

Big data: Unlocking strategic dimensions

By Teresa de Onis and Lisa Waddell



New technologies help decision makers gain insights from all types of data — from traditional databases to high-visibility social media sources.

Every minute of every day, staggering amounts of data from online transactions, email, video, log files and other diverse sources are generated and collected across enterprise networks. By putting data-driven decision making at the heart of the business, organizations can harness this wealth of information to drive an unparalleled competitive advantage.

Current market hype would have decision makers believe that this mountain of big data primarily encompasses unstructured and semi-structured data — such as social media, sensor data and machine-to-machine data — which cannot be handled by traditional tools and skill sets. The fact is, business and IT leaders must leverage all types of data to create optimal outcomes. This also includes structured data from traditional sources such as relational databases and spreadsheets.

By sidestepping the hype, decision makers are finding remarkable new ways to apply the latest technologies and techniques to turn data of all types into actionable insights. To succeed, big data initiatives must ensure data is cost-effectively managed, shared by systems across the enterprise, and quickly and securely made available for analysis and action by line-of-business (LOB) teams. Taking a holistic approach enables business and IT leaders to realize the full value of a big data strategy.

Done right, the opportunity presented by big data is very real. (See the sidebar, "Deeper insights across industries.")

Addressing critical success factors

To accelerate business outcomes, CIOs must surmount three main challenges: align IT and business priorities, work within resource constraints and integrate siloed data environments.

The benefit of aligning IT with business priorities is no secret. But when it comes to big data, close cooperation is essential. Business objectives must be clear, IT and business leaders must be committed to collaborating, and the right people need to be granted access to the right data. Key success factors include having the proper skill sets, either in house or from a service provider, and tying big data projects to measurable performance metrics. Big data projects may be derailed or fail to achieve the expected return on investment (ROI) unless they are linked to strategic business opportunities and designed to answer clearly defined business questions.

Resource constraints continue to be a top concern for CIOs executing a big data plan. Storing, protecting, managing and analyzing data on legacy infrastructure that is costly to operate and manage can hinder scalability and drain IT resources. Organizations need technologies that can keep pace with data growth and diversity in a cost-effective and scalable way, without resorting to a rip-and-replace approach.

Moreover, multiple disparate platforms for structured, semi-structured and unstructured data have

Deeper insights across industries

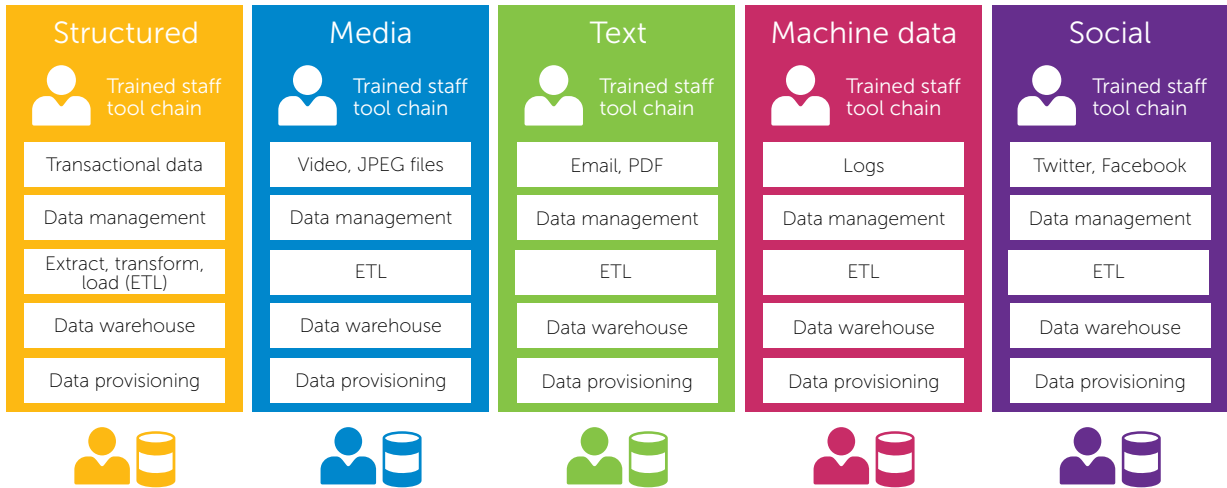
Organizations of all sizes and types are taking advantage of big data technologies to improve decision making around core business drivers. For example, a leading Midwestern U.S. hospital and academic medical center is using predictive analytics to help prevent life-threatening surgical site infections. These types of infections lead to the loss of tens of thousands of lives and cost the U.S. healthcare system billions of dollars each year.* By enabling doctors to make real-time predictive and prescriptive decisions during surgical procedures, big data enhances the hospital's quality of care while helping to reduce spending.

