

Master Data Management – Why Businesses Are Getting Serious About It



About Mike Ferguson



Mike Ferguson is Managing Director of Intelligent Business Strategies Limited

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An analyst and consultant, Mike specializes in business intelligence and enterprise business integration. With more than twenty-six years of IT experience, Mike has consulted for dozens of companies on business intelligence strategy, technology selection, enterprise architecture, enterprise portals, business process integration, SOA and data integration. He has spoken at events all over the world and written numerous articles. Mike is a resident expert on the Business Intelligence Network (www.b-eye-network.co.uk) providing articles, blogs and his insights on the industry. Formerly he was a principal and co-founder of Codd and Date Europe Limited – the inventors of the Relational Model, a Chief Architect at NCR on the Teradata DBMS, and European Managing Director of Database Associates. He teaches popular Enterprise 2.0 master classes in Operational Business Intelligence and Performance Management, Master Data Management, Service Oriented Architecture and Enterprise Portals. Mike can be contacted at mferguson@intelligentbusiness.biz.

Teradata talks with Mike Ferguson, Managing Director of Intelligent Business Strategies Limited

Teradata: How do you define Master Data Management?

Mr. Ferguson: I define Master Data Management (MDM) as a set of policies, services, processes and technologies used to create, manage and maintain data associated with core business entities, meaning customers, suppliers, employees, products or assets and all related processes. I realize that's a broad sweeping definition, but that's because MDM is not just about data. It's about putting policies in place with respect to governing and maintaining data, as well as putting services in place that enable a common way to use and process master data. MDM is fundamentally about processes and data.

Teradata: Why do businesses need MDM?

Mr. Ferguson: They need it for several reasons. For many companies, master data is fractured across too many disparate systems – for example, too many databases, too many files on servers and desktop computers or even laptops, and no chance for data exchange.

The complexity around keeping master data synchronized can lead to “spaghetti” architecture, meaning the company uses various IT processes to move data between systems, which becomes difficult – if not impossible – to manage over time in terms of maintaining one consistent version of data. In those situations, the complexity of the architecture may outweigh the business value coming from it.

In that case, businesses could ask themselves a number of probing questions. For example, where is the complete set of master data? How do we get to the master data? Are there so many definitions of master data that it becomes difficult to trust it? Is it complete? Is it correct?

The bigger issue for me is how much does it cost a company to function with overly complex – and in some cases non-existent – business processes around master data, rather than with common MDM processes and solutions? To support common MDM processes and solutions, you need a technical architecture that includes support for master data management and business process management. Think of all the duplication and overlapping processes around fractured partially overlapping subsets of master data scattered around the enterprise.

You see, MDM creates all kinds of business benefits, including cost-cutting, by getting away from inconsistencies and overlapping functions of that spaghetti architecture, which slows a company's responsiveness. Simplification through centralized MDM leads to not only direct cost-reduction, but also to a nimbleness in proactively responding to customers and suppliers and making competitive business decisions.

And that synchronization of data also enables a trusted system of record, which is essential for compliance to regulations and laws.

Teradata: That leads nicely to our next question... why is MDM important for competitiveness?

Mr. Ferguson: I already mentioned MDM as a means to cost-cutting, and clearly if you cost-cut, you'll widen your margins and become more competitive in that way.

For example, if you only have to maintain customer data in one central location and all other systems are automatically synchronized to receive these changes, then there is no need for people working in different parts of the business to re-enter this data or maintain it via any other system. Today you may find that people are maintaining pieces of overlapping customer data in order entry systems, call center systems, billing systems, financial accounting systems, distribution systems, and so on. The net result is that the duplicate maintenance of each system (along with all the overlapping synchronization jobs needed to replicate changes to the same data in each and every system) is prone to error, takes longer and slows down operations and responsiveness. All of this could be eliminated.

But it is more than that. When there is only one common way to maintain master data and one common way to synchronize it, the chances of operational errors occurring are significantly reduced. These errors can cause delays, incorrect processing, incorrect product delivery, and so forth.

