Five Ways To Tame the Chaos of Corporate Data

Enterprise reporting delivers consistent information to more users

White Paper

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Introduction: Information Out of Reach

In many organizations, information is the problem as well as the solution. The availability of desktop spreadsheets, front-office customer relationship management (CRM) systems, enterprise resource planning (ERP) applications and databases can mean that business users have access to more data sources than they can use effectively. How this chaotic information environment came to be is no mystery: Corporate departments or regional offices implemented each of these "point" information assets independently to address their own needs, with little concern for sharing information across the organization. The result is "silos" of data: When each system controls and reports largely on just its own set of data, organizations cannot gain complete and timely views of everything they know about customers, products, suppliers or other objects of interest. And the many different, often incompatible formats and ways of handling data create a management headache for IT staff.

Reporting is business's primary tool for turning raw data into understandable information, but it, too, is held back by the walls of silos. Reports present selected data formatted in a number of ways, including as graphs and tables and in text. Web-based reporting can deliver the data inside portals for distribution across company intranets. Many reports are e-mailed automatically to "subscribers" who may be employees, partners or even customers. However, if each reporting system is tied to a particular point application or database and the data isolated inside it, the reports may conflict; at best, they provide merely slices of information, forcing users to move from tool to tool in a time-consuming effort to get the full picture.

The information inefficiency that is the inevitable result of siloed systems often is compounded when business managers rely primarily on spreadsheets for data analysis, collaboration with colleagues and presentation. Once data leaves its source system and is manipulated in a spreadsheet to fit the planning, forecasting and budgeting needs of a particular manager's line of business or function, synchronizing the information with other applications and systems of record becomes exceedingly difficult. As a result, line-of-business managers end up making decisions based on partial or even erroneous information. In addition, spreadsheet systems do not provide the drill-down capability that is essential to management decision-making. Regulations such as the Sarbanes-Oxley Act also demand transparency and demonstrable integrity of data.

ERP, CRM and other packaged applications streamline many business tasks and processes, but they also create information silos. The several data models, definitions and interfaces that are hallmarks of the typical organization's information infrastructure force IT to reconcile the technologies to enable data access and analysis. Querying disparate data marts and other databases presents similar challenges.

But technology can be a solution as well as a problem. Enterprise reporting offers a reporting platform that is separate from individual applications and data sources but can access them all, and thus can deliver the integrated information managers

and operational employees need to improve business performance. Enterprise reporting also lets IT take five steps to overcome major barriers that develop when organizations are limited to spreadsheets and siloed reporting tools.

Step 1: Deliver Information, Not Just Reports

Managers and front-line employees really want information, not reports. But in most companies, the one still requires the other. The demand for information thus has led in most companies to a proliferation of reports generated by point solutions – reports that may well contradict one another. For example, a report from a financial management system might contain data that conflicts with a CRM report's sales figures. And since the two systems likely use different data formats, aligning them likely will require manual effort. This sort of inconsistency across hundreds or thousands of reports creates an opportunity for fraud and costly errors. Moreover, since reporting tools in point applications tend to have limited functionality, users are more likely to reach out to IT to customize reports to suit special requirements.

Organizations should focus on delivering information, not just increasing the output of reports. This is increasingly becoming possible. Now that business intelligence (BI) and reporting software are maturing, proving their scalability and being packaged with information access technology, an alternative is emerging.

Enterprise reporting, which offers a consolidated package of BI and reporting tools to replace (or, through standard interfaces, incorporate) all the individual point solutions, can give organizations a platform on which to build a consistent, information-centric alternative to the chaos of spreadsheet data and narrow, inflexible reports. With this approach, managers rely on an independent reporting platform that's not coupled to siloed data sources and point applications. Rather than force users to switch among tools to produce and interact with different styles of reports keyed to the data sources, an enterprise reporting system brings all query and reporting processes into one platform and one view. Advanced enterprise reporting systems are often packaged with a common business model that underpins all reporting and insulates the business from the complexity of the information integration infrastructure, which frequently includes software tools as well as custom, manually coded point-to-point routines.

