



Four business trends driving the need for a dynamic information infrastructure

Embracing a more instrumented, interconnected, and intelligent planet

Today's global marketplace is increasingly information oriented—with far-reaching implications for businesses. The ability to securely leverage information can create a competitive advantage. Conversely, the inability to securely leverage information creates business risk.

Consider what's coming: hundreds of billions of smart things—sensors, cameras, cars, shipping containers, intelligent appliances, and RFID tags by the hundreds of millions—all becoming interconnected. This will enable new, highly flexible ways of interacting with customers, employees, patients, and citizens from any device, anywhere. The resulting volume of data promises insight and intelligence to solve some of our biggest problems—but only if we can process and make sense of it in real time and ensure its captured, stored, protected, and made available when and where its needed.

Additionally, organizations around the world are feeling the squeeze from globalization, emerging technologies, coupled with tighter budgets and demand for projects with rapid ROI.

An Information Infrastructure comprises the storage, software, servers and networks, integrated and optimized to deliver information throughout the organization and out to customers and partners.

Four information-related business trends, described in the following section, are causing an explosion of information and complexity stressing already overtaxed infrastructures, staffs and budgets. Information growth means more business opportunities and also more risks. Businesses that are able to take advantage of information-related opportunities and manage information risk outperform those that don't, according to IBM's 2008 Global CEO Survey.¹

IBM can help. IBM uniquely provides a comprehensive, innovative end-to-end approach to building a dynamic information infrastructure that can enable organizations of all sizes to manage the explosion of information more effectively, mitigate business risk, and extract new intelligence for business insight while helping to reduce overall costs.

IBM is the only vendor in the market that can deliver and support the full information infrastructure stack and address all of our clients' information-centric challenges with best of breed leading-edge storage and data management products, leading services capabilities, and integrated solutions supported by world-class expertise and proven successes—the building blocks for the world's strongest information infrastructure portfolio.

Four business trends and the explosion of information

Trend #1: Information availability requirements are increasing.

Businesses providing real-time access to information can make decisions better and faster. Yet 47 percent of users surveyed said they still don't have confidence in their information.² Another survey reveals that 42 percent of managers use wrong information at least once a week.³ CEOs and CIOs will continue working to fill this information gap.

Information-based products and services continue to compete to deliver faster access to more information, with a better overall user experience. The ability to successfully leverage information can help drive competitive advantage.

Trend #2: Information privacy regulations and security threats are increasing.

Over 100 million consumer records were reported lost or stolen in 2007.⁴ The number and scope of security breaches has been rising steadily every year, and the trend is expected to continue. Theft of intellectual property and other information assets becomes a bigger risk as more information is made available online.

Trend #3: Information compliance is more complex and penalties are more severe.

Compliance regulations and discovery requirements vary by country. Companies operating in multiple countries quickly find themselves bound by multiple compliance rules and retention periods. Fines have been levied for failure to retain records, failure to communicate legal hold orders, and failure to produce records in a timely manner. The trend indicates that, as technology improves over time, judges will be quicker to impose stiffer penalties.⁵

Trend #4: Information retention periods are longer, often exceeding the life of storage media.

A recent survey of archive requirements found 83 percent of respondents keep some data 50 years or more.⁶ Long-term data retention policies require that data be migrated to new

technology platforms within its useful life. These policies justify investments in tiered (or blended) storage, which can significantly reduce power requirements and total cost of ownership.

The result of these trends is that information volumes are exploding, forcing business leaders to consider evolving or transforming the way their infrastructure provides information services. IBM recognizes this challenge and is responding with a vision and strategy for a dynamic infrastructure—designed for today's instrumented world, helping clients integrate the growing intelligent business infrastructure in the expanding digitally interconnected world with the necessary underlying design of a flexible, secure and seamlessly managed IT infrastructure. This model aims to deliver superior business and IT services with agility and speed, while addressing the day-to-day operational needs to improve service, reduce cost and manage risk.

Organizational, operational and process silos degrade the manageability of information

Many IT organizations face additional challenges when information is segregated by application, platform, geography, or business unit. Segregated environments provide a measure of control to the business units they serve, but tend to create pockets of unused resources and inconsistent implementation of risk management policies. For example, the 2007 Open Compliance and Ethics Group (OCEG) GRC Strategy Survey found that 84 percent of executives reported fragmentation of their governance, risk, and compliance activities and processes. Segregated information is also more difficult to share.

