The Information Agenda Guide
for Communications Service Providers

Accelerate your journey to Information On Demand

Leaders from around the world are focused more than ever on the economic, social and environmental implications of vertical integration, where free trade agreements, the Internet and globalization are making the world simultaneously smaller, flatter and smarter. The systems and processes that enable goods to be developed, manufactured, bought and sold, services that deliver everything from electricity, financial transactions and efficient healthcare systems to name a few, are driving us towards becoming a smarter planet.

What all of this means is that for the first time in history, almost anything can become digitally aware and interconnected, bringing major implications for the value that can be derived from such systems. With so much technology and networking abundantly available at such low cost, what wouldn't you put smart technology into? What service wouldn't you provide a customer, citizen, student or patient? What wouldn't you connect? What information wouldn't you mine for insight?

The foremost issue facing enterprises today is the waste, inaccuracy and volume of missed opportunities that stem from the single root cause of information raging out of control. Enterprises are handling more information than ever before, but at the same time they know they are not keeping pace. In effect, more information is available, but proportionally less—and radically less of the information being created in real-time—is being effectively captured, managed, analyzed and made available to people who need it. They are seeking new intelligence, bringing together the power of human cognition and computational excellence. They are focused on shifting the agenda to situational awareness and prediction, thus driving the focus towards optimization.

Communications service providers are well aware of the potential that connectivity, computation and cognition present. Rapid increases in broadband deployment and throughput capacity will further amplify this potential. 10,000 security cameras in London are connected to the Web, feeding it video 24 hours a day. Take the 300 connected sensors on a bridge in Minnesota, add the 800 monitoring another in Hong Kong—and multiply by the millions of roads, bridges and buildings in cities around the world. Now add billions of intelligent phones, cameras, cars and appliances, and millions of miles of smart power lines and roadways. Is it any wonder that in just three years, IP traffic is expected to total more than half a zettabyte? (A zettabyte is a trillion gigabytes—or 1 followed by 21 zeroes.)

Information is the key

There is unprecedented change taking place in the communications industry today. Technology, globalization and economic liberalization have caused the communications industry to change more rapidly than many other industries. Gone are the days of vertical powerhouses providing one product—such as wireline phone service with a predictable revenue stream—and controlling every aspect of the creation and delivery of that product. Triple- and now quad-play business models are becoming the norm as communications delivery systems converge and consumers increasingly desire a single source for their communications needs (wired, wireless, video and Internet services). Some pundits predict an evolutionary convergence and emergence of a telemedia industry.

Time-to-market for new services and return-on-investment horizons are being significantly shortened as providers compete in geographically larger and increasingly competitive markets. Risk mitigation, from the technical, financial and regulatory perspectives, gains importance as providers contract with partners and third parties for content, services and technologies to gain competitive advantage or provide more sophisticated service offerings.

The key to managing these activities is the effective stewardship all of the information in your enterprise. Successful communications companies will be those that exploit customer, network and operational information as a strategic resource. Those that don't have a plan will be frustrated and overwhelmed with increasing volumes of information.

Communications service providers have been investing in point solutions with the goal of automating business processes to reduce cycle time and reduce cost. Significant investments in enterprise-wide applications such as enterprise resource planning (ERP), customer relationship management (CRM) and supply chain management (SCM) were made to address these automation requirements. For most providers, information managed by these systems is isolated, unsynchronized and often of questionable quality. Providers rarely obtain optimum value from this information.

In a recent survey of CEOs from communications providers, it was recognized that significant change is inevitable, even desirable. CEOs were concerned, however, about their ability to manage that change. An Information Agenda™ creates an enterprise-wide vision that can allow them to execute and manage that change with the desired result in mind.

As a result, communications service providers are launching new initiatives designed to drive new intelligence, business optimization and ongoing competitive advantage – and these initiatives all depend on information that is created, owned or managed by the provider.

Information is at the core of the communications industry

The new, converged business model demands a better utilization of information—information that is already in a provider's control as well as the massive volumes of customer, transactional and media information that will become vital in providing a broad range of customer services and a superior customer experience. Every call, every SMS message, every pay-per-view or on-demand movie creates data that can enable a provider to gain insight regarding the customer, market segments, emerging trends and delivery channels. Considering the potential value of these data, a more effective strategy of information management is required.