Large organizations may already have business analysts and some executives using BI reporting tools to access and analyze the contents of data warehouses or data marts. IT management in these companies should consider the potential of an enterprise approach. The most obvious benefit is to eliminate software that offers redundant capabilities so that licensing and maintenance costs decline. But other reasons are important as well. First, departmental and line-of-business users ultimately will need IT's support as they reach scalability limits with point solutions and desire more BI capabilities. Second, if they don't already demand access to corporate data sources, those users will, and IT doesn't want to write numerous custom routines to provide it. Third, in today's regulatory climate, data security and accountability are major concerns; an enterprise solution gives IT a central framework within which to exercise proper data governance.

Last but not least, strategic goals such as improving customer satisfaction, managing business performance and streamlining end-to-end processes span functional areas of the organization; they require participation by – and data from – numerous divisions and departments. Information has to flow, not stop at technology barriers. Enterprise reporting can enable IT to take an information-centric approach that focuses on easing bottlenecks that impede employees as they try to access and share the data most vital to fulfilling strategic goals, objectives and initiatives.

IT can establish the enterprise reporting platform as the BI hub for information flowing through a service-oriented architecture (SOA). This technology holds promise as a less expensive, more standard way of integrating applications and data sources. SOA can be a comprehensive framework to support BI services, using a modular, plug-and-play approach to provide data access, analytics and visualization. According to a recent survey by Ventana Research entitled "Service-Oriented Architecture for Business Intelligence: Trends, Needs and Practices," 63 percent of IT managers expect BI services to help them improve their responsiveness to business needs. A large majority of respondents cited customer operations as the area where initially they will focus their SOA for BI development efforts.

One example of how SOA and BI can come together is in a portal or dashboard interface. Developers can personalize the BI services and event alerts to be included in the dashboard, while the SOA architecture shields users from the details of securely accessing and interacting with the actual data sources. The enterprise reporting platform supports the dashboard by handling the consolidation and integration of different styles of reporting, alerting and performance metrics so users don't have to switch between dashboards or portal interfaces to perform different tasks.

Step 2: Extract Value from ERP

Enterprise resource planning systems have been widely used for about 15 years. In that time, ERP implementations, in tandem with other information technology, have reduced the cost of functions such as manufacturing and financial management. While many organizations also retain separate software packages or in-house developed applications for CRM, human resources and other functions, ERP has been the focus of a major effort to consolidate transaction-oriented applications such as supply chain management, financials and manufacturing by turning them into modules that connect into an application integration framework. Now organizations are trying to expand ERP by using business process management (BPM) software to modernize procedures that until now have been based on paper forms and documents.

According to a recent study by Ventana Research titled "ERP Innovation," organizations are still waiting to realize the full business value of those systems. Only about half of survey respondents said their ERP systems have improved

insight, visibility and internal control. Just four out of 10 said the systems have driven down operational costs or optimized business processes. Thus, a major priority in implementing BI and enterprise reporting systems should be to improve the return on investment in ERP; this can be done by using more effective reporting to improve its value as an information asset by making it available to a wider population of stakeholders.

So a second move toward establishing a more information-centric enterprise is the often difficult job of extracting data from multiple ERP instances (as well as other applications such as CRM). Traditionally, partners of ERP vendors have provided more substantial tools for BI, reporting, data integration and data warehousing than the vendors themselves. While the ERP providers' own software for these areas is maturing, their primary capability remains working with data produced and stored in their own systems, with less focus on integrating data from heterogeneous ERP, CRM and other applications.

While ERP has become synonymous with consolidation, in truth, its modules typically are not seamlessly integrated; frequently, ERP installations are collections of old and new technologies, some of which are linked to legacy data sources. To improve integration, Some ERP providers are shifting their suites to run on SOA and are rewriting interfaces, adapters, portals and the applications themselves to adhere to industry standards for Web services and processing based on the XML standard. But even as they try to use SOA to standardize their portfolios, the major ERP providers continue to acquire related applications and other software, which makes integration an ongoing challenge. It also means that what constitutes an ERP system is not the same in all organizations.

