

April 2007



**Master data management: looking  
beyond the single view to find the  
right view.**

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**Introduction**

The only constant in business data is constant change. On average, 14 percent of the nation’s population changes addresses each year,<sup>1</sup> rendering customer information in countless databases obsolete. And that’s just for starters. These same customers change jobs, swap credit cards, open new bank accounts, get divorced, make new purchases, change phone numbers, make payments and get married. This constant change holds true as well for patients in healthcare, citizens in government and prospects tracked by the salesforce.

If changes such as these are not accurately reflected in an organization’s data records—and pushed out to all the systems and processes that depend on those data records—the organization can pay a high price.

Incorrect or duplicated customer information costs corporations more than US\$600 billion annually.<sup>2</sup> For example, in 2007 alone, poor quality data will cost the insurance industry US\$14 billion and the banking industry US\$27 billion in operating costs.<sup>3,4</sup>

The problem is widespread. Roughly half of 750 companies surveyed in late 2005 reported incurring losses, problems or costs due to poor quality data.<sup>5</sup> Over the last decade, organizations have come to realize that they need a single view of the master data on which their business, and their business decisions, is based. This master data includes a heterogeneous mix of customer information, product information, agreements and accounts, vendor and supplier information and inventory information—all generated and currently stored in line-of-business systems throughout the organization.

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There is, however, a significant flaw in the “single” view approach to managing master data. Given the organic way in which most organizations’ information systems and IT infrastructure have grown to meet changing business needs – not to mention the reality of information silos, legacy systems and multiple information architectures – a literal single view of master data has proven virtually impossible to achieve. As organizations reorganize, merge, acquire new business units and grapple with new security and compliance regulations, master data management problems are only becoming more pressing.

For many organizations, the answer may lie not in master data aggregation (the “single” view) but rather in master data management – which offers a multiview approach to achieving the “right” view. By using a unified understanding of data to implement a series of changes to architecture, systems and processes that allow for automatic collection, dissemination and validation of the data stored in various places, organizations can help assure that their master data is consistently presented in the right view, to the right people and processes, at the right time.

**Understanding the issues**

In a recent survey, more than half the companies participating said that designing business processes that utilize real-time data would be a strategic priority for the coming year. Other priorities included enhancing customer service and customer satisfaction.<sup>6</sup> Proof that organizations in all industries, all across the world, are grappling with data management issues. The more essential the data is to the core of the business – what is called master data – the more crucial a viable solution becomes.

***Ineffective management of master data has both day-to-day and longer-term ramifications.***

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The day-to-day ramifications of the lack of effective management of master data can be costly, including:

- *Reduced customer satisfaction due to incomplete, out-of-date or incorrect data*
- *Inability to bring new products to market quickly*
- *Depleted or overstocked inventory*
- *Wasted postage due to incorrect addresses*
- *Loss of revenue due to billing errors and lost opportunity*
- *Lost manufacturing time due to inaccurate parts ordering*
- *Regulatory fines due to noncompliance.*

Perhaps even more costly are the long-term ramifications of ineffective management of master data. These include the inability of the organization to respond quickly to changing business requirements, increased risk and higher than necessary IT costs. Also at stake is the organization's ability to maintain its customer base and competitive edge, due to inaccurate or unavailable information.

***What is master data?***

Master data is data that describes one or more attributes of core business entities such as customers, suppliers, locations, products and inventory.

***The compartmentalization of data within incompatible, siloed systems makes a "single" view of master data virtually impossible to maintain.***

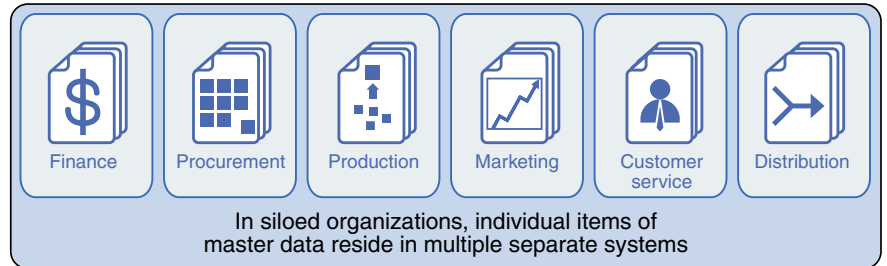
**The problem with silos**

A major contributor to many an organization's master data woes is the information silo. In many organizations, master data is distributed across numerous self-contained, or siloed, systems. Customer service has its system, manufacturing its system, procurement yet another system. Even within a single business unit, there can be numerous front- and back-office systems that contain data critical to the business, but do not normally share that information with other systems. It is this compartmentalization of data within often incompatible systems built on various architectures that makes a "single" view of master data virtually impossible to create and maintain.

