

WHITE PAPER

# Top 10 trends in business intelligence for 2006

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## Top 10 trends in business intelligence for 2006

### **BI was big in 2005, but what's ahead for 2006?**

The topic of business intelligence seemed to be everywhere in 2005, and justifiably so. Gartner's annual survey of CIOs found that BI was number two on their top ten list of technology priorities. A Forrester study similarly found that business intelligence had the top spot in companies' list of planned application purchases. And Merrill Lynch CIO surveys in February and September of 2005 revealed that BI retained a consistent place in the top three spending priorities.

Organizations clearly made some significant investments in BI in 2005, but did they achieve their goals? And will they continue to invest in BI in 2006? In this white paper we look at the top 10 trends shaping enterprises' approach to BI in 2006, which demonstrate that companies are making progress with BI, are becoming more mature in their BI approaches, but still have work to do to unleash the full potential of their data.

### **Trend #1: Information quality: at the heart of many business challenges and opportunities**

It used to be that poor data quality was the problem no company wanted to admit it had and certainly didn't want to contemplate solving on an enterprise level. However, we have seen more and more organizations come to the conclusion that information quality is the place to start solving some of their most pressing business problems. Poor information quality makes regulatory compliance difficult, impairs decision-making, and promotes inefficiency. Forrester predicts that the information quality market for software and professional services will reach \$1 billion by 2008, indicating that companies are taking these potential problems quite seriously and are investing in solving them.

A program for improving information quality must not only include traditional data cleansing and profiling, but also data governance, master data management, meta data management, data certification and auditability, and data protection. An information quality program is no small undertaking, but there are ways to address it iteratively and prioritize projects. Many organizations have found master data management (see Trend #2) the ideal starting point for information quality.

At a high level, there are three components to any information quality program. The first is measurement. A systematic discipline of measurement is where any information quality program should start. If you don't measure the quality of your data, you don't know what you need to improve. The second component is quality improvement, which must be an iterative process, not a one-time effort. And the third component is verification, which involves measuring information quality again. By capturing quality metrics at the beginning and end of the process, a quality service level agreement (SLA) foundation can be developed and used to enable data "certification" by downstream users. Data certification is further described in Trend #5 on regulatory compliance.

Specific components of an information quality program are discussed as separate trends below, including master data management, data governance, and data certification and auditability for regulatory compliance.

### **Trend #2: Master data management: building a common language**

Enthusiasm for master data management (MDM) has exploded over the past year. IDC predicts that the market for MDM will grow at a compound annual rate of almost 14% over the next five years. MDM can be considered part of the overall information quality universe, and as mentioned above, many organizations have chosen MDM as a good starting point for addressing their information quality problems. Master data is data that describes an organization's key business entities, like customers, products, and vendors. MDM ensures semantic consistency across organizational and business process lines and simplifies process and data integration.

MDM technology offerings from vendors like Kalido and SAP provide valuable help in managing master data. However, an effective MDM approach also needs to consider the organizational and process changes necessary to define, manage, and share key master data across the enterprise. MDM is a program, not a one-time project. An organization's master data constantly evolves, so MDM requires an iterative approach that continuously monitors, evaluates, validates, and creates master data. A program approach allows for phased delivery that builds momentum and prioritized projects that result in immediate business benefits. It also engages the stewardship and quality models so critical to empowering master data management.

### **Trend #3: Data governance: overcoming organizational barriers**

Data governance is the business function that provides a strategic direction for information quality efforts, sets standards and processes, and ensures that information quality goals are achieved. It addresses the important organizational dimension of quality improvement efforts through change management and the development of processes for achieving consensus. An effective data governance function must address six key dimensions: policy and planning, organization, standards, process and methods, monitoring, and communication. Without an effective data governance function, information quality efforts are unlikely to succeed.

*In an example of one successful MDM initiative, an international oil and gas company is implementing MDM as part of a larger, multi-year information management initiative. The company's reference data was managed and stored at the application level, creating localized variations in content and structure. Consequently, the company had difficulty integrating business information across applications and suffered from discrepancies in key reference data across the enterprise. The company's approach was to build its solution on one of the leading MDM tools, in this case the Kalido MDM tool, after conducting proofs of concept across several geographies. This project is succeeding because the governance process calls for data stewardship embedded across the business, illustrating the high-level support for MDM that includes a larger view of how information should be managed in the enterprise.*

Because data governance is so heavily focused on overcoming organizational barriers, one of the most important considerations is deciding who should be involved in the governance organization. Both business and IT must be represented, because it is the business that is usually best equipped to own and manage the organization's data. Representation across business units and divisions must be as fair as possible in order to deal with political dynamics and overcome organizational barriers. Some companies might find it useful to engage an outside consultant to help define the governance function. A third party can provide objectivity when needed and ensure that the organization keeps its eyes on the bigger picture with respect to information quality goals.

