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RESEARCH**

RESEARCH REPORT D14 | FOR USE WITH NUCLEUS FINANCIAL MODELING TOOL D14

# ROI Evaluation Report: Microsoft Business Intelligence

## **THE BOTTOM LINE**

*Microsoft's business intelligence platform allows companies to rapidly develop customized analytical applications. Organizations can boost employee and IT staff productivity through more efficient reporting and querying processes and improve business processes and market share through the analysis of business data.*

## **KEY RETURN AREAS**

- Reduced infrastructure costs
- Reduced ongoing support costs
- Increased worker productivity
- Improved working capital
- Improved inventory management
- Reduced or managed time to market
- Profit on additional revenue

The Microsoft business intelligence (BI) platform enables companies to organize, extract, and analyze large quantities of operational data from their enterprise applications and databases.

Organizations can leverage the following Microsoft technologies and services to develop customized BI solutions:

- SQL Server 2000. SQL Server is a platform for relational-database management with online analytical processing (OLAP) cube technology and is widely used for mining and analyzing data within customer relationship management (CRM) and enterprise resource planning (ERP) applications as well as internal and Web-based corporate applications.
- SQL Server Accelerator for BI. SQL Server Accelerator for BI enables companies to expedite the development of data warehouses and analytical applications through a combination of prebuilt data models, client views, and starter templates.
- Office XP. The querying, reporting, and analysis capabilities of Office XP applications such as Excel and Data Analyzer enable employees to access and drill down information needed for making better business decisions. Office XP tools can be deployed directly to the desktop or embedded in customized Web portals.
- Independent software vendor (ISV) solutions. Partnerships such as the Microsoft Gold Certified Partner Program for Business Intelligence leverage the experience of the company's partners in designing data warehousing and OLAP functionality based on Microsoft's technologies to help develop customized tools.

In addition to SQL Server 2000 and Office XP, which form the core of the BI platform, companies can leverage other Microsoft technologies such as SharePoint Portal Server, Office Web Components, and Microsoft Project to add collaboration, visualization, and project management capabilities to the BI function.

As an increasing number of companies deploy CRM, ERP, and other enterprise applications to improve business performance, the volume of transactional and operational data contained in these systems also increases. The potential benefits from exploiting this data can be significant, and many organizations are considering investments in BI applications or in the construction of data warehouses. However, building a data warehousing system or purchasing and deploying an enterprise-scale BI application can be prohibitively expensive. Therefore, companies need to carefully weigh the costs of building a BI solution against the expected benefits.

There are many BI solutions available with various price points and development and integration costs, ranging from tools such as Cognos Impromptu and PowerPlay that can be used for reporting and budgeting functions to predictive modeling software offered by vendors such as SAS Institute. Choosing the right solution depends on the specific business needs of an organization and the kinds of

analytical activities that the company must support. The following are some key factors that determine a company's choice of BI solutions:

- **Power.** An important factor determining the choice of an analytical application is its power or functionality. A number of BI tools, such as Cognos PowerPlay, have robust analytical capabilities that allow specialized users in companies to rapidly perform sophisticated data analysis. Usually, the user population for analysis-heavy tools consists of more skilled employees such as financial analysts and executive management.
- **Usability.** Although several powerful tools are in the market, lack of user friendliness is a barrier to adoption that has often frustrated business users and kept them from utilizing the full value of analytic applications. If the users of an analytical application are business personnel, picking a solution that is easy to learn and use is key to achieving positive returns. Office XP tools such as Excel are high on the usability scale because they enable business users to support BI functions through the use of desktop tools they are already familiar with.
- **Compatibility with existing technology.** If companies are following best-of-breed technology strategies, the solution must support rapid integration with third-party and homegrown applications and databases. In developing its BI platform, Microsoft has leveraged the compatibility of SQL Server with databases such as Oracle 9i and DB2. Companies can use the SQL Server 2000 for the Oracle Customer kit to link the two databases and ease the task of managing the two databases.

This report explores the benefits and costs associated with using the Microsoft BI platform to develop and customize analytical applications. The associated Nucleus Research financial modeling tool can be used to calculate the return on investment (ROI), total cost of ownership (TCO), payback, and risk associated with the deployment of Microsoft's BI tools in a specific user environment.

