Use analytics to innovate and lead in today's banking environment

IBM DB2 Analytics Accelerator and IBM System z deliver critical insight for competitive advantage

Incorporating analytics into business applications is essential to help business leaders quickly identify new opportunities, respond to changing situations faster and ultimately gain a competitive edge. Nowhere is this analytics capability more critical than in the banking industry.

Today's banks face multiple challenges. Regulators are ushering in a new era of government oversight with more detailed disclosure requirements. The rise of non-banking firms as competitors is remaking the industry landscape. Fraud attempts and other security threats are becoming more complex and more common. And tech-savvy customers are demanding increased transparency, varied and personalized offerings, and multiple channels through which to do business.

In this environment, financial firms must turn insight into both a strategic advantage and a competitive differentiator. Analytics provide the sophisticated insight required to attract and retain customers, develop new sources of revenue and proactively address risk and regulatory requirements. Banks that invest in building sophisticated insight through analytics will be better positioned to emerge as market leaders.

Turning insight into action

Many banks are reevaluating their analytical strategy and the information management foundation upon which they are built. Existing solutions may be failing to keep up with increased scalability requirements as user populations and workloads grow, and they may be unable to handle more frequent and sophisticated queries of larger volumes of data. IT departments are looking for ways to deliver timely, accurate and secure access to analytic information, and to gain faster time-to-value through rapid deployment and expansion of analytics. And they need to meet these goals while supporting high availability, scalability and performance.

With those challenges in mind, forward-looking banks are focused on three key areas:

- **Creating a customer-oriented enterprise:** A deep, cross-enterprise view of product, customer and relationship data enables banks to attract and retain profitable customers with compelling, personalized offers and multichannel experiences across all touch points. In this way, they create a superior customer experience that differentiates them from competitors. However, delivering that experience requires an authoritative pool of data that acts as the foundation for an enhanced understanding of product usage, profitability and customer behavior.
- **Increasing flexibility and streamlining operations:** Banks must have adaptable core systems that create a flexible and agile banking environment. Banks with flexible core systems can efficiently adapt to ongoing structural shifts, continuously realign to new business needs, proactively manage customers and deliver products faster and more consistently than the competition. Firms need to start by aligning business, operations and technology using a common architecture and infrastructure platform that drives out complexity and cost while increasing flexibility.
- **Optimizing enterprise risk management:** Banks require superior information to identify and manage various types of risks (financial, operational and IT) holistically across the enterprise. Actionable risk-based insights benefit every aspect of the banking environment, from customer acquisition and product pricing to regulatory compliance. Financial firms need a platform with integrated and reliable near–real-time information that can be accessed by finance, risk and compliance teams across the enterprise. They also require timely, accurate and consistent insight into customer and supplier data and risk indicators across finance, trading, sales and geographies to improve risk intelligence.

Success in these areas will have a big impact on banks' competitive position. Firms that implement these initiatives can turn insight into a strategic driver to attract and retain customers, develop new sources of revenue, streamline operations and proactively address risk and regulatory requirements.

Defining business-critical analytics

The goal of analytics is to deliver greater insight to the business and to maximize business performance. Incorporating analytics into business applications is now essential to maintain a competitive edge. As analytics become embedded into the fabric of the business, users expect more from analytics applications; they expect the information they receive to be timely, accurate and compliant. If these business-critical analytic applications fail at any level, for any length of time, vital opportunities could be lost and the business could suffer significantly.

Therefore, strategic and IT teams must ensure the highest levels of performance, availability and scalability of their analytics applications. The data used for analytics must be accurate, properly governed and delivered efficiently across the enterprise. Organizations that cannot adequately address these requirements might negate any competitive advantage initially gained through analytic advancements.

Extending existing infrastructure with IBM technology

A successful analytics solution requires a flexible data warehousing infrastructure as a foundation, so users can access the information they need without worrying about delays, rigid infrastructure or system disruption during an upgrade, improvement or disaster.

The ideal analytics solution allows access to the most current data—as it is created—to support more timely decisions on the front lines of the business. It also ensures that the information used to make critical business decisions is consistent, reliable and accurate, and makes certain that critical corporate data assets are protected, secured and governed as they proliferate across the organization.

With traditional analytics approaches, organizations duplicate and move data to departmental systems for processing. Transferring data from one platform to the next, however, can introduce data quality and security issues while adding data latency. Moreover, departmental analytics environments often struggle to deliver the availability, scalability and performance levels required.