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***Current data management solutions—including data warehouses and customer relationship management solutions—were not designed to manage master data and have critical limitations.***

**Current solutions have their limitations**

In search of the elusive “single” view of their master data, organizations have implemented a number of attempted solutions, many of them focusing on the customer data piece. Unfortunately, none of these solutions has been able to provide the automated, consistently managed master data repository which has been the ultimate objective.

**Customer relationship management (CRM) solutions**

CRM solutions are a crucial part of many organizations’ data management toolsets. What CRM solutions were designed to do—manage specific customer-facing processes such as sales, customer service and marketing—they do very well. As a method for managing the totality of an organization’s master data, CRM solutions fall short of an effective solution. CRM solutions are reliant on the preexistence of good master data in order to be effective. CRM solutions are not designed to manage master data and customer transactions across all systems in an enterprise; they are designed to use the information they receive from other systems. Further, because CRM databases are closely tied to the CRM solution they support, these databases are not easily separated to become master data.

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***Data warehouses, transaction systems, customer information files, and operational data stores have their place in a comprehensive data management solution, but they were not designed for master data management or enabling a “right” view.***

**Data warehouses**

Data warehouses can be extremely efficient holding systems for data. Unfortunately, data warehouses often contain cleansed data that is used for analysis and reporting, making the warehouses a good complement to a master data management solution, rather than being the solution themselves. Current implementations of data warehouses also tend to be siloed, leading to the same data-sharing problems discussed earlier. Finally, data warehouse solutions provide only limited data management capabilities and are dependent on other systems for data updates.

**Transaction systems/suite**

Enterprise resource planning (ERP) solutions, designed to manage specific application processes, are also consumers of master data rather than master data management solutions. They are not designed to provide access to their data from other non-ERP systems. In addition, ERP solutions can make the master data problem worse by storing data items multiple times (in each order transaction for a single customer, for example).

**Customer information file (CIF) and operational data store (ODS) solutions**

CIFs and ODSs are frequently implemented to provide better customer data to customer relationship management and other customer-facing systems. They do the job of managing master data more comprehensively than either CRM systems or data warehouses, but they still fall short of the final objective. CIFs and ODSs do not manage complete customer relationship data and cannot easily accommodate all product lines and channels. They also do not maintain new customer data such as information about relationships, interaction history and privacy preferences. Finally, CIFs and ODSs usually have view-only functionality, so information can be seen, but there is no service or process to allow updating of the underlying data.

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***Organizations now have the option of looking beyond the “single” view of master data management to find the “right” view—the right information delivered to the right place at the right time.***

As discussed, each of the above solutions holds only a piece of the answer to the master data issue. As master data becomes ever more heterogeneous and complex, these solutions fall farther and farther behind. In particular, none of these options can manage—or even store—the unstructured data such as documents and images that are becoming an ever more critical part of day-to-day business. Further complicating the situation for many organizations are the limitations inherent in IT infrastructure. Most current solutions are designed to manage low-velocity customer and product data in a single mode—either batch or online—and are not flexible enough to accommodate the dynamic master data requirements for adding new channels and sources of information.<sup>7</sup>

**Master data management: the “right” view of master data**

An alternative solution to today’s data management issues is surprisingly simple in concept. Organizations need to expand their thinking beyond the “single” view to find the “right” view—the right view of the right information, delivered to the right people and processes at the right time. This is what master data management (MDM) has been designed to do.

***What is master data management?***

Master data management describes a set of disciplines, technologies and solutions used to create and maintain consistent, complete, contextual and accurate business data for all stakeholders (users, applications, data warehouses, processes, trading partners).

The key to master data management is “management.” Master data management does not create new data or new data silos. Rather, it provides the method by which an organization can effectively manage the data already resident in disparate systems. Master data management uses the systems already in place,

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drawing up-to-date information from each of those systems and providing the technology and processes that automate and validate the accurate, timely dissemination and analysis of that data across the entire enterprise.