According to our research, users do not find that point reporting systems tied to ERP applications are doing a good job of providing needed information. The study reports that most companies use ERP data to support reporting. However, only 11 percent of those surveyed said their ERP system captures all or most of the nonfinancial information their companies need to monitor employees' key performance indicators. As they always have been, ERP sources remain critical for financial reporting and the accounting close; however, few respondents said the systems are important for management reporting. We attribute this result partly to the sheer difficulty of culling the right data from these systems – a problem that is exacerbated by the fact that complete ERP portfolios often include disparate data sources.

Enterprise reporting can help organizations get at this data and use it in valuable new ways. As an application-independent platform that uses a single architecture to access and transform data from a variety of sources, it enables organizations to gain more management insight from ERP data by contextualizing it and juxtaposing it to data from other systems. Combined with data from other sources, the systems acquire the potential to deliver greater return on investment and add dimension to management's understanding of business processes and events.

Step 3: Put Databases to Fuller Use

Similar underutilized value resides in database management systems (DBMSs), the core of business information systems. Historically, DBMS implementations have focused primarily on working with transactional applications to get data into those systems, where it can be managed securely. More recently, with the development of data warehouses, data marts and BI, the data management function has shifted attention to getting data back out of the database; this is the central concern of this third step in bringing consistent information to a wider range of users. Enterprise reporting, which specializes in getting data out of systems and presenting it effectively, can accelerate an organization's progress by establishing a platform dedicated to the task.

Despite that fact that the DBMS software industry has consolidated over the years, database systems in actual use remain numerous and varied. When BI and reporting are tightly integrated with one database system, the tool implementations can require significant adjustment to work with other sources. Data warehousing addresses this problem by loading data into a specialized store designed for use by BI, reporting and analytical tools. However, even organizations that have established an enterprise data warehouse often have data marts and other sources that hold needed data as well. And most organizations haven't quite made it to a truly "enterprise" data warehouse; more often, they have several data warehouses or large data marts, each dedicated to a single business function, such as marketing.

A DBMS is concerned primarily with access and storage (as are DBMS vendors to a large extent). With database sizes heading into the terabytes, hundreds if not thousands of users to support and exacting requirements for high availability, reliability and security to be met, data management is one of the biggest challenges facing organizations. Thus, another risk of coupling BI and reporting too closely to single data sources is that IT begins to view these matters primarily as data management challenges. They have an aspect of this, to be sure. But to users, BI and reporting are about gathering, organizing and presenting data in the most effective way possible so they can understand the information quickly and use it to impact business actions and processes.

In this step, the goal is to establish an enterprise reporting platform that can tap into multiple data systems running with heterogeneous DBMSs and normalize the data for use in business analysis and decision-making. In this environment, getting data out becomes the core competence, focusing attention on the ability to gather, organize and present data. Thus, to avoid silo constraints and to optimize the flow and use of data across the organization, an enterprise reporting system, not the individual database systems, should be the platform upon which to build extended BI functionality.

Step 4: Use Consistent Information To Overcome Challenges

Mergers and acquisitions, globalization and years of independent technology purchases by departments have IT overseeing a hodgepodge of old and new applications, databases and integration technologies. Enterprise reporting can help organizations establish a consistent information resource that doesn't have to be rebuilt with each new ripple in the data pool. "A single version of the truth," much desired yet elusive for users of point reporting systems and single data sources, becomes attainable with an enterprise reporting platform.

Often, establishing an enterprise reporting platform serves as a catalyst that persuades an organization to address data inconsistencies and quality problems that beset the entire information infrastructure. These problems often become apparent when, for enterprise BI and reporting initiatives, organizations try to collect data from ERP, CRM and other siloed applications, as well as departmental data marts and databases. However, remedies must be applied more widely than just for BI and reporting, so that organizations address problems at the source level and consider the entire process of how data comes into the organization and is processed. Once an enterprise reporting system is in place, it can help IT staff see how to address reconciliation and data quality issues; however, this should be done as a separate initiative that does not slow down the move to enterprise reporting. With that platform, companies can immediately gain business value by combining information from multiple silos while IT crafts a strategy to address broader issues of data quality.

