



UIM evaluation: IBM's Information on Demand

28 August 2008

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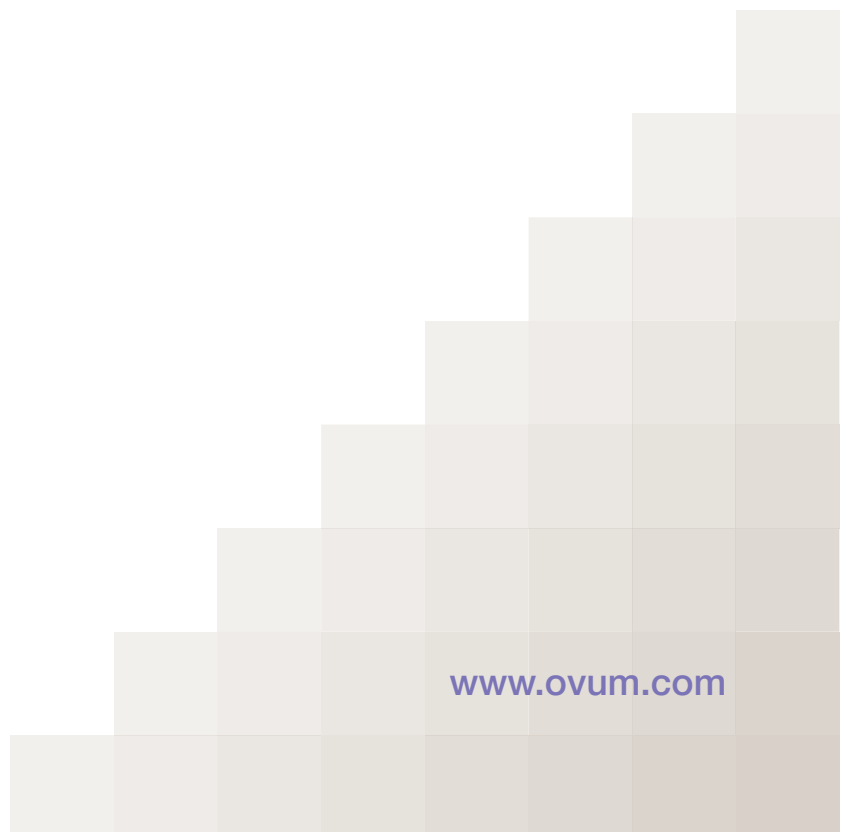




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UIM evaluation: IBM's Information on Demand

IBM can claim what is arguably the industry's broadest portfolio of unified information management (UIM) software, services and industry-specific solutions. All of these offerings fall under IBM's Information on Demand (IOD) initiative, which the vendor launched in early 2006. IOD is a cross-IBM effort, spearheaded by the Information Management division, and supported by both IBM-developed and IBM-acquired properties. IBM has acquired more than 20 firms that have bolstered its IOD product and services offerings, with three major acquisitions – Ascential, FileNet and Cognos – playing particularly critical roles in its ongoing strategy.

The IOD effort is complementary to IBM's other major strategic initiatives, particularly its service-oriented architecture (SOA) activities. As is the case with its SOA portfolio, one of the biggest challenges IBM faces with its IOD lineup is that of integrating, rationalizing and packaging the dozens of products and services that it encompasses. In its high-level messaging, IBM is promoting the importance of companies establishing an "information agenda." The information agenda is intended to map out corporate business and technology goals and to create a roadmap to ensure that companies can leverage their corporate information as a strategic asset in the pursuit of those goals.

Key messages

IBM offers an unmatched UIM product portfolio

Having launched its "Information on Demand (IOD)" initiative two-and-one-half years ago, IBM has been among the most aggressive vendors in building an end-to-end unified information management (UIM) capability. It has supplemented its internally developed products with a large number of strategic acquisitions. Although no other vendor can boast the same breadth and depth of UIM products, IBM still has work to do to fully integrate and rationalize its diverse product line.

IOD is a cross-IBM initiative

IBM's Information Management group takes the lead in driving the IOD initiative, but virtually every other business unit contributes key resources to the overall effort. Those contributors include the other IBM Software Group units (in particular, WebSphere, Lotus and Tivoli), IBM Global Services, and IBM's worldwide network of

research and development labs. Again, it is difficult for any other single vendor to match IBM in the scope of resources — product, services and R&D — that the company can bring to the UIM table.

