 3: Managing Internet Content

With Oracle8i *interMedia*, a single server environment enables all types of information commonly found in Internet applications to be managed using Oracle8i. While *interMedia* makes it possible for all the data used in an Internet or media-rich application to be stored inside Oracle8i, it does not require that every piece of information be migrated into Oracle8i. It also provides powerful metadata services for data stored in files, on web pages through URLs, and in specialty servers often used to deliver streaming content.

### ***interMedia* SERVICES FOR MANAGING INTERNET CONTENT**

Internet-based applications require advanced data management services that support rich data types used in electronic commerce catalogs, corporate repositories, and other Internet applications. Oracle *interMedia* enables Oracle8i to manage multimedia content for both Internet and traditional applications that need access to image, audio, video, location, text and relational data. Open application programming interfaces (APIs) allow third parties to build additional media extensions for specialized data types.

- *interMedia* text management services include Oracle's award-winning ConText® technology to deliver powerful text retrieval capabilities fundamental to Web applications. This lets users query and analyze documents stored in common formats including HTML, Word, Excel, PowerPoint, WordPerfect, and Acrobat/PDF in document archives, online newsfeeds, customer call reports, and other online text information sources.
- *interMedia* audio, video, and image services support integrated management of audio, video, and image information within an Oracle8i database. It allows for access to audio, video, and image data in dozens of Internet formats from a variety of sources, both within Oracle8i and from external locations such as Web URL sites or specialized servers. *interMedia* supports delivery of video through any streaming server, such as the Oracle Video Server or RealNetworks RealAudio and RealVideo Servers. *interMedia* also supports drag and drop of audio, video, and image data through the *interMedia* clipboard into Web applications and Web authoring tools such as Oracle WebDB, Symantec Visual Page, and Microsoft Frontpage.
- *interMedia* locator supports the development of Internet applications that help users locate information, such as stores, distribution points and events, based on their location or distance from a given address. *interMedia* locator enables Oracle8i to perform location queries and supports the Internet's leading online geocoding services including Centrus™ from QMSOFT and MapMarker™ from MapInfo, and Internet visualization applications like MapXtreme™ from MapInfo.

### **Oracle8i Extensibility Framework Makes this Possible**

Only now, with Oracle8i, is it possible to support efficiently and completely the rich media and detailed data structures required for all Internet content. *interMedia* is built using a consistent architecture provided by the Oracle8i Extensibility Framework. This is a set of unique services to model complex logic and extend the core database services (optimization, indexing, type system, SQL language, etc.) to meet the specific needs of an application. Oracle has used these unique services to provide a consistent architecture for the rich datatypes supported by *interMedia*. These services include support for user-defined object types, specialized indexing designed in cooperation with the application, and new ways to model and store data that can be tuned to the needs of the application and datatype. This data server extensibility is a key mechanism in realizing Oracle's strategic vision for managing increasingly media-rich application data in a networked world.



Oracle Corporation  
World Headquarters  
500 Oracle Parkway  
Redwood Shores, CA 94065  
U.S.A.

Worldwide Inquiries:  
+ 1. 650.506.7000  
Fax + 1. 650.506.7200  
<http://www.oracle.com/>

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