

Better business outcomes with IBM Big Data & Analytics

The insights to transform your business with speed and conviction



Five years ago, IBM observed that the planet was becoming increasingly instrumented, interconnected, and intelligent. In response to these changes, IBM developed the IBM® Smarter Planet® initiative. The goal of this new venture was simple—to help everybody benefit from building a smarter planet. Twenty thousand engagements later, IBM has gained critical knowledge of how big data and analytics can improve outcomes for individuals, organizations in nearly every industry, and society.

The advantages to be gained from big data and analytics

The escalating volume, variety, and velocity of information that is being generated today can present businesses with many critical challenges. However, this overabundance of information can also be an important asset to those organizations that choose to capitalize on it. Powerful big data and analytics solutions are now being used to analyze this explosion of information and fundamentally change the way that organizations manage their daily operations.

The advantages to be gained from big data and analytics are substantial. Organizations that are aggressively pursuing analytics and information strategies are differentiating themselves from their competition. Meanwhile, many companies that neglect to implement big data and analytics are struggling to maintain market share. A study that was conducted by the Saïd Business School at the University of Oxford and the IBM Institute of Business Value described the growing momentum of big data and analytics:

- Sixty-three percent of respondents reported that the use of information—including big data and analytics—is creating a competitive advantage for their organizations
- When compared to companies that rely on traditional analytics alone, organizations that implemented big data and analytics pilot projects or deployments are 15 percent more likely to report a significant advantage from their information assets and analytics¹

Furthermore, the IBM Institute of Business Value also found that 75 percent of leaders cite growth as the key source of value from analytics.²

Organizations in a broad range of industries have learned to integrate big data and analytics into their business and culture. To precisely determine the scope of a big data and analytics implementation, companies often begin by focusing on the areas where they can have the strongest impact.

Outperform in your industry

Insights gained from big data and analytics enable companies to know their most profitable customers and continuously serve them better. Companies with big data and analytics implementations are outperforming their competitors by finding new revenue opportunities, driving product innovation, and identifying patterns to reduce fraud.

The speed of analytics can also differentiate companies from their competitors. Because businesses are no longer limited to small sample sizes and narrow data sets, they can analyze all relevant data to discover previously hidden correlations. Equipped with these new insights, companies can reduce latency in decision-making and business processes.

Companies are also creating new products and services from their data resources. Telecommunications companies sell location data, product manufacturers collect and capitalize on maintenance data, and even healthcare companies can derive value from treatment information.

Above all else, big data and analytics are continually generating a wealth of insight. With that insight, companies are building the confidence to act with speed and conviction—enabling them to be more right, more often.

Manage risk

The inability to quickly access the right data often results in poor decisions. Problems can also occur when data travels from multiple silos and passes through several users within an

organization. To protect against both of these challenges, companies need a proactive approach to finding the right data, integrating it with their processes, and providing the appropriate tools and access privileges.

As data and analytics become more critical to the development of business advantages, the need for comprehensive data security is escalating. Many leaders are acting now to implement stronger security and data privacy measures in addition to governance policies to protect their organizations from both internal and external threats.

To benefit most from big data and analytics, companies must find an appropriate balance between risk and opportunity. Organizations must proactively identify and manage their exposure to the risks associated with data breaches, compliance with industry regulations, and vulnerabilities throughout the value chain.

Create IT agility to support business processes

Existing IT infrastructures were never designed to process today's magnitude, complexity, or workload of data. Big data, with its increasing volume, variety, and velocity, is straining these older systems. Companies must adopt new approaches to infrastructure that integrate analytics-optimized systems and cloud computing to respond dynamically to the new stresses of data processing.

An economical and effective data management approach is to keep data where it is generated, leave it in its original form, and run analytics close to that data—even while it is in motion. For the stored data, companies must develop a defensible disposal strategy. Defensible disposal enables organizations to lower the run rate of storage, reduce legal expenses, and mitigate risk.