Today, CIOs have an opportunity to harness and leverage the information they have captured to provide sustainable competitive advantage, rather than simply support or automate business processes. Yet, accessing and verifying that information is not simple. For example, data is often locked up in multiple departmental silos—putting it at risk of duplication and other errors—and a communications service provider's different business units may use different terminology or formats to describe the same information.

Overcoming these hurdles can be well worth the effort. When all of an organization's data can be consistently utilized, with processes and governance in place to assure the delivery of correct, complete and current information, that information becomes trusted information. As seen in Table 1, that trusted information can then be used as the fuel for an entirely new level of information-driven services—and sustainable competitive advantage.

Advertising	becomes	**Context marketing** Targeted ads driven by detailed customer profiling
Reactive network management	becomes	**Service availability management** Anticipate and resolve network issues and notify affected clients
Churn management	becomes	**Predictive Churn Management** Identify high-value customers at risk of moving to another provider. Proactively address issues and retain
Increasing average revenue per user (ARPU) via additional services	becomes	**Monetizing customer segmentation** Rapidly develop and deliver a wider range of services that exploit convergent technologies and are tailored to the needs of well-defined customer segments

Information On Demand

Information On Demand is a comprehensive vision for unlocking the business value of information for competitive advantage, by enabling organizations to establish and leverage trusted information to optimize business performance. Communications service providers can optimize business performance through Information On Demand, helping them to reduce operational costs, gain a far more detailed understanding of customer trends and behaviors, reduce risk and improve revenue management.

Information On Demand is required to optimize business and asset performance through the strategic use of information. Information On Demand allows a provider to better utilize the information under its control, thereby facilitating more accurate customer profiling, superior customer experience, faster product development and targeted service offerings based upon the individual profile, transaction context and device. This level coordination and optimization can only be achieved through a common information management strategy.

Building an Information Agenda

For organizations that want to get started on the path to Information On Demand and establish a foundation for new intelligence but do not know where to begin, an Information Agenda is needed. An Information Agenda is a comprehensive, enterprise-wide plan that explains how to take the information being generated across, and even outside of, the organization and put it to use to better run the business. In establishing an Information Agenda for the organization, the CIO, working with line of business colleagues, puts information to work to achieve both short-term and long-term strategic changes.
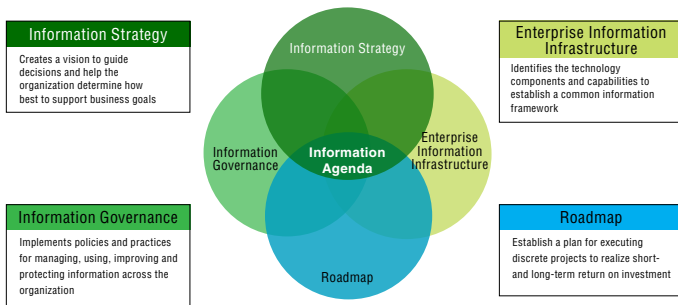
Figure 1: An effective Information Agenda provides a strategic vision and a phased plan to align the use of information with an organization's business strategy.

An effective Information Agenda helps organizations achieve several key objectives:

- Identify data and content that are vital to the organization

- Identify how, when and where information should be made available

- Determine data management processes and governance practices

- Identify and prioritize the information projects that deliver the most return

- Align the use of information to match the organization's business strategy

- Create and deploy an information infrastructure that meets both immediate and future needs

IBM® accelerates the process and minimizes the risk of creating an information agenda through industry-specific Information Agenda Guides. The IBM Information Agenda Guide for Communications Service Providers is a practical, proven approach for turning a client's Information On Demand vision and strategy into reality. CIOs, working with their line of business colleagues, can build a best-in-class information

management vision for their organization and create a detailed roadmap to realize it. The goal is to transform the organization to unlock the business value of information for competitive advantage, enabling the delivery of trusted, accurate information to optimize business performance.

The IBM Information Agenda Guide for Communications Service Providers can help direct businesses as they develop their own information agenda in a matter of weeks through IBM Information Agenda workshops. It addresses the four key components of an information agenda and ensures that they work in conjunction to deliver Information On Demand (see Figure 1).