### **KEY BENEFIT AREAS**

The following sections give a detailed review of the major areas of benefits. Specific calculations for each benefit area and associated potential returns can be found in the associated financial modeling tool.

#### **Improved Technology Management**

Microsoft's BI platform can positively impact technology management by facilitating the project planning and deployment phase of a BI project as well as simplifying the task of ongoing system management.

During the project planning phase, tools such as the SQL Server Accelerator for BI can expedite the development of BI systems by giving developers direct access to existing best practices. For example, the Analytics Builder Workbook is a Microsoft Excel

spreadsheet that can automatically generate a company's specific BI solution infrastructure based on its application data model, producing a staging database, relational database, OLAP database, and preconfigured view of the BI data in the OLAP database. This can save developers a significant amount of time in mapping corporate data and consolidating information by reducing some common barriers associated with data warehouse development.

During the actual implementation, developers can leverage existing knowledge of the .NET architecture to quickly build custom applications using the building blocks provided by the BI platform. Doing so significantly reduces the need for specialized skills and expensive consulting engagements during the development phase, while allowing companies to rapidly start realizing returns from their BI systems.

On an ongoing basis, Microsoft's BI tools can boost IT productivity by reducing the burden on IT employees to produce ad hoc reports because business users can run queries and reports using tools they are familiar or proficient with. Excel 2002 is specifically focused on delivering analytical capabilities to the average business user, and the productivity benefit is likely to be significant for companies whose technology personnel currently shoulder most of the reporting responsibilities. In addition, the core SQL Server application includes built-in management tools that ease the task of ongoing support for IT departments and can result in significant benefits; customers using other databases such as Oracle need to make additional investments in management aids.

Specific returns resulting from using Microsoft BI solutions for improved technology management include the following:

- Reduced development and integration costs
- Reduced consulting expenditure
- Reduced IT employee training
- Reduced infrastructure costs
- Reduced report development costs
- Reduced ongoing support costs

### **Improved Information for Decision Making**

Improved information organization and access from BI can impact the bottom line by improving several business activities. Companies using Microsoft's BI tools can make it cheaper for users to access information, simplify the task of data mining and analysis, and enable employees to make business decisions that reduce costs or improve profitability.

Several components of the Microsoft BI platform can lower the costs of accessing information by allowing users to efficiently generate queries and reports on their own. Excel is a user-friendly yet valuable OLAP tool, enabling employees in various departments from sales to accounting to perform sales analysis on their own. Companies can estimate the potential returns from improved

information organization and access by assessing the repeatability of the reporting function.

The ease and speed of the data mining function are also critical to achieving positive returns from an analytic application. SQL Server's Analysis Services has data mining capabilities built into it, unlike other tools such as Oracle's, whose data mining capabilities need to be separately licensed. Data Analyzer, Microsoft's recent addition to Office XP, gives users the ability to publish reports onto many different formats in Excel, PowerPoint, and Adobe or as native XML documents.

Improved access to critical business data locked into enterprise applications can enable employees to pinpoint delinquencies in performance or profitability and implement corrective changes, which lead to cost reductions as well as increases in profits. The savings from improved information access will be greater for companies with high-volume processes. Management decisions that cause even minor improvements in a single business process can have a significant impact on the working capital and the size of revenues.

Potential returns from improved information organization and access for decision making include the following:

- Reduced administrative overhead
- Increased worker productivity
- Reduced communication costs
- Reduced employee hiring and training costs
- Improved working capital
- Improved inventory management

### **Improved Customer and Partner Management**

Companies can use Microsoft's BI solutions to analyze transactional data to optimize their customer and partner relationships. Business users can rapidly gather and analyze information from transaction processing systems and Web-enabled applications to determine customer profiles and trends, target promotions and marketing, provide specialized service, and prioritize customer groups. The drill-through analytical capabilities present in Office XP tools such as Excel and Data Analyzer can allow companies to evaluate the profitability of products by region and industry and accordingly prioritize customer relationships. Sales analysis provided by the BI solution can also contribute to understanding customer needs and buying patterns as well as increasing the accuracy and timeliness of sales forecasts.

