Nº 2 IN A SERIES

Building a smarter enterprise: The essential building blocks

Big Data & Analytics: The insights to transform the business with speed and conviction.

Five years ago, IBM observed the planet was becoming instrumented, interconnected and intelligent. 20,000 engagements later, here's what we've learned matters in the realm of big data & analytics.

What is changing in the realm of data & analytics:

Data is emerging as the world's newest resource for competitive advantage.

It's more bountiful and takes more forms—structured and unstructured; data at rest and data in motion. Running analytics on this range of data gives a more vivid picture of your business—and the forces that affect it. This helps you move more quickly as an organization—with less time passing between insight and action. This is the basis for new kinds of competitive advantage. In fact, outperformers are 3.6 times more likely to be applying analytics than their peers.

Decision-making is moving from the elite few to the empowered many.

Analytics help your team members see not just 'what happened?'
But 'why did it happen?'
And 'what is likely to happen?'
Even 'Tell me, what's the best course of action based on what you've learned?'
This range of analytics empowers team members at every level of the organization to make better decisions.

As the value of data continues to grow—current systems won't keep pace.

As your teams recognize the revenue potential from analyzing and acting on data, demand for insights escalates. But your IT budget can't keep up with increased demand, volume of data and associated metadata, and complexity of all the moving parts. Your current IT infrastructure isn't sustainable. Which is why top performing organizations confront this reality by taking a fundamentally different approach—to architecture, tools, practices.

Why act now:

To outperform in your industry.

- **Use analytics to improve the core competitiveness of the business.** Use big data & analytics—not just instinct—to know who your most profitable customers are and continuously serve them better. Spot new revenue opportunities. Fuel product innovation. Identify patterns to reduce fraud. And so on.
- **Make speed a differentiator.** Because you are no longer limited to small sample sizes and narrow datasets, you can analyze all the relevant data to find correlations that humans can't see on their own. Armed with these new insights, you can reduce latency in decisions, business processes, and every aspect of your business.
- **Monetize the data itself.** Data has its own value. Create new products and services from the data itself—telcos and location data, manufacturers and maintenance data, healthcare and treatment information.
- **Be more right, more often.** A big data & analytics approach continually generates more and more context that, in turn, builds deeper confidence to act.

To manage risk.

- **Guard against poor decision-making.** The inability to access the right data leads to bad decision-making. However, data coming from multiple silos within an organization—and passing through multiple hands—can be equally troublesome. To protect against both, you need a proactive approach to sourcing the right data, integrating it and providing the appropriate tools and access.
- **Protect against security and privacy risks.** As data and analytics become more central to the advantage of your organization, data security becomes more central as well. Many leaders are acting now to put in place stronger security and data privacy measures and governance policies necessary to protect the organization from both internal and external threats.
- **Get the risk-opportunity equation right.** You must proactively identify and manage your risk exposure—to your reputation from data breeches, to your ability to comply with regulations in your industry, to losses and vulnerabilities across your organization and value chain.

To create IT agility to underpin the business.

- **Relieve the pressure on your IT infrastructure.** The increasing volume, variety and velocity of data is straining your IT infrastructure. It was never designed to handle this magnitude, complexity or workload. You need to capitalize on new approaches to infrastructure that integrate analytics-optimized systems and cloud as a way to respond dynamically to the demand.
- **Adopt a new approach to the onslaught of data.** New practices are emerging: Often a more economical and effective approach is to keep the data where it is generated, leave it in its native form, and run analytics close to that data – even while it is in motion. For the data you do store, you need a defensible disposal strategy, lowering the run rate of storage, legal expenses and reducing risk.
- **Eliminate the hidden costs.** Organizations often sprout small, independent data initiatives across the enterprise. However, taking a piecemeal approach often cost more, takes longer, and delivers less over the long run. You can start small, then scale—but to do that, you need an orchestrated roadmap.

How to act strategically:

To transform your business using big data & analytics there are three things you must get right:

1.
Build a culture that infuses analytics everywhere.

Develop a curiosity-driven and evidence-inspired workforce. Infuse analytics into everything employees touch.