Big data and analytics can also help organizations eliminate the hidden costs of smaller IT initiatives. Organizations often sprout small, independent data initiatives throughout their different departments. This disparate, small-scale approach often costs

more, takes longer, and delivers meager results. Companies can start small with big data and analytics and expand as their needs change, but this strategy requires guidance.

Three steps for a successful big data and analytics implementation

For an organization to fully benefit from a big data and analytics implementation, they must adhere to the three strategies outlined by IBM:

1. Build a culture that infuses analytics everywhere

By infusing analytics into business processes and employee interactions, organizations can develop a company-wide culture of innovation. Developing a curiosity-driven and experience-inspired workforce requires a methodical approach:

- **Start with the people.** An analytics-driven culture requires employees who are passionate and skilled in exploring data and content. These users must understand the implications of critical data points and apply insight to every task. Companies that encourage this kind of behavior can liberate teams that have had to make crucial decisions based on instinct and past experiences alone.
- **Infuse analytics into key business processes.** For employees to drive maximum value, organizations must engineer analytics-driven business processes and practices. Marketers can increase revenue by using analytics to tailor unique offers to individuals. Claims processing teams can detect fraudulent claims for further examination. Healthcare teams can even use analytics to reveal the most effective treatment protocols.
- **Deploy the full range of analytics.** Descriptive analytics can help employees better understand what has happened. Diagnostic analytics can explain why an event happened. Predictive analytics can find patterns and see what is likely to happen. Prescriptive analytics can help users decide upon a course of action. Cognitive analytics can even learn new information and make recommendations. Employees must apply each of these analytical models to derive insight from human decisions, management systems, and machine-to-machine processes.

2. Be proactive about privacy, security, and governance

A successful big data and analytics implementation demands forward-thinking approaches to maximize impact while reducing risk:

- **Trust the facts.** A big data and analytics initiative is about creating a shared set of knowledge. A shared set of facts, insights, and correlations can help employees and departments develop a singular view of the organization. With a common foundation of trusted information, companies can spend less time debating numbers and more time making decisions.
- **Privacy and security.** Executives must set the precedent for protecting the use of data. Policies must be developed for privacy and data protection. Only with these practices can companies be sure that the data and insights they rely upon are protected.
- **Enable risk-aware decisions.** There are varying degrees of risk in every decision. To mitigate risk, companies must embed governance into all processes. These governance practices allow companies to proactively identify, understand, and manage risk. It is also important that organizations model exposure and understand the variability of outcomes. This procedure allows companies to measure the risks that are associated with each new opportunity.

3. Invest in a big data and analytics platform

Companies must invest in a big data and analytics platform that capitalizes on their existing investments. They must develop a plan that accounts for all types of data, analytics,

and potential business outcomes. A plan of this magnitude often requires a transformational approach to many critical IT processes:

- **Build a platform that is fluent in all forms of data and analytics.** Organizations are beginning to recognize the value in all forms of data. New statistical relationships are being found between transactional data, Hadoop data, social data, images, and machine-to-machine information.
- **Analyze data in motion.** A big data and analytics platform must capitalize on real-time information that is flowing through an organization. It must capture, analyze, and correlate information as it arrives from thousands of sources. This process enables organizations to assess events as they are happening and respond with automated business processes, better agility, and improved economics.
- **Cultivate new partnerships and roles.** To build a transformational big data and analytics platform, business and IT leaders must work together to develop an effective strategy. Many progressive firms are creating new roles—Chief Data Officer, Chief Analytics Officer, and Chief Data Scientist—that better address business and technology needs.

Leaders from every industry can benefit from big data and analytics

It is increasingly clear that organizations must use their information assets to gain a comprehensive understanding of markets, customers, products, regulations, competitors, suppliers, and employees. By putting the right skills and tools in place to better understand operations, customers, and the marketplace, companies can use their information assets to unlock new value. As seen in *Figure 1*, IBM Watson™ Foundations is capable of delivering better business outcomes by integrating and analyzing every available data type.