IBM seeks to become both a sole-source provider and a standards-compliant role player

The vendor has methodically filled in gaps in its product portfolio in an attempt — at this point largely successful — to be able to provide end-to-end IOD solutions to customers of all sizes and types. At the same time, IBM recognizes that most corporate UIM deployments will consist of software and hardware from many vendors, and it has worked to ensure that its products can fit easily into such heterogeneous environments. A large part of its efforts on this front consists of the company's participation in UIM-relevant standards activities, and its provision of support for emerging standards in its own products.

IBM has assumed a leadership role in evangelizing the "information agenda"

IBM is encouraging its customers to create an information agenda so that they can fully realize the business value of their corporate information. This concept implies a top-down assessment of a company's overarching information needs, the status of its current information infrastructure, and a mapping of future information management and analysis priorities. IBM provides industry-specific Information Agenda Guides, workshops, centers of excellence, and foundational software tools to help companies understand the characteristics of their information so they can better leverage it to achieve their business objectives.

Evaluation summary

IBM at the UIM vanguard

By almost any measure, IBM can claim to be at the vanguard of the unified information management revolution. Marching under the banner of "Information on Demand" — which equates quite directly to Ovum's UIM concept — IBM has deliberately and doggedly constructed an unparalleled portfolio of software products that address virtually every element within the UIM universe. Those products, which include many gained via strategic acquisitions in recent years, span everything from data management to content management to business intelligence and performance management.

Furthermore, for IBM, IOD is much more than a collection of point products. IOD is a cross-IBM initiative that also draws upon the vendor's extensive professional services

capabilities, its server and storage products, and its research and development laboratories. In this regard, IOD is similar to — and complementary with — other broad IBM initiatives, particularly its service-oriented architecture (SOA) program. The company has crafted a range of professional services designed to help companies deploy IOD solutions, and has created a number of industry-specific solutions of its own to help accelerate this process.

IBM has also assumed a leadership role in educating the market about the benefits to be gained by treating corporate information as a strategic asset, and is evangelizing the need for companies to create an "information agenda." As part of this effort, IBM is actively engaged in a wide range of standards activities that have bearing on UIM, and is actively partnering with other major players, including its competitors, to advance such standards.

Through its focus on IOD, IBM has largely achieved its goal of being able to offer end-to-end UIM solutions. At the same time, the company professes to understand that the vast majority of customer deployments will be heterogeneous environments that include products from several vendors. As such, IBM is working to ensure that, first, its own collection of products work well with one another and, second, that its products can also play well with products from other vendors.

Positioning and initiatives

Cross-company Information on Demand initiative

IBM formally launched its Information on Demand initiative in February 2006, and has since matched or surpassed its stated objective of investing \$1 billion per year in this effort. From the start, IBM positioned IOD as complementary to the company's existing efforts to promote services-oriented architecture. In this context, IBM initially talked about both IOD and "information as a service," but the latter phrase has gradually been subsumed by the preferred IOD usage. In the context of IOD, IBM also talks about the importance of "information governance" and, increasingly, about the need for corporations to pursue a strategic "information agenda."

IBM's notion of IOD is largely in synch with the concept of unified information management, which Ovum has promoted for some time. At a high level, we have characterized UIM as "the approach and the techniques for dealing with rapidly increasing volumes of business-relevant information to exploit an organisation's 'corporate memory'." By comparison, IBM's tagline for IOD is "unlocking the business value of information for competitive advantage."

Actually delivering against these lofty concepts, of course, is far from a trivial exercise. Among the products and disciplines encompassed by UIM and IOD are database and content management systems; information cleansing and information integration

tools; master data management, information distribution, access and security; business intelligence; and many other functional areas.

Furthermore, achieving the goals of IOD and UIM requires much more than simply deploying point products in each of these areas. Companies must first understand how they can best leverage their corporate information as a strategic asset, and then must work to ensure that all of the moving parts of a UIM environment are collectively supporting the firm's business objectives in a coordinated and integrated fashion.

Given its comprehensive vision of what IOD encompasses, it isn't surprising that IBM sees its information initiative as drawing from all of the vendor's business units. The Information Management group within IBM's Software Group takes the point in the company's IOD battle plan, but IBM's other software, professional and technical services, hardware and R&D units also play critical roles in the overall effort. Since its acquisition of business intelligence (BI) and performance management vendor Cognos in January of this year, IBM has claimed to have more than 35,000 people throughout the company working in support of the IOD initiative.

