

# Creating the Information-Centric Enterprise

Modeling Information and Broadening Access  
to It Can Transform Your Business

White Paper

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R E S E A R C H

*Aligning Business and IT to Improve Performance*

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## The Search for Information Assets

In most businesses, information access is broken. It needs to be fixed – quickly.

Demanding “the right information at the right time” may sound like a cliché, but in truth businesses require it to operate. Observing their attempts to respond to the rapid and intrusive growth of globalization as well as intensifying competition makes it clear that organizations are largely ill-prepared to cope with the rapid cycle of demand for up-to-date information.

Needed information today often is dispersed in many technology systems, each of which is used by only some employees and managers. Typically, each of these silos of data was created by a business unit in response to a particular need or was built by the IT group as part of an effort to update the organization’s technology infrastructure. Each silo stores and presents information in its own formats, and more often than not IT specialists must expend time and effort to make any particular data set comprehensible to other applications and those who use them.

Therefore, not only does the truth consist of many pieces stored in multiple information silos and data marts that can’t communicate easily; the tools that people in the business units use to search for it have their own idiosyncrasies and limits. And despite illusions of progress, the situation is not getting better in organizations. Rather, it is getting worse as departments or IT teams adopt new software and systems that have their own quirks.

Individual users commonly extract information from data marts available to their particular business intelligence (BI) tool and import it into an application, usually a stand-alone spreadsheet such as Microsoft Excel, where they

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manipulate it along with other data and draw conclusions from the analysis. But spreadsheets are notoriously susceptible to errors introduced by mistyping or miscalculation. And because users store them on their own hard drives, multiple versions of the same analysis can proliferate, so users exploring the same issue may be working from different versions of that analysis.

The result is more reminiscent of the situation at the Tower of Babel than of a smoothly running process: Users cannot understand each other’s information, and each believes he or she has the correct information. In our research earlier this year on performance scorecards and dashboards, fully 37 percent of respondents with IT titles told us they believe that business users are dissatisfied with dashboards because they cannot integrate data from multiple sources. And 42 percent of business

respondents reported they are dissatisfied because they cannot drill down adequately to details of information.

Business users expect IT to manage the information infrastructure, but they don't want those management efforts to interfere with their own work, nor do they want to be told what tools to use. The lack of flexibility for business to model information assets has contributed to the siloed systems and scattered spreadsheets that now haunt IT. Without an agreed-upon method that provides standardized universal access to and business modeling of company data, departmental or functional barriers will endure, and existing investments in technology will continue to fail to deliver the business value they were supposed to provide.

It is little wonder, then, that a manager will ask, "Where is our information, anyway?" the answer is that it is dispersed throughout the enterprise in bits that in the aggregate tell the company what it is doing, how well and with what outcomes. The follow-on question then is, how can a company assemble "a single version of the truth" and put it in the hands of everyone who needs to know it?

The answer is not to undertake a mechanical process that merely moves data from one location to another or transforms it into a different format; not only is that inefficient, it fails to address the overall problem. Nor can most companies afford to tear down their heterogeneous architectures and replace them with a single new standard; even if that were economically feasible, it wouldn't be long before departments introduced new single-function systems of their own, recreating the complex and siloed situation yet again.

*A layered modeling approach can help the organization make optimal use of existing tools and data investments.*

Happily, a simpler, more cost-effective approach is available.

## **Model Your Information Assets**

That approach involves building on top of a company's existing technology infrastructure a system to empower information access and integration – one that can rationalize all company information and support its utilization, in whatever form that information is held and wherever it is stored. Such a system uses two levels of modeling that support a layer of business-to-data abstraction to make it possible for users across the enterprise to access whatever information assets they need when they need them.

Historically, organizations have taken an inflexible approach to data modeling, one that relies on a database and requires IT involvement. Today, though, business users need modeling that allows for live and interactive changes. This business-and-data-modeling layering approach can help the organization make optimal use of existing end-user tools and

back-end data investments, avoiding significant investments in a costly BI standardization project that after deployment still may not deliver the access to and modeling of information the business requires.

An information model is an organizational framework used to organize and facilitate access to information resources while providing the flexibility needed to support the business's need for customization. It defines contextually what a company's information is, using descriptive business categories such as "product," "customer" or "supplier" rather than the technical names often chosen by IT specialists, and helps manage and move it. The information model simplifies data access and improves the effectiveness of its utilization by making it easier for business users to understand the nature of the data elements residing in back-end storage environments such as a data warehouse or front-end applications such as a business intelligence system.

The information model contains a semantic layer that separates the business (sometimes called "logical") and data (sometimes called "physical") data. Working in the semantic layer, nontechnical users can create information labels that are meaningful to them, rather than having to figure out the nature of data based on its physical structure. This layering approach makes it faster and easier for a business to assemble combinations of territories into districts or products into new categories rapidly to assess changes needed to improve performance, as well as to navigate or adjust the model without impacting the physical storage of the data.

