

## WHITE PAPER

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# Business Intelligence Solutions from the Microsoft and Teradata Partnership

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October 2008

## THE NEED FOR PERVASIVE BUSINESS INTELLIGENCE

The trend toward evidence-based decision making is taking root in commercial, nonprofit, and public sector organizations. Driven by increased competition due to changing business models, deregulation, or, in some cases, increased regulation in the form of new compliance requirements, organizations in all industries and of all sizes are turning to business intelligence (BI) and data warehousing (DW) technologies and services to either automate or support decision-making processes.

An increasing number of organizations are making BI functionality more pervasively available to all decision makers, be they executives, customer-facing employees, line-of-business managers, or suppliers. IDC defines pervasive BI as follows:

Pervasive BI results when organizational culture, business processes, and technologies are designed and implemented with the goal of improving the strategic and operational decision-making capabilities of a wide range of internal and external stakeholders.

The technology to support such BI efforts consists of many components, all of which are deployed with the goal of providing the right information to the right people at the right time.

## WHY INVEST IN BUSINESS INTELLIGENCE SOLUTIONS?

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### Strategic Imperative

While discussions and arguments about the return on the investment in BI technology continue, a growing body of evidence suggests that investments in BI solutions to improve decision making by management and staff can lead to improved organizational performance. This evidence is presented in books, such as *Competing on Analytics*<sup>1</sup> and *Super Crunchers*<sup>2</sup>, as well as in market research projects, such as IDC's 2002 study *The Financial Impact of Business Analytics*<sup>3</sup>. However, if none of these sources are sufficient to convince an organization's management to make increased investments in BI, then the organization should consider the fact that its competitors are investing in BI solutions at an aggressive pace.

### ***Business Intelligence as an Investment Priority***

In 2007, organizations worldwide spent about \$13.5 billion on DW and BI software alone<sup>4</sup>. This figure excludes related services and hardware. During a time of economic slowdown in 2007, the DW and BI markets outpaced forecast growth rates. Part of the reason is that BI and analytics projects remained high on the priority list of most organizations. In a July 2008 IDC survey, 51% of the 400 respondents surveyed regarding short-term (12 months) BI requirements indicated that BI is a critical or high priority. When the question was repeated for the intermediate time frame (3 to 5 years), the number jumped to 66%.

Furthermore, BI is getting attention from top executives. When asked which group of decision makers are most actively involved in pushing for the development of BI solutions, the largest percentage of respondents indicated that it is their executive management, not analysts or the IT group. According to the mid-2008 survey, 54% of respondents indicated that their upper management has made a strategic decision to make BI a priority, and 40% of respondents indicated that their organization's BI budget is increasing over the next 12 months, while 31% said it would remain stable.

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### **Operational Business Intelligence**

The deployment of BI solution supports not only strategic decisions by executives but also operational decisions by line-of-business managers and staff as well as many external stakeholders. An increasing number of organizations are providing direct access to their BI assets to customers, suppliers, partners, and government agencies. In fact, research shows that organizations that do so create stronger and longer-lasting relationships with their customers and partners because of a mutual reliance on a consistent set of information that becomes part of their ongoing business processes.

As organizations become more reliant on DW and BI technology to support operational decision making, such systems become more mission critical, taking on some of the availability characteristics of transaction processing systems. In recent IDC research, 20% of organizations said that a material, negative impact on business operations would occur if their BI solution was out of service for more than one hour — a phenomenon that would not exist if the DW supported the analytic needs of only a few analysts.

In parallel with the higher-availability requirements, DW and BI solutions are also under pressure to support an ever-growing number of end users and data volumes. In 2008, 40% of organizations reported a DW size greater than 1TB, with 9% having a DW of over 25TB. DW sizes are projected to grow substantially, with half of the organizations reporting that their DWs are expected to grow at least 25% in the next 12 months. As the BI solution expands from supporting dedicated analysts to other information consumers, organizations need to account for the differing needs of these user groups. Some will require ad hoc query functionality, while others will be satisfied with static or parameterized reports. Some users will need exception-based dashboards, others will require scorecard applications, and a group of quantitative analysts will need access to advanced analytics tools for statistical analysis and data mining.

