ERP and MDM – A Road Ahead

**Applies to:**
SAP MDM and SAP ERP

**Summary**
Organizations are heavily investing into data management and especially Master Data Management but there are some reservations about existence of ERP and MDM together. This whitepaper attempts to clear some of them and discuss how ERP and MDM can exist together and can be mutually beneficial.

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Preface

Information Management has been there for long time within any organization’s IT map. But, management of Master Data was a little ignored area almost everywhere. In true sense, managing all types of master data in 100% efficient manner is still a dream. Positively, different vendors have taken good step towards it in last few years. The ignorance towards master data has caused several precincts for business such as inaccurate view of its performance, limited insights into actual working of business, missed opportunities of cost reduction, loss of sales … to name a few.

When we deal with different clients they often raise a question that, if they have an ERP in place then what is the need of MDM. To a certain extent it is a valid question if you are managing very small business with very few applications and small volume of data but might not be true if you have a big ERP implementation with single or multiple instances. In this article, I will take you through the road ahead for MDM and ERP together.

Business and IT

No wonder, till date business is driving IT and this will continue. But it is high time for IT to ask business to do the necessary changes in order to improve its processes. MDM attempts the same. Today, business is more concerned about achieving better performance and process improvements. Corporate demand for right kind of information is increasing at such a speed that organizations fail to deliver right information in time. This has triggered thinking to redefine organization’s IT Strategy. SOA and MDM are results of it. Many organizations are re investing on their data management strategies. According to Gartner report 2006, Fortune 100 companies have started investing heavily into data management especially into Master Data Management.
Enterprise Resource Planning – ERP

*Today’s enterprise is transforming itself from an internally focused organization to a system that deals with external dynamics of associated entities*

I am not going to talk more on ERP. It has been there since long and people are well acquainted with it. I am going to talk its relationship with Master Data Management.

If you look at the architectural styles of ERP systems today, there are different applications which exist within the ERP system.

ERP systems, when launched, promised lot of things; but in practical, we see below problems in existing ERP systems, let it be a single ERP instance or multiple ERP instances in an organization.

1. **Data Quality**: As we see that the data is spread across multiple applications, the data is duplicate / redundant and we do not get a single view of master data. You find different definitions of same data element in different applications.

2. **Reconsolidation Problem**: When the decision makers want to analyze the data and make some decision based on that information, people who provide them with the data spend lot of time reconciling the data even if you have a BI system in place. BI system is also not getting the correct data most of the time. BI system is capable of doing its business but the source of information for BI system is not good.

3. **Lack of accountability**: Essentially, when we talk about MDM, its strong foundation is enterprise wide data governance. In the current ERP systems, the central data governance is lacking. This is a common scene in most of the organizations. There are multiple entry points for the data and there is no control over the data modification by different data stakeholders. No proper accountability is maintained. Looking at this from a different angle, this has more to do with the business processes than technical.
Master Data Management – MDM

You will find number of literature now written on MDM. In short it is all about maintaining a single version of truth across the enterprise. It makes sense to have a central MDM when you have cross functional, business processes, application using same master data. When you talk about Master Data, the most important thing is to identify it within your organization.

Simultaneously it is important to have an enterprise wide centralized Data Governance structure which goes hand in hand with MDM. Most of the organizations do not have a centralized data governance structure which helps to control your data in better way.

Data quality is again an issue when you have data spread across multiple systems in your IT landscape. MDM takes care of data quality in much better manner.

MDM and ERP – Mutually beneficial living together

When it comes to dealing with master data and providing a single view, there are few challenges which ERP systems have to tackle:

- ERP system consists of different modules with different purpose of operation for each module.
- They have specific, focused points of view that are not shared by other applications or systems in the environment.
- They have the potential for multiple unrelated instances of ERP in any business environment.

To fully maximize the value that ERP offers to an organization, each of these challenges need to be addressed systematically and holistically with a central MDM solution.

If you have a separate entity to look after master data then ERP can focus itself to its core operations.

Following are the identified specialized areas which need to be tackled by MDM:

1. Flexible Data Modeling Capability: MDM tool is as adaptive as the business process. MDM tool has a flexible data model to quickly prototype and develop.

2. Data Governance & Stewardship: It is always recommended to have a data governance team to own the right data, enterprise wide. MDM and this concept complement each other. Through MDM system, you can set up the security access, correct the erroneous data, define the work-flow and act on the notifications and submit a report on the usage of the data.

3. Security control: When you talk about data governance, you must have security at different levels, such as table level, field level. Moreover, when you are dealing with such data entities which need security access globally (e.g. a user from USA should have access to some data which is owned by UK geography etc.). These needs should be taken care at enterprise level rather than at any ERP system. MDM system is well capable of doing so.

4. Workflow engine: Most of the organizations still do the authorization and the publishing of data through emails. MDM tool always gets an upper hand over any system in providing strong workflow capabilities with integrated email service solution for notifications.