One of northern Europe's largest financial institutions capitalizes on predictive analytics for risk modeling to help determine the best products to offer individual customers, while minimizing the bank's exposure. Through real-time risk analysis and scoring, the bank delivers excellent customer service tailored to specific needs.

A large, fast-growing customer relationship management agency in the United States deployed an enterprise data hub (EDH) to manage and understand the exploding volume of data generated by its clients' many customer touch points. Predictive analytics, backed by a petabyte-scale Hadoop cluster, now allow the agency's clients to find patterns in a year's worth of historical data, compared with 90 to 120 days' worth previously. The big data solution advances the agency's ability to make the crucial connection between customer identity and experience, so its clients can serve up appropriate responses to certain behavior.

* "National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination," Office of Disease Prevention and Health Promotion, accessed October 11, 2014, health.gov/hai/prevent_hai.asp.

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Silos lead to slow insights, business teams bypassing IT and compromised governance.

created siloed data environments that are not integrated (see figure). Through 2017, 90 percent of the information assets from big data analytic efforts will be siloed and unleveragable across multiple business processes.¹ These silos are inefficient and create data quality and governance problems, hindering LOB teams from getting fast, secure access to the data and tools they need. They also affect the ability of IT to respond rapidly to business unit requests. As a result, LOB teams may end up bypassing the IT department altogether for a quick workaround. To strengthen

the IT and business partnership, CIOs must tackle silos to manage the size and complexity of the data environment and speed delivery of data and analytics tools.

Another key factor to consider is an organization's current level of analytical maturity. Turning large stores of data into actionable insights is a journey that builds on several levels of growing analytical maturity. How an organization approaches big data analysis depends on where it is right now. Fundamentals such as casual data access through a simple spreadsheet or database must be in place before an organization

can rely on business intelligence (BI) systems to run the enterprise.

Similarly, business reporting systems should be established before delving into advanced analytics that are predictive in nature. Predictive and cognitive analytics integrate additional data, such as context and sentiment, with historical data to enable foresight into what is likely to occur and feels most suitable in a given situation — that is, the right answer at the right time in the right context. Stakeholders are more willing to accept predictive and sophisticated analytics if they trust the results of their current BI systems to accurately report what has happened and is happening in their business.

Organizations should address all these considerations holistically to successfully define, prioritize, implement and measure the

Dell helps IT leaders overcome the challenges of IT and business alignment, resource constraints and siloed environments through a comprehensive big data portfolio based on choice and flexibility, redefined economics and connected intelligence.

¹"Predicts 2014: Big Data," by Nick Heudecker et al., #G00258154, Gartner, Inc., November 20, 2013, gartner.com/doc/2626815/predicts--big-data.

performance of big data projects. (See the sidebar, “3 best practices.”)

Adopting a comprehensive approach

Many organizations can benefit greatly by distilling more business value from their data, but they lack the necessary in-house skills and analytical maturity to initiate or implement big data projects. Dell helps IT leaders overcome the challenges of IT and business alignment, resource constraints and siloed environments through a comprehensive big data portfolio based on three major tenets.

Choice and flexibility. Dell has combined new product development, strategic acquisitions and expert services to deliver modern, comprehensive solutions designed to fill the gaps created by fragmented niche products – while avoiding the lock-in penalties of rigid legacy solutions that propagate silos.

Redefined economics. Dell solutions leverage existing investments to integrate quickly and easily into an organization’s current IT environment. Workload- and use case-optimization capabilities further help lower total cost of ownership (TCO) by creating intelligent data placement and accelerating time to insights.

Connected intelligence. The company’s connected intelligence approach enables IT to connect more and more LOB teams with the data and analytics tools they require. This approach means organizations no longer need to retool staff, start over for each



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3 best practices

To remain viable and competitive, many organizations must look for new opportunities hidden in data. The following best practices help IT leaders ensure the business success of big data initiatives.

1. Commit to IT and business collaboration

- Join forces to develop objectives, requirements and metrics
- Assess the data environment, infrastructure readiness and analytical maturity
- Measure performance to adapt to business changes and maximize resources

2. Implement effective data management, without starting over

- Leverage existing investments, skills and tools
- Optimize IT infrastructure performance
- Break down data silos for rapid insights and enhanced data governance

3. Empower line-of-business users

- Integrate silos to connect intelligence
- Build analytics capabilities to extract insights from all data types
- Deliver secure self-service access to data and analytics

business request or put data governance at risk.