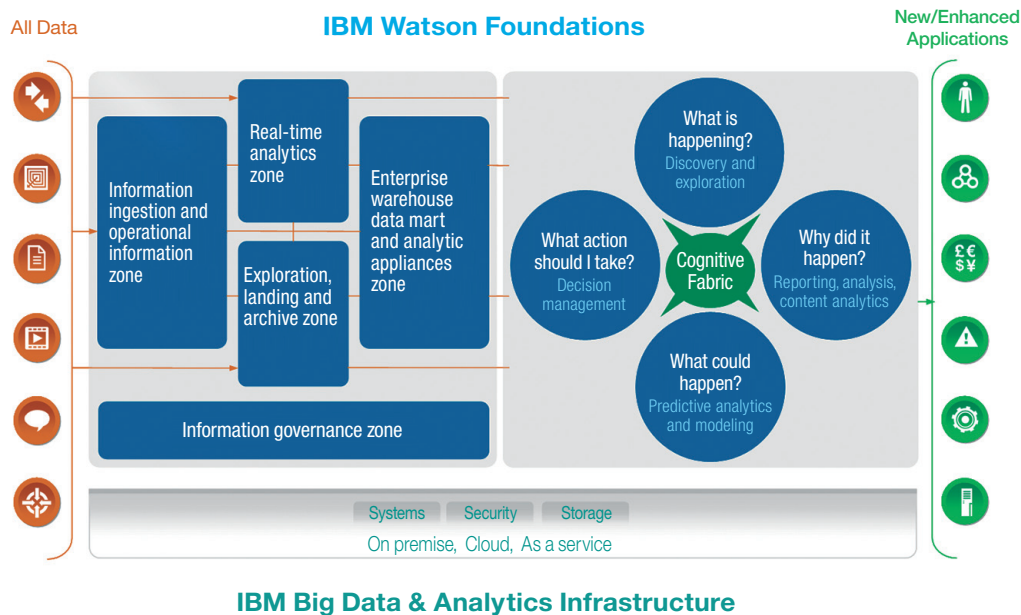


Figure 1. IBM Watson Foundations enables companies to achieve better business outcomes by integrating and analyzing all data types.

Organizations around the world continue to expand the use of big data and analytics to gain business value and advantages in today's globally integrated economy. As this expansion accelerates, it is important for companies to consider what roles big data and analytics can perform in their operations.

Acquire, grow, and retain customers

Organizations can no longer afford to see customers as broad demographic segments. Today, big data and analytics can help companies communicate with their customers on a more personalized, individual level. After XO Communications identified the factors that foretold a customer's departure, they improved their customer retention rate by 26 percent—translating to an annual net gain of 3.8 million US dollars.

Big data and analytics can help an enterprise identify and deliver exactly what an individual customer needs. By uncovering significant trends that are hidden in the enormous cache

of incoming data and merging that information with the vast amount of existing customer data, big data and analytics can help promptly address customer needs in real time. This high level of personalization and consistency is what enables organizations to acquire new customers, grow their customer base, and retain their current customers.

Optimize services by developing a customer-centric approach to banking

Strengthening relationships between clients and financial service providers through big data and analytics has the potential to completely change the standard customer service experience. By creating a more customized experience for clients, banks can reduce the time for processing loan applications and performing other critical tasks. Big data and analytics can help banks integrate face-to-face, mobile, and social media experiences to provide a holistic, customer-centric approach to banking.

Working with IBM, ING Poland—a leader in the banking sector—aligned their marketing efforts with customer demand. This partnership resulted in a 180 percent increase in outbound sales and improved operational efficiencies. With a clearer understanding of their customers, banks can more accurately predict customer behavior and increase the acceptance rate of service offerings.