Market forces driving IOD demand

The information challenges that organizations face are well documented. They continue to have silos of information that make it difficult for people to find and leverage the information they need. That information is often duplicated, dated or faulty, and it can be very difficult to attain "one version of the truth." Compounding these challenges is the exponential increase in data volumes, types and complexities. On top of all this, many organizations are attempting to move from a model of analyzing past data for business trends and insights to a model of real-time information access and analysis.

IBM has always been keen on surveying IT and business leaders to help it identify market needs, industry trends and growth opportunities. In recent years, the company's surveys — as well as those of other players — have substantiated the growing demand among customers to get a better handle on their corporate information. Among the survey results that IBM cites:

- 47% of IT users don't have confidence in the information they're using (AIIM survey).
- 59% of managers missed information they should have used when making business decisions (Accenture survey).
- 42% of managers said they use the wrong information at least once per week (Accenture survey).
- 67% of 300 Global 5000 data management professionals surveyed said that data governance and data stewardship issues were among their top three metadata-

related issues or projects, but 45% don't have a data governance council or data governance projects under way (IBM/Gavilan survey).

- 80% of the Global 5000 data management professionals surveyed said they are struggling with information-related issues such as documenting business metadata, and 64% are documenting metadata for data warehouses, data marts and analytical applications.

Moving from business automation to business optimization

The growing ability of IT systems to capture and store mountains of data has exacerbated the information management crisis. But IT technology and best practices are also stepping up to the plate to help customers address the information-centric corporate challenges listed above. The growing sophistication of management and analytical software is combining with the escalating power of computing systems to allow companies to more intelligently and efficiently exploit the resource of their own corporate information. Also aiding in this cause is the emergence of a variety of data formatting, exchange, modeling and management standards that are gradually working their way into the UIM landscape.

IBM is attempting to harness the advances in technology and standards as well as its extensive software, hardware, services and R&D capabilities to become the premier IOD partner for its customers. The vendor says that corporate IT spending trends already reflect a shift among companies as they look to better capitalize on their information resources.

In this regard, IBM notes that customers have spent the past 20 years with an "application agenda" that involved investing in technology to automate various business processes. Now, because these investments are no longer creating sustainable competitive advantages, companies are launching new "information agenda" initiatives to optimize their businesses rather than to simply automate them. Through such information-based optimization, companies hope to gain better insights into financial risk, to achieve better dynamic demand planning, to drive up customer profitability, and to realize other competitive benefits.

Business automation expenditures still far outweigh those devoted to business optimization initiatives, but the latter category of IT spending is growing at more than twice the rate of the former, according to IBM. The company estimates that, in 2008, organizations worldwide spent \$594 billion on traditional business automation efforts, representing a compounded annual growth rate of 5.1% over 2007. By comparison, business optimization spending during 2008 totalled approximately \$117 billion, but that represented an 11.1% CAGR over the previous year.

As IBM sees it, there are four core components that corporations require to unlock the value of their business information:

1. An efficient and solid foundation of data management and content management systems for managing information over its lifetime.
2. The ability to enable more rapid use of their information to transform their business processes.
3. The ability to establish accurate and trusted information across the enterprise, which requires technologies including information integration, data warehousing and master data management.
4. The ability to leverage information to drive better business outcomes through the use of business intelligence, business process management and performance management techniques.

Varying approaches to investing in IOD

Through the ongoing expansion of its IOD products and services portfolios, IBM intends to compete for information-centric, business optimization sales opportunities of all types. The company says it sees customers investing in IOD technologies and initiatives in three distinct ways:

1. Point product purchases — selecting a database, a BI tool or some other independent software based on a best-of-breed assessment.
2. Business transformation initiatives — investing in IOD products and technologies as part of a broader transformational effort that is often led by professional services engagements.
3. End-to-end systems purchases — purchasing a complete IOD solution that includes software, hardware and implementation services from a single vendor.

Acquisitions and partnerships

Balancing sole-source capabilities with partner-focused efforts

Even though IBM is positioning itself as a sole-source provider of IOD solutions for companies that choose to rely heavily on a single vendor, it understands that the vast majority of IOD deployments will occur in heterogeneous environments that include products from many companies, including IBM competitors. As such, IBM emphasizes its support of open standards in its IOD products as well as its extensive partnership activities.