The Dell portfolio spans the data lifecycle (see figure). Software includes database management tools such as Toad for Oracle and Toad for SQL; data integration across virtual and cloud environments with Boomi;

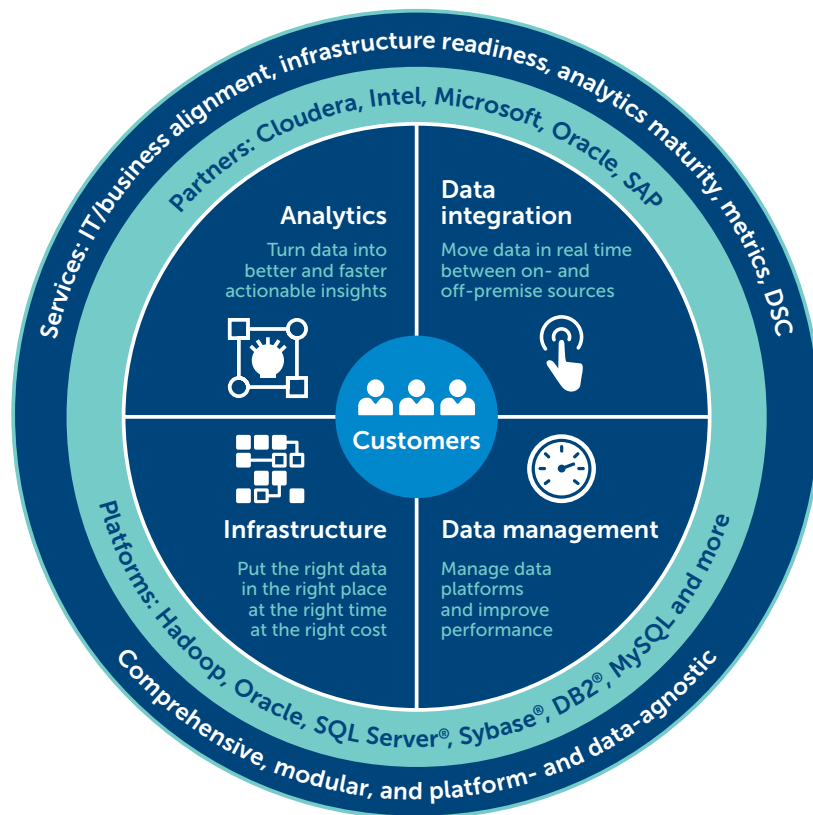
and analytics tools such as Toad Business Intelligence Suite, Kitenga and the recently acquired Statistica platform. The software elements are complemented by storage, server and network offerings designed to put the right data in the right place, at the right time and at the right cost.

To support data-platform flexibility, Dell takes an agnostic approach, working with major vendors such as Intel, Oracle, Microsoft, SAP and Cloudera. For example, some IT decision makers may want to complement existing data systems with the open Apache™ Hadoop® platform for data management in complex environments. A joint effort between Dell and its primary Hadoop partner Cloudera has resulted in a reference architecture that includes a Dell hardware platform and Cloudera Enterprise, a combination of management tools and support for Hadoop environments.

Dell Services helps IT leaders put big data best practices in place. Drawing on deep expertise across industries and partnerships with key vendors, Dell Services consultants enable organizations to assess the data environment, infrastructure readiness and analytical maturity level. Working with Dell Services, IT leaders can create a strategic plan that minimizes trade-offs, adapts to changing needs, maximizes resources and enhances collaboration with the business.

Capitalizing on the power of data

Ultimately, the phenomenal growth of data is a wake-up call for organizations across every industry. When managed, secured and leveraged properly, data has the potential to solve tangible business problems and create groundbreaking opportunities – while achieving organizational goals to enhance the customer experience, optimize operations and lower IT costs.



Dell big data solutions enable LOB teams to unearth myriad insights.

Dell helps IT leaders join forces with business leaders to create and implement effective big data strategies. The company’s technology-agnostic approach to the big data stack enables organizations to plan and prioritize big data projects on their own terms. They can work with Dell to implement a cohesive big data strategy without worrying about starting over. And they can avoid vendor lock-in or propagation of silos.

By focusing on business priorities and outcomes, organizations are on their way to turning data into insights and making all their data a pathway to competitive advantage.

Authors

Teresa de Onis is a senior marketing manager for Dell Global Marketing focused on big data trends and technologies. With 20 years in information technology, Teresa is known as a customer-focused marketing change leader.

Lisa Waddell writes about big data and the Internet of Things technologies in her role as senior marketing manager for the Dell Commercial Business Organization.

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