Optimize operations; counter fraud and threats

Companies can reduce costs and increase operating margins by improving process efficiency and basing real-time decisions on an optimized mix of predictive models, new data sources, and strategic business rules. By optimizing their operations, organizations can also be better prepared to identify and investigate anomalous actions. Advanced analytics can help pinpoint and mitigate fraudulent activity in real time with detailed trend analysis and text mining. The detection and prevention of unwanted threats with analytically driven surveillance can help organizations predict the likelihood of incidents to ensure effective deployment of resources with the intent to improve the efficacy and speed of resolution.

Using a powerful analytics-based software platform, MoneyGram International can now better understand their users. These insights helped them prevent more than 37.7 million US dollars in fraudulent transactions, reduce customer fraud complaints by 72 percent, and promptly address stringent regulatory requirements. Working with IBM, MoneyGram implemented a big data and analytics solution that helps integrate information in real time to provide company managers with valuable insights.

Improve social services with a holistic, integrated approach to care

Social services programs tend to deal with difficulties that do not affect the typical business. Many social services agencies lose great sums of money to fraud, waste, and abuse, and case workers often lack information that is critical to providing satisfactory services. When workers are able to provide services, the

effectiveness of programs and interventions is notoriously difficult to measure. Citizens in need of social services deserve a better, more reliable system.

Big data and analytics can help social services agencies develop a unified view of clients, their relationships, and the programs that serve them. By analyzing medical records, case worker notes, financial transactions, death records, and social media, agencies can personalize treatment based on a holistic understanding of clients and programs. These same methods can even be applied to uncover fraud, accurately measure outcomes, and improve the efficiency of administrative responsibilities.

Manage risk

Today, all organizations are faced with the challenge of building comprehensive risk information architecture while also delivering on the promise of improving business performance. To meet these challenges, a smarter approach to risk is needed. Companies need an approach that enables organizations to build both trust and value amidst uncertainty by having confidence in their data, risk exposures, and ability to make risk-aware, actionable decisions to achieve risk-adjusted performance for the business—all while meeting stringent regulatory requirements.

Improve driver safety and employee satisfaction with predictive analytics

FleetRisk Advisors is a company that assesses driver fatigue levels in real time and takes corrective actions before accidents occur. Drivers in the commercial transportation industry often spend long periods of time on the road. Companies within this industry are constantly seeking new ways to improve driver safety and reduce the average annual staff turnover rate, which is typically more than 100 percent.

With the help of IBM, FleetRisk provides a unique range of services that are designed to reduce accident rates and driver turnover. By creating advanced predictive models, FleetRisk can assess critical risk factors like fatigue and identify drivers who are most likely to seek employment elsewhere. Using data that is taken from each vehicle's electronic log and other client systems,

FleetRisk can even help their clients identify drivers at risk of an upcoming accident, and drastically reduce the prevalence of such disasters.

Transform financial management processes

Big data and analytics can be used to drive enterprise agility, anticipate outcomes to make better decisions, and drive business model innovation through a discipline of performance. By implementing new analytical capabilities, companies can also better handle disclosure management and financial close by delivering accurate, timely financial management and corporate reports to internal and external stakeholders.

Using big data and analytics to streamline global operation and refine supply chain management, IBM helped Becker Underwood gain an average benefit of one million US dollars.³ According to a study conducted by Nucleus Research, Becker Underwood's implementation of IBM Big Data & Analytics resulted in an ROI of 383 percent in just four months. Becker Underwood now uses their entire information delivery system and presentation capabilities to produce reports, metrics, scorecards, dashboards, and data analysis. With IBM Big Data & Analytics, Becker Underwood can now extend analytics to their client portal, enterprise resource planning, and customer relationship management (CRM) infrastructures.

Automate variable-based pay programs

Manual compensation administration can be slow, costly and error prone—often leading to calculation errors, commission overpayments, and payment disputes. Preparing both plan administrators and sales representatives with detailed views of the entire compensation plan portfolio and tracking capabilities while automating commission calculations can increase accuracy, reduce costs, and improve sales performance—not to mention employee satisfaction—as well as meet audit requirements.