Another 65 percent of executives surveyed in the study claimed that fragmentation caused serious business problems including duplication of effort, redundant solutions, higher costs and increased risk.

Improved resource and secure information sharing allows businesses to be more responsive to change. IT is key to making this happen. By pooling available capacity and replicating risk management policies, businesses can deliver faster information services while controlling costs, improving the overall value of IT.

Adopting a dynamic information infrastructure strategy

Organizations can maximize the benefits and reduce the risks of the information explosion by developing and implementing an information infrastructure strategy that aligns with business goals. A comprehensive strategy not only addresses governance, risk and compliance concerns, but also helps streamline operations to deliver new levels of economics and improved capacity planning.

Organizations can benefit from an overarching policy definition that will steward the management of data throughout its life cycle, as well as help protect data from exposure or damage. The OCEG GRC Strategy Survey found that 71 percent of respondents who took advantage of opportunities to integrate these activities realized benefits that met or exceeded their expectations.

A dynamic information infrastructure strategy should be focused on identifying and closing the gap between the current and desired state across four core capabilities that impact service levels, business risk and economics:

- **Information availability**—*Plan and deliver continuous and reliable access to information, in any form, at any time, to any device.*
- **Information retention**—*Retain and maintain access to business records for legal, regulatory or business needs.*
- **Information security**—*Protect and securely share information across the organization, and out to partners and customers.*
- **Information compliance**—*Reduce regulatory, operational and reputation risks, audit costs and audit deficiencies.*

Developing a information infrastructure strategy is often the right next step for creating a more dynamic, flexible and resilient infrastructure that better integrates information, systems and processes. Implementing an information infrastructure strategy can help IT organizations become more energy efficient. Enterprises can also expect to achieve increased levels of service delivery by utilizing automation to drive efficiency and operational agility. When this highly efficient and shared infrastructure aligns with business goals, it also allows for more dynamic response to changing business needs.

Prioritize governance, risk and compliance activities against business requirements

A well-implemented information infrastructure strategy assesses and analyzes information risk to determine ways it can potentially affect the organization and its value chain, such as impacts on information accessibility, communication flow, ongoing operations and workflow interactions. Understanding the scope and impact of a risk helps teams better determine where they should place their immediate attention.

IBM Information Infrastructure



Information Availability

IBM Information Infrastructure assists organizations in identifying the information that is most critical to their business, prioritizing information, and leveraging best practices to create and implement a comprehensive strategy for achieving the desired level of information resiliency.



Information Retention

IBM Information Infrastructure can help organizations facilitate management of the competing demands of cost and availability; and to help them respond effectively to legal, regulatory, and investigatory inquiries. IBM can help organizations proactively reduce the risks associated with information discovery.



Information Security

IBM Information Infrastructure helps clients assess information security priorities and risks, determine where sensitive information resides, and provide a means to assess and prioritize vulnerabilities and security gaps.



Information Compliance

IBM Information Infrastructure helps organizations reduce the complexity and costs of security audits and regulatory compliance, while enabling them to protect against potential financial penalties and damage to their reputation.

Organizations then come to realize that they need not protect against every conceivable threat, but instead should understand the risks and prioritize efforts according to what makes the most sense for the business. Businesses cannot completely remove the risks but can work to better manage them. This can put an organization in a better position to balance the needs and resources of the business with its needs for information security, information compliance, information retention, and information availability.

Information availability

An organization's ability to access information correlates directly with its business resiliency. Disasters can destroy vast amounts of work and data with devastating effects on business viability. However, information availability means more than just having effective disaster recovery measures in place. Five hours of downtime can be just as debilitating—and is far more likely to occur—as the effects of a hurricane or fire. Organizations must

take steps to ensure users have continual access to critical information. Disruptions to availability can impede productivity, resulting in lost revenues, and damage to customer loyalty, partner relationships, brand, and overall reputation.

Information availability planning assists organizations in identifying the information that is most critical to their business, prioritizing areas such as intellectual property, financial information, human resource data, and customer records. It then leverages best-practice frameworks to create and implement a comprehensive strategy for achieving the desired level of information resiliency, which can include the ability to deliver continuous and secure access to information, optimize employee productivity and stakeholder satisfaction, meet service level agreement requirements, help meet internal or external regulations regarding access to data, and reduce management costs.