Given the breadth of its IOD portfolio, it isn't surprising that some IBM units find themselves competing with certain vendors even as other IBM units collaborate with

them. For example, IBM has had a long partnership with BI vendor Business Objects around IBM's DB2 Warehouse (recently rebranded as the InfoSphere Warehouse). IBM says it remains committed to the Business Objects partnership, even after completing its acquisition of Cognos — a major Business Objects competitor — earlier this year. On the flip side, Cognos will maintain its pre-existing partnerships with IBM competitors such as Informatica even as Cognos is blended into the IBM IOD portfolio.

In another example, despite its long-standing and ongoing battles with Oracle in the database market, IBM notes that its Global Business Services unit is the world's largest provider of Oracle-focused professional services. And, even as SAP competes with IBM in the middleware space, the two companies have a long history of collaboration that continues unabated. For instance, in May, IBM announced open client and partner testing of the new IBM Optim Data Privacy Solution tuned for use with SAP deployments, with Optim providing advanced enterprise data management and data privacy capabilities in support of the SAP applications.

Since IBM launched its IOD initiative in February 2006, more than 20 firms have joined an IOD business partner community that IBM established at the time. To further bolster this program, it recently created an IOD speciality program under which partners can get certified in specific IBM products and technologies, including the newly acquired Cognos portfolio.

Acquisitions are central to IBM's IOD strategy

Even before it formally unveiled its IOD initiative, IBM had for some time been expanding its information management capabilities via targeted acquisitions. Three of its most notable purchases — that of information integration vendor Ascential in 2005, content management vendor FileNet in 2006, and BI/performance management expert Cognos at the start of 2008 — are central to the foundation of three of the Information Management group's four core business units. However, as *Table 1* illustrates, IBM's IOD-related acquisitions have been numerous and far ranging.

Table 1 **Representative IBM Information on Demand acquisitions**

Date	Acquisition	Technology description
March 2004	Trigo Technologies	Product Information Management software (now InfoSphere MDM Server for Product Information Management)
July 2004	AlphaBlox	Data analysis and visualization software
October 2004	Venetica	Enterprise content integration software
January 2005	SRD	Identity resolution software (now Entity Analytic Solutions)
March 2005	Ascential Software	Comprehensive information integration platform to understand, cleanse, rationalize and transform information (now InfoSphere Information Server)
August 2005	DWL	Customer data integration software (now WebSphere Customer Center)
November 2005	iPhrase	Context-aware search and content management software
March 2006	Language Analysis Systems	Multicultural name-recognition and analysis software (now InfoSphere Global Name Recognition)
May 2006	Unicorn Solutions	Information modeling and metadata management
October 2006	FileNet	Enterprise content management and business process management solutions
September 2007	DataMirror	Identification and capture of changed data to ensure use of trusted, accurate data (now InfoSphere Change Data Capture)
September 2007	Princeton Softech	Data archiving, test data management, data privacy and data classification software
January 2008	Cognos	Business intelligence and performance management software
January 2008	Solid Information Technology	In-memory database software for real-time information access
January 2008	ApSoft	Event processing and business applications such as algorithmic trading (part of WebSphere Business Events software)
February 2008	Arsenal Digital Solutions	Suite of on-demand data protections solutions (Global Technology Services)
March 2008	Encentuate	Identity and access management software (Tivoli)
April 2008	Diligent Technologies	De-duplication technology (Systems Storage)
April 2008	InfoDyne	High-speed platforms and data-feed connectors (WebSphere)

Source: Ovum/IBM

No other vendor can point to UIM-related acquisitions that match the scope and the depth of IBM's IOD purchases. The downside to IBM's buying spree, of course, is that the company must continually work to integrate its newly acquired properties into both its product line as well as into its go-to-market sales and marketing programs. Providing seamless interoperability among the many elements of its IOD portfolio would be challenging enough. But IBM aims to go beyond basic integration by driving new innovations with, and within, its acquired properties.

The most recent example of this process followed the Cognos acquisition. Because IBM and Cognos had partnered for 15 years prior to the acquisition, the two vendors' product lines were already fairly well integrated and complementary. This history allowed IBM to quickly introduce a series of pre-integrated offerings that bundled elements of the two product lines. IBM also enhanced and expanded a number of industry-specific solutions by interweaving Cognos's BI and performance management capabilities into the mix.

