

**IBM WebSphere Information  
Integration for enterprise  
risk management and  
regulatory compliance.**

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**Executive summary**

A succession of high-profile governance failures, increased regulatory pressures, catastrophic events and surging competition have all conspired to cast the spotlight on risk management. Today's companies face a daunting array of business risks, ranging from market and credit risk to terrorism and natural disasters, and yet regulatory risk is seen by corporate executives as the most significant threat to global business.<sup>1</sup> As regulations proliferate, evolve, and permeate various corporate functions, compliance requirements are increasingly more difficult to manage, both domestically and internationally. Compounding the problem is the explosive growth and distribution of enterprise information. Today's regulatory environment is forcing companies to take a more holistic approach to managing their information. This white paper will explore the role of information integration as a key enabler of enterprise risk management (ERM) and regulatory compliance.

**The enterprise risk management landscape**

**The preponderance of risk**

Today's organizations face an unprecedented spectrum of risks. Among the most prevalent are reputational risk to brand and products, IT risk in the form of security breaches and system failures, problems arising from regulations, terrorism and natural hazard risk. Banks, in particular, are beset by increasing credit, market and operational risk, and the looming threat of inadequate capital allocation and financial collapse. Energy companies are subject to considerable regulatory risk due to corporate, state-level and sectoral rules. And virtually all businesses are vulnerable to political risk, human capital risk, foreign-exchange risk, and crime. Risk is a pervasive reality for today's companies. It is woven into the very fabric of global business, and it must be managed.

**Regulatory compliance is top priority**

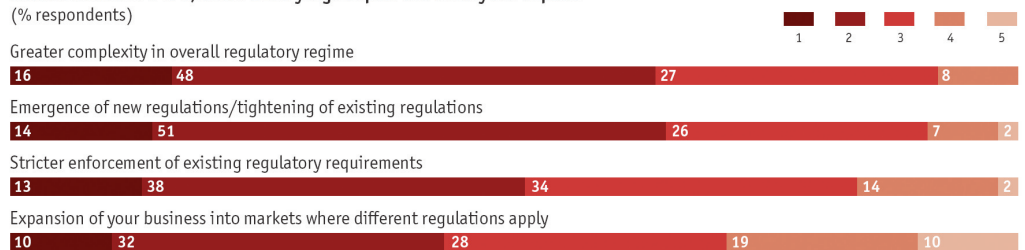
According to a risk barometer published by the Economist Intelligence Unit, regulatory risk currently ranks as the top threat to global business<sup>2</sup>, making regulatory compliance the focus of risk management efforts. A recent wave of high-profile corporate scandals including Enron, WorldCom, Tyco, and

**Regulatory risk is the top threat to global business.**

Merck has led to increased regulatory pressures and heavier penalties for noncompliance. Regulatory requirements continue to grow in number and complexity, spanning multiple corporate functions and industries. According to a global risk briefing published by the Economist Intelligence Unit, “regulatory rules now cover every aspect of a business and its relationship with society, from business competition to financial management, from health and safety to conservation of the natural environment is subject to regulatory rules.”<sup>3</sup>

**Regulatory requirements continue to proliferate and evolve.**

How significant an impact do you think each of the following will have on your business over the next three years?  
Rate on a scale of 1 to 5, where 1=Very high impact and 5=Very low impact.



Source: Economist Intelligence Unit survey, June 2005

Figure 1. Growing complexity in the compliance landscape will have a profound impact on business.

Examples of domestic and international regulations:

**Regulations span multiple functions and industries across the globe.**

- **Basel II** – Mandates ongoing assessment of credit, market and operational risk, and the allocation of adequate capital to cover potential loss;
- **Sarbanes-Oxley** – Requires CEO and CFO certifications of annual and quarterly SEC reports; evaluation of the effectiveness of internal controls; and rapid disclosure of material changes in financial conditions or operations;
- **Health Insurance Portability and Accountability Act (HIPAA)** – Obliges physicians to ensure they are protecting the privacy and security of patients’ medical information and using a standard format when submitting electronic transactions;
- **Transportation Recall Enhancement, Accountability and Documentation (TREAD) Act** – Requires companies producing highway vehicles, trailer and tire manufacturers, and component suppliers to report all warranty claims, consumer complaints, field reports, and any other incidents involving a fire or fatality on a quarterly basis;

- *SEC 17a-4* – Imposes specific rules on financial brokers/dealers regarding the retention, non-rewriteable storage, and ease of retrieval and viewing of electronic records, particularly e-mail and instant messages;
- *International Financial Reporting Standards* – Stipulate how specific transaction types and other events should be reflected in financial statements.

