Decision Tree Methodology -
A solution for Local Vs. Global Master Data conflict

- Rajendra Kumar Tamboli, Promodh Narayan Ravichandran

Abstract

Most master data management (MDM) implementations have conflicts in identifying the local vs. global master entities and their attributes. Many such implementations face challenge in proving intangible benefits time and again, change management and having a section of powerful business community driving enterprise MDM strategy, data governance. While most implementations need tactical measures, some can be handled scientifically through a defined methodology. Another challenge is a situation where each business community want its convoluted definition and acceptable sources of master data. Although such definitions and sources of data are not interoperable across the enterprise, yet such trade-offs affect data integrity, data quality and purpose of consolidating islands of information. We propose a decision tree methodology that attempts to address and help enterprises adopt a strategy to evaluate and induct true master data into their operations unequivocally.
The New Normal for Master Data in Digital Age

The economic downturn may have slowed down many manufacturing enterprises, but it has not impacted their zest of inorganic growth which needs not only financial consolidation of acquired companies but also product or customer data consolidation. Even manufacturing enterprises growing organically and expanding into multiple channels have relentless pursuit of operational excellence. In either of these situations, enterprises have felt the need to get their arms around a gigantic problem called master data. Any program across the value chain, whether it is SCM, CRM, Big Data, Analytics, or WMS, can easily get derailed without proper MDM investment and guiding principles. In this digital age, the master data information plays an important role in ensuring its consistent behaviour across enterprise through various touch points or channels. This is the new normal required to succeed in digital age.

Why New Normal becomes a Battleground for Master Data?

The aspect of deciding what product or customer entity qualifies as master data becomes an issue especially in a multi-business unit, multi-geography, multi-location and multi-channel enterprise. Each local division or even business unit wants its own version of a key master data set. For example, manufacturing business unit may define the master data set in terms of size, specification, materials and so on, while marketing may have responsibility for package design and size. Similarly, for different business units, market segments may be divided differently, which may lead to conflicts while defining customer master attributes. In a bid to keep all stakeholders (so called data guardians of the enterprise) aligned to a common definition, the enterprise acts on the nearest and not the newest master data definitions. As a result such enterprises suffer from:

- Inconsistent semantics of product definition or customer attributes
- Invalid and inconsistent values of master data

Why Traditional ERP Methods for governing Global and Local Master Data fail?

Many ERP packages have in-built mechanism to implement global and local master data with set of restrictions, security and flags to enable/disable mastering attributes as ‘Global’ and ‘Local’. But they lack the qualification process or principle which forms the basis to mark a particular attribute or characteristic as ‘Global Master Data’ or ‘Local Master Data’. This is because the negotiations with business community on global vs. local master data happen outside the system which later gets converted into configurations. While this argument may be extended to MDM packages also, the impact of implementing a guiding principle or techniques through MDM is far and wide reaching as it becomes the channel for data distribution. Many order management applications and call centre or support applications manage customer master data locally. However, they lack standard definitions and consistent information for various customer master entities and attributes.

Is there an alternative to induct Global vs. Local Master Data?

Definition of Global vs. Local Master Data

Global master data attributes are standard across systems, divisions, and common to the global enterprise. In some cases, the global attributes for a business unit, may appear local from the enterprise perspective. They can be referred to as ‘Glocal’ (global + local) attributes and may end up as local master data as far as configuration is concerned. Finally attributes which are restricted to a particular function or a department within a business unit whose values may vary from one department to another within the same department or function or even business units are referred to as local master data.
Figures and tables given further in the article illustrate the decision tree methodology. Figure 1 and figure 2 illustrate the product domain entries and customer domain entries respectively.
Alternative to Induct Master Data: Decision Tree Methodology

Figure 3 illustrates the use of decision tree methodology for the product master data.