Product portfolio

Entire IBM Software Group contributes

As noted earlier, the IBM Software Group's Information Management division, headed by general manager Ambuj Goyal, leads the company's IOD initiative. However, the Software Group's WebSphere, Tivoli and Lotus units also make major contributions to the IOD cause. Rational, the development tools and technology unit, contributes in a more general fashion, given that many IOD-specific development tools reside within the Information Management division itself.

The Information Management division is subdivided into four operational units, each of which has its own independent development, marketing and sales organization. The four units are:

- Data Management
- Enterprise Content Management
- Information Platform Solutions
- Business Intelligence and Performance Management

Combined, the Information Management units field dozens of products in many permutations, and also market horizontal and vertical IOD solutions that combine the units' products with products and services from other IBM operations. It isn't practical to list all of IBM's many IOD-related products, but the major offerings from each Information Management unit are:

Data Management

This unit is home to IBM's well established family of database systems, integrated data management solutions and tools for managing data through its lifetime, as well as new emerging capabilities in the areas of high-volume data streaming and analytics systems. The data server products include DB2, Informix, SolidDB, IMS and U2 databases. The Optim integrated data management (IDM) solutions and tools portfolio represents a scalable, modular data management framework designed to increase organizational productivity while improving the quality of service, cost of ownership, and governance of data, databases, and data-driven applications. The Optim IDM portfolio includes DataStudio, Rational Data Architect, Optim Test Data Management, and Optim Data Growth solutions.

Also within the Enterprise Data Management portfolio is the InfoSphere Warehouse, formerly called the DB2 Warehouse. (IBM introduced the "InfoSphere" brand early in 2008 to label a number of its products that aim to help customers combine and use information from throughout their corporations.) IBM has supplemented the InfoSphere Warehouse with Optim Data Retention (based on technology gained via the Princeton Softech acquisition) to help customers more effectively manage large amounts of data.

Another product is the recently introduced DB2 Warehouse Performance Management Suite, which provides advanced capabilities for reporting and analysis of data and system utilization. The goal of this suite is to help enterprises more quickly and easily deploy and manage BI and data warehouse applications.

This Data Management unit has recently announced a new product, IBM SolidDB, based on another acquisition, that of Solid Information Technology. SolidDB is in-memory relational database software designed to deliver performance-critical data at extreme speeds — up to 10 times faster than conventional database software, according to IBM. SolidDB can be deployed as a cache to IBM DB2 data server or Informix Dynamic Server, or as a stand-alone, in-memory database to allow applications to quickly access performance-critical data using the familiar SQL programming language.

Enterprise Content Management

With its internally developed enterprise content management (ECM) products and its broad portfolio of acquired FileNet P8 products, IBM claims to be the industry's largest ECM vendor. The company is working to blend its homegrown Content Manager products with the FileNet P8 assets into a common architecture. This element of the IOD effort has been one of the fastest growing, with IBM's ECM-related revenues climbing by 27% during 2007.

In addition to traditional ECM functions such as document and image capture and management, IBM's ECM purview encompasses content-centric business process management (BPM) — a core capability derived from the FileNet acquisition. Another growing element of IBM's ECM activities is compliance, records management and discovery services. Central to IBM's ECM approach is its ability to unify and optimize content, process and compliance capabilities and to federate content from multiple repositories — IBM's and other vendors'.

IBM is working to expand the reach of ECM by marrying the enterprise-grade scalability and functionality of its products with broad-based content-creation tools (including Microsoft's Office products, Lotus Notes, etc.) and departmental-level content management systems such as Microsoft SharePoint and IBM's own Lotus Quickr and Connections platforms, among others. The company calls this effort "Business Content Services," and says it is intended to help businesses of all sizes to address the explosive growth of content across diverse, and often global, workgroups.

In June 2008, IBM introduced two new products to bolster its Business Content Services capabilities:

- IBM ECM Services for Lotus Quickr (currently available in beta) allows customers to mix the Web-based collaboration and desktop integration of Lotus Notes, IBM Lotus Sametime, Microsoft Office, and Windows Explorer with IBM ECM capabilities.
- IBM FileNet Connectors for Microsoft SharePoint version 2.2 allow a seamless flow of content between IBM ECM repositories and Microsoft SharePoint servers. Content can be automatically moved or copied from Microsoft SharePoint to IBM ECM repositories and business processes can be accessed from SharePoint using IBM Web Parts.