#### **Trend #4: Enterprise-level BI: striving for an integrated view of the business**

Achieving enterprise-level BI has been on many organizations' shortlists of BI goals for several years now. There is certainly still a need for it. Regulatory compliance demands an integrated view of data, merger and acquisition activity requires companies to rapidly integrate disparate data infrastructures, and executives are increasingly asking for a consolidated view of enterprise performance. Many organizations have attempted to develop an integrated, standardized view of the enterprise but have failed. Others have taken steps towards enterprise BI but have hit obstacles that have stalled their progress. A recent Knightsbridge survey of nearly 500 business and IT professionals suggested that 24% of their organizations had achieved some level of enterprise-level BI, focusing either on creating standards and performance metrics or innovating with real-time performance management.

Despite advances in data integration technologies, there are no easy answers to achieving enterprise-level BI because it also requires significant process and organizational changes. Companies striving to achieve an enterprise view of their data need to start with an enterprise-level BI strategy and architecture that reflects the input of both business and IT. They need executive sponsorship to ensure continued funding and put some muscle behind the organizational changes required to make enterprise BI successful. An iterative approach is key; "big bang" efforts to deliver enterprise-level BI will fail. Additional challenges in the arena of ERP-based data warehousing continue to hamper enterprise BI efforts. ERP data warehouses are a valuable part of an overall information management solution. However, when companies implement them without considering the enterprise's larger information needs beyond ERP data, they will run into issues including scalability, solution architecture constraints of ERP DW products, and narrowly focused systems integration efforts that delay the realization of enterprise BI efforts in the ERP DW world.

*One regional managed healthcare organization successfully overcame a number of challenges to implement enterprise-level BI. This organization knew that despite its market leadership, it needed to leverage data more strategically. An initial assessment revealed that IT and business were not aligned, no enterprise-wide view of data existed, and business analysts spent most of their time locating, gathering, validating and integrating data – not analyzing it. The solution for addressing these challenges was threefold. First, the organization created an enterprise information access division that is responsible for managing information as a corporate asset. Second, the organization developed an information access architecture that would allow it to extract maximum utilization and performance benefits from the future integrated data stores. Finally, the organization enabled new BI capabilities that leveraged industry best practices for healthcare analytics and for providing information externally to customers and partners.*

### **Trend #5: Regulatory compliance: driving BI investment**

Smart companies are looking at their regulatory issues holistically and determining how BI fits into their compliance solutions on an enterprise basis. Regulatory requirements vary from industry to industry, and while Sarbanes-Oxley is important, it's not the only compliance issue companies are dealing with. Regulatory compliance is therefore not a one-off solution to address one challenge, but a program that must fix deeper business and technology issues, including information quality and data integration problems.

Heavily regulated industries such as financial services are using their data quality initiatives to institute data certification processes for regulatory compliance. Certified data is data that has been subjected to a structured quality process to ensure that it meets or exceeds the standards established by its intended consumers. The ability to provide certified data—and even better, certified data integration and management processes—is a huge step in regulatory compliance efforts. Certified data enables companies to assign data ownership, satisfy regulatory reporting requirements, and improve their public image and shareholder confidence.

Information protection is another area where BI and regulatory compliance intersect. Companies are particularly concerned about ensuring that customer data is protected. It has become apparent to many executives that enabling a higher overall level of customer data protection requires a more coherent blend of business process and technology improvement.

Data auditability also plays an important role in regulatory compliance. Auditability enables an organization to reconstruct historical views of the business. It isn't a big challenge for a company to understand its data flows and transformations from yesterday or a week ago, but stretching the timeframe to three years ago makes the task significantly more difficult. An efficient mechanism for reconstructing historical views of the business is a huge asset to regulatory compliance.