"How well banks respond by building more flexible data management frameworks to implement new reforms, while also containing overall costs, will have profound implications for their competitive position in the marketplace. Instead of incremental fixes and add-ons, banks are realizing that an enterprise-wide approach may be the only viable solution."

—Ernst & Young, "Time for bold action: Global banking outlook 2013-14," December 2012

Today's banks are bringing together big data projects, transactional processing, data warehousing and analytic tooling on mainframe systems. Implementing IBM® DB2® for z/OS® and DB2 Analytics Accelerator in an IBM zEnterprise® environment can better help organizations meet and exceed business-critical analytics objectives and avoid the drawbacks of traditional analytics approaches.

DB2 for z/OS, DB2 Analytics Accelerator and zEnterprise offer a hybrid solution that brings together high-volume business transactions, batch reporting and complex analytic queries running concurrently in a mixed-workload environment. This integrated, single-platform approach to delivering business-critical analytics enables banks to bring analytics closer to the source of transactional data—which helps to reduce latency, minimize complexity and control costs while improving data quality and governance.

Accelerating business-critical analytics

A significant number of data transactions in banking and insurance—from financial transactions to customer information—occur on the IBM System z® mainframe, including:

- 97 of the top 100 worldwide banks[1]
- 21 of the top 25 insurance organizations[2]

IBM zEnterprise is the platform of choice for these industries because of its unparalleled quality of service and performance.

Case in point: A large international bank

The experience of a large international bank shows how the power of zEnterprise and DB2 Analytics Accelerator can be used to transform existing systems into a foundation for business-critical analytics that turn insight into opportunity. Like many financial organizations, the bank depends on analytics for tasks such as strategic market analysis, business intelligence, reporting, regulatory compliance, and the ability to develop customer-specific offerings and services. The bank's analytic applications involve a mix of high-speed transactions and complex queries that must be processed simultaneously with very low latency.

The bank was looking for a revolutionary analytics solution that would speed delivery of information to business users. The solution had to provide high-quality, accurate data for large numbers of concurrent users, while also supporting the bank's rapid growth and its heightened need for analytics to improve competitiveness in the global market. The solution also had to fulfill current requirements and quickly adapt to handle future changes in customer needs and market conditions. Plus, recent regulatory changes mandated increased audit capability.

From an IT perspective, the bank needed to:

- Create a cost-efficient analytics infrastructure that leveraged existing IT investments
- Deliver a scalable platform that could provide fast query response times today as well as scale to handle tomorrow's demands
- Limit the size of the storage footprint as data volumes grew
- Meet service-level agreements (SLAs), maintain data security, and sustain high availability and reliability
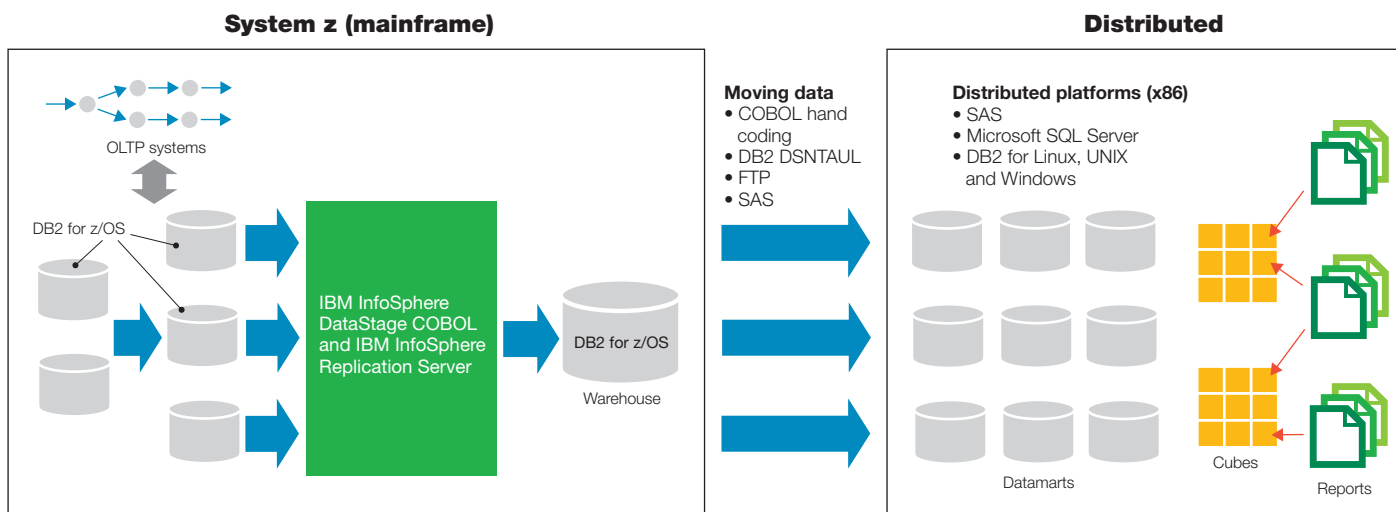
Figure 1. The bank's existing data warehouse solution.