IBM has also launched a renewed effort to become a bigger player in the creation of content, rather than simply succumbing to the Microsoft Office juggernaut. In September 2007, IBM released its Lotus Symphony productivity suite (word processing, spreadsheet and presentation programs) as a free download, and is also bundling the suite with Lotus's Notes 8 software. Not incidentally, Lotus Symphony (which is based on the OpenOffice open-source code) supports the OpenDocument Format (ODF) as its native file format, and thus serves as IBM's point product in trying to persuade customers to shift away from Microsoft's Open Office XML default format.

In the area of content-centric process management, IBM says it aims to treat content as a first-class object in BPM environments. IBM introduced its plans for a BPM suite earlier this year, and has so far created two foundational offerings: the content-centric IBM FileNet Active Content Edition and the transaction-centric IBM WebSphere Dynamic Process Edition.

For compliance, IBM has outlined a strategy for creating a common archiving approach, a common store and comprehensive records management for all manner of content — files, e-mails, chat sessions, videos, etc. One of the vendor's first products in this area is the IBM Compliance Warehouse for Legal Control, a turnkey solution that blends software, services, servers and storage to provide legal firms with records management, automatic content classification, intelligent content archiving, analytics and other functions.

Information Platform Solutions

In its Information Platform Solutions unit, IBM groups three core product categories: information integration products, master data management (MDM) products and a collection of industry models and accelerators. The company is gradually applying its relatively new "InfoSphere" brand to most of the products in this category (including those that come from other Software Group units). For example, upcoming releases of IBM Information Server and IBM WebSphere Product Center will be rebranded as IBM InfoSphere Information Server and IBM InfoSphere Master Data Management Server for Product Information Management, respectively.

Since its 2006 introduction, the Information Server has been one of the flagship IOD products, given the scope of functionality that it aggregates. Broadly speaking, the Information Server provides an abstraction layer for consistent, trusted information services over diverse types of underlying data. Its functions include metadata management, information profiling, data cleansing, data transformation, information federation, data caching and replication, and data event publishing.

Another core product is the InfoSphere Master Data Management Server, which allows businesses to centrally manage customer, product, location and account data from across the enterprise. The InfoSphere MDM Server contains more than 800 business services out-of-the-box to manage both complex and simple master data inquiries and updates, and to provide "one version of the truth" data consistency throughout an organization.

A core strategy in many of IBM's business units is to identify needs and tailor solutions specific to individual industry segments, and the Information Management division is no different in this regard. It offers a variety of industry models/frameworks and accelerators designed to speed deployment of IOD solutions in various vertical sectors including banking, insurance, telecommunications and retail.

As with all of IBM's Information Management categories, there are more products in the Information Platform Solutions group than can be detailed here. One of the more interesting recent releases was that of InfoSphere Change Data Capture (based on the acquired DataMirror technology), new software that allows organizations to react faster to changing business conditions, improve response time and access the most current information for decision making.

Business Intelligence & Performance Management

IBM created this fourth unit within the Information Management division following its acquisition of Cognos. This company's product portfolio greatly expanded IBM's existing BI, data warehousing and querying/reporting capabilities, and forms the core of the BI & Performance Management unit. As it has done with the FileNet products, IBM is maintaining the well-established Cognos name in its product-branding, but is inserting "IBM" before "Cognos" in the name of each product.

Three of the core products in this unit are:

- IBM Cognos 8 Business Intelligence — A single product that provides all of the core BI functions (reporting, analysis, dashboards, score-carding) across the enterprise on a foundational SOA-based platform that is shared by other BI and performance management products.
- IBM Cognos 8 Planning — Integrated software that supports the broad-participation planning, budgeting, and forecasting needed to drive performance management across the enterprise. Cognos 8 Planning is fully integrated with Cognos 8 Business Intelligence and is built on its SOA platform.
- IBM Cognos TM1 — Software for planning, analytics, scenario modeling, and optimization of large, highly complex data sets. Cognos TM1 also leverages the SOA platform and can be a data source for Cognos 8 Business Intelligence.