Using an information model conveys several important benefits. First, it allows organizations to define and name information

consistently, in ways that then can be standardized across the enterprise. This is in sharp contrast

*An information model can deliver performance superior to that of a database, an array of data marts, a spreadsheet or a BI platform.*

to the challenge of attempting to change names across many different BI deployments. The model thus can yield a single view of information shared by everyone in the company.

In addition, an information model eliminates the problem of data silos and nonconforming practices by users. In many departments, individual business users pull data via reports or BI queries and plug it into a spreadsheet to perform an analysis. This practice effectively moves data beyond the normative control of company standards and is a major source of data variance and duplication, which can impair the reliability of information and undercut management's confidence in it. By offering users, transparently, only the option of operating on or with the data where it resides, a centralized information model can enforce the consistency required to maintain efficient information use across the enterprise.

In our experience and observation, instances of varying BI tools have multiplied rapidly within organizations. Typically an operational function or a line of business will purchase a BI tool as a point solution that is associated with a single type of information – customers, for example. Meanwhile, another department may have its own tool of choice (or just of habit), which it uses on, say, product information. In fact, of course, these customer and product information types are then replicated into these BI systems. Each of these systems then is used to create different instantiations of the data and metrics, with no interoperability between vendors' systems.

This source of continuing information confusion can be resolved by using a common information model that rationalizes the conflicting definitions of data and metrics so the organization can use them more consistently.

## Establish Information Services

Deployment of the information model enables the IT infrastructure to provide information to the business as an on-demand service. Users can quickly assemble the information they need from various sources, regardless of the locations, systems and data formats in which they are stored.

The advent of service-oriented architecture (SOA) has begun to drive improvement in the adaptation of connecting technologies. Leveraging an SOA approach is critically important in the area of information to provide more agility to business, enabling the rapid changes needed to meet evolving information requirements.

*An information model can function as a bridge between business users' BI tools and a variety of data assets.*

In the technology stack, the information model is managed on a server that exists between BI systems above and the physical data sources below. In this instance, it functions as a bridge between business users' BI

tools and the variety of data assets stored in, for example, data warehouses, enterprise resource planning (ERP) and customer relationship management (CRM) applications, and legacy systems.

The information model defines and correlates relations among data types. Designers create the semantics within the information model, then map it to the physical data sources. They build a model, define where the data sources reside and build a comprehensive information-to-data map that connects the sources to the information model.

Once the information model is operational, it can be deployed as a service across the enterprise to support BI and other applications. A model that is optimized to access data can support run-time query processing, which provides dynamic access to data for users through their BI tool of choice,

or even an Excel spreadsheet. By processing queries in run-time – that is, while the data is being collected – it can gather and deliver the data on the fly. Users seeking business information can collect it quickly from various sources, regardless of the system or application in which it resides.

An information model can deliver performance superior to that of a database, an array of data marts, a spreadsheet or a BI platform that is not optimized for query performance across the many data silos that users need to access dynamically. Making changes to the information model is simple, as it can be managed centrally and easily modified or adjusted, either by IT or by business-side employees who need to configure key performance indicators (KPIs) or other performance metrics.

Since the information model is portable, IT can deploy run-time servers across the enterprise. This approach of “design once, deploy many” ensures consistency of data and usage, and for IT staff it dramatically cuts development time. As a result, IT can deliver projects sooner and respond to new requests faster.

IT organizations constantly are challenged to satisfy users’ requests that they deliver business data faster, and the ability to design and deploy information models that can serve existing BI tools or spreadsheets can help reduce the backlog on data requests while maintaining the data governance needed by the business. Our research has identified connecting operational data sources as the top challenge in deployment of dashboards and scorecards. This issue can be addressed through an architectural approach to information services that includes modeling.

From the enterprise perspective, this strategy allows IT to design an architecture that accommodates existing systems and applications while allowing for the addition of new ones. It establishes data consistency among systems – an attractive and considerably faster deployment alternative to multiple projects, which produce new legacy silos that cannot interoperate with others. Of equal importance, it allows a central point of data governance and a consistent approach to management of the business’s information.

## **The Business Case for Live Information Modeling**

Information access challenges are not easy to address. While the volumes of data continue to grow in organizations, the flexibility to access that data has not kept pace. For example, data marts have proliferated, but connectivity between them has not. But connecting them together in a virtual information network – a task that can be readily accomplished today – can harness the value of those existing investments.