Mitel, a global provider of business communications and collaboration software and services, was in search of a user-friendly solution that could help administer its manual compensation plans to reduce its high degree of reliance on IT resources.

IBM helped Mitel by automating its incentive compensation—reducing the number of people calculating commissions from more than 30 for just North America to three for all of North America and South America. The company has also reduced payment times from more than six weeks to approximately two weeks.

Improve IT economics

Organizations that use big data and analytics to improve the economics of their IT environment have the potential to harness and analyze all of their available data assets and integrate new data sources. This wealth of information can be used to effectively govern their data, interact with data in real time, and shape better outcomes with advanced analytics capabilities.

Many different types of marketing mediums are being used to communicate with consumers. Constant Contact provides a platform for social media, email, mobile coupons, and various other marketing methods. Customers of Constant Contact send about 35 billion emails each year.

With IBM Big Data & Analytics, Constant Contact's performance improved exponentially. Because of this improved productivity, the performance of customer email campaigns increased by 15 – 25 percent. Moving forward, Constant Contact intends to apply big data and analytics to the analysis of email content. They plan to analyze word usage, structure, and imagery to determine the most cost-effective email strategy for their clients.

Reduce the cost of IT to drive growth

GS Retail Co. Ltd. is a conglomerate of retail chains that has modernized the Korean retail industry since 1971. Before implementing a big data and analytics solution, their data was stored in three different departmental locations. This system resulted in complaints about bottlenecks, slow load and processing times, and a batch processing function that took nine to 15 hours to complete. With these lagging, disparate systems, it was impossible to perform cross-departmental analyses or sophisticated data

analysis. GS Retail required a high-performing, intelligent data warehouse environment to enable quicker analysis of data and a more organized, sophisticated CRM system.

To overcome these challenges, GS Retail chose to implement IBM Big Data & Analytics. With this new system, GS Retail reduced their data storage needs by 60 percent with the help of advanced data compression capabilities. This system helped them achieve a 30 percent reduction in TCO by lowering the economic burden of data storage, maintenance, and backup. With decreased batch processing times, improved IT economics, and advanced cross-department analytics, IBM provided GS Retail with the insights they needed to propel growth.

Create new business models

Organizations that use big data and analytics to create new business models can find themselves entrenched in a culture of innovation. Harnessing customer, sensor, and mobile information allows them to quickly generate new impressions, prototype new ideas, explore hypotheses, and deliver new products.

Analyze existing and emerging data to find new and unexpected sources of revenue

Businesses are beginning to realize the value of expanding the scope of data and analysis—not only in their normal, everyday operations, but now more than ever in finding new sources of revenue. Many people have said that data is the new oil—meaning that mining this natural resource can result in many forms of cash flow for the business. Businesses that are exploring the value of their data assets are seeing unexpected results. By integrating big data and analytics into existing business scenarios, companies are even finding that they can profit from their data by reselling it to other organizations.

Telerex is a great example of how a company can use existing data and emerging data types to increase profits. A leading outsourcing company based in Horsham, Pennsylvania, Telerex provides customer care services for corporations in the consumer packaged goods, technology, luxury goods, pharmaceutical, healthcare, retail, hospitality, publishing, utilities, nonprofit, and consumer durables industries.

To differentiate themselves from their competitors, Telerex sought to provide their clients with a solution that was able to support evolving product and marketing objectives. They found that they could combine existing support data with unstructured consumer data that was streaming through social media outlets. This new approach provides their clients with multidimensional insights into consumer thoughts and feelings about supported products and brands.

This solution closely monitors consumer opinions using advanced analytics to gather and analyze streams of unstructured data from social media sites. Telerex can now identify developing issues, create proactive customer care strategies, and better estimate call volumes to prepare contact center agents before their phones start to ring. Telerex is also able to offer its business clients new insights ranging from identifying product improvements to marketing for new consumer segments.