Another product introduced last year is IBM Cognos Now!, which is an operational BI solution, delivered as pre-packaged hardware, software or virtual appliance, that continuously monitors time-sensitive key performance indicators and other operational metrics.

The OmniFind search, data access and data analytics products also fall within this category, including the free OmniFind Yahoo! Edition enterprise search software. This product provides Web search services powered by Yahoo! that enable users to customize and personalize their enterprise- and Internet-wide searches. As we have noted in our past UIM coverage, a search-driven user interface is one of the critical components of any broad-based UIM offering.

The BI and performance management unit also includes industry-targeted solutions. One example is IBM's Enterprise Health Analytics, which leverages the Cognos portfolio to help organizations manage and derive intelligence from massive amounts of healthcare-industry data. IBM has announced at least 10 such industry solutions, including analytics packages for banking, retail, manufacturing, and other areas.

UIM-related products from other IBM Software units

As noted, even though the Information Management division spearheads IBM's IOD initiative, all of the vendor's Software Group divisions contribute to the cause. Again, it

isn't possible to list all of the IOD-relevant products, but some of the most important are listed by division below.

- WebSphere Information Integrator
- WebSphere Customer Center
- WebSphere Product Center
- WebSphere RFID Information Center

Lotus

- Lotus Quickr
- Lotus Connections

Tivoli

- Tivoli Storage Manager
- IBM Tivoli Identity Manager

Services

Complementing products with IOD services

Much as it has done successfully with its SOA initiatives, IBM has worked hard to complement its IOD product portfolio with a range of technology and business-oriented services. At a high level, IBM's Global Business Services (GBS) are positioned to play a central role in helping to evangelize and support the realization of an "information agenda," and IBM's Global Technology Services (GTS) are positioned to help companies design and deploy IOD solutions.

Companies need to establish information agendas, according to IBM, to map out a vision and strategy to guide their IOD decisions (including the creation of an information infrastructure). The ultimate goal, of course, is to exploit information as a strategic resource that can be used to further the company's business goals.

GBS has a variety of business optimization and transformation consulting services that include strong IOD elements. For example, IBM claims to be the market's leading provider of business intelligence services, and also offers services specific to information integration, content management, and master data management.

More specifically, GBS offers several services designed to help companies initiate and design IOD efforts. These include:

- IOD Readiness Assessment: a diagnostic appraisal and evaluation of the client's state of information management, integration and consistency as it relates to their business requirements.
- Information Maturity Assessment: an analysis of an organization's use of information against a standard baseline of best practices, culminating in a prescriptive action plan to address the highest-priority issues.
- IOD Architecture Workshop: a technical workshop to identify an enterprise's information pain points, introduce and review IBM's information architecture capabilities, and map and define specific solution architectures and project initiatives to mitigate the pain points.
- IOD Pilot: a short feasibility project undertaken to study and evaluate effectiveness of IOD capabilities and proposed "to-be" architecture.

For its part, GTS has created an IOD Infrastructure Community of Practice to offer a range of IOD-specific services. These include:

- IOD Infrastructure Implementation Services
- Storage Optimization and Integration Services
- Data Mobility Services
- Infrastructure Services for Compliance Warehouse

Among other IOD-services-related activities, IBM has established an ECM center of excellence staffed by experts with deep knowledge of IBM's ECM software as well as skill in how best to promote enterprise adoption of ECM. In another example, as part of its New Enterprise Data Center strategy to help customers gain greater efficiency from their IT resources, IBM opened a center specifically designed to help clients across the globe develop and implement long-term plans to manage and archive massive amounts of business information. The center is designed to serve as a key resource for IBM Business Partners.

Breadth of vision and future direction

IBM assumes a leadership role in UIM

As should be obvious, IBM, with its IOD initiative, is fully committed to pursuing the market opportunity that Ovum defines as unified information management. It should be equally clear that IBM has both the means — with its broad product and services portfolio, its large partner ecosystem and its industry-specific expertise — and the

corporate commitment to maintain the leadership role that it has already assumed in this market.

As part of its IOD efforts, IBM has been a very active participant in standards and best-practices activities that have bearing on information management, access, exchange and analysis. One example of the vendor's efforts in this regard is its creation of the IBM Data Governance Council, comprised of about 50 global companies that are attempting to establish best practices around risk assessment and data governance. Among the corporate members of this IBM-led group are Abbott Labs; American Express; Bank of America; Bank of Tokyo-Mitsubishi UFJ, Ltd; Bank of Montreal; Bell Canada; BMO Financial Group; Citibank; Deutsche Bank; Discover Financial; Kasikornbank; MasterCard; Nordea Bank; Wachovia; Washington Mutual; and the World Bank.

