

The Journey Along an Information-Led Transformation

Discovering a new kind of intelligence



What does the future look like? If you could look into the future, what would you see? Living in a better tomorrow requires creating a better roadmap today.

Can you imagine a better world? Can we make smarter decisions?

Smart food. Across Norway, retailers and restaurants rely on Ringnes, Norway's largest brewery and a subsidiary of the Carlsberg Group, to provide almost half a billion liters of beverages annually, including beer, soft drinks and bottled water. Ringnes is using RFID technology to track the arrival, departure, loading and unloading of each container. Smart sensors capture all data linked to the plant's 40 loading gates, so the brewery can quickly spot and resolve bottlenecks in its logistics operations and address them in order to speed deliveries.¹

Smart healthcare. In a smarter world, your healthcare information could be available anytime, anywhere. When they found that there was no consistent way to capture and share vital information on patient treatment, the Merit Foundation decided to create the first pan-European database of patient information. Consultants from across Europe developed METEOR—Measurement of Efficacy of Treatment in the Era of Outcome in Rheumatology—an Internet-based solution that enables clinicians

to check a patient's treatment and responses in a single view on a PC screen and then compare it with thousands of others in minutes.²

Smart traffic. Urban congestion poses a challenge to many cities across the globe. In the U.S. alone, the cost of congestion nears \$200 billion each year. The city of Stockholm implemented a smart traffic system that used intelligent transportation solutions such as congestion charging and real-time traffic prediction to help combat the problem. After a seven month pilot, the city had cut gridlock by 20%, reduced emissions by 12% and increased public transportation by 40,000 people.³

The cost of embedding information technology into every device we interact with is shrinking every single day. Given that reality, 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?

Information is central to making a smarter future possible; how it is captured, shared, and applied. Information is the backbone of making smarter decisions, smarter plans, smarter communities, smarter companies and ultimately, a smarter planet.

The journey along an Information-Led Transformation

A shift is underway from simple automation to business optimization, and information is at the center of it. Information, when aligned with your business strategy, holds the key to driving profitable growth, cost take out and proactive risk management. However, despite the tremendous growth in information, most organizations are operating with significant blind spots and are trapped within application-bound silos.

Business leaders have shared that in order to meet their goals for profitability, revenue, cost reduction, and risk management, especially in the current economy; they know they cannot continue to operate the way they have in the past. Simple business automation initiatives have only taken them so far, and they are realizing that through the better management and use of information – information that may already be at their disposal or easily gathered – they can remove the blind spots that are keeping them from making informed decisions and better optimizing their business.

These forward-thinking organizations are proceeding along an information-led transformation to achieve business optimization. This information-led transformation journey

creates smarter organizations by helping them make better informed, real-time decisions as they turn their information into a strategic driver to accelerate innovation, business optimization and sustained competitive differentiation. Organizations that plan an information strategy, make real-time, predictive business analytics available pervasively to all levels of the organization and architect an extensible information platform can generate more revenue, lower costs, reduce risk and predict future outcomes with greater confidence.

By building on a foundation of trusted information that can be shared, reused and applied as a strategic asset, these organizations are discovering a new kind of intelligence and capturing new efficiencies that result from making insight available at the point of greatest impact. As a result, they are realizing immediate and cumulative value with each step, resulting in a business that is sustainably smarter and can make better-informed decisions, ranging from everyday moves to major strategic bets.

Every Decision Needs Information

As a business leader, making decisions is an integral part of your daily responsibilities. In order to have confidence in your decision, you have to consider all that has happened, is happening and might happen in every aspect of the enterprise.

- Can you spot the key patterns?
- Can you extract critical insights from data?
- Can you take latency and cost out of making and implementing a decision?

By any measure, these kinds of questions can be answered with more accuracy than ever before in history. But the ante is about to be upped by the increasing volume and variety of information, and the velocity of decision-making on a smarter planet.

How much? Digital information is growing every day at a rate eight times the amount of all the data housed in US libraries.⁴

What kinds? Information is being created by billions of people — and flowing from trillions of intelligent devices,

sensors and all manner of instrumented objects. Fully 80% of new data growth is unstructured content: e-mail, documents, images, medical records, video, audio and more.⁵

How fast? To keep up with the speed of transactions today, systems will have to take in all types of event information in real time, then correlate it, analyze it and take an action more than 60,000 times a second — or 300 times faster than a hummingbird can flap its wings.