Figure 4 illustrates the use of decision tree methodology for customer master data.
### Decision Tree Guiding Principles and Criteria

#### Product Domain

<table>
<thead>
<tr>
<th>Master Data Type</th>
<th>Definition</th>
<th>Global</th>
<th>Local</th>
<th>Recommendation</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
</table>
| **Item Master**        | An item record comprising information required to manage aspects of Procurement, Sales, Costing, Storage and commercial trade                                                                             | Yes    | Yes   | All basic, user defined master attributes will be maintained globally for organization, business unit in Product Hub and all application specific, localized master and operational attributes to be maintained in local item master of ERP | • Globally maintained items avoid duplicity  
• Easier movement of stocks across intercompany plants for some item | None                                                                 |
| **Item Material type** | All materials like raw materials, semi finished or finished goods sharing some basic attributes                                                                                                           | Yes    | No    | Same item type could be followed across all locations                            | Easier management, control, training, reporting, knowledge sharing and future improvements       | Local requirements may get ignored                                     |
| **Manufacturing plant**| A plant is an organizational unit for dividing the enterprise according to production, procurement, maintenance and material planning. It is a location where raw materials are produced or converted to finished goods | No     | Yes   | For a business unit plants should remain the same with exceptions. Business logic for creating a plant should be same or similar across locations within the BU. | Easier management, control, training, reporting, knowledge sharing and future improvements       | None                                                                 |
| **Document type**      | A document that standardizes creation of sourcing processes and helps purchaser predefine features                                                                                                         | Yes    | No    | Same documents process should be followed across locations for the same item category | Easier management, control, training, reporting, knowledge sharing and future improvements       | Local requirements may get ignored                                     |
| **Storage location**   | An organizational unit allowing differentiation between various stocks of items in a plant                                                                                                                  | No     | Yes   | Business logic and naming taxonomy for creation of storage location across business units should be same | Can accommodate local inventory and freight requirements                                          | None                                                                 |
| **Purchasing Group**   | A key for a buyer or group responsible for purchasing activities                                                                                                                                               | No     | Yes   | Based on local business logic but should be similar across locations             | Can apply local purchasing or organization structure requirements                                | None                                                                 |

#### Customer Domain

<table>
<thead>
<tr>
<th>Master Data Type</th>
<th>Definition</th>
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<th>Local</th>
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</table>
| **Customer Master**    | An individual or organization type Customer who buys product / avails services                                                                                                                              | Yes    | No    | All basic information, attributes related to Customer will be maintained globally in Customer Master | • Improved quality  
• Less duplicates  
• Consistency                                                                 | None                                                                 |
| **Contacts**           | An individual who is primarily responsible for the Customer relationship and manages payments, shipments etc                                                                                                | Yes    | Yes   | Primary Contacts are defined globally in Customer master. However individual BU’s may have local Contacts | Contacts can be defined in both Customer master or in CRM / Order management applications   | Contacts may be duplicated if defined locally                           |
| **Hierarchy**          | Organizational structure of the Customer                                                                                                                                                                    | Yes    | Yes   | Global hierarchy can be maintained in Customer master and can have secondary hierarchies defined for individual BU | • Easier reporting at organization or BU level  
• Flexibility to define custom hierarchies                                                                                            | Locally defined hierarchies could be duplicates and required to be merged                     |
| **Shipping Information**| Shipment related information like shipping method, customer shipping preference etc.                                                                                                                        | No     | Yes   | Definition must be based on standard set of values, however individual BU’s to maintain the shipping information – consolidated information available in Hub | Flexibility to reuse and define shipment details                                              | None                                                                 |
| **Financial Information**| Customer financial information required for order management applications e.g. credit limit, financial accounts                                                                                          | No     | Yes   | This is to be maintained at BU level, but consolidated in Customer Hub           | Single view of all financial information available in customer master                          | Aggregation reporting might be required if maintained locally          |
Conclusion

While many may argue the global and local definitions vary based on the enterprises flavour and unique processes, but that is exactly the conflict which decision tree methodology tries to address. Instead of breakdown in negotiations during the conceptualization, this methodology helps establish a scientific benchmark and informed decision making. The above shown illustrations are only sample scenarios but Infosys has full blown capability to implement a decision tree methodology to any manufacturing enterprise or even further extend it to retail and supply chain processes. Also, the decision tree illustrated here only addresses customer and product master data domain; however the methodology can be applicable and extended to any master data domain. In fact we have already tested and proven this methodology in some of our projects in the manufacturing vertical.
About the Authors

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