An enterprise reporting platform should give users the ability to access heterogeneous data sources through a common business view; the platform should offer a single metadata model that creates consistency among data descriptions and structures so users can effectively access, analyze and report on data coming from multiple sources. With this platform, the organization can deliver needed information immediately to business users, while positioning itself to identify and resolve the array of information management challenges it faces now and will face in the future.

With one platform supporting ad-hoc queries, dashboards, managed reports, alerts and specialized reporting formats, users can focus on the information they need for business decision-making. Enterprise search, an increasingly popular way to find reports and other data, is faster and more precise when supported by an enterprise platform already dedicated to managing access to heterogeneous sources.

In this fourth step, establishing a single version of the truth should be a goal, so that information doesn't degrade as users move from one kind of report to another, or when they drill down into heterogeneous data sources through online analytical processing (OLAP) tools. An enterprise reporting platform can be an important breakthrough in the effort to eliminate the pitfalls of information dysfunction for business users.

Step 5: Relieve IT's Burden by Empowering Users

Enterprise reporting can free IT staff from the remedial work of providing access to incompatible data in silos. Point reporting solutions, BI tools optimized to work with single data sources and a multitude of users who rely on desktop spreadsheets for planning and other forms of analysis add up to a huge burden on IT management and staff. Without an enterprise approach, IT has to do custom work to solve information integration challenges, and over time these programs become too numerous and the infrastructure becomes too expensive to maintain. If this unproductive cycle continues, users, frustrated with delays from IT, purchase more point solutions, further worsening it, and continue to make decisions without the benefit of consistent, comprehensive data. Those decisions can have detrimental consequences in terms of confused customers, misfiring supply chains and lost sales opportunities.

IT needs to unclog the information infrastructure so that users gain a reliable and timely enterprise view of information. Establishing an enterprise reporting platform can free IT to turn the organization's ability to access, analyze and share information from a costly maintenance burden into a competitive business advantage.

Once an enterprise reporting platform is in place, the organization will find significant benefits. The effort to establish this facility will undoubtedly reveal redundant reporting efforts. Instead of having perhaps hundreds of different reports addressing much the same needs, an enterprise platform can reuse a smaller number and share these reports with more users. By uncovering duplication, IT management will see how to reduce the number of software and service licenses and save money. And with fewer tools being used, training will be simpler and its costs will go down; the organization can concentrate training on use of the enterprise reporting platform.

Another major goal in this step is self-service; IT needs to identify user requirements and then enable reporting technology allowing users to access data and author and distribute reports themselves. As duplicate reports are weeded out, IT can focus on managing components (queries, report formats and other objects) so that users can apply them more than once. An enterprise reporting platform can present well-managed services and components in drag-and-drop form to give users choices in how they want to assemble, schedule and access reports – as event notifications on mobile devices, for example, or as personalized content on the desktop. The more self-service that is available, the less handholding IT need do to for users to be able to get the reports they want without exposing data sources to unexpected queries.

Enterprise reporting unifies all the tools for BI, analytics and performance management, which is how organizations apply information to drive continuous improvement throughout the organization. Ventana Research defines performance management as managing the effectiveness of business activities and initiatives to a common set of goals and objectives. Metrics and scorecards that are vital to

performance management can't be disconnected from BI and reporting functions. Supported by a common business model in the platform that underpins all reporting and insulates the business from changes to the information integration infrastructure, an enterprise reporting platform can unify performance management with BI and reporting.

As the value of information continues to rise, business and IT leaders need to come together to address today's problems and plan for a better future. Reporting solutions tied to single sources may meet tactical goals, but they can't measure up to the challenges that face organizations as a whole. An enterprise reporting platform will endow users with confidence in their data, while lowering maintenance and licensing costs through the elimination of redundant reports and programs. In this way, the whole organization wins.

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