Must you simply resign yourself to blind spots that keep growing larger? Are you doomed to more data bits lost in bigger data stacks, to opportunities missed because of knowledge latency?

Happily, no. The technology exists today to help capture and process all this data, and turn it into not just organized information, or even knowledge, but actual intelligence. We can spot patterns with unprecedented detail. We can capture and analyze changes in markets, trends and consumer preferences faster than ever before. And highly complex systems and large organizations can now be optimized in entirely new ways.



New Intelligence is giving smarter organizations entirely new capabilities for optimizing business processes, collaborating and driving innovation.

Why New Intelligence Now? Why Today?

Enterprises are handling more information than ever before, yet know they are not keeping pace.

- A 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.
- At the same time, almost anything can now become digitally aware and interconnected, from our roads to our appliances to our clothing. Technology and networking is abundantly available at low cost, bringing major implications for the value that can be derived from interconnected instruments.
- The danger stemming from more information coming from more devices is increased complexity. Organizations that can decipher and predict emerging trends will gain competitive advantage.
- Competitive advantage is hard to sustain when based solely on gains in productivity and cost efficiency in transactional work – simple automation is just table stakes and provides no competitive differentiation.

More and more information is available, but proportionally less of it—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. We are crossing a new threshold in our ability to capture, process, model, evaluate, aggregate, prioritize, forecast and analyze how the world's major economic, social and physical systems work in fundamentally new and deeper ways. To effectively harness that ability in our organizations, an intelligent, robust information infrastructure is needed.

New intelligence shifts the focus towards optimization and the agenda to situational awareness and prediction. To information which is secure, available, compliant, retained, precise, predictive and aware – a strategic asset that can be flexed with greater agility than any muscle.

New York Police Department (NYPD)

“The NYPD’s innovative policing strategies depend on our ability to gather, share and act on information. IBM—its people, partners and technology—have helped us redefine how information can be used to fight crime.”

James Onalfo, Chief Architect and CIO, NYPD

Business Challenge

The country’s largest police department recognized that to more effectively solve and prevent crimes, it needed to provide information to key users—from precinct detectives to crime analysts to department leadership—more holistically, thus strengthening their ability to synthesize various bits of information into actionable intelligence.

Solution

To frame and execute its transformation strategy, NYPD engaged IBM Global Business Services. The solution, known as the Crime Information Warehouse (CIW), provides a single, easy-to-use point of access to data on virtually all crimes committed in NY’s five boroughs. Using IBM Cognos® business intelligence software along with GIS mapping and visualization tools, officers and analysts in the center can detect crime patterns as they are forming, enabling precinct commanders to take proactive measures to keep ahead of these trends—and head off spikes in criminal activity.

Benefits

- *Support for more proactive policing tactics by virtue of an ability to see crime trends as they are happening*
- *Faster and higher rate of case-closing through more efficient gathering and analysis of crime-related data*

Smarter Business Requires New Intelligence; Information-Led Transformation Helps You Get It

An information-led transformation is a journey that can begin – and deliver immediate value – at any stage in an organization’s maturity in their use of information. It does not require major investments of resources or time to deliver value. And you can start at any point, depending on where you are in your own journey:

- **Plan an information agenda** – You need to make sure that you have a plan to align your information with your business objectives, including understanding how information can best be applied in situations that may be unique to your industry or field.
- **Apply business analytics to optimize decisions** - You need to be able to make better, faster, more accurate decisions through planning, monitoring, reporting and analysis of your information.
- **Establish a flexible information platform** – You need to have the necessary technology platform and infrastructure to support your needs and to ensure that information can serve as a trusted asset that can be shared and securely accessed by all who need it, when and where they need it.

Whether you start by first planning a strategy, improving the underlying infrastructure, addressing a specific business need or with tactical changes, it is possible to begin seeing improvements in business optimization – with tangible ROI – from the onset. At the same time, you can lay a foundation and a standard set of information services that can be leveraged more readily in the future.

As a result of proceeding through an information-led transformation, you will be able to achieve a new kind of intelligence.

What is New Intelligence?