## COMPONENTS OF A BUSINESS INTELLIGENCE SOLUTION

BI solutions require the existence of not only appropriate technology but also a defined BI strategy, a group of dedicated staff, a data governance policy, and a set of processes and procedures for developing, deploying, and supporting the BI solution as well as resources for training end users on the use of the technology and the meaning of the data and metrics. IDC defines the technology to support BI solutions as business analytics software, which includes two broad categories of technology:

- ☒ The **data warehouse platform**, which is composed of:
  - ☐ Data warehouse management software, which is used to store the data (in a predefined format or data model, which is optimized for BI and analytics workloads such as reporting, ad hoc query, and data mining) and process queries or execute analytical models. The data warehouse solution must be scalable so it can meet the increasing demands of additional users and increased data, as well as the capability to manage mixed workload requirements.
  - ☐ Data integration tools that are used for data movement and manipulation. These tools employ techniques such as extraction, transformation, and loading (ETL); extraction, loading, and transformation (ELT); replication; change data capture; and data matching and cleansing for readying and loading data into the data warehouse. The frequency of the load process depends on the needs of the underlying business process that the BI solution supports and can range from monthly, weekly, or daily batch loads to almost instantaneous, real-time updates.
- ☒ **Performance management tools and applications**, which are composed of:
  - ☐ Query, reporting, and analysis tools and advanced analytics tools. These include reporting, dashboarding, multidimensional analysis, data mining, and statistical analysis tools. Although IDC does not consider spreadsheets to be specialized BI tools, end-user surveys continue to confirm the fact that spreadsheets remain the most widely used tool for BI tasks.
  - ☐ Analytic applications such as financial performance management, supply chain, customer relationship management, human resources, and services operations analytic applications as well as scorecard applications that support a specific performance management methodology such as balanced scorecards. These applications differ from tools because they are prepackaged for specific business processes or industry decision-making tasks and include support for workflow management, specialized content such as key performance indicators (KPIs), and templates for reports, dashboards, and scorecards.

When developing a BI road map, organizations should take into account the possibility for the need of any and all of the previously mentioned technologies. Each software category has a role in the overall BI solution and can address the varying needs of different user groups. In addition to the specialized business analytics software, deployment of any BI solution would require other related technologies such as servers and storage and related portal and collaboration tools that are integral to a successful deployment and broad diffusion of a BI solution.

One of the options for technology purchasers is to evaluate the BI and DW offerings from Microsoft and Teradata.

## MICROSOFT AND TERADATA PARTNERSHIP

Microsoft and Teradata have provided BI solutions for many years, and both companies rank among the leaders of the business analytics software market based on revenue. It is typically the case in the software market that any given vendor may be both a partner and a competitor of another vendor in the same market space. Microsoft and Teradata are no exception to this observation. As partners, the companies have established several points of collaboration and technology integration, including:

- ☒ **Teradata DW technology on the Microsoft Windows operating system.** In 2007, DWs deployed on the Windows platform led the market with 43% share (up from 40% in 2005) of all DWs worldwide. The Teradata Database and Client tools are all available on the Windows platform, and Teradata has committed to continuing to invest in and support the deployment of its Teradata Database on the Windows platform for the foreseeable future.
- ☒ **Microsoft data integration and BI tools deployed for the Teradata DW environment.** As already mentioned, the DW represents only one of the components that make up a BI solution. Today, organizations have an option to utilize the Microsoft SQL Server Integration Services (SSIS) product for populating a Teradata DW with data from operational systems. They can also utilize Microsoft SQL Server Analysis Services (SSAS), Microsoft SQL Server Reporting Services (SSRS), and Microsoft PerformancePoint Server products as end-user query, analysis, and reporting or analytic applications that source data from the underlying Teradata DW. Specifically, Teradata developed a .NET Data Provider, and Microsoft enhanced SSAS with a new cartridge to support that Provider. This enables optimized connectivity between SSAS and Teradata. With the release of SQL Server 2008, Microsoft has enhanced its SSRS functionality to include optimized direct access to Teradata for ease of authoring formatted reports. SSIS has also been enhanced with a new free adaptor from Attunity that leverages the Teradata Parallel Transporter (TPT) architecture to facilitate high-speed loading of and extraction of data from the Teradata Warehouse. In addition, because many organizations use Microsoft Excel as one of their BI tools (90% of organizations report that spreadsheets are part of their overall BI solution), Excel Services deployed through Microsoft SharePoint Portal represent another opportunity to provide end users access to the information in a Teradata DW. Thus, Microsoft's entire BI technology stack can connect with the Teradata Warehouse to enable analysis, reporting, and collaboration either via Microsoft's Office System or via the Web.