For example, if delivery of products to a customer is incorrect because of bad data, you have to fix it, which increases the operating costs. I recall a bank where a high wealth customer calling into a call center was told that he could not access his accounts because the date of birth given by the customer did not match that on file. Data on file said the customer was 74 years old when in fact the customer was 39 years old. A personal banking manager who knew the customer well intervened and fixed the data error when the customer complained but the result was that the customer (who was also CEO of a profitable business) closed their personal AND business accounts and went elsewhere. My question is how many more customers could be impacted by such a defect? Can you imagine not being able to get at any of your hard earned money because of process errors?

But additionally, MDM stops data defects in business processes, and errors that can cause customer dissatisfaction. So removing the potential for error removes the potential dissatisfaction. Just on a personal note, I renamed my company a few years ago – legally, a simple thing to do. But my bank took nearly two years to catch up, which caused me several problems, such as not being able to get paid electronically from customers outside of my country. If it weren't for a bank manager finally intervening, I'd have gone to another bank. However, if the bank had had MDM in place – with a common system

of record for all my accounts – this problem would have been avoided, and I'd be much more likely to recommend the bank to other people.

I can think of another example where a company tried to offer customer flexibility by allowing customers to place orders at their local plant and centrally via a call center. The problem was that this was done using two different systems, each with its own product coding. Collating order data for each customer then became cumbersome as product codes did not match across systems, resulting in manufacturing errors, incorrect inventory and incorrect delivery. The result was significant customer dissatisfaction, product waste, increased cost to fix the delivery errors, and, in some cases, order cancellation and customer account closure. If product information was maintained in a shared system and changes correctly synchronized with other systems, then this would have been avoided.

The problem of multiple, different systems holding parts of what should be master data is that defects become much more likely, whether that means errors or sluggish responsiveness. On a much larger scale than my banking experience, for example, there's risk management. If a bank can't see all the exposure for all the accounts their customers hold, then it can't see the risks it is taking... and multiplied over many customers, that could mean millions or even billions in bad debt.

Teradata: Has globalization made MDM a more urgent requirement for businesses? If so, how?

Mr. Ferguson: Yes! Obviously, data consistency across systems means smoother operations across the entire corporation.

Yet, I also have to say no, in the sense that there's a lot of difficulty in implementing globalization and so doing it urgently may not be totally achievable. Issues like global price management and country specific product attributes, for example, introduce an additional complexity to doing business globally. Therefore, it is not the case that everything becomes common when it comes to globalization – additional country specific regulations and attributes may need to be catered to especially when it comes to product data. For example, there might be a need to have different product branding in different countries. So, getting to common master data in this case shouldn't be "urgent" as in getting it done correctly as soon as possible; it may need to be done over a few years in very large organizations.

So while there is an important need to get data consistency across a company which has different locations around the globe, doing so isn't easy and must be approached thoughtfully.

Teradata: How does MDM impact businesses growth – or shrinkage – in situations such as mergers, acquisitions, divestitures, and asset sales?

Mr. Ferguson: Ideally, if a company has a common definition for master data and a common place where it's held, and a merger occurs, then the company also has a potentially clear cut strategy to migrate data to the MDM system and get a rapid consolidation of customer data of the merged organization. In that sense, there is a potential business impact because the more quickly you can migrate the data for a merged system, then the more smoothly you can do so, and the more quickly you can drive revenue, either by leveraging merged customer data or by cutting expenses.

On the divestiture side, MDM helps businesses see and analyze the impact of that divestiture.

Teradata: Where does MDM fit into the overall Data Warehousing solution?

Mr. Ferguson: That's fairly straightforward. People confuse the issue of MDM and Data Warehousing. I'm often asked: "why do we need a separate MDM system if we have a Data Warehouse?" To me, that's the wrong question. The right one is: why are you doing MDM in a data warehousing system? MDM needs to be de-coupled from Data Warehousing and operational systems. An MDM system, however, is an important data source for the Data Warehousing system. In that sense, a company can acquire master data (dimension data) from an MDM system and integrate it with transactional data to populate a Data Warehouse. Decoupling MDM from both operational and analytical systems allows one version of the truth to drive consistency across BI and operational systems.

Teradata: What are the required technology tools for integrating MDM into a business's overall technology solution portfolio?