Evaluating the bank's existing architecture

Working with IBM, the bank began by evaluating its existing data management architecture for ways to improve delivery of information to business users (see Figure 1). One of the first considerations was the infrastructure used to run the warehouse.

Options included keeping the existing System z mainframe infrastructure and DB2 for z/OS or deploying the solution on a different infrastructure. A risk analysis showed that deploying the solution on a different infrastructure would negatively impact performance by multiplying network communication requirements while increasing the complexity of solution integration and administration. It would also reduce the availability, reliability and security provided by the existing solution.

Identifying opportunities to improve information delivery

IBM helped the bank IT team identify elements of the existing infrastructure that could be streamlined to increase the speed and accuracy of analytic insight:

- **Eliminate multiple departmental data marts:** Like many organizations, the bank had added departmental data marts over the years for particular workloads. As data came in, it was duplicated and moved out to these systems. However, transferring data from platform to platform increased the data latency (the delay in the time required to move data from its source to data warehousing applications and ultimately, business analytics tools). These outlying deployments also created technology silos that made it difficult to deliver the availability, scalability, data governance and security levels needed by the bank. The bank could improve efficiency and performance by centralizing data on a single platform.

- **Bring analytics closer to the source data on System z:**
  Collocating the data warehouse and operational data presented another opportunity to speed up data delivery. The bank needed an integrated, single-platform approach that enabled bringing analytics close to the transactional source data on System z—helping reduce latency, complexity and costs while improving data quality and governance.

Revolutionizing the analytics architecture

After an evaluation of the IBM solution, the bank decided to centralize its data warehouse on DB2 for z/OS to leverage its current System z infrastructure, people and processes and to fully utilize the security and audit functionality of the platform. The bank also deployed the DB2 Analytics Accelerator to enhance performance and help reduce costs (see Figure 2).

Together, DB2 Analytics Accelerator and System z deliver the functionality, cost-effectiveness and rapid deployment required by the bank. The IBM solution exploits the bank's existing System z capabilities, allowing the bank to easily interface with analytics and campaign management applications. This enables the bank to efficiently adapt its offerings and modify its strategy to attract more business and drive growth. The zEnterprise infrastructure provides a centralized data hub and leverages the security benefits of System z to maintain data protection and compliance. For an additional performance boost, the DB2 Analytics Accelerator speeds up complex DB2 for z/OS analytic queries to provide unprecedented response times and support for a high number of concurrent users. The dramatic time savings provided by the DB2 Analytics Accelerator drives speedy insight for business users, helping them make better decisions about strategies for product development, special offers and customer service.
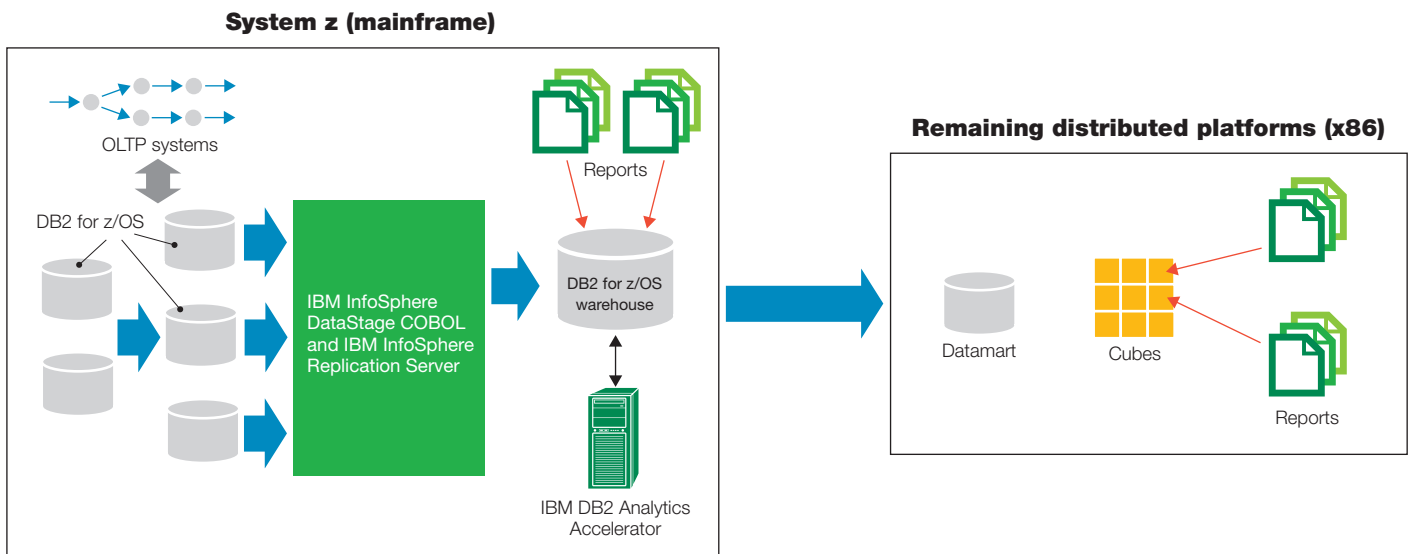