- **Information strategy:** The vision that guides decisions and helps the organization determine how best to support business goals

- **Information infrastructure:** The technology components and capabilities needed to establish a common information framework

- **Information governance:** The policies and practices that facilitate the management, usage, improvement and protection of information across lines of business

- **Roadmap:** A phased execution plan for transforming the organization

As figure 1 indicates, the Information Agenda for Communications Service Providers identifies crucial IT projects that establish the necessary information infrastructure and then leverage that infrastructure to help produce measurable business results identified by the business objective. Depending on an organization's existing information architecture, and the objectives that are of most importance to the business, an organization's final information agenda roadmap can contain some or all of these projects.

Figure 2. The Business Optimization Map for communications service providers: a practical, proven approach for turning an Information On Demand vision and strategy into reality.

Information strategy: Recognizing the big picture

At its highest level, the Information Agenda Guide for Communications Service Providers incorporates industry best practices to assist in the identification of the primary information-centric strategic imperatives that drive virtually every business decision. As Figure 2 illustrates in its outermost ring, customer focus, revenue management, operational and organizational efficiency, line-of-business convergence and consolidation, along with risk and compliance, are key strategic imperatives that many communications service providers contend with under the current market dynamics.

The next ring details the specific business optimization objectives that support the strategic imperatives. The business imperatives and business optimization objectives are the foundational components used to help set the vision and strategy for an organization's information agenda. This approach helps ensure that IT objectives and overall corporate objectives are aligned and provides line-of-business and IT colleagues with a common language to communicate in regarding all projects and plans.

At the center of the Information Agenda Guide are a set of performance management activities and application areas that are common across all industries. These capabilities are required to run your business, but alone are not sufficient to drive competitive advantage in today's business environment.

Information governance: Enhancing information quality, availability and integrity

As a crucial component of the Information Agenda Guide, information governance assists a provider in establishing standards for data quality, management processes and accountability. These help to improve business performance via standard definitions and processes that establish a more disciplined approach to managing data and information across the enterprise.

The Information Agenda Guide for Communications Service Providers applies best practices, based upon IBM's extensive experience in the communications industry, for creating information governance policies. It also leverages existing policies and procedures to create an environment that can more consistently and confidently manage information, thereby obtaining maximum value from these assets in support of the strategic imperatives.
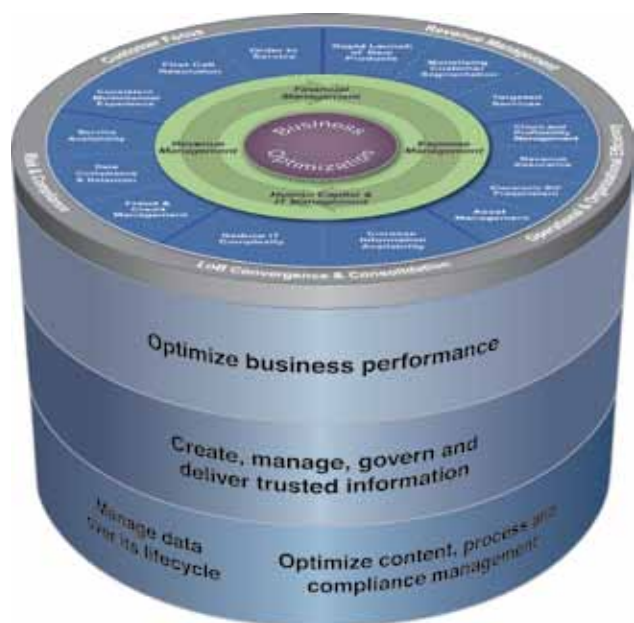
Figure 3: The Information Agenda Guide for Communications Service Providers addresses common information requirements.

Information infrastructure: Creating, managing and delivering trusted information

All initiatives and business optimization objectives depend upon a common information infrastructure that enables a communications service provider to more effectively create, capture, manage and utilize information associated with customers, services, products and market strategy. As shown in Figure 3, an effective information infrastructure allows a communications company to:

1. **Manage information over its lifetime—**Reducing the costs associated with managing information while controlling access, expanding retention and increasing compliance.

2. **Optimize content, process, and compliance management—**Better tuning system performance and improving decision-making by injecting timely, trusted information into business operations.

3. **Establish an accurate, trusted view of information over time—**A flexible architecture can leverage existing IT investments to produce accurate and trusted information that is consistent across sources, facilitating better analytics and sound business decisions.

4. **Plan, understand and optimize business performance —** Leveraging trusted information to build plans, understand how business is performing and focus on optimizing performance across the enterprise.