5. Data Quality Management: This is one of the cruxes of having MDM system in place. Bad data is as good as not having the data at all. The business rules and some processes are always changing in an organization, which in turn impact data quality. MDM tool is capable of handling such dynamics in real time with dedicated quality framework.
6. Integration Capability: When it comes to integration, MDM system can get an upper hand over ERP system anytime. The integration capability of MDM system can provide variety of options to integrate with different kind of systems dealing with different file formats. Almost all the leading MDM tools in market today provide a good integration capability; among which SAP MDM scores well.

7. Complementing SOA: MDM forms a base for Service Oriented Architecture. All organizations are moving towards SOA and it makes sense to segregate your master data and have it loosely coupled. MDM has a capability to present data as services - the next generation thing.

Solution Approach

Broadly speaking, there are two cases for organizations thinking to implement MDM within an organization. These two cases are discussed in brief below:

Case A: When organizations are going for major business transformation with an ERP system:

We have seen a problem for organizations to align their MDM initiative with ongoing organizational business transformations.

MDM is relatively new and organizations are not sure about its tangible benefits. But if we look at the organizations which have implemented MDM, we can have a good learning curve.

We strongly recommend defining your MDM Strategy first before going for any Business Transformation IT Initiative within your organization.

Align your ERP initiative with MDM initiative

When organizations are going for any Business Transformation initiative such as ERP, it is highly recommended to identify and segregate your master data objects/attributes in the beginning. Doing so, saves an amount of data related work in ERP.

While planning your strategy you should plan a go live of you master data system first, before your ERP go live. When you segregate your master data and its processes; your task becomes easier. One more care which you have to take is to see that there is no duplication of work in ERP or anywhere else as far as identified data and its processes are concerned. Thus, you can avoid any conflicts.
Case B: When organizations are already running single/multiple ERP instances and supporting external systems.

Many a times, organizations feel that, if there is an ERP system to manage our data show, then why would we go for MDM. But the real value of MDM is as explained above.

Now, the point remains, how to decouple the master data and the related business processes when entire organization is running its show on current ERP instance/s.

There are different styles of architectural styles defined by Gartner for MDM implementation viz. Consolidation, Registry, Coexistence and Transactional.

Among which Transactional is supposed to be the desired and the most difficult level to achieve. Its nearby terminology in SAP MDM’s language is known as Central Master Data management. Organization can not directly jump onto this style of implementation. Rather they would analyze their need and then accordingly decide on the approach for MDM implementation and would start with incremental approach of MDM architectural styles. This is said to be evolved from ‘Consolidation’ and ‘Coexistence’ style. Organizations should think of this option when they have long term viability for strategic investment.

The basic style, Consolidation would be a good start. To consolidate all the master data objects and attributes at a single place is most appropriate start. While doing this, cleansing of the data should be top most priority and must be done at this stage.

It does not, however, support harmonization.

Registry style is faster and easiest of all. It creates a new index of records but does not store the records centrally. It consists, mainly of metadata with small amounts of master data. When organizations can not go for a physical central database due to political or legal considerations, they can go for registry style.

When organizations want to create a physical database for read-only purpose in an operational environment, they can go for coexistence style. With this style you can achieve a harmonization of master data across different application within the IT landscape.

It always recommended that not to go with big bang approach for enterprise wide MDM. It is recommended to start with a simple master data object such as vendor, location or customer. Item/Product master data is considered to be complex of master data elements.

Once you are through with simpler master data objects, you get some good learning from MDM implementation as it is unique for every organization. Also with one MDM implementation the users get comfortable with MDM systems. Then you can decide to go for complex master data objects such as items/product.

So, in the existing systems, you should decide your strategy for vendor or customer or other simpler master data first. The system using these master data objects should be decoupled in first phase.

If an organization has only item/product master data in its charter, then it should be implemented with identifying important processes and attributes around it. According to recent magic quadrant of Gartner, no MDM product is clear leader in PIM market. The products are evolving and maturing. So, you need to be
more careful while implementing item/product related MDM stuff, such as hierarchies, catalogs, workflows and security management. Best strategy is to start with a small PoC and then go on adding important processes around item/product master data.

**Conclusion**

To conclude, there is a lot scope to introduce MDM within an organization’s IT landscape at any point of time and it would surely add a good value in various terms such as data quality, data governance, security and integration with other systems in the landscape. At the same time, there are few crucial success factors which need to support this initiative, such as good coordination with business and IT folks within an organization, executive sponsorship, organization wide data governance support, and good project management, of course.

**Related Content**

Please include at least three references to SDN documents or web pages.

- MDM Assignment – Analogy with ERP Implementation
- SAP NetWeaver Master Data Management: Leverage MDM in ERP Environments
- Resolving Master Data Consolidation Challenges in IT Business transformation with SAP MDM Implementation
- How to choose the right architectural style for MDM – Gartner report – publication id: G00142610 Date: 28 Sep 2006
- Ventana Research 2007
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