#### **Information control is key to risk mitigation**

##### **The proliferation and distribution of data and content**

It's no secret that enterprise information continues to proliferate. According to an oft-cited study published by the University of California, Berkeley, the volume of enterprise information has doubled in the last three years alone.<sup>4</sup> This is true for structured or transactional data, as well unstructured content including documents, e-mail, images, reports, web content and rich media. Companies have invested in numerous technologies to manage and control this information, including customer relationship management (CRM), enterprise resource planning (ERP), supply chain management (SCM), and enterprise content management (ECM). The tactical and widespread nature of these investments has left silos and redundancies in its wake.

*Enterprise information, comprising both structured and unstructured data, continues to grow exponentially.*

As a result, key data and content assets are scattered across the enterprise, isolated and inaccessible to people, applications, and processes. According to a study conducted by the IDC, "an enterprise with 1,000 knowledge workers wastes \$48,000 per week – \$2.5 million per year – due to an inability to locate and retrieve information."<sup>5</sup> Mergers and acquisitions compound the problem by introducing a heterogeneous mix of data and content systems. Today's companies are looking to unify their information infrastructure to reduce Total Cost of Ownership (TCO) and optimize Return on Investment (ROI). Unified information can have profound implications for risk and compliance and records management initiatives.

*Rampant investments in information management technologies and applications have trapped key data and content in isolated silos.*

##### **Availability and quality of risk data are constraints**

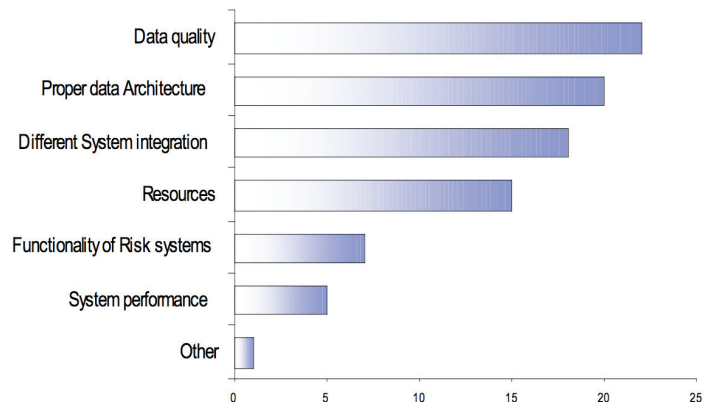
A survey of Chief Risk Officers (CROs) conducted by the IBM Institute for Business Value reveals that data management is the most significant barrier to implementing an ERM strategy.<sup>6</sup> In fact, the same survey indicates that data quality and a proper data architecture are the two most important constraints to producing risk numbers for use by management.<sup>7</sup>

***Lack of clean, quality data prevents accurate “risk snapshots” and reports, and increases risk of exposure and noncompliance.***

For many organizations, data quality is low, reconciliation costs are high, and only limited and incomplete data are readily available. This prevents accurate “risk snapshots” and reports, and it’s a key inhibitor to financial transparency and compliance with Sarbanes-Oxley and other financial regulations. Companies are spending too much time gathering, cleansing and consolidating data instead of analyzing and adding value to the data. As data suffers availability, consistency and reliability problems, there is pervasive lack of confidence in risk data.

**What are the main constraints for you to produce risk numbers for use by management?**

***Data quality and a proper data architecture are the top two constraints to producing risk numbers.***



Source: IBM Institute for Business Value April 2005 Chief Risk Officer Survey Analysis

Figure 2. Constraints to producing information on risk.