5. **Provide solutions that drive operational efficiency—** Information infrastructure solutions focus on information compliance, security, availability and retention, providing an infrastructure environment that is highly scalable, standards-based, flexible and essential to handling today's most information intensive business challenges.

As the journey towards Information On Demand evolves, guiding principles will be applied to leverage existing assets and IT purchase decisions with these key common information requirements in mind. The journey will include looking for opportunities to use existing IT assets as common components to be utilized for other projects, and will provide guidelines that help ensure new technology and software investments can accommodate both short- and long-term objectives.

Roadmap – bringing it all together with a step-by-step execution plan for creating an information agenda

The roadmap gives information management and integration efforts direction and cohesion. It spells out the priority, order and timeframe of IT projects necessary to achieve the organization's crucial information-enabled business optimization objectives. The first step of creating the roadmap is identifying and prioritizing the underlying IT projects— usually combinations of software and services—that can help achieve each business imperative.

As Figure 3 indicates, the Information Agenda Guide for Communications Service Providers identifies crucial IT projects that establish the necessary information infrastructure for improving the customer experience—and then leverage that infrastructure to help produce measurable business results identified by the business objective.

Depending on an organization's existing information architecture, and the objectives that are of most importance to the business, an organization's final information agenda roadmap can contain some or all of these projects.

IT projects for improving customer experience

As a result of the industry-wide shift in emphasis from a comparatively small number of products to an increasingly larger and complicated number of services, improving the customer experience is high on most communications organizations' lists of strategic imperatives. Providers are looking for new and better ways to identify market needs quickly, as well as new ways to provide new services that will allow them to retain customers and acquire news ones. Since better management of the organizations' customer-related information is vital to achieving these imperatives, CEOs and other executives are increasingly looking to the CIO for answers.

Making the transition from the current state of information management to the ideal state identified by an organization's information agenda is not an easy task. Some of the factors that prevent communications service providers from delivering a superior customer experience are the numerous, isolated and inconsistent sources of customer data distributed throughout the organization; the difficulty in coordinating and synchronizing customer information; and the inability to establish a single, trusted source of complete, accurate and current customer information.
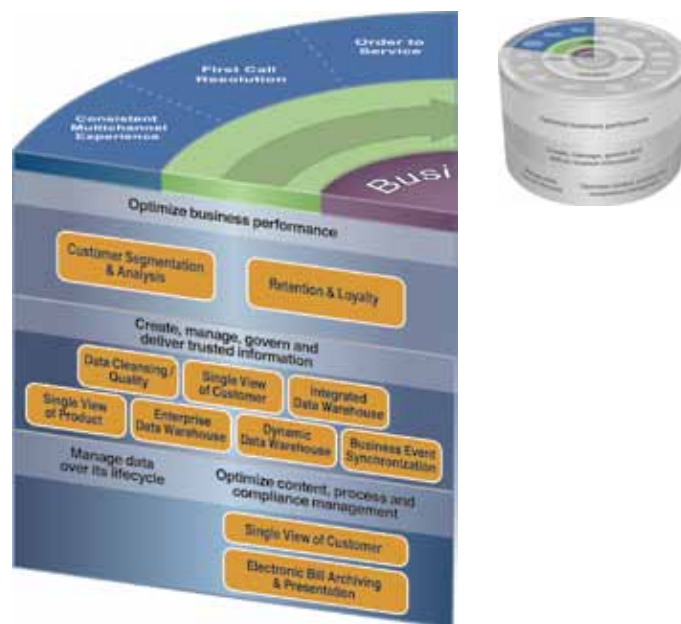

Figure 4: An example prescriptive roadmap of IT projects to enhance the customer experience.

Many of the same issues arise when providing information about products, plans and services to customers, which, given the increasing complexity and variety, result in inconsistency of experience across the various channels of interaction. The Information Agenda Guide helps communications service providers remedy these problems by improving the quality and consistency of customer data regardless of its source, integrating various sources of data to create a "single view of customer" or "single view of product" that is consistent across all channels of customer interaction, and helping establish real-time monitoring and analysis of customer transactions to gain insight into customer trends.

Figure 5: An example prescriptive roadmap of IT projects for revenue management.

IT projects for revenue management

Revenue management has evolved from the time when a regulated environment allowed providers to focus simply on cutting costs and adding new customers. In many communications service provider organizations, costs have already been substantially reduced, while the overall pool of potential new customers is becoming more sophisticated and demanding in the use of technology, services and information sources. It takes far more effort to attract and retain customers in today's market.