Figure 2. The modernized IBM data warehouse solution.

Combining System z and DB2 Analytics Accelerator

The integrated platform provides the rock-solid reliability and exceptional security the bank demands for its sensitive analytics data. The strengths of System z match up well with the bank's requirements for business-critical analytics, providing best-of-breed database server qualities of service with high performance, availability and scalability. DB2 Analytics Accelerator can dramatically improve response times of complex queries running within the DB2 for z/OS environment, without tuning efforts and without generating additional load to System z. And with the seamless integration between DB2 Analytics Accelerator and DB2 for z/OS, the bank doesn't have to modify its applications to realize the acceleration benefits.

The bank now collocates its transactional data and analytics on System z, which minimizes data movement and duplication, and reduces the potential for inconsistencies. It has more accurate, consistent data—and reliable access to that data. It eliminated many departmental data marts and centralized on one scalable and versatile platform, thereby reducing extract, transform and load (ETL) overhead, security risks and data latency.

Gaining important business benefits

By deploying the IBM solution, the bank achieved its goals for data warehouse modernization and analytics expansion, realizing multiple business benefits:

- **Increased system efficiency and faster delivery of information** to end users by reducing multiple data marts to one versatile platform and utilizing a single data source to ensure one version of the "truth"
- **High performance and scalability** to meet current SLA requirements, support growth and provide improved time-to-market for new product and service introductions
- **Fast loading of the most up-to-date data to the data warehouse,** enabling marketing campaigns to target audiences based on the most accurate data available

- **Improved availability and user experience** with access to data anytime and in the manner needed by the user
- **An analytics environment that helps ensure regulatory compliance** by exploiting System z auditability and security capabilities
- **Accelerated analytics** that put insight into workers' hands quickly and allow the bank to grow its business while deferring investment in new computing resources

The bank achieved its goal of building a scalable, secure and high-performance analytics platform that allows it to identify gaps in the market and adjust or expand offerings to meet customer demand. It can deliver vital insight to both product development teams behind the scenes and customer-facing employees—improving responses to clients, business partners and market trends.

Leveraging trusted IT assets

As banks build out their infrastructures and introduce new analytics capabilities, they look for ways to reduce costs and make the most of their existing IT investments by extending their trusted assets, including the core data on System z mainframes. The zEnterprise platform provides a modern, cost-competitive analytics infrastructure that is primed for big data initiatives. With zEnterprise and DB2 Analytics Accelerator, banks can apply the same qualities of service to their business-critical analytics as they do to their transactional systems, extending the mainframe's powerful reliability and security features while delivering the multi-workload flexibility, scalability and performance needed to innovate and lead in an evolving industry.

For more information

To learn more, contact your IBM representative or IBM Business Partner, or visit: **ibm.com**/software/products/en/db2analacceforzos

[1] Based on U.K. magazine "The Banker," System z install base and financial records.

[2] Based on IBM market development and insights documentation on top 10 insurance companies, ranked by non-banking assets.

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