**Integrating risk information is a challenge**

Today’s companies need to deliver an integrated picture of risk across the enterprise, but this is extremely difficult to achieve. Consolidating multiple risk systems and processes ranks as one of the most significant obstacles for risk managers.<sup>8</sup> This is an acute problem in the context of Sarbanes-Oxley or Basel II compliance projects, where regulatory reporting rules require data to be regularly updated from a collection of applications and databases. According to the IBM Institute for Business Value, “risk information is unconsolidated or too aggregated for business units to rely on in making decisions.”<sup>9</sup>

***An integrated picture of risk across the enterprise is necessary for compliance, but very difficult to achieve.***

**Sarbanes-Oxley, Basel II and other compliance projects require data to be regularly updated from a variety of applications and databases.**

A successful regulatory compliance plan requires that all data related to operational, risk and financial performance be exposed and available to the enterprise, internally and externally. This means that companies must be able to integrate data within and across the complete spectrum of the organization. They need to integrate transactional data to enable real-time analytics; synchronize data to deliver a single view of business operations; consolidate redundant applications and systems; and, address regulatory requirements with data that is standardized, cleansed, summarized and aggregated to support decision, compliance and reporting applications.

**Main obstacles for risk managers**

Average % score given by respondents for each obstacle\*

Financial sector  
Non-financial sectors



**Risk management systems are fragmented across organizational silos.**

\* % of survey respondents who say this issue is a major obstacle minus those who believe it is not a major obstacle  
Source: Economist Intelligence Unit survey, April 2005

Figure 3. Consolidating risk systems and processes is a key obstacle to managing risk.

***ERM requires the integration of data, content and processes across the enterprise.***

***Information control is critical to compliance, but it remains a pervasive challenge.***

***Delivering information clients can trust for critical business initiatives.***

**Information integration – a key enabler of ERM and regulatory compliance  
Integrated risk management**

According to the IBM Institute for Business Value, to be effective, ERM must be integrated, comprehensive and strategic. This means it must span all lines of business, cover all types of risk, and be aligned with the overall business strategy, i.e., be integrated with existing business processes.<sup>10</sup> Integrated data, content and processes are key to integrated risk management. Today's organizations need the ability to collect, synthesize, and disclose enterprise-wide risk information in order to meet evolving regulatory requirements and provide sufficient transparency to maintain stakeholder confidence. This requires a comprehensive information integration platform for integrating risk data from different business areas to facilitate consolidated reports, driving consistent data definitions across the business, and managing consistent recordkeeping policies across the enterprise.

**Introducing IBM WebSphere Information Integration**

Today's organizations face a formidable information challenge. Where is my data and content? How do I get it when I need it, in the form I need it in? What does it mean? What insight can I gain from it? Can I trust it? How do I control it? The list goes on, and the challenges grow unceasingly if organizations cannot ensure they have access to authoritative, consistent, timely and complete information.

The WebSphere® Information Integration platform integrates and transforms any data and content to deliver information clients can trust for their critical business initiatives. It provides breakthrough productivity, flexibility and performance, so clients and their customers and partners have the right information for running and growing their businesses. It helps clients understand, cleanse and enhance information, while governing its quality to ultimately provide authoritative information. Integrated across the extended enterprise and delivered when the client needs it, this consistent, timely and complete information can enrich business processes, enable key contextual insights and inspire confident business decision-making.

*Generate authoritative, consistent, timely and complete information to satisfy regulatory and industry-driven compliance and risk initiatives.*