Some of the attributes of a master data management solution include:

- *Consolidation of customer and other knowledge and insight from existing silos to an enterprise level*
- *Sharing of data across all systems as a set of customer-centric business processes and services*
- *Common master for customers, products and suppliers to speed data entry, retrieval and analysis*
- *Support for multiple users of data, including the ability to limit certain users' ability to add, update or view processes which maintain the master data*
- *Integration of product information management, customer relationship management, customer data integration and other solutions that provide access to analysis of master data.*

***Because a “right” view master data management solution operates separately from—but in conjunction with—an organization’s other systems, it can address all the different uses of master data.***

Because the methods and processes associated with master data management operate separately from an organization’s line-of-business and other systems, they have the ability to provide not just retrieval, updating and dissemination of data—they also address all the different uses of master data. Master data management supports operational uses by integrating data with the operational applications in real time. Master data management supports collaborative use of master data by providing an authorizing process to create, define and synchronize that data. Finally, master data management supports analytical use of master data by proactively pushing data to analytical applications via an event management tool.



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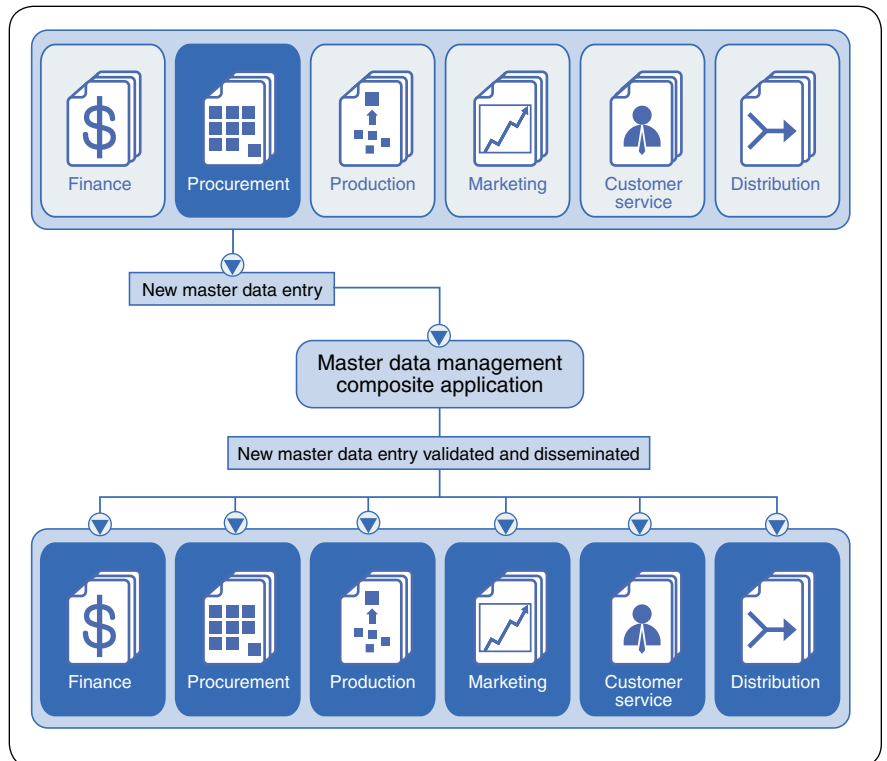
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***The core of the “right” view approach to master data management is the composite application which facilitates the collection, validation and dissemination of up-to-date master data to and from all the organization’s other applications.***

**Master data management at work**

With a single, integrated master data management solution, an organization can provide each of its business units with a view of master data that is up-to-date, accurate and customized to the special needs of the viewer (the right view to the right place at the right time). A call center representative, for example, can be presented with one view of the master data while the Web self-service channel is provided with another. Relevant procurement information can be automatically presented to the manufacturing and inventory systems dependent on this information. Marketing can measure program success by receiving tracking information that begins with the customer mailing list and continues through order processing and delivery data.

The core of a “right” multiview master data management solution is its composite application. In organizations with 30, 50 or 100+ siloed internal applications, this composite application allows the organization to collect all new product information entered in any of the siloed applications in one place, using a single process, and apply that single master process to ensure the data is complete and validated, as illustrated below.



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***A “right” view master data management solution can provide all the benefits of traditional data management solutions—and the potential for enhanced, enterprise-wide efficiency and competitiveness.***

***If your organization shares these business needs, a “right” view master data management solution may be appropriate.***

Once the composite application is in place, the master data management solution can automatically send the data and automate the individual business processes required to set up the new data item in each of the separate applications.