Mr. Ferguson: I think to do MDM well, companies need to do more than consolidate master data in one place. They need a series of integrated data management tools. I have six such tools I always talk about in my seminars, including: tools for developing common definitions, data modeling, data quality profiling, data cleansing and data integration.

The sixth one is perhaps the most important – an automated data discovery tool to uncover what common data already exists under disparate names in disparate systems out there in the enterprise. That, to me, is one of the toughest challenges in the MDM process, discovering existing master data out there including master data that you didn't know you had. What I have learned is that it exists in places way beyond your core operational systems. If people have nowhere to enter it on a screen it is almost certain to end up stored in a spreadsheet or desk-top databases and be managed in a business area, outside of IT. A tool to automate discovery is key because many companies have reached the point at which it would be impossible to manually conduct this search. This is particularly important if a company has many line of business systems, has grown by merger and acquisition or is trying to share resources across a group of companies.

In addition, the ideal is that a master data item exists only under one enterprise-wide common data name. The reality is that for many companies, a master data item might have ten different names on ten disparate systems. It's important to make that discovery, and map those ten different names for that one data item to one common data definition. That's at least a start to undoing spaghetti architecture!

Also, most people interested in MDM already have a Data Warehousing system. It's possible to leverage dimensional data definitions from the Data Warehouse to create master data definitions for the MDM system, but I must emphasize the two systems need to be decoupled.

You have to also recognize that getting to enterprise MDM is a journey which involves change management way beyond data. Introducing MDM will ultimately cause change to data stores in disparate line of business applications (both operational and BI systems), document workflow and system processes, user interfaces, business documents (such as forms) and people's roles and responsibilities. You have to manage change across all of this which is why understanding business processes is so important.

Think about the data models, data integration jobs, reports, application functionality, screens, documents, process activities and people associated with maintaining disparate master data. If you introduce change to make master data common and centralized, then all of this is impacted and may have to change. Therefore careful planning and co-ordination is needed.

The big change will come if you start to maintain master data centrally. This is the “tipping point” beyond which companies have to work hard to deliver change management. A good understanding of existing business processes is critical to success. I have written extensively about this change process on the internet.

Teradata: What are the benefits of the MDM approach to suppliers, or to bundling components/parts for an end product?

Mr. Ferguson: MDM within the supplier itself helps the supplier have a better way to process orders as well as have better inventory management. Of course, if they’re supplying products around the world, there may be global pricing issues, or various regional categories for the same product.

But also, it’s mutually beneficial if a supplier can have access to the MDM within its customers’ companies. That would significantly help a supplier to provide the correct information to its customers and also know how to best help its customers.

Teradata: What are three first steps a business should take in assessing its need for MDM?

Mr. Ferguson: I struggle to name just three!

But first, a company should assess where it is in terms of MDM in order to judge the extent of the challenge it’s facing to implement MDM.

The second step is to analyze its business processes to see what currently happens when processing master data, and to identify what tasks will need to be created or modified or even suspended in order for MDM to succeed within the organization.

And the third step would be to organize the company from an IT perspective and get the right technologies and processes in place. I think part of that organization is thinking about having a Chief Data Architect with a dedicated team in place to help bring all this about – to get the right processes and tools in place to achieve the full business benefits from MDM that we’ve just discussed.

Teradata: What do you see as the future of MDM in the next year or so? In the next five years?

Mr. Ferguson: In the next year or so, I’d like to see a tying together of data management tools – the data glossary, cleansing, modeling, quality, integration and discovery tools I spoke of earlier – and MDM solutions. That has to come together. My clients often ask about leveraging these tools to get more value from their investment as they approach MDM.

Looking farther out, in the next five years, MDM vendors will have to address not just data issues, but process issues. What I’ve found is that many companies look at MDM and see Mount Everest. They wonder how they are ever going to discover the disparate definitions that are out there. What’s more, they also realize their process models are insufficient and not documented; many process models exist only in people’s heads. Hopefully, in the next five years MDM will help companies not only discover, capture and understand their master data but also the processes associated with this data. This will allow companies to gain a much better understanding of their own processes, understand how to best change them and also get more value from them.