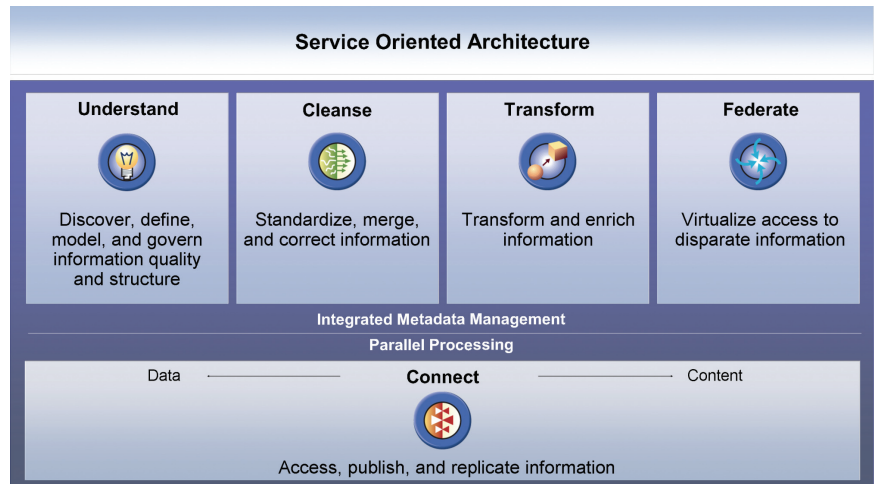


Figure 4. WebSphere Information Integration is a key enabler of ERM and regulatory compliance.

The WebSphere Information Integration platform enables businesses to perform five integration capabilities:

*Collect, synthesize, and disclose enterprise-wide risk information in order to meet evolving regulatory and transparency requirements.*

- **Connect** to any data or content, wherever it resides
  - Access, publish, and replicate information
- **Understand** and analyze that information, including its meanings, relationships, and lineage
  - Discover, define, model, and govern information quality and structure
- **Cleanse** it to assure its quality and consistency
  - Standardize, merge, and correct information
- **Transform** it to provide enriched and tailored information
  - Transform and enrich information
- **Federate** it to deliver a unified view of distributed information to people, processes, and applications
  - Virtualize access to distributed information



***Industry-leading information integration platform to help organizations accelerate ERM and regulatory compliance.***

The WebSphere Information Integration platform is a key enabler of ERM and regulatory compliance. It helps organizations to:

- *Improve the quality and availability of enterprise-wide data to enable accurate “risk snapshots” and reports*
- *Harmonize and load historical risk data into a warehouse for integrated analysis and calculations*
- *Apply and manage recordkeeping policies consistently across multiple repositories from a single application*
- *Perform a single search across multiple repositories in response to audit-related discovery requests*
- *Identify “data gaps” and enable ongoing data quality analysis*

#### **Basel II compliance is critical**

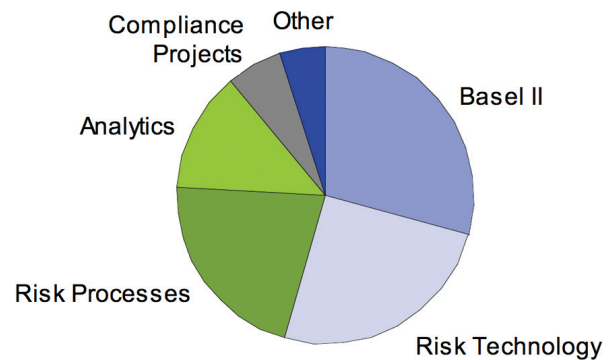
***Data quality and Basel II compliance will continue to be the most relevant topics for banking risk management executives.***

The focus on enterprise risk management remains intense in the banking industry where credit, market and operational risk continue to rise.<sup>11</sup> And risk management investments are focused largely on Basel II implementations.<sup>12</sup> In fact, according to an IBM Institute for Business Value survey of banking risk management executives, data quality and Basel II compliance are currently the most relevant topics and will remain so for the next 3 years.<sup>13</sup> Basel II mandates ongoing assessment of credit, market and operational risk, and the allocation of adequate capital to cover potential loss. This requires data from many disparate systems to be incorporated into an accessible warehouse. At least three years of data needs to be collected by the end of 2006/7, and risk calculations and reporting must be in place by the end of 2007.

Banks that are not required to comply with the de facto international Basel II standard are by no means absolved from ongoing risk assessment and the allocation of adequate capital to cover potential loss. The federal bank regulatory agencies are currently considering revisions for Basel II that will apply to the vast majority of banks in the US.

**Single platform for all Basel II data management and integration requirements.**

### Allocation of risk investment budget



Source: IBM Institute for Business Value Analysis

Figure 5. Basel II compliance is driving risk management investments.