The complexity associated with revenue management (Figure 5) challenges every provider. Some of the factors that prevent communications service providers from optimizing their revenue management opportunities are the difficulties and delays in developing, planning and executing the launch of new products and services due to a lack of sufficiently reliable information, the inability to accurately identify customer needs or segments that could be addressed by the targeted services, and the difficulty of quickly implementing new

services once opportunities are identified. The Information Agenda Guide helps communications service providers improve revenue management by offering business intelligence capabilities to segment customers more effectively, improve new customer acquisition, identify new product and service opportunities, and bring them to market faster.

IT projects for operational and organizational efficiency

The idea of using technology to enable greater operational efficiencies is not new. What is new, however, is the realization of the vital role of information in accomplishing this. An organization's information agenda can now help direct the creation, collection, management and dissemination of information, with a resulting optimization in that information's usage by and value to the organization.

Unfortunately, the extensive and sophisticated data and information applications already in place can be barriers to the implementation of an information agenda. Some of the factors that prevent communications service providers from achieving

Figure 6: An example prescriptive roadmap of IT projects for operational efficiency.

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operational efficiency are the inability to extract the full value and insight from customer and transactional data sources, the inefficient utilization of capital assets, and the lack of data and process integration among IT systems or applications. The Information Agenda Guide helps communications service providers apply business intelligence to gain the full value of voluminous customer, network and operational data resources with the goal of identifying issues or trends that could improve profitability (Figure 6). Greater overall "back office" operational efficiency can be achieved by improving the integration of processes and the management of information involved in billing, invoice processing, and contract, employee and asset lifecycle management.

IT projects for line-of-business convergence and consolidation

The CIO is particularly affected by the challenges of globalization, new technologies and economic liberalization. Every one of these directly impacts the information infrastructure. Mergers and acquisitions create the need to absorb additional—and sometimes incompatible—legacy systems. New partner and third party relationships present challenges in the form of systems, software and data that need to be accessed and integrated without changing their existing form or location to obtain the greatest value from these information assets.

The difficulties of accommodating massive amounts of data and information from incompatible systems or sources can be daunting. Some of the factors that prevent communications service providers from efficiently managing convergence and consolidation include the difficulty of establishing comprehensive data quality and integration of disparate data

Figure 7: An example prescriptive roadmap of IT projects for line-of-business convergence and consolidation.

sources; the challenges of consolidating data across multiple data domains such as product, customer, account, supplier and location; and the difficulty of developing an enterprise content strategy to manage unstructured content distributed throughout the organization.

The Information Agenda Guide helps communications service providers in the midst of convergence and consolidation address these challenges (Figure 7) with enterprise master data management, data warehouses, archiving, and enterprise content, and process management platform capabilities that can bring consistency and quality to diverse data sources and reduce the complexity of the IT infrastructure.

IT projects for risk and compliance

With every new service, new acquisition and new partner there are new risks to assess and new compliance imperatives to establish in response to legislative and industry requirements such as data retention and privacy. Risk and compliance have a broad set of technical, financial and legal implications and demands with respect to information management. Behind all successful risk and compliance efforts is information—trusted, accurate information that can be quickly accessed and analyzed to give a true picture of the business today and for the future.

However, the volumes of data, the diversity of information and the number of isolated systems make risk management particularly challenging. Some of the factors that prevent communications service providers from effectively managing risk and compliance issues involving enterprise information include the difficulty of establishing a comprehensive enterprise compliance strategy for all data; the multitude of isolated, departmental, legacy, line-of-business data and information systems that remain critical to a service provider's operations; varying regulations and data privacy laws that international operators must conform with; and the different management "domains" responsible for each of these data sources or systems. The Information Agenda Guide provides strategies and capabilities that enable a communications service provider to systematically address the risk and compliance issues associated with data growth, data privacy, retention, discovery, test data management and application decommissioning; records retention and management; and e-mail management and archiving (Figure 8).

The Information Agenda Guide for Communications Services Providers accelerates roadmap creation with best practice templates for specific IT projects. They are pre-configured to accommodate industry-specific business optimization

Figure 8: An example prescriptive roadmap of IT projects for risk and compliance.

objectives and initiatives, allowing organizations to quickly organize and prioritize IT projects within the framework of their information agenda.