The IBM Big Data & Analytics Portfolio

The capabilities of a big data and analytics implementation are determined by an organization's specific needs. As seen in *Figure 2*, IBM offers the services, solutions, platform, and infrastructure necessary to deliver a wide variety of IBM Big Data & Analytics initiatives.

Consulting and implementation services

IBM has significant industry and domain experience to help companies develop their own big data and analytics strategies. The business analytics and optimization services that are provided by IBM include consulting in many areas:

- Business strategy and transformation
- Industry business use cases and value accelerators
- Digital front office and customer analytics
- Finance, fraud, and risk analytics
- Operations and supply chain analytics
- Services managed by big data and analytics
- Analytics centers of excellence
- Data exploration and visualization

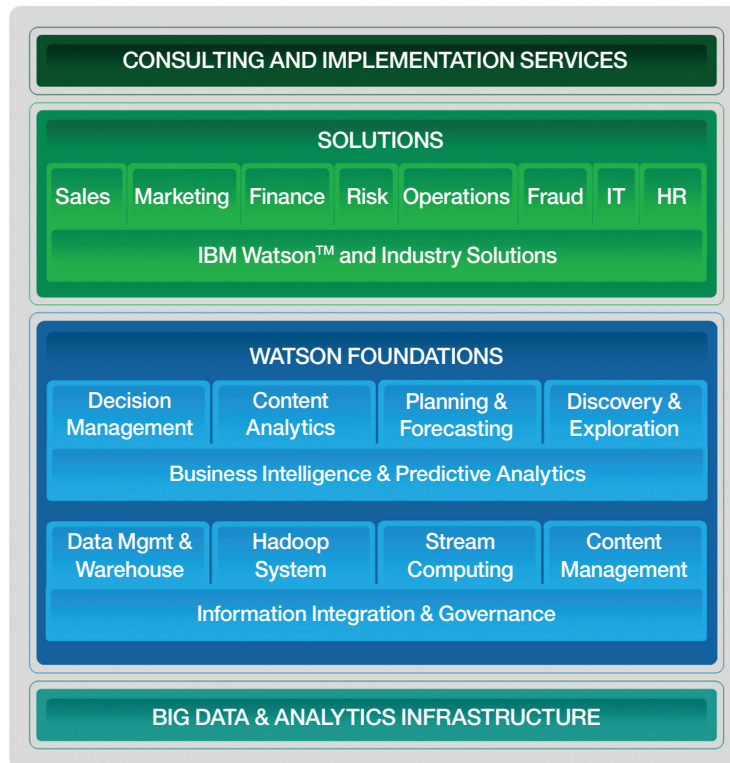


Figure 2. IBM provides organizations with the necessary services, solutions, platform, and infrastructure to establish a viable big data and analytics implementation.

Tailored solutions for specific industries and use cases

IBM provides organizations with an outcome-driven portfolio of solutions, original IBM Research projects, and 60 different use cases that apply to 17 industries. Those industries that can benefit from IBM Big Data & Analytics include banking, government, telecommunications, insurance, healthcare, retail, and many more. To craft a strategy that addresses each organization's

specific needs, IBM developed a set of critical solutions including many offerings that best display the capabilities of big data and analytics:

- Predictive maintenance and quality
- Counter fraud manager
- Intelligent law enforcement
- Customer analytics
- Next best action

- Defensible disposal
- Incentive compensation management
- Governance, risk, and compliance
- Financial and operational performance management
- Operational risk

The capabilities of IBM Watson Foundations

IBM Watson Foundations is capable of handling all types of data, supporting all types of decisions, and pursuing every business opportunity. Organizations can infuse analytics everywhere with the governance, privacy, and security that they need. Depending on a company's needs, they can start with a small big data and analytics strategy, and then expand at their own pace.

Decision management automatically delivers high-volume, optimized decisions to systems and front-line workers through predictive modeling, business rules, and optimization.