**Discover, prepare and transform data from multiple sources to help accelerate Basel II compliance.**

#### Accelerating Basel II implementations

WebSphere Information Integration provides a single platform for Basel II data management and integration requirements. It enables banks to discover, prepare and transform data from multiple sources to help accelerate Basel II compliance. WebSphere Information Integration delivers more than just simple ETL. Discovery consists of identifying sources of data, assessing data quality, validating business rules, and analyzing data for consistency and gaps. The preparation of data includes matching and reconciling related data elements, removing redundant data, and assuring the quality and integrity of data. Transformation is about loading data into a warehouse for integrated analysis and risk calculations, interfacing with business intelligence and analytics applications, and maintaining the required audit trail and common data “dictionary” for inspection and validation. WebSphere Information Integration can deliver as much as sixteen times the reduction in time spent assessing data, and create 50% time savings over hand-coding.

**Achieve as much as 16x the reduction in time spent assessing data, and 50% time savings over hand-coding.**

**WebSphere Information Integration underpins IBM's complete infrastructure solution for Basel II.**

**IBM combines its industry expertise, technology leadership, delivery model and key partnerships to deliver an end-to-end solution.**

WebSphere Information Integration is a key component of IBM's comprehensive Risk Management and Basel II Solution Offering. Leveraging the financial expertise of its Business Consulting Services organization, and its experience in building banking data warehouses, IBM delivers a complete infrastructure solution including hardware, software and services. The IBM Banking Data Warehouse Model, which is installed at more than one hundred accounts, has been enhanced to include the data elements required for Basel II reporting. Superior database software and tools running on high performance servers and storage underpin the solution. IBM's extensive financial and Business Intelligence (BI) consulting experience provides implementation support, while strong partnerships with key Independent Software Vendors (ISVs) deliver the application support. IBM is unmatched in its ability to provide a complete, well-integrated solution, which is available today.

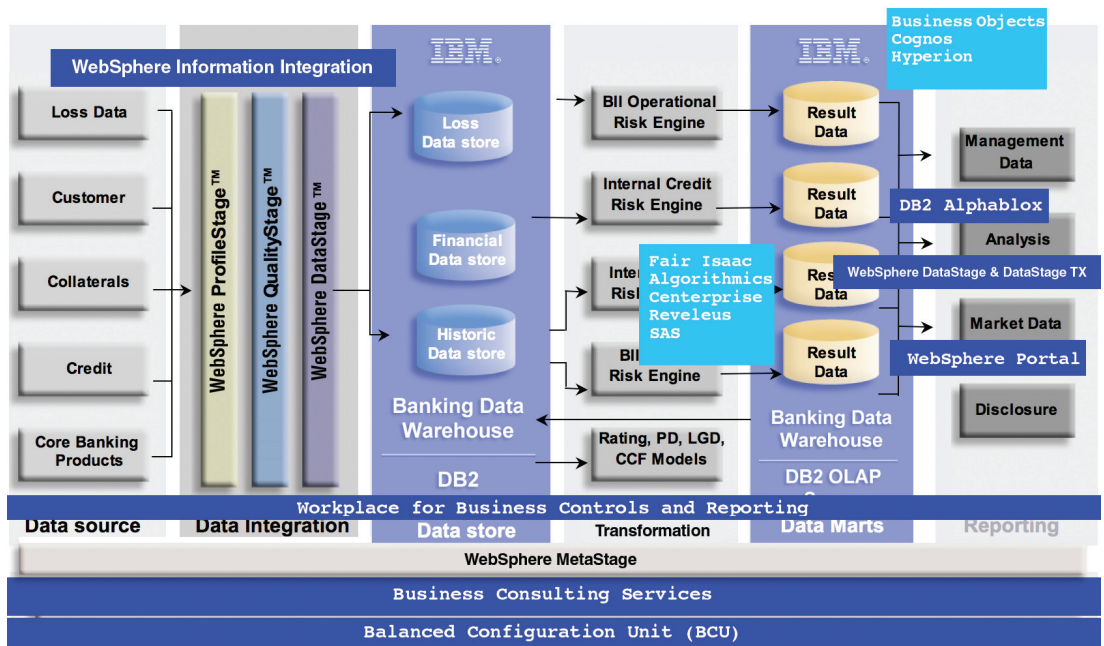


Figure 6. WebSphere Information Integration is a key component of IBM's comprehensive Risk Management and Basel II Solution Offering.

