



Business analytics: Gaining a competitive edge from the data deluge

By Shree Dandekar

To enhance business outcomes, IT leaders aim to accelerate decision making based on the most relevant information. Emerging analytics tools on high-performance, cost-effective architecture promise to help enterprises capitalize on a profusion of data.

Through effective use of data-driven decision making, enterprises can uncover valuable insights and form targeted strategies to retain customers and increase revenue. Emerging technologies—such as the MapReduce and Apache™ Hadoop™ platforms, NoSQL and NewSQL databases, and columnar databases in massively parallel processing (MPP) architectures—can help organizations manage and profit from the data deluge. No matter the size of an organization’s data set, the true value of the data is realized when it has produced actionable insights.

Key trends in business analytics

Particularly when working within the confines of limited IT resources and budgets, enterprises look to implement data-agnostic

decision making tools that are cost-effective, easy to deploy, simple to use, and scalable. However, advanced data sources and types require intelligent data integration and performance management that current systems may not be able to handle. Several trends shaping the business analytics landscape are expected to bring about major changes that address these challenges, with the potential to drive the creation of innovative analytics tools.

Self-service and real-time business intelligence

Enterprises can expect to see the snowball effect of an ever-growing backlog of business intelligence requests, even as IT tries to address them at an accelerated pace. From this backlog has emerged the need for a simple, user-friendly analytics platform that

helps business users access data quickly and extract meaningful insights from it.

Moreover, as unstructured data from social media content continues to flow into and across enterprise networks, data volume and data processing challenges grow. The real-time integration of traditional data sources with these unstructured data sets calls for a new breed of data integration and analytics solutions.

Data growth

Data continues to grow at an astronomical rate. Today, data growth is measured in zettabytes (10²¹ bytes) because of the enormous proliferation of unstructured as well as structured data. The sheer amount of data and the complexity of managing it have shifted value from storage systems with rudimentary data management features to those that feature automated data movement and tiering. Organizations are looking to improve cost-efficiencies for storing rarely used data—such as archived data, legal data, and so on—as well as optimize the performance of analytic-centric data through the use of solid-state technology.

In-memory, scalable storage

A current trend in business analytics is memory-based storage systems. Storage vendors are combining solid-state technology with traditional rotational media and dynamic tiering technology. This innovative mix enables vendors to build



Figure 1. Structured/repeatable and iterative/exploratory approaches to business analytics

Jump-start a business intelligence program

To gain a competitive edge, organizations need access to reliable information for actionable results. Find out how the Dell Optimized Business Intelligence program uses a holistic, collaborative approach to business intelligence that incorporates information from multiple sources to provide comprehensive reporting on financial and operational performance.

qrs.ly/1j2kl3d

memory-based systems that offer cost-effective bulk-storage capacity together with high performance and scalability.

Differentiated approaches toward driving actionable insights

When it comes to turning data into a competitive advantage, it's not just about managing big data. It's about deriving actionable insights that advance business and organizational goals. To that extent, there are two approaches that help unearth actionable insights (see Figure 1): the *structured/repeatable* use of business analytics driven by end users and the *iterative/exploratory* use of novel scientific methodologies and architectures. The suitable approach is driven by an organization's specific needs as well as its analytical sophistication level (see Figure 2).

For each level, Dell provides end-to-end business analytics tools for organizations of all sizes and levels of analytical sophistication. Organizations can progress from casual data access and analysis into complex analytics and big data using tools that are designed with the following key tenets:

- **Cost-effective:** The Dell™ Quickstart Data Warehouse Appliance combines the hardware, software, and services needed to accelerate implementation of a robust and powerful data warehouse. Designed for small and midsize enterprises or departmental

Sophistication level	Description	Example query	Pain points
Big data analytics	Analyzing root cause of customer behaviors using social conversations	Why is Product X more popular with teenagers instead of middle-aged men?	<ul style="list-style-type: none"> • Slow adoption because of underdeveloped tools and limited skilled resources
Predictive analysis	Enabling an organization to make reasonable predictions based on historical trends	How will monsoons impact sales in Indonesia next quarter?	<ul style="list-style-type: none"> • Slow adoption because of limited skill sets and limited executive support
Proactive reporting	Establishing key performance indicators for the organization using visual drill downs	In the last quarter, how many product Xs have been sold in the United States, compared to the United Kingdom?	<ul style="list-style-type: none"> • Long time to insights • Slow and lengthy business intelligence projects • Lack of data interactivity
Information consolidation	Deriving organizational relationships by storing data in a logical fashion	How many sales reps sell Product X versus Product Y?	<ul style="list-style-type: none"> • Budget constraints • Nonexistent-to-limited IT staff
Casual data access and analysis	Capturing progress of an organization's events by recording and tracking data	How many customers and products does the enterprise have?	<ul style="list-style-type: none"> • Reliance on spreadsheets • No systematic way of analyzing data

Analytical sophistication level ↑

Figure 2. Five levels of analytical sophistication

users, it is engineered to provide the most power in the smallest footprint possible. The appliance includes Dell Boomi™ cloud-based data integration software.

- **Data-agnostic:** The Dell | Cloudera Solution for Apache Hadoop, along with streamlined deployment tools based on the Dell-developed Crowbar framework, helps simplify the processing of large data sets of virtually any type. Also, with the recent acquisition of Kitenga, Dell enables organizations to analyze structured, semi-structured, and unstructured data stored in Hadoop.
- **Rapid:** To accelerate time to insights, Dell offers Microsoft® Fast Track reference architectures, which detail best practices for quickly deploying hardware and software components to help achieve a balanced and optimized system.
- **Robust:** The Dell Big Data Retention Solution, paired with the Dell DX Object Storage Platform, is designed to provide a single system for reliably retaining various types of data across an unlimited number of data sources.

Dell continues to expand its portfolio of business analytics capabilities across the spectrum of ingest, storage, management, warehousing, and analytics. For example, the recent acquisition of Quest Software, an IT management software provider, enables Dell to broaden its range of business intelligence

software to include the Dell Quest™ Toad™ Suites of database management software and the Dell Quest Foglight™ application performance monitoring tool.

Extracting optimum value from data

The accelerating volume, velocity, and variety of data are flowing into enterprises from disparate sources. To extract actionable intelligence from the data, IT leaders may take a structured/repeatable or iterative/exploratory approach to business analytics, depending on specific organizational requirements. Innovative business analytic tools running on high-performance, cost-effective architectures enable IT leaders to advance business and organizational outcomes with actionable insights that help gain a competitive edge. PS

Author

Shree Dandekar is the director of business intelligence strategy at Dell. Follow Shree on Twitter at @shree_dandekar.

Learn more

Business intelligence and data warehousing: dell.com/bi

Dell | Cloudera Apache Hadoop solution: dell.com/hadoop

Dell Quickstart Data Warehouse Appliance: qrs.ly/to2c359