- **Start with your people.** An analytics-savvy culture centers around employees who are passionate and skilled in exploring the data and content, understanding its implications, and applying insight. Establish the right behaviors across your organization, liberating teams from relying on past experiences and instinct alone as the formulators of future success.
- **Infuse analytics into key business processes.** For employees to drive maximum value, you need to engineer analytics-driven business processes and practices: Marketers increasing share of wallet by using analytics to tailor unique offers to individuals; claims processing teams detecting fraudulent claims for further examination; healthcare teams using analytics to surface the most effective protocols.
- **Deploy the full range of analytics.** Employees need descriptive analytics to better understand what has happened, diagnostic analytics to understand why it happened, predictive analytics to find patterns and see what is likely to happen, prescriptive analytics that put forth what to do, and cognitive analytics to learn and recommend. These insights can be applied broadly—in human decisions, management systems, and machine-to-machine processes.

2.
Be proactive about privacy, security and governance.

Forge forward-thinking approaches to maximize impact—while balancing risk.

- **To trust the insight, you have to trust the facts**. This is about creating a shared set of knowledge—a set of facts, insights, and corrrelations that get different parts of the organization to see not just their portion of the world, but a shared view of the business as a whole. It is through common grounding, based on a shared set of trusted information that there can be less debating of the numbers and more resolute and rapid decision making.
- **Privacy and security.** The c-suite must set the tone for using and protecting data. For policies around privacy. Around data protection. Around understanding usage and monitoring compliance. Only with these practices in place can you be sure that the data and insights you rely upon will be protected.
- **Enable risk-aware decisions.** There are varying degrees of risk in every decision. Proactively identify, understand and manage risk and embed governance into all processes. And model exposure and understand the variability in outcomes. This allows you to balance risk versus opportunity.

3.
Invest in a Big Data & Analytics platform.

Build against a master plan: All types of data. All types of analytics. A full range of business outcomes.

- **Build a platform that is fluent in all forms of data and analytics.** Increasingly, organizations are recognizing the value in all forms of data: Transaction data typically in your systems of record; Hadoop-based data; enterprise content: and other social media, mobile and location data, images and machine-to-machine data. You must evolve to a platform that capitalizes on the investments you've already made, and provides an ability to run a full range of analytics on this data— reporting, dashboards and planning, predictive analytics, recommendations and new cognitive capabilities.
- **Analyze data in motion.** Your platform needs to capitalize on real-time information flowing through the organization. It must capture, analyze and correlate information as it arrives from thousands of sources. This allows you to assess events as they are happening—and respond with automated business processes, better agility, and also improved platform economics.
- **Cultivate new partnerships, roles.** To build this platform, business and IT leaders must join forces to develop a master plan. What's more, progressive firms are also investing in new roles—Chief Data Officer, Chief Analytics Officer, Chief Data Scientist—that better align business and technology needs.

How IBM can help leaders innovate with big data & analytics:

Acquire, grow and retain customers.	Create new business models.	Transform financial processes.	Manage risk.	Optimize operations and reduce fraud.	Improve IT economics.
Leader in predicting customer behavior and outcomes that drive revenue.	Leader in helping businesses create value from their information assets.	Leader in performance evaluation and forecasting, reporting and controls design.	Leader in assessing business risk—designing governance processes and implementing mitigation strategies.	Leader in organizational process improvement, fraud prevention and asset productivity.	Leader in helping clients transform IT infrastructure to meet the demands of their big data & analytics strategy.

Why IBM:

Big Data & Analytics.

Four powerful forces are converging. Social—the new ways we're all interacting around decisions. Mobile—the ability to know what new value to put in people's hands. Cloud—a way to innovate iteratively and with less investment. And big data & analytics—the way to turn all of the forces at work into competitive advantage. Between 2005 to 2020, the digital universe will grow by a factor of 300, from 130 to 40,000 exabytes. IBM is the most experienced partner to help you:

Imagine it.
Realize it.
Trust it.

IBM—plus its network of partners—bring unmatched industry and domain experience to help you forge your big data & analytics strategy and roadmap. We take an outcomes-driven approach that prioritizes high-impact initiatives to help you outperform your peers.

IBM provides the capability to bring the big data & analytics platform and your IT infrastructure into powerful alignment. We support the full spectrum of data types, decision types and business opportunities—to help you infuse analytics everywhere. You can start small, and scale at your pace.

IBM helps you develop the governance, policies and data security to deal confidently with data. And provides the systems, storage and cloud-based infrastructure required to deliver a secure, agile, efficient big data & analytics environment.