New Intelligence addresses the question: How can we take advantage of the wealth of information, available in real-time and from a multitude of sources, to make more intelligent decisions? Specifically, it applies to situations where a business is deploying a solution that delivers value across one or more of the following dimensions:

- **Information Management** – Effective management and use of the explosive volume and variety of historical and real-time information
- **Predictive Capability** – Identifying and proactively addressing opportunities and threats with predictive analytics in real-time
- **Engaging the Value Chain** – Pervasive information, collected from a multitude of sources across the value chain and made useful to all who need it
- **Operating with Speed** – Speeding time to value by delivering trusted, accurate and timely information to the right decision makers at all levels within the organization

New Intelligence Dimensions

Information Management

Business leaders understand they must take advantage of the wealth of information available to them make more intelligent decisions. New means of managing and analyzing information are necessary to allow for the free, open flow of information and, in turn, provide the business an ability to pinpoint and act on real insights in real-time, from what would otherwise be an endless sea of data. Information Management imperatives include:

- Aligning stakeholders on requirements and translating to application architecture using powerful visual and collaborative techniques
- Exposing legacy data using new services or applications
- Creating a system of systems: pulling together information from disparate systems and combining it to deliver higher value
- Improving decisions by centralizing and relating a web of unstructured data
- Ensuring quality and managing complexity through automation

Predictive Capability

Business leaders understand the strategic need for a far more accurate predictive capability in anticipation of opportunities, threats and risks. Smart businesses need the ability to manage change via real-time visibility into business performance, superior forecasting of events in markets, politics, regulatory regimes, social trends, currencies, technology trends, future skills requirements and sources of talent. Predictive capability imperatives include:

- Shifting from reacting to situations to taking a predictive stance on your business
- Using real-time and historical data to make better decisions faster, decisions that take into consideration the possible consequences

Engaging the Value Chain

Business leaders sense a widening gap in their ability to dynamically engage the collective intelligence of their value chain and seize the benefits of social media and perpetual collaboration with a new class of information-rich customers, employees, partners and other stakeholders. Engaging the Value Chain imperatives include:

- Developing intelligent systems to connect people, processes and devices
- Automating and collaborating across disciplines and teams, and suppliers, processes and assets supporting Product Lifecycle and Software Development (including Requirements Management)

Operating with Speed

Business leaders understand their best path to sustainable competitive advantage comes through business model innovation rather than simply more product or service offerings. They realize they must integrate disparate data and systems rapidly to act on new customer insights now, not months from now. Operating with Speed imperatives include:

- Delivering accurate, timely and trusted information to the right decision makers, personalized to their specific role in the decision-making process
- Relating trusted information across diverse silos to get valuable insights independent of data locations.

Information Agenda

Unlike their business processes and applications, most companies lack a cohesive strategy to get the most value from their information. They need an Information Agenda to use information more effectively and turn their information into a strategic asset.

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.

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 information use to match the organization's business strategy
- Create and deploy an information infrastructure that meets both immediate and future needs

IBM's Information Agenda™ is a proven approach that brings together key members of an enterprise and helps them create a roadmap to become an information-centric organization. Information Agenda foundation tools and industry specific optimization maps will help an organization focus on key IT investments, transforming data into a trusted strategic asset that can be leveraged across applications, processes and decisions for sustained competitive advantage and to obtain better business outcome.

GSMS

“GSMS is ahead of the curve with the pharmaceutical tracking solution from IBM.”

Jim Stroud, GSMS, Inc., CEO

Business Challenge

With new regulations requiring the traceability of pharmaceutical drugs, GSMS, Incorporated, wanted to gain an advantage in the marketplace by achieving compliance before others in the industry. GSMS needed an experienced, one-stop technology provider to help implement a system to track all shipments and deliveries—at the level of individual items.

Solution

GSMS implemented the Pharmaceutical Track & Trace Solution from IBM in its packaging facility and distribution center, using two-dimensional barcodes, radio frequency identification (RFID) and other sensors to track product movements. The system enables GSMS to identify the source and chain of custody information for incoming pharmaceuticals and provides unique serial numbers for outgoing shipments.

Benefits

- *Helps validate product authenticity and facilitates product security (patient safety)*
- *Reduces manual processes associated with pharmaceuticals receipt verification and reconciliation (for operations such as recall)*
- *Puts GSMS in an advantageous competitive position by making it one of the first distributors to comply with the new regulations*

IBM's Information Agenda approach brings together unique capabilities in software and best practice methodologies with supporting infrastructure services. It is based upon deep industry knowledge and successful client implementations. These assets quickly transform data into a trusted strategic asset, generating exponential value out of information and accelerating business. Without a cohesive information management strategy, organizations will find themselves facing higher IT operational costs and greater exposure to business risk.