***World-leading bank leverages WebSphere Information Integration to deliver a single view of operational risk.***

**Basel II customer success**

A world-leading emerging markets bank with over 500 offices in more than 50 countries, required robust risk management analytics, processes and disclosure in order to meet Basel II Capital Accord guidelines by 2006. The bank needed consistent data management processes across operations, customers and supporting technology in more than 50 countries. They implemented a centralized Basel II data integration solution leveraging WebSphere Information Integration to deliver single view of operational risk. Data is treated in a consistent manner, critical to Basel II compliance, and there's a common library of data processing routines for risk data, ensuring consistent controls and providing consolidated information for compliance with Basel II regulations.

***Businesses responding to Sarbanes-Oxley must be able to generate authoritative information.***

**Achieving Sarbanes-Oxley compliance**

The Sarbanes-Oxley Act of 2002 (SOX) consists of three key compliance elements: officer representation, controls assessments, and real-time disclosure. It requires CEOs and CFOs to assume full responsibility for accurate and complete financial reporting and disclosure; mandates that companies provide an annual report on internal controls, attested to by an external audit firm; and, compels firms to disclose material changes in their financial conditions or operations on a rapid and current basis. SOX also calls for other specific actions including records retention and a finance code of ethics. Businesses responding to SOX must re-evaluate their general financial management and reporting procedures, and they must be able to generate authoritative, consistent, timely and complete information.

***Satisfy reporting needs driven by multiple applications.***

Information integrity is key to achieving Sarbanes-Oxley compliance. In responding to SOX, it is critical that companies be able to trust their data and avoid any inconsistencies in their reporting definitions and calculations. WebSphere Information Integration enables companies to satisfy reporting needs that are driven by multiple applications and multi-repository environments. High-performance, end-to-end data integration enables the extraction, movement and transformation of data from multiple sources to ensure consistent results. Information is presented in a unified way for consolidated reporting and accurate "risk snapshots." Inaccurate, redundant

or incomplete data undermines corporate financial integrity. WebSphere Information Integration helps organizations to identify “data gaps”; to disclose enterprise-wide risk information stakeholders can trust; and, to consistently retain and manage records across the enterprise.

**Sarbanes-Oxley customer success**

A global financial services organization headquartered in the eastern United States has 130 globally dispersed operations. Erroneous reports from one of the international offices led to inaccurate and incomplete corporate financial reports. Lack of visibility and information control prevented correction of monthly update data and put the company at risk of financial transparency noncompliance. Using the WebSphere Information Integration platform, the company developed a process to check and cleanse all 30 monthly update files from international operations. This significantly reduced the risk of Sarbanes-Oxley noncompliance, and it helped the company to eliminate 71 legacy applications. The staff supporting these applications was redirected to other projects, and the company is saving \$1M per year as a result.

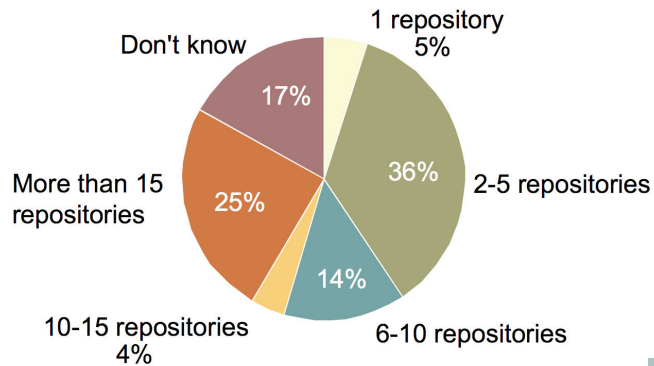
*One of the world’s leading financial management companies saves \$1M per year and reduces risk of SOX noncompliance.*

**The records management challenge**

Records management has clearly come to the forefront of corporate priority as a result of sweeping regulation around information retention and retrieval. These mandates require virtually any piece of information to be properly declared, classified and retained as a record. But records-class information is never stored in one place – most companies have sensitive and material documents and other content scattered across multiple repositories. In fact, more than 75 percent of companies have two or more repositories, and nearly 25 percent have more than 15.<sup>14</sup> Content isolated in these systems can easily become the difference between compliance and noncompliance.