The Council has already created a Data Governance Maturity Model to help companies determine their current capabilities in this area and is now developing an Information Governance Framework to define relevant standards and best practices. This new framework will aim to provide guidance for achieving data governance at a granular level with defined roles, tasks, activities and a broad set of procedures designed to make data governance an integral part of standard business operations.

Moving from integration to innovation

IBM's appetite for acquiring IOD-related firms and technologies, as noted, carries challenges as well as benefits for the company. The obvious downside to such inorganic growth is the difficulty of integrating and packaging the diverse elements of IBM's IOD software portfolio, to say nothing of the sales and marketing ramifications of having to explain, package and promote such a complex set of products. That said, IBM is happy to have such problems, given the flip-side benefits associated with having a portfolio so broad that it can address practically every IOD market opportunity and need.

Furthermore, IBM stresses that it isn't limiting its work in this area to providing base-level integration and interoperability across its IOD and related product lines. The company is spending a good portion of its \$1-billion-plus yearly investment in IOD to drive innovations in this area. Some of the "innovations" are relatively straightforward product enhancements and combinations, but others are more pioneering.

In one recent example, researchers at IBM's India Research Laboratory in March 2008 announced that they had developed advanced business intelligence software that uses sophisticated math algorithms to analyze the huge volumes of information gathered by companies during customer service calls and other interactions. Called ProAct, the software is designed to help organizations gain new business insights that can be used to improve customer satisfaction, develop new products and services and find new business opportunities.

In July 2008, the same IBM India Research Lab announced that it had developed a speech analytics tool that detects and masks private and sensitive information collected from audio recordings of conversations between call center agents and customers. This advanced data masking tool could help companies comply with security and privacy legislation and compliance standards, and also could drive increased customer trust and satisfaction.

These are just two examples of dozens of technical advances that IBM's worldwide R&D laboratories and product teams have driven. The company's extensive R&D resources just add to its advantage when it comes to staying several steps ahead of other firms competing in the UIM market.

A holistic approach to IOD/UIM

IBM's ace in the UIM game may well be its ability to elevate the competition from an arena in which point products compete to an environment in which IOD-based solutions become integral elements of broader business optimization and transformation efforts. And the company's IOD solutions are not limited to traditional information management and access usage scenarios.

In this regard, one of IBM's more ambitious projects relates to the concept of "Info 2.0," which it introduced in the fall of 2007. By embracing the user-centric access and social collaboration themes associated with Web 2.0, Info 2.0 aims to provide support for business-user-driven "situational" applications that are distinct from IT-driven enterprise applications. Such situational applications, including the now-familiar mashups model, will operate in an access and interaction layer that overlays the trusted and secure information infrastructure that IBM is trying to establish with its IOD portfolio.

As part of its Info 2.0 efforts, IBM offers a Mashup Starter Kit, which includes the QEDWiki and the IBM Mashup Hub. These and other tools are designed to help knowledge workers, domain experts and other non-programmers create information-centric applications of their own, rather than depending on the IT department to roll out formal IOD applications. Ultimately, IBM envisions enterprise applications that run on the Information Server and the ECM platform feeding into Info 2.0 situational applications, and those applications feeding back into the core IOD infrastructure applications and platforms.

Clearly, the scope of unified information management is extremely broad, and that scope is constantly expanding with the introduction of new technologies, optimized business practices and innovative usage scenarios. IBM was among the first of the major vendors to identify this area as one of increasing customer demand and significant business opportunity, and arguably has been more aggressive than any other vendor in pursuing this market.

Any weaknesses IBM may have — including portfolio complexity, product integration challenges and the like — are more than compensated for by its extraordinary software, services, R&D and partnership strengths. The company will continue to face stiff competition from major UIM players including Microsoft, EMC, Oracle and others, as well as point-product competition from many pure-play vendors (at least those that it doesn't acquire!). But at this stage of the game, IBM can fairly claim to hold the most powerful position in this high-growth marketplace, and it's difficult to see how any competitors will be able to knock it from its throne anytime soon.

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