*In one example of a large-scale information quality initiative that illustrates the use of data certification, a global transaction processor wanted to ensure that data derived from transactions had a persistent definition throughout its payment transactions' lifecycle. Basically, these definitions were to carry the same denotation to everyone in the organization throughout the company's environment at all times. This persistent definition of the data became the first level of certification. Subsequent levels of certification supported alternative user needs and were consistent with the lineage of the data's original definition. In this way, data and also process certification supported a variety of user needs in a standard manner. As part of an assessment of the demonstrated solution, the company was required to undertake a multi-part program to achieve a global implementation. The program required the company to address the global acceptance of business and technical definitions and naming conventions as well as the implementation of data quality measures based on critical business-based rules. Data governance also played a key role, with the company establishing a global organization that would recommend and enforce standards. This integrated program provided a scalable and efficient means of providing many levels of data certification, starting with a clear definition of data and consequently providing the definition and certification through the end of the business's transaction lifecycle.*

**Trend #6: Enterprise data transparency: keeping companies off the front page**

The need for what we call “enterprise data transparency” is closely related to the concept of auditability described in Trend #5. Enabling auditability leads to greater enterprise data transparency. Enterprise data transparency means that any piece of data within an organization can be easily tracked back to its source—in other words, the lineage of the data can be traced from a historical perspective. Enterprise data transparency means knowing that you are aggregating the right data and that the data is comparable and rationalized across all business areas. Data transparency is also about understanding how the data has been transformed and manipulated along its path through the organization.

One of the technologies that will evolve to support data transparency is meta data management, particularly within ETL applications. Currently, only IT workers use meta data tools. In the future, business users will also be able to access these tools to define and apply business rules and understand data lineage for themselves. Meta data tools are starting to evolve so that data can be manipulated the way business users want and need without intervention from IT.

**Trend #7: Actionable BI: turning volumes of data into usable insights**

With demand for corporate performance management increasing, organizations are beginning to recognize the disconnect that exists between their strategic goals and their key business activities. These organizations see the amount of information they have collected in data warehouses and other repositories and are now asking themselves how they can use it to close this gap and improve business processes and performance measurement. While they are gaining some valuable strategic insights from their BI solutions, they want to know how to use data to perform better on the ground on a daily basis.

This has led to an increased focus on developing operational metrics and determining how they can be aligned more closely with corporate performance management and measurement systems that are already in place. Oftentimes, there’s an organizational gap between the metrics and measurement systems that have been established at a corporate level and the data that is being looked at for each business unit, product line, etc.

Companies are also increasingly using predictive analytics to glean insights from the large volumes of data they have amassed. Although these tools still tend to be the province of statisticians and advanced analysts, they are gradually evolving to accommodate the needs and skill levels of the larger BI user base.

**Trend #8: Service-oriented architecture: drawing the connections to BI**

Service-oriented architecture (SOA) certainly seems to be emerging as one of the technology buzzwords of 2005 and 2006. SOA appears to hold a lot of promise in terms of both business and IT benefits. Forrester believes that successful SOA enables applications to serve as “a technology-based embodiment of your business,” offering a “unified environment for designing business processes, measuring business operations, and continuously and incrementally optimizing the business.” SOA’s benefits for the OLTP world are clear, but companies are also trying to understand its implications for BI.

SOA as a discipline is not data-centric; it does not address how services will affect the underlying data. BI, on the other hand, is a very data-centric discipline. Companies need to make the connection between SOA and BI themselves by modeling the relationship between services and data models. In other words, they need to have a data view of their services. SOA offers great potential benefits, but companies must not forget to address its impact on data and information management.

**Trend #9: “Rightshoring:” making BI development more efficient**

Offshore sourcing for BI development activities has gained fairly widespread acceptance. However, the enthusiasm for offshore has moderated over the past year or two. Some companies have sent their BI projects offshore, haven’t achieved the expected benefits, and are now looking to fix their approach. Others companies have heard about these mishaps and are being more cautious about going offshore. The focus is now on “rightshoring”: getting the right mix of onsite/offsite/offshore work that delivers high quality results at a lower price point while mitigating risk.

One best practice that can help companies evaluate and monitor their sourcing options is implementing analytics around IT and development. As costs rise in India and stabilize in North America, more firms will wonder about the tradeoff of sending projects overseas. They will increasingly question the value of what they’re getting from offshore. Applying BI to the problem will help companies understand the true costs and benefits of their sourcing choices. It’s important for companies to begin by establishing a sound development methodology and IT performance measurement program *internally* before attempting to measure offshore performance. If you don’t know how well your onsite IT organization is performing, you will be unable to make a meaningful comparison with offshore or offsite resources.