**Potential benefits can extend across the enterprise**

A “right” multiview master data management solution can provide the traditional benefits of data management solutions—benefits that “single” view solutions have had difficulty in providing. These include reduced administrative and IT costs, improved data integrity and enhanced productivity.

The advantages of the “right” view approach to master data management can reverberate far beyond the data itself, however. The right view of data, delivered to the right people and processes at the right time can also help the organization realize:

- *Achievement of strategic business objectives such as increasing revenue and customer share*
- *Improved risk management capability*
- *Reduced merger and acquisition time and costs*
- *Improved compliance with privacy legislation and other regulations.*

**Is master data management the right view for your organization?**

Organizations that are utilizing the “right” multiview approach to master data management are doing so because they find it helps them meet some of their most important business needs. If your organization shares any of these needs, the “right” view approach to master data management may benefit your organization, as well.

- *Does your organization have multiple front- and back-end systems serving multiple business units?*
- *Have your organization’s business decisions been negatively affected by data management issues?*
- *Has your organization experienced a problem with trusted information not being available when and where it is needed?*

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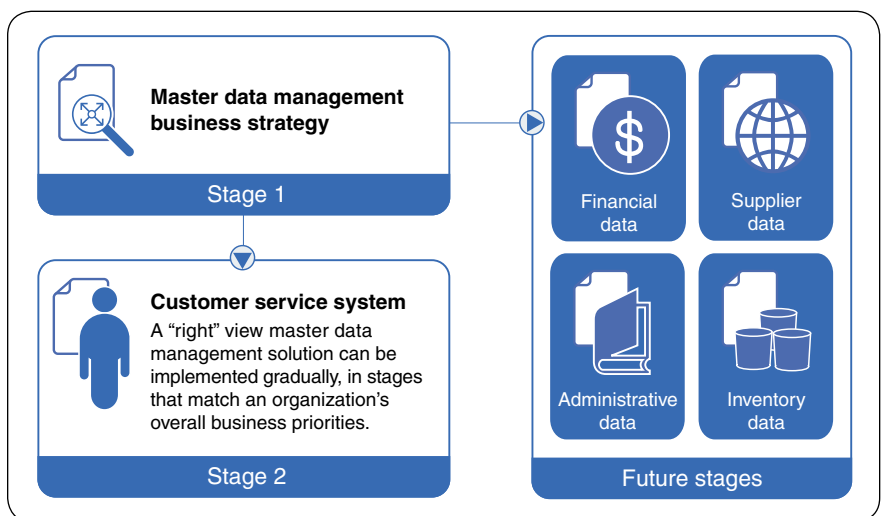
***At its core, a “right” view solution to master data management is a business strategy, implemented via IT deliverables.***

- *Are data inflexibilities making it difficult for your organization to respond quickly to changing business requirements?*
- *Do you suspect that the full value of the information your organization holds in its various systems is not being optimally leveraged?*

**Taking the first step**

Putting a master data management solution in place may seem daunting, especially for larger organizations and/or those with limited IT resources. With the “right” view approach to master data management, this does not have to be the case.

At its heart, a “right” multiview solution to master data management is a business strategy, implemented via IT deliverables. Once the business strategy is in place, organizations can implement the IT enablers one domain at a time, as their overall business priorities indicate. The staged implementation process can also be coordinated with – and enhanced by – other business-driven IT initiatives such as implementation of a service-oriented architecture.





For the bottom line, this staged implementation approach allows the financial impact of the new solution to be absorbed over a longer time and tied directly to specific business benefits. Staged implementation also allows an organization to see the real-world benefits of master data management more quickly.

### Conclusion

Master your data, or it will continue to master you. Without a master data management system in place, an organization may continue to be at the mercy of its information silos. It has been shown how “single” view solutions for master data management are often impractical to implement and limited in their scope. An attractive alternative may be the “right” view approach to master data management. This type of master data management solution does not seek to replace existing data silos with a single data view. Rather, it employs special technologies and processes to break down the barriers between the data silos – allowing for optimal use of existing information, presented in the right view to the right place at the right time.

There is help available. Whether your organization is large or small, IBM can help you explore the alternatives and realize the master data management solution that is right for your organization’s goals and needs. To learn more, contact your IBM sales representative or visit:

**ibm.com/cio/leverage**

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