Information retention

Larger organizations may have to manage hundreds of disclosure requests every year, often with the requirement to satisfy those requests in very short timeframes. Lack of responsiveness can result in serious repercussions, including significant fines and penalties. Additionally, industry and government regulatory bodies often require lengthy retention periods for business records. Organizations have to maintain information according to company and regulatory retention policies in order to maintain compliance.

A dynamic information infrastructure can help create an environment that facilitates management of these competing demands and helps organizations respond more effectively to legal, regulatory and business inquiries. This infrastructure can enable early analysis and diagnosis of e-discovery readiness, e-mail and records management, development of chronological and event-based retention policies, enterprise-wide search and discovery analytics capabilities, and information risk management.

Information compliance

Regulatory, industry and legal mandates for maintaining the integrity and privacy of information are continually on the rise. Unfortunately, complex audit and compliance requirements can hamper an organization's effectiveness. Information infrastructure can help organizations reduce the complexity and costs of security audits and regulatory compliance, while enabling them to better protect against potential financial penalties and damage to their reputation.

Information infrastructure facilitates a sustainable compliance strategy that includes defining and implementing policies, processes and procedures for data encryption, records and content management, storage and archiving, retention management, change and configuration management, identity and access management, Web site auditing, and in-depth network defense and system protection. For an organization to declare itself compliant, it needs to be able to provide sufficient evidence to substantiate that claim. All business records must be managed and available for inspection, as legally required. The foundation of an information compliance approach includes the ability to document and enforce policies (security, retention, and authentication) while simultaneously prove (collect evidence) that the business is following those controls and policies.

An effective information infrastructure leverages automated policy enforcement mechanisms and standardized compliance discovery and reporting. It provides a means for organizations to monitor user activities in relation to misuse or noncompliance, then to manage incidents using standardized, traceable procedures.

Information security

Organizations must be able to protect and securely share information across the business, as well as with their partners and customers. This includes enabling secure business collaboration with effective controls that protect intellectual property and the privacy of information while not slowing down business processes. It means providing anytime-anywhere access to secure information while helping to ensure the integrity, confidentiality and availability of that information.

An information infrastructure strategy can help customers understand information security priorities and risks, determine where sensitive information resides, and provide a means to assess and prioritize vulnerabilities and security gaps. Based on those assessments, an organization can create a threat profile to assess its current security stance and facilitate plans to improve that stance.

A key part of the design process is to develop an enterprise security roadmap that defines policies, processes and procedures needed to obtain the desired security stance, as well as the enterprise security architecture needed to support it. This architecture requires shared solutions and services that go beyond traditional security, privacy, compliance and operational risk solutions to offer proven technologies and collaborative methods to build consistency and quality control.

Maximize the business benefits of your information infrastructure

By taking a holistic approach to protecting and managing information, organizations can leverage their technology investments across the entire enterprise in multiple governance, risk and compliance areas. A dynamic information infrastructure can empower organizations to create models for comprehensive security and compliance infrastructures that can be easily overlaid on other segments of the business, such as new operations, branches or franchises. It can also enable an organization to more deftly manage risk so that it can move forward, innovate and thrive competitively as a business.

Why IBM for information infrastructure?

IBM brings a strategic, end-to-end approach to analyzing an organization's information infrastructure. Together, we develop a customized strategy that leverages IBM expertise with data center operations, including virtualization, energy efficiency, business-driven service management, security, and business resiliency, to help meet the goals of your IT organization and your business.

A vast portfolio of software, hardware, services, integrated solutions, and financing puts IBM in a unique position to help organizations through any or all of their information infrastructure challenges. IBM combines deep consultative expertise and education with software, hardware and tools that have broad platform, application and resource support to protect and strengthen the resiliency of an organization's valuable information assets.

Turning to IBM as a trusted partner can enable an organization to create a more dynamic, flexible, robust and resilient information infrastructure that can translate into a more efficient, cost-effective and competitive business posture.

For more information

To learn more about IBM's Information Infrastructure strategy and solutions, contact your IBM representative or IBM Business Partner, or visit ibm.com/information_infrastructure



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March 2009
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