Content analytics finds, organizes, analyzes, and delivers insight from textual information that is found in documents, emails, web content, and more using intuitive natural language recognition and categorization.

Planning and forecasting enable more dynamic and efficient planning cycles such as target setting, forecast rollout, reporting, analysis, and reforecasting.

Discovery and exploration provide a context-relevant view of a business through federated navigation, visualization, and interaction with a broad range of internal and external data sources and data types.

Business intelligence delivers insight to users with dashboards, reports, analysis, and modeling on desktops, the web, and mobile devices.

Predictive analytics performs statistical analysis, data and text mining, and predictive modeling to reveal patterns and trends from structured and unstructured data.

Data management enables companies to gain industry-leading database performance with multiple workloads while lowering administration, storage, development, and server costs.

Content management allows comprehensive content lifecycle and document management with cost-effective control of existing and new types of content with scale, security, and stability.

Hadoop systems bring the power of Apache Hadoop to businesses with administrative, discovery, development, provisioning, and security features in addition to the analytical capabilities of IBM Research.

Stream computing analyzes massive volumes of streaming data in near real time by deploying advanced analytics in a highly scalable runtime environment.

Data warehouses allow companies to gain speed with capabilities optimized for analytics workloads. Systems that can be installed and running in less than four hours enable organizations to quickly realize the benefits of data warehouses that are optimized for big data and analytics.

Information integration and governance build confidence in big data and analytics with the ability to integrate, understand, manage, and govern data appropriately through its lifecycle.

An integrated, high-performance big data and analytics infrastructure

Companies can benefit greatly from the IBM Big Data & Analytics Infrastructure, which includes critical server, storage, networking, and systems software technology. The IBM Big Data & Analytics Infrastructure is capable of accelerating the flow of data and insights, providing shared and highly secure access to all types of data where it resides, and significantly improving the availability of information.

Scalability

Organizations can choose to scale-in, scale-up, or scale-out infrastructure to support the complexity and breadth of analytics workloads.

Parallel processing

Parallel processing can enhance data processing and ingestion through workload and data layer parallelism that uses distributed analytics processing.

Low latency

The IBM Big Data & Analytics Infrastructure provides discrete speed enhancements to accelerate analytics workloads.

Data optimization

Those companies that optimize their data assets can implement storage solutions that provide optimal speed, scale, quality of service, and reliability for data-iterative applications.

Security

When security is enhanced with big data and analytics, companies can manage risk from cyber attacks through cloud and mobile environments. The distribution of these security capabilities is enabled by advanced analytics from security intelligence.

Cloud

Companies can choose between private, public, or hybrid cloud delivery for simple, powerful cloud solutions.

Your path to better business outcomes

Today's market is changing on a minute-by-minute basis. To fully benefit from a big data and analytics implementation, it is important to act soon. By implementing IBM Big Data & Analytics, you can outperform in your industry, manage risk, and create IT agility capable of supporting your changing business processes.

If you choose to delay your adoption of big data and analytics capabilities, you are risking your company's viability in an ever-changing marketplace. Early adopters stand to benefit the most

from this new technology. Take the necessary steps now to secure your position in tomorrow's market. Build a culture that infuses analytics everywhere. Be proactive about privacy, security, and governance. Transform your organization by investing in IBM Big Data & Analytics.

Why IBM Big Data & Analytics?

Four powerful forces are converging; social, mobile, cloud, and big data and analytics. Social media is rapidly changing how people interact and make decisions. Mobile devices and services are enabling organizations to know what offers to make based on real-time location data. Cloud services are allowing companies to innovate iteratively with less investment. Big data and analytics offer a way to transform these new data sources into competitive advantages. Between 2005 and 2020, the digital universe will grow by a factor of 300—from 130 to 40,000 exabytes.⁴ IBM is the most experienced partner to help you in this era of transformation.

