Achieving big savings from big data analytics

Global expansion of Dell operations was a driving force for the design and deployment of integrated business intelligence (BI) and data warehousing for big data. The resulting solution helped the company reduce IT costs by approximately US$35 million.

With explosive data growth and the proliferation of data silos, Dell spent millions on data management without monetizing information. As the company expanded worldwide, it established regional systems to help automate business processes and improve efficiencies. But Dell needed to integrate all those systems and consolidate data to create an enterprise-wide view of information designed to improve accuracy, cut costs, and uncover actionable insights. Through an innovative business intelligence (BI) and data warehouse architecture, Dell was able to streamline management of big data to facilitate global enterprise-level decision making.

For Dell, an approach to BI and data warehousing needed to accommodate a rapidly increasing volume of information, including big data produced by e-commerce sites, social networks, and other sources. Big data can help organizations unlock fresh business growth opportunities, but they must have the software and hardware infrastructure to rapidly analyze petabytes of information.

"In addition to large volumes of supply chain data, order data, and service data, we are now faced with a huge amount of 'external context' information, such as the demographic information collected during purchases and the customer sentiments that appear on a wide variety of social media sites," says Mike Lampa, director of business intelligence portfolio development at Dell.

Paving the way for big data

Dell created a single, enterprise-level data environment designed to integrate data across its global enterprise. And it established corporate data governance rules at the outset. "Dell had established regional data warehouses, one for each of the main regions around the globe. But the company was using different business rules to describe the same information in each region," says Lampa. Dell’s BI solution architecture was designed to facilitate consistency across the company while supporting appropriate regional flexibility.

With the Dell acquisition of Perot Systems in 2009 and access to consulting resources with extensive experience in designing and deploying BI and data warehousing for organizations in a wide range of industries, Dell Services formed the Enterprise Business Intelligence (EBI) BI Domain and BI Factory practice. The Dell EBI team decided to build a foundation with Teradata® Data Warehouse, which includes the Teradata Database Management System plus a range of tools for managing the database and facilitating interoperation with other applications in the Dell IT environment. The Dell team also incorporated Informatica® PowerCenter® and PowerExchange® software for data integration capabilities.

Deploying BI and data warehousing at Dell was a large-scale, two-year undertaking that involved implementing a fresh data architecture, data integration platform, and infrastructure; establishing business data governance; gaining corporate-wide approval of key financial and performance measures; and retooling end-user procedures—while preserving existing hardware and software investments wherever possible.

The deployment helped eliminate data silos at Dell and facilitate effective decision making across...
Deriving valuable insights from an enterprise-wide view of information

Dell Enterprise Business Intelligence consultants helped design and deploy an integrated, global enterprise data warehouse solution combining Teradata, Informatica, and other business intelligence (BI) software with Dell infrastructure components. This approach helps Dell increase operational efficiencies, improve product quality, and reduce costs.

33%
Developing fresh BI applications to integrate with order management systems enabled Dell to reduce product shipment times by 33 percent.

US$2 million
As part of its initiative to enhance product quality, Dell avoided an anticipated US$2 million in part replacements by developing analytic models to forecast potential product-related problems and help prevent installation of defective parts in its products.

US$35 million
By consolidating multiple, global data warehouses into a single enterprise-wide architecture, Dell IT realized an approximate US$35 million reduction in hardware and management costs.

the global enterprise. “Business information consumers can access certified global data faster and more easily, directly from their desktops,” says Lampa. “Those capabilities ultimately help us increase productivity and business agility. We are now much better positioned to gather, analyze, and monetize the data flowing in from social media sites and other external context sources. Dell is ready for big data and big analytics.”

The Dell™ BI and data warehouse architecture is also enabling Dell to heighten order-processing efficiency. By developing new BI applications that integrate with order management systems, Dell is enhancing customer satisfaction. “We reduced shipment time by 33 percent, decreased overdue orders by 60 percent, and diminished our backlog,” says Lampa.

The Dell team is also using fresh insights to help improve product quality. “We developed analytic models for predicting potential product issues that might require us to replace defective parts—even after the first 60 days of use,” says Lampa. As a result, the company can alert component manufacturers and help prevent defective parts from being installed in Dell products. “We have saved more than US$2 million so far by avoiding part replacement down the road.”

Enhancing operational efficiency
The BI and data warehouse architecture also helps Dell IT increase operational efficiency. “Consolidating multiple data warehouses into a single, global, enterprise-wide solution has helped the Dell IT group save approximately US$35 million in hardware and management costs,” says Lampa. In the past, business units had created a variety of new applications across the enterprise. “We put governance policies and controls in place to eliminate redundancies. Today we have fewer systems to manage and maintain, so we can refocus more of our IT staff on strategic projects. At the same time, the business can reinvest the savings we achieved into the development of innovative solutions for monetizing data.”

This success also informs the company’s offerings of flexible end-to-end approaches to BI and data warehousing. For example, Dell Services offers business process strategy consulting and financial planning, IT solution design, implementation, management, training, and support. “Each organization has distinct technical requirements and objectives for business intelligence and data warehousing,” says Lampa, “whether they need a cost-effective solution to monitor and optimize specific business processes or a large-scale, cloud-based solution that can maximize the value of big data.”

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