Information Infrastructure

Information is an asset and can be a competitive advantage if customers can unlock the business value of information in time to make better decisions and deliver valuable information-based services. Information can also be a risk. Without the right security, compliance, and retention policies, unnecessary expenses and liability can distract an organization from its mission. A balanced approach is needed to both leverage information and manage risk.

For years, IBM has been helping clients manage their information infrastructure with solutions that help address information availability, data retention, and security requirements. IBM offers industry-leading products and services to enable clients to unlock the business value of information. IBM helps clients deliver service-level improvements in information availability, information retention, information security, and information compliance.

With IBM Information Infrastructure solutions supporting your environment, your processes can be made more efficient and cost-effective while reducing your overall carbon footprint. IBM offers solutions such as storage virtualization, Information Lifecycle Management, archiving, and a wide

Rabobank International

“Using the solution from Virgil and IBM, we believe that we offer the fastest, most convenient access to financial data now available in the Netherlands.”

Theo van Koningsveld, Manager, Electronic Distribution Wholesale, Rabobank International

Business Challenge

Rabobank International comprises 174 local banks with 1.100 branches that provide a wide range of financial services to businesses and consumers in the Netherlands. To offer the best rates, prices and advice to customers, Rabobank must have the quickest possible access to stock market data, interest and exchange rates, and other information. But like most large banks in its market, Rabobank used separate internal applications to tap into the various data sources. This process forced staff to toggle through several interfaces to find all of the pertinent data for a customer, making it hard to offer fast, quality advice. Maintaining the various applications was also costly. To better serve customers, Rabobank needed to deliver financial insight more efficiently.

Solution

Rabobank became the first bank in its market to integrate financial data sources into a centralized, customizable portal. Based on software from IBM and IBM Business Partner Virgil, the portal enables staff to provide faster, more accurate advice, and it allows customers to track relevant data in real time via the Web. Virgil's One products leverages IBM WebSphere® software to integrate directly with multiple data vendors and sources, making it possible to stream financial data as it changes, without multiple applications.

Benefits

- *Staff and customers can access the data they need 35% more quickly*
- *Lower application costs cut TCO by 15%, enabling an 18-month ROI*
- *First-to-market functionality increases customer satisfaction*

array of IBM servers, storage, middleware and management software focused on greater operational efficiencies as well as efficiencies in power and cooling. With IBM's comprehensive range of service solutions, policies can be established to move information through the infrastructure with increased precision.

Enabling the most needed information to be accessed in the fastest way is the key to infrastructure efficiency. IBM Information Infrastructure solutions give you more granular control over how information is created, captured, revised, routed, approved, published, archived or destroyed. These solutions pertain to all stages of the lifecycle of your applications and information.

IBM can help you create an information agenda supported by an information infrastructure comprised of the right combination of storage, software, servers and networks, integrated and optimized to securely deliver information to the business. IBM Global Technology Services can help you create the strategy and design that will help ensure information availability, information security, addressing compliance regulations, and efficiently retaining information throughout its lifecycle.

Business Analytics & Optimization

Today's business environment is fundamentally different – new economics, globalization, massive interconnections and increased risk, coupled with an explosion of information. Business leaders making crucial decisions every day sense they are operating with major blind spots, precisely at a point in time when margins for error have been reduced to nearly nothing, where costs have to be taken out of the system and the velocity of decision-making is increasing exponentially. Intuition and gut-feel fueled mostly by personal experience is no longer sufficient.

Market Leaders Acting on New Intelligence

- **Focus on Value.** BlueCross BlueShield of Tennessee improved their provider satisfaction to over 90%
- **Exploit Opportunities.** Moët Hennessy Louis Vuitton increased their daily deliveries by 100%
- **Act with Speed.** HSBC plc reduced the time to spot new trends from 7 weeks to 7 seconds

A fundamental shift to a smarter, fact-based enterprise is essential, and possible, based on the broad application of advanced analytics to a far richer, integrated set of information. IBM can make this a reality by bringing together foundational business intelligence and performance management with advanced analytics, world-class software solutions, proven models that accelerate client time-to-value and predictive modeling leveraging IBM's unparalleled Research capabilities.

Bringing together sophisticated analytics from IBM Research with market-leading software platforms, deep industry insight and business consulting expertise, IBM's Business Analytics and Optimization service line helps clients gain greater precision and predictability out of every business decision they make. With the help of IBM's Business Analytics and Optimization practice, clients now can understand the consequences of any business decision allowing them to operate at a new level of intelligence, far beyond sense and respond.