Imagine it. IBM and its network of IBM Business Partner® associates bring unmatched industry and domain experience to help you develop your big data and analytics strategy. IBM takes an outcome-driven approach, and prioritizes large-scale initiatives to help you outperform in your industry.

Realize it. IBM can align your IT infrastructure with a platform capable of maximizing agility and performance. By supporting the full spectrum of data types, decision types, and business opportunities, IBM Watson Foundations can infuse analytics anywhere that it is needed. Depending on your organizational needs, you can start with a small initiative, build on what you have, and grow at your own pace.

Trust it. IBM helps you develop the governance, policies, and data security to confidently manage your data assets. With systems, storage, and cloud-based infrastructure from IBM, you can implement a secure, agile, and efficient big data and analytics environment.

For more information

To learn more about big data and analytics solutions from IBM, please contact your IBM representative or Business Partner, or visit: ibm.com/bigdata-and-analytics/

Additionally, IBM Global Financing can help you acquire the software capabilities that your business needs in the most cost-effective and strategic way possible. We'll partner with credit-qualified clients to customize a financing solution to suit your business and development goals, enable effective cash management, and improve your total cost of ownership. Fund your critical IT investment and propel your business forward with IBM Global Financing. For more information, visit:

ibm.com/financing

Statement of Good Security Practices: IT system security involves protecting systems and information through prevention, detection and response to improper access from within and outside your enterprise. Improper access can result in information being altered, destroyed or misappropriated or can result in damage to or misuse of your systems, including to attack others. No IT system or product should be considered completely secure and no single product or security measure can be completely effective in preventing improper access. IBM systems and products are designed to be part of a comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products or services to be most effective. IBM does not warrant that systems and products are immune from the malicious or illegal conduct of any party.

¹ Michael Schroeck, Rebecca Shockley, Dr. Janet Smart, Prof. Dolores Romero-Morales, and Prof. Peter Tufano, "Analytics: The real-world use of big data: How innovative enterprises extract value from uncertain data," *IBM Institute for Business Value and Saïd Business School at the University of Oxford*, October 2012.

² "IBM IBV Study: Analytics: A blueprint for value," *IBM Institute of Business Value*, October 2013.

³ "IBM ROI Case Study: Becker Underwood," *Nucleus Research*, March 2011, <http://www.nucleusresearch.com/research/roi-case-studies/ibm-roi-case-study-becker-underwood/Becker%20Underwood>

⁴ John Gantz and David Reinsel, "The Digital Universe in 2020: Big Data, Bigger Digital Shadows, and Biggest Growth in the Far East," *EMC and IDC Go-to-Market Services*, December 2012, <http://www.emc.com/leadership/digital-universe/view/index.htm>



© Copyright IBM Corporation 2014

IBM Corporation
Software Group
Route 100
Somers, NY 10589

Produced in the United States of America
January 2014

IBM, the IBM logo, ibm.com, IBM Watson, Let's Build a Smarter Planet, Smarter Planet, and the planet icons are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at "Copyright and trademark information" at ibm.com/legal/copytrade.shtml

The content in this document (including currency OR pricing references which exclude applicable taxes) is current as of the initial date of publication and may be changed by IBM at any time. Not all offerings are available in every country in which IBM operates.

The performance data and client examples cited are presented for illustrative purposes only. Actual performance results may vary depending on specific configurations and operating conditions.

It is the user's responsibility to evaluate and verify the operation of any other products or programs with IBM products and programs.

THE INFORMATION IN THIS DOCUMENT IS PROVIDED "AS IS" WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT. IBM products are warranted according to the terms and conditions of the agreements under which they are provided.

The client is responsible for ensuring compliance with laws and regulations applicable to it. IBM does not provide legal advice or represent or warrant that its services or products will ensure that the client is in compliance with any law or regulation.

Statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Actual available storage capacity may be reported for both uncompressed and compressed data and will vary and may be less than stated.



Please Recycle