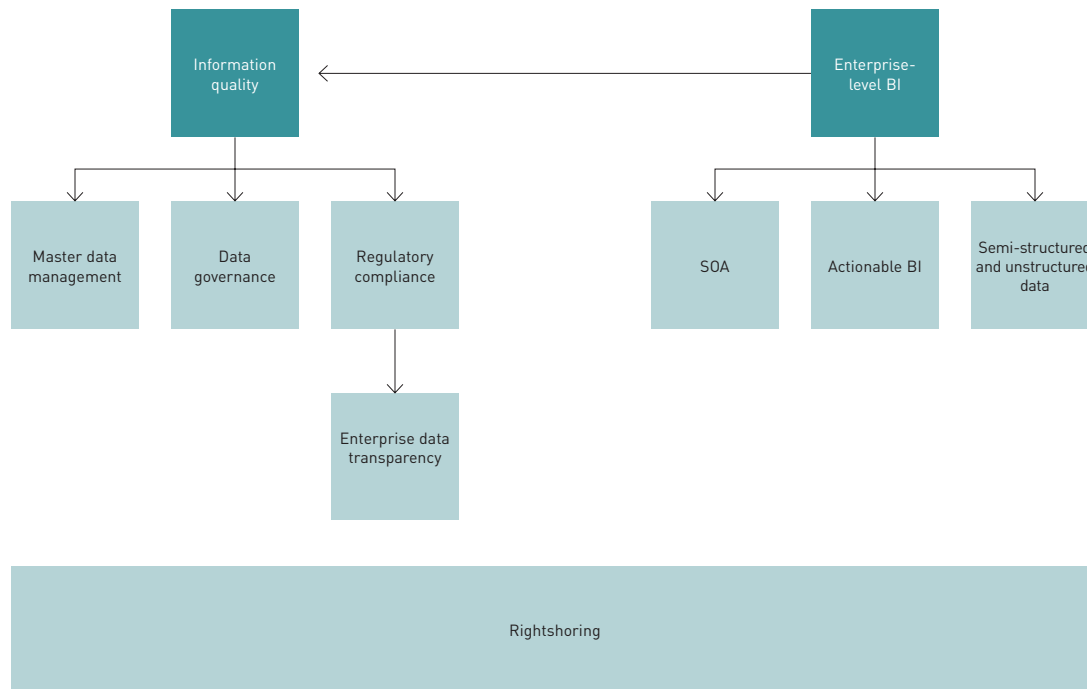
**Trend #10: Semi-structured and unstructured data: entering the BI universe**

Semi-structured data (data with non-repeating structures where attributes can be discerned) is the current battleground for integration of contextual information into the database environment. Master data enablers related to ERP suites are opening the door to semi-structured data integration into the structured (database) world. These emerging solutions provide richer contextual meaning in master file areas such as customer and product master file data. Additionally, content management tools have evolved to help bring unstructured information like customer affinity and preference information, supply chain quality dynamics, and customer data protection closer to the structured intersection than ever before.

The next challenge companies face is how to integrate unstructured and structured data so that it can be analyzed. Companies' BI and content tool stacks are generally quite disparate, and current solutions for bringing them together offer only shallow integration (e.g., a portal that displays both types in the same user interface) or require a lot of manual work on the part of the user to toggle back and forth between the two types of data. Gartner predicts that by year-end 2007, a framework and terminology will have emerged to help companies align their structured and unstructured data. So why is this a trend for 2006? Because companies are starting to recognize that this is an upcoming challenge. It's on their radar and in the next year leading-edge organizations will begin to consider the unstructured data integration problem.

### Conclusion

Most of our top 10 trends for BI in 2006 are interconnected. Two of the trends, information quality and enterprise-level BI, provide larger themes under which the other trends fall as related aspects or specific components. Enterprise-level BI and information quality are also highly interconnected themselves. The diagram below illustrates Knightsbridge's view of the connections among the top 10 trends.



While these interconnections demonstrate the complexity involved in meeting BI challenges, the good news is that BI technologies and methodologies have matured. Organizations can more easily find the help they need to prioritize their efforts and determine a starting point for tackling their next BI efforts, and learn from the mistakes and best practices of those who started before them.

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## About Knightsbridge Solutions

Fortune 500 companies and other large data-centric organizations turn to Knightsbridge for consulting services that address their most difficult data problems—problems rooted in massive data volumes or complex information challenges. Our clients rely on us to deliver actionable and measurable business results that inform decision making, optimize IT efficiency, and improve business performance.

Knightsbridge data solutions focus exclusively on the information management disciplines of data warehousing, data integration, information quality, and business intelligence. With proven methodologies, the best consulting staff in the industry, industry-specific business knowledge, and deep expertise in the tools and technologies for managing complex data environments, we deliver practical solutions that reduce time, reduce cost, and reduce risk. Knightsbridge serves clients in financial services, insurance markets, health and life sciences, retail and consumer products, high technology, manufacturing, telecommunications, energy, federal government, and other industries.

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