*Records are everywhere within an enterprise.*

***Multi-repository environments are not conducive to consistent, enterprise-wide records management.***



Base: 81 North American decision-makers (multiple responses accepted)



"The Future of Content in the Enterprise,"  
Connie Moore and Robert Markham

Figure 7. Most organizations have multiple content silos.

***Isolated content silos increase the risk of noncompliance.***

Multiple, isolated content repositories can negatively impact a records management strategy in several ways:

- Increase risk of non-compliance with government and regulatory requirements
- Fail to identify all relevant records in an audit or discovery request
- Increase the cost of audit, discovery and litigation support by requiring multiple searches and creating a potentially error-prone consolidation of search results

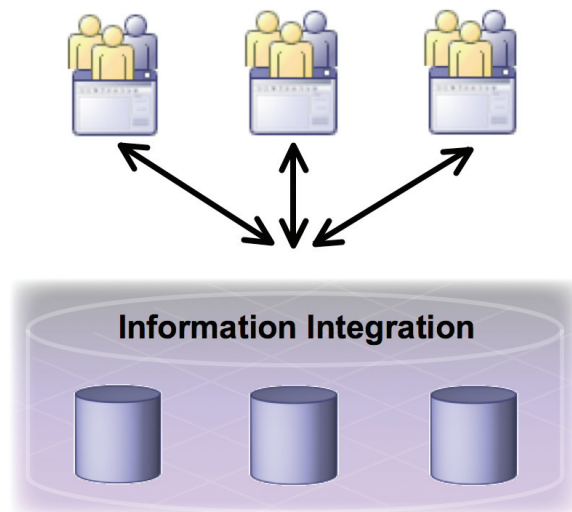
***The right blend of consolidation and federation — migrate records in a controlled manner or apply RM policies in place.***

Multi-repository environments make it extremely difficult and costly to manage all records consistently and effectively. Consolidating records to a single repository is not a viable alternative because of the time, expense and complexity of replacing existing content systems, disruption to business operations, and the introduction of isolated content sources by the next merger or acquisition. Companies need a solution that will enable them to apply and manage recordkeeping policies consistently and confidently across the enterprise. This must include the right blend of consolidation and federation, allowing organizations to migrate records from non-strategic systems in a controlled manner; and, leave records in strategic repositories while applying records management policies in place.

***Federated records management — a multi-repository solution for managing electronic records across the enterprise.***

**Federated records management**

It is critical for electronic records management strategies to embrace, not just a single repository, but all of the repositories where information is managed. As a result, many organizations are looking to federated records management to integrate multiple, disparate content repositories with a single enterprise-wide records management policy engine. This requires a unique blend of records management and information integration technologies.



*Figure 8. Federated records management embraces all of the repositories where records-class information is managed.*

***A first of its kind solution for managing recordkeeping policies consistently across multiple repositories.***

**Introducing IBM Federated Records Management**

IBM Federated Records Management (FRM) is an award-winning, first of its kind solution in the new era of enterprise-wide electronic records management. It combines IBM DB2 Records Manager, IBM's repository-agnostic e-records engine, with the content integration capabilities of WebSphere Information Integrator Content Edition, to enable organizations to manage and control all of their records-class content through one centralized records management application – even when these records are distributed across multiple, disparate content management systems. With this solution, organizations can finally achieve truly enterprise-wide records management.

IBM Federated Records Management allows organizations to:

***Perform a single search across multiple repositories in response to audit-related discovery requests.***

- *Accelerate time-to-market for enterprise-wide records management*
- *Leverage legacy content management systems and business applications*
- *Leave records in their native content repositories or consolidate into a single records repository*
- *Manage recordkeeping policies, retention schedules and disposition across multiple repositories from a single application*
- *Perform a single federated search across multiple repositories*
- *Apply disposition policies consistently across all records*

***Apply and manage recordkeeping policies consistently and confidently across multiple repositories from a single application.***