## BENEFITS AND RISKS

There is potential for organizations that decide to select BI and DW technology from Microsoft and Teradata to benefit from the partnership between these two vendors, but organizations should also evaluate potential risks or challenges.

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### Potential Benefits

- ☒ One of the potential benefits is the performance of a joint Microsoft-Teradata BI solution. This includes the query performance, system availability, and scalability to handle growing data volumes and numbers of concurrent users. For example, in an organization looking to deploy online analytical processing (OLAP) cubes with a DW based on relational database management systems (RDBMS), the two vendors advocate relational OLAP (ROLAP) deployment of Microsoft SSAS with Teradata. This OLAP deployment option processes queries in the Teradata Database rather than a separate middle-tier OLAP server, thus taking full advantage of the database's high-performance characteristics. This approach eliminates the need to move data out of Teradata into the OLAP engine for query processing, thus saving both processing time and disk storage. The joint solution can also support separate multidimensional OLAP (MOLAP) cubes or a combination of ROLAP and MOLAP, referred to as hybrid OLAP (HOLAP), depending on enterprise preferences.
- ☒ The breadth of Microsoft's BI software portfolio and the depth of Teradata's DW software are additional benefits of a joint solution. Microsoft develops and markets reporting, query, OLAP, dashboard, scorecard, and spreadsheet technology, as well as portal, collaboration, and data integration technology. While Teradata is focused primarily, but not exclusively, on its DW product, the company provides various related services for high availability and archiving, industry data models, and DW deployment and support services from Teradata consultants.
- ☒ The vendors have developed software integration components, such as the Teradata .NET Data Provider, and have gone through the efforts of pretesting their components and providing reference guides on the results of such testing. These factors contribute to faster and easier deployment of technology and help to optimize the performance from the resulting BI solution.
- ☒ While historically about 10% of all Teradata DW deployments have been on the Windows platform, this number is expected to rise as both companies have made a tangible commitment to continue to collaborate in the BI market.
- ☒ Organizations looking to invest in Microsoft BI software can benefit from the broad availability of IT staff with Microsoft technology skills, including database developers and administrators and .NET developers.

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### Potential Risks

Since the BI and DW products offered by Microsoft and Teradata have been tested in the market by thousands of organizations for years, any risks for prospective buyers will depend primarily on both companies' level of commitment to the partnership. The risk factors include:

- ☒ **The commitment to resource allocation to maintain and grow the partnership.** Both companies need to continue to allocate development, customer support, and marketing resources toward the partnership. To date, all indicators suggest that both companies are committed to long-term technical and strategic collaboration. The reality of the marketplace, which includes a majority of organizations with BI and DW technologies from multiple vendors, dictates that there will continue to be technical integration between the BI products of two key players in the market.
- ☒ **Price/performance of any BI solution that includes components from both vendors.** There is no question that Teradata provides one of the most scalable DW solutions in the market and that Microsoft has one of the broadest portfolio's of BI software tools. Technology buyers should carefully evaluate the costs of any solution that combines technology from both vendors given the level of performance required for the BI solution. Organizations should evaluate BI solution component costs in the context of its performance and features. In addition, instead of looking only at the initial price, organizations should estimate the total cost of ownership of the BI solution. In a recent BI survey about the importance of various software factors during the BI software selection process, price ranked third behind reliability of software and aftersales support.

## CONCLUSION

IDC believes that a BI solution that combines DW technology from Teradata and BI technology from Microsoft on a Windows platform should be evaluated by organizations in need of business analytics software. As always, IDC encourages all organizations to conduct proof-of-concept evaluations, reference checks, and price comparisons when purchasing any technology.

## REFERENCES

- ☒ <sup>1</sup>*Competing on Analytics: The New Science of Winning* by Thomas H. Davenport and Jeanne G. Harris, 2007
- ☒ <sup>2</sup>*Super Crunchers: Why Thinking-by-Numbers Is the New Way to Be Smart* by Ian Ayres, 2008
- ☒ <sup>3</sup>*Leveraging the Foundations of Wisdom: The Financial Impact of Business Analytics*, IDC, 2002
- ☒ <sup>4</sup>*Worldwide Data Warehouse Platform Software 2007 Vendor Shares* (IDC #213671, August 2008) and *Worldwide Business Intelligence Tools 2007 Vendor Shares: Query, Reporting, and Analysis, and Advanced Analytics Markets Stable in the Face of Economic Turmoil* (IDC #212921, June 2008)

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