Business Analytics and Optimization Competencies

- Business Intelligence and Performance Management
- Advanced Analytics and Optimization
- Enterprise Information Management
- Enterprise Content Management
- Analytics and Data Optimization
- Advanced Customer Insight
- Risk and Fraud Analytics

Information On Demand Software

Information On Demand is a comprehensive set of information management solutions and associated services that can help you leverage information for smarter business outcomes. Information On Demand software and solutions provide the ability to create an information agenda; manage data over its lifecycle; optimize content, process and compliance management; create trusted information; and optimize business performance.

In addition to information technologies and industry-specific solutions, Information On Demand brings together best practices, comprehensive strategy and planning capabilities, proven models and methods, reference architecture, and experienced resources to meet the entirety of each client's business optimization needs.

It is critical to be able to access, analyze and control information, in real-time and use information to:

- Better operate and maintain their assets
- Improve worker productivity
- Gain insight into their customers
- Introduce new product offerings
- Improve the quality and results of their regulatory interactions
- Improve customer service

Repsol

“We see IBM’s technology and expertise as game changing in the area of oil exploration because they enable a new level of analytical insight that fits with our need for cost effectiveness, sustainability and fast time-to-market.”

–Francisco Ortigosa, director of Geophysics, Repsol YPF

Business Challenge

Repsol is an integrated oil and gas company operating in over 30 countries. To enable cost and time efficiencies for its oil exploration activities, the company needed to augment its seismic imaging capabilities to reduce the risk of drilling “dry holes” and shorten the time to “first oil.”

Solution

Repsol worked with IBM to build a powerful new system capable of running the next generation of more accurate seismic algorithms – and do so quicker than the rest of the industry. Leveraging advanced multicore technology, Repsol has broken through the accuracy-versus-speed tradeoffs that have defined seismic exploration until today.

Benefits

- *More detailed imaging of complex subsurface structures, resulting in fewer dry holes and wasted resources*
- *Faster time to market for new oil and gas properties due to an 85 percent reduction in seismic algorithms runtime*
- *Substantially lower power and cooling costs resulting from the increase in computing efficiency*

This level of challenge and coordination can only be achieved when an information platform is in place. Information on Demand architecture can help ensure you have the right foundation.

The Information on Demand portfolio provides a foundation that enables you to more effectively create, capture, manage and utilize information associated with customers, services, products and market strategy. It allows you to:

- **Manage information over its lifetime** to help reduce the costs associated with managing information while controlling access, expanding retention and increasing compliance.
- **Use information, both data and content, as part of business processes across your enterprise** to help improve decision making by injecting timely, trusted information into business operations.
- **Establish an accurate, trusted view of information over time** and create a flexible architecture that can leverage existing IT investments to produce accurate and trusted information. Information that is consistent across sources facilitates better analytics and sound business decisions.
- **Plan, understand and optimize business performance** by leveraging trusted information and existing IT investments to build plans, understand how your business is performing and focus on optimizing performance across the enterprise.

How IBM Can Help

Drive more value from better information management

- Minimize business risk for you to explore new business opportunities and growth
- Optimize business performance and profit improvement
- Transform information into a trusted strategic asset
- Efficiently protect, retain and share information

Capture opportunities throughout the entire value chain

- Collect and leverage information from a multitude of sources across the value chain
- Seize the benefits of collaboration with partners, suppliers, customers and employees

Predicting outcomes and improving decision speed

- Analyze and predict more accurate business outcomes for faster decision making

Why IBM

Only IBM has a heritage of making the deep commitment required, in people and in research, to truly understand how the systems of our planet work... and how to make them work better. IBM's unparalleled combination of pure science, deep industry knowledge and technology expertise makes it uniquely qualified to make a smarter world work better.

IBM is the only company that brings complete world-class, end-to-end proven solutions under one roof, from strategy through data, to advanced business analytics and business optimization, which allows a seamless match between client business need and solution delivery. Complete solutions comprise the very best insights and technology from IBM services, Research, Software and Hardware. With its unmatched assets of Research Labs, Briefing Centers and Analytics Solution Centers, IBM provides a breadth of experience with deep vertical business expertise.

For more information

To learn more about IBM's vision of a smarter planet and find smarter ways to collect, analyze and use your information, visit:

- ibm.com/software/data/new-intelligence



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