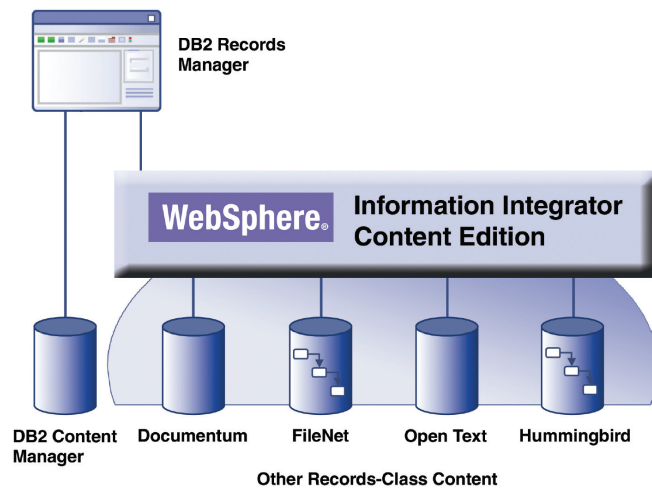


Figure 9. IBM Federated Records Management helps companies achieve consistent, enterprise-wide records management.



***Achieve higher rates of compliance, reduce risk of exposure, leverage existing investments, lower discovery and litigation costs.***

The IBM Federated Records Management has powerful implications for today's business. It can help deliver:

- *Higher rates of regulatory compliance by ensuring all records-class content is subject to centralized retention and disposition policies*
- *Reduced exposure in audits and potential litigation, as well as protected goodwill*
- *Better leverage of legacy systems and business applications by allowing a single records management application to interoperate within a mixed content management systems environment*
- *Avoidance of migration costs and the resulting disruption to business operations*
- *Lower audit, discovery and litigation costs*

#### **Text analytics and search applications**

***Discover and analyze unstructured information to maximize compliance initiatives.***

More than 80% of all enterprise information is unstructured including documents, e-mail, reports, web content, and free-form text fields. Today's stringent regulatory environment compels organizations to cultivate the ability to discover and analyze this information to augment compliance initiatives. IBM delivers breakthrough enterprise search, discovery and analysis capabilities as part of the recently acquired iPhrase OneStep and WebSphere Information Integrator OmniFind Edition. This solution leverages the Unstructured Information Management Architecture (UIMA), an open framework developed by IBM Research for building analytic applications that process unstructured information to find latent meaning, relationships and relevant facts buried in text-based information sources.

***Enhance business insight, improve customer service, and augment compliance with powerful text analytics and enterprise search.***

Text analytics and search applications play a key role in enabling and accelerating regulatory compliance. “Automotive early warning” is an example of a text analytics application that helps auto manufacturers comply with the TREAD Act. It enables the analysis of warranty claims, repair requests and call center logs to identify parts, problems and conditions specific to vehicles, determine correlations, and reduce the cost of recalls. “e-Discovery” is an example of a search application that helps improve compliance and reduce litigation costs by providing highly targeted and accurate retrieval of information in response to pending litigation or audit-related discovery requests. WebSphere Information Integration delivers powerful text analytics and enterprise search capabilities to help organizations enhance business insight, increase online revenue, deliver better customer service, enhance product quality, and accelerate regulatory compliance.

**Conclusion**

Recent dynamics have propelled enterprise risk management to center stage for corporate executives. These include flagrant governance failures, subsequent regulatory pressures, natural disasters, and increased competition. As companies seek to improve risk management capabilities, and to adopt an enterprise risk management strategy, information integration is gaining recognition as a key enabler of risk mitigation. WebSphere Information Integration, the industry-leading platform for delivering information clients can trust, enables organizations to understand, cleanse, transform, federate and connect to all of the required information to accelerate risk and compliance initiatives. This translates into higher rates of regulatory compliance, reduced exposure in audits and potential litigation, and better leverage of existing information investments.

**For more information**

To learn more about the technologies and products behind IBM information integration solutions, contact your IBM marketing representative or IBM Business Partner or visit [ibm.com/software/data/integration](http://ibm.com/software/data/integration)



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- <sup>1</sup> Global Risk Briefing Survey. Conducted by the Economist Intelligence Unit and sponsored by ACE Insurance, Deutsche Bank, IBM and Cisco Systems. April 2005.
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