The Power of An Information Agenda Approach

With an Information Agenda for Communications Services Providers in place, CIOs have many of the tools needed to make the essential transition from simply supporting the business to making a measurable, sustainable contribution to the business' bottom line. The Information Agenda Guide for Communications Service Providers supplies the integrated vision needed to help achieve the business goals and objectives of a converged business model — and deliver better business outcomes. These outcomes can include projects such as data quality, information lifecycle, first call resolution and rapid launch of new products that support multiple strategic imperatives.

The benefits— Competitive advantage through business optimization

The IBM Information Agenda Guide can help communications providers address a wide variety of business tasks, including:

- Integrating technologies gained through mergers and acquisitions
- Introducing new products quickly to targeted audiences
- Achieving a common view of the customer across all lines of business

Most important, consistently delivering trusted information to employees, customers, and business partners gives organizations the ability to use that information—and the intelligence derived from it—in entirely new ways, providing real competitive advantage for providers whose infrastructure and services are rapidly facilitating the transition to a smarter planet.

Why IBM is the right transformation partner

IBM's unparalleled combination of pure science, deep industry knowledge and technology expertise makes it uniquely qualified to help business discover a new kind of intelligence. Only IBM offers the industry accelerators, enabling technologies and deep expertise with a proven approach necessary to do so.

The Information Agenda Guide for Communications Service Providers is a practical, accelerated approach developed by IBM after years of working with leading global organizations. It is a cross-IBM program composed of a proven, prescriptive methodology and mature software and technology assets, delivered by IBM practitioners with deep industry expertise.
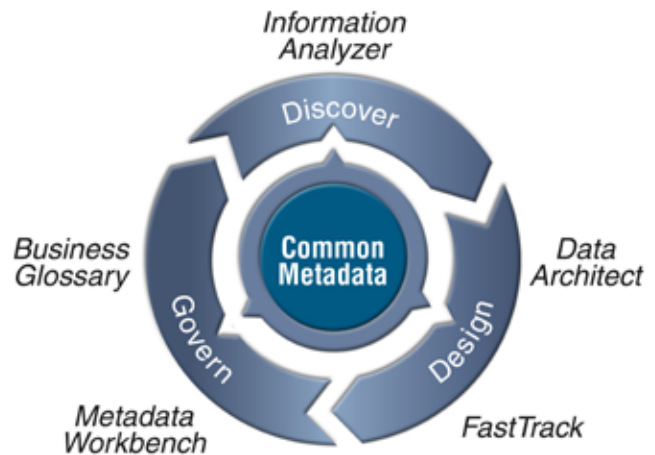
IBM Information On Demand and Information Infrastructure solutions offer end-to-end information infrastructure capabilities for executing your information agenda. Information On Demand and Information Infrastructure offerings are specifically designed to address virtually every aspect of an organization's trusted information needs. Based on open standards and reflecting an investment of more than US$10 billion in the last three years, Information On Demand and Information Infrastructure offerings are among the industry's most comprehensive.

IBM complements its Information Agenda with additional services and capabilities from IBM's Business Analytics and Optimization organization. IBM Business Analytics and Optimization leverages the unique capabilities of IBM Research, which, when combined with our world-class software solutions, foundational business intelligence, performance management and advanced analytics, accelerate client time-to-value. Business Analytics and

Optimization helps businesses make better decisions faster while optimizing operations, either by eliminating costs or transforming business processes. Ultimately, Business Analytics and Optimization helps predict outcomes with greater certainty and uncover opportunities that were once unknown and unattainable.

CIOs and senior IT managers ready to jump-start their organization's information agenda efforts should consider a hosted IBM Information Agenda workshop. This workshop leverages IBM's expertise to guide CIOs, senior IT managers and line of business stakeholders quickly through the process of building a cohesive information agenda with an actionable set of projects. A hosted workshop can result in faster execution and realization of return on investment.

For more information

To learn more about the IBM Information Agenda Guide for Communications Service Providers and IBM IOD solutions, contact your IBM sales representative or visit:

- **ibm.com**/think

- **ibm.com**/ibm/ideasfromibm/us/smartplanet/topics/intelligence

- **ibm.com**/software/data/information-agenda

- http://www-03.**ibm.com**/systems/information_infrastructure/resources/info/iis_0908.html

- **ibm.com**/informationondemand

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