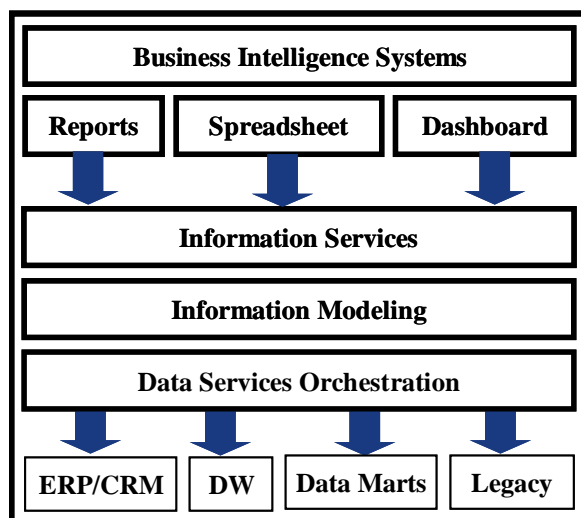
*The IT infrastructure becomes more responsive to the business’s needs for prompt delivery of data.*

Of course, no technology solution is likely to gain enterprise-wide support just because it makes life easier for the IT group. Information modeling offers sizable benefits for business in the form of improved processes and performance through having rapid access to information. In general, designing and deploying an information model capable of run-time processing can protect existing technology investments, improve performance and access to data and reduce the time it takes to provide access to new data sources. A business case for this technology investment should be based on reducing or avoiding future costs while enabling specific new benefits. In addition, realizing the untapped value of existing investments should not be underestimated.

As a BI vendor-neutral technology for BI, the information model helps companies leverage existing investments in BI, data warehouses and marts as well as ERP and CRM systems by freeing data from the constraints of particular systems. The IT infrastructure becomes more responsive to the business's needs for prompt delivery of data. This improved, more consistent information access can help support existing BI tool investments and eliminate the rush to undertake standardization projects merely for the sake of data consistency.

Short-cycle concerns should not force organizations to accept the static and brittle nature of existing BI systems – the situation that provokes usage of and reliance on spreadsheets. Ventana Research's 2006 report "Performance Scorecards and Dashboards: A Performance Alignment Research Study" indicates that more than two-thirds of dashboards do not allow the most basic of capabilities: being able to drill down to details, even though technology for that has been available since the early 1990s.

For business users, an information model expands the range of their BI tools by allowing them to model and utilize commonly defined information across those tools. They can access more data and perform better because they work on the data directly and immediately. This straightforward approach can maximize the value of existing BI investments and prevent companies from purchasing unnecessary new ones. In reality, organizations will never consolidate completely and standardize on one BI tool – the costs are too high and time is too important. But simplifying and streamlining your information architecture is easy to do, as the diagram to the right demonstrates.



This approach supports efforts to assure information quality, an issue that matters to everyone. It is a concern indirectly for top executives and strategists since that information

is the foundation on which they base decisions, and directly for front-line workers and business analysts as the raw material they work with. For the finance group, assured quality of information will enable it to demonstrate fiscal transparency and adherence to laws and regulations to regulatory agencies.

It is important to finance and IT management that a model assists in data governance. It simply isn't possible to govern data assets without having a unified view of them based on common definitions, which the model provides. Ventana Research's recent research on master data management indicates that 61 percent of organizations spend more time reconciling data than analyzing it and 45 percent of organizations cannot determine which spreadsheet has the correct data. These startling research findings should support directly the business case for a much-needed improvement through information modeling.

Another key benefit, as the term "model" suggests, is that an information model is reusable. As noted, a "design once, deploy many times" approach allows IT to apply the model repeatedly, modifying only the specifics for each particular project. For example, designers could create an information model for sales organizations and their customers across territories, districts and regions. Later, instead of starting from scratch, they could derive from the master information model a new project for, let's say, analyzing customers or launching new campaigns. This reuse of existing information models can contribute significantly to the cost avoidance or reduction requirements for any new technology investment business case.

*According to our research, 61% of organizations spend more time reconciling data than analyzing it, and 45% of organizations cannot determine which spreadsheet has the correct data.*

In all these ways, information modeling helps companies gather a single version of the truth and apply it confidently to make sound decisions and plan for the future. Instead of merely refining your existing approaches in data warehousing and BI, step back and determine how you actually can support your business's needs for information while protecting your existing investments. The opportunity to institute live information modeling in your organization is available today. It is your job to address the risk to your business and IT organizations that failing to adopt it would pose.

## About Ventana Research

Ventana Research is the leading Performance Management research and advisory services firm. By providing expert insight and detailed guidance, Ventana Research helps clients operate their companies more efficiently and effectively. We deliver these business improvements through a top-down approach that connects people, processes, information and technology. What makes Ventana Research different from other analyst firms is our focus on Performance Management for finance, operations and IT. This focus, plus research as a foundation and reach into a community of more than 2 million corporate executives through extensive media partnerships, allows Ventana Research to deliver a high-value, low-risk method for achieving optimal business performance. To learn how Ventana Research Performance Management workshops, assessments and advisory services can impact your bottom line, visit [www.ventanaresearch.com](http://www.ventanaresearch.com).