Many companies also use BI tools to deploy reporting and analytical capabilities to their corporate clients through an extranet. This way, they can greatly reduce the costs of customer and partner management while providing organizations with critical transactional data for customer intelligence. Providing self-service to customers and partners through Microsoft's BI tools may involve

some additional development and integration, and companies should carefully compare the costs of additional customization with the expected reductions in customer support costs.

Potential returns from improved customer and partner management include the following:

- Reduced or managed time to market
- Reduced logistics cost
- Reduced product rework
- Profit on increased revenue
- Reduced customer care costs
- Increased customer retention
- Improved working capital

### **KEY COST AREAS**

Organizations considering an investment in Microsoft's BI solutions need to consider a number of one-time and ongoing cost factors. The associated Nucleus Research financial modeling tool can be used to calculate the ROI, TCO, payback, and associated risk of deploying Microsoft's BI tools.

#### **Software**

Production licenses for Microsoft SQL Server are based on a per-processor or per-server client access basis. Excel 2002 can be purchased individually or as part of the Office XP suite.

In addition to licenses and maintenance for SQL Server and Office XP, companies seeking to deploy Microsoft's BI solutions will have to invest in other Microsoft server software technologies as well. The required software for a SQL Server installation is Windows Server 2000 and Windows 2000 Advanced Server.

Although SQL's Analysis Services come bundled with SQL Server, companies needn't be dependent on SQL Server because Analysis Services functions with other relational databases, including Oracle and DB2. However, companies should be aware that, by opting for other databases, they might lose some functionality available only in SQL.

#### **Hardware**

The initial hardware investment will depend on the volume of data and the analytical demands of the reporting process supported by the solution. It is likely that organizations will have to invest in standalone servers. Companies should be aware that as the number of users increases and as the database expands, upgrades to existing hardware and disk storage space might become necessary.

#### **Personnel**

Organizations should consider both the initial and the ongoing personnel costs associated with using Microsoft's BI platform.

During the deployment phase, IT and business personnel will have to spend time developing and integrating the application. For those organizations currently running Microsoft software, a significant benefit of using Microsoft's BI platform is that developers can leverage their existing knowledge of .NET architecture to reduce development time and cost.

Data validation is an important step in any BI project, and companies should carefully budget for the personnel time spent on cleaning data in various source systems. Nucleus has found that business and IT personnel staffed to BI projects can spend anywhere from several weeks to a few months validating data, and the more data sources to be consolidated, the greater will be the personnel commitment. In addition, business users will have to devote project time to defining business objectives and documenting user needs.

On an ongoing basis, database administrators supporting BI are usually responsible for creating and updating tables, performing query tuning, and assisting data extraction. In SQL Server 2000, several of these tasks are automated, and the number of IT personnel needed for ongoing maintenance is likely to be reduced.

### **Consulting**

Most organizations will have to spend on consulting for the development of their BI solutions. Clearly, an organization's existing level of expertise with Windows 2000 and Office XP will have a significant impact on their need for outside help in deploying Microsoft's BI platform. Organizations without extensive experience in Windows 2000 may need additional Windows-focused consulting. The consulting section of the financial modeling tool provides details for calculating the initial and ongoing costs associated with using SQL Server and Office XP to develop enterprise analytical applications.

### **Training**

Nucleus has found that companies deploying standalone BI tools from pure-play vendors usually have to train users for an average of two days following the implementation. Microsoft has focused on improving usability in its analytical applications, and Nucleus estimates that the training time for users of BI tools built on Office XP is unlikely to exceed that range. However, companies should expect to spend more on training in year 2 or 3 of the deployment as users demand more value from the solution.

Companies should also budget for the costs of training IT personnel in developing and maintaining the solution. SQL Server's ease of use will ensure that database programmers familiar with Windows can program easily in their language of choice and can manipulate the .NET environment without substantial training efforts or investment.

**Other**

Other costs associated with Microsoft's BI platform may include travel by the project team or staff, promotional activities, and user incentives.

**CONCLUSION**

The Microsoft BI platform addresses the challenges of building rapidly deployable analytical applications that are customized to serve business needs. With it, developers can escape lengthy development cycles of heavy data warehousing projects that take too long to deliver rapid returns on investment.