

A Tinge of Six Sigma for MDM Implementations



Applies to:

SAP MDM. For more information, visit the [Master Data Management homepage](#).

Summary

In this article I have put forward my view point on leveraging Six Sigma process and tools for MDM implementations. I am not projecting this as an alternate to ASAP methodology. Six Sigma process and ASAP methodology can go hand in hand to ensure successful implementations.

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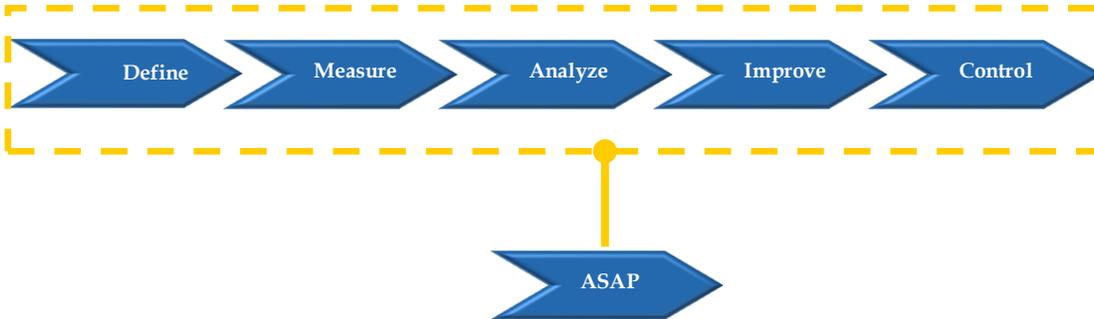
I am a certified SAP PP consultant. I am also a six sigma green belt certified and Sun certified Java Programmer. My SAP expertise include Master Data Management, Resource and Portfolio Management, cProjects and cFolders.

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Executive Summary:

There have been several blogs floating around talking about the usage of six sigma and the benefits it brings to the business. Companies like Motorola and Honeywell saved several billions of dollars by incorporating six sigma techniques. It has been wrongly understood that six sigma concepts can be applied only in engineering and do not make sense in Information Management. In fact some of the concepts like Quality functional deployment and Failure modes effects analysis can play a major role during package implementations. This article is to emphasise my point of view on how we could use the D(Define)-M(Measure)-A(Analyze)-I(Improve)-C(Control) process during SAP MDM implementation. There can be a question on how different it is going to be when compared to ASAP methodology or for that matter Solution Manager. Some of the tools and principles put forward by the DMAIC process can be combined with SAP bestpractices to form a closely knit unit. In most of the cases the customer won't know to what extent his data would need cleansing and if the data are existing in silos, the process still gets complicated. So it becomes imperative to measure the extent to which the data is unclean and then come up with a strategy.



This paper will explain the objectives and the activities involved in each phase. It is not necessarily that the activities should be restricted to those mentioned below. Based on the type of project the activities can be more to ensure all the intricacies are covered.

Define:

The objectives during the define phase are to identify and/or validate the improvement opportunity. To develop the business process and to define the most important customer requirements (ctq: critical to quality). Let us consider that we have a situation of having different systems in various locations that handle the master data. If we consider the vendor master, there can be instances wherein the different locations handle the same vendor and differs in the way they maintain the record. In this situation it is important that we understand the customer's requirements and proceed with the initial assessment. The customer's requirements need to be ranked. This will allow us to come up with the best set of tools for addressing those needs, as certain requirements cannot be achieved by the functionalities available within SAP MDM. We will discuss this in detail when we address QFD (Quality functional deployment). Let us say following are the customer's high level requirements.

- i) Master data management should be web based
- ii) Data cleansing
- iii) Reporting capabilities
- iv) Workflow
- v) Business rules
- vi) Validations
- vii) Syndication to ECC, 3rd party tools

It is important that the customer is in line with the suggestions that we make for achieving those functionalities intended. We need to come up with a mapping of how the requirements can be achieved by the combination of the features available. This mapping can be done through QFD. It calls for building the house of quality diagram. The customer's requirements are ranked and the values are assigned for each tool based on their ability to address the requirements. If there is a particular functionality that can be achieved through standard out-of-box feature a higher score is assigned. In the example, for the requirement related to workflow SAP MDM has been assigned a value of 5 because it available out of box whereas EP get a score

of 3 because some development needs to be done to tie up with SAP MDM. Planning this diagram will go a long way in ensuring that the customers get what they want.

Rank (1-5)	Tools	SAP MDM	SAP EP	Others	SAP BI
	CTQs				
5	Web based		5		
5	Data cleansing			5	
4	Reporting		3		5
5	Workflow	5	3		
4	Business rules	5	3		
4	Validations	5	3		
3	Syndication	5			
	Score	80			

Measure:

Once we are done with the identification of the tool, the next activity is to assess the current data. The various activities but not limiting for the assessment are

- i) Study of the master data creation process
- ii) Current system landscape (This is to understand the various systems that are involved in creation of master data)
- iii) Understanding the pain points during data creation and maintenance
- iv) Current data quality
- v) FMEA – Failure Modes & Effects Analysis

Study of the master data creation process will enable us to understand the amount of non-productive activities that are involved and hence helps us to explore the opportunities in the to-be MDM system to get over those non-productive activities. Assessing the current data quality will help us understand the data cleansing requirements and if any tools (Business objects, Informatica etc.) are needed for data cleansing. Data are assessed based on conformance to standards, completeness, duplicates and consistency.

The other important activity is the development of FMEA scorecard. FMEA is the abbreviation for Failure Modes and Effects Analysis. It is the analysis of potential failures within a system. Failure modes are any errors or defects in a process or design that affects the customer.

Let us consider that a data steward forget to populate a field and the information goes unchecked to the e-commerce system. This would be a disaster because the customer who places the order might get confused and might switch over to the competitor's product. So it is important we address these things in the FMEA.

The various steps in FMEA are

1. Detect a failure mode: The scenario mentioned above is an example ie. effects of having a particular field not filled.

2. Severity: What would be the severity of the failure. In our example it is loss of business. We can assign a number from 1-10 for the severity
3. Probability: What is the probability of occurrence? We can assign a number from 1-5 for the probability. 1 for least occurrence and 5 for frequent occurrences
4. Detection: Is it possible to detect the failure easily? In our example we could detect the failure based on the number of calls the back office receives from the customer. In certain cases it is not easy to detect even though the failure exists.

RPN (Risk priority number) is then calculated. RPN is the product of severity, probability and detection. It is important to address those modes that have higher RPN.

It is also important to have an abatement plan for each of the modes. This needs to be addressed during the next phase (Analyze).

Analyze:

During this phase we need to analyze the causes of the problems (pain areas) that need improvement and how to eliminate the gap between the existing performance and the desired level of performance.

This calls for completing the FMEA by including the abatement plan. So let us address the problem we mentioned ie. the data steward missing a particular field. The abatement plan for this scenario is to incorporate workflows in your system and go through a review process. Other way of doing it is to build validations in your system ie the system will not allow you to save a record without having that particular field filled.

Other important aspect of this phase is to come up with a performance scorecard. The performance scorecard consists of various functionalities that need to be implemented to take care of the customer's requirements.

Let us consider one of the requirements mentioned in the Define phase, Syndication. This is based on my experience wherein the customer has to log-in into a Portal and place request for a file to be uploaded into an e-commerce portal. A background job has to run for delivering the file for the customer. It takes 24 hours for the file to be delivered. With the help of an MDM tool, the same requirement can be achieved within few minutes and can be fully automated.

Performance scorecard needs to be filled during the testing phase and the output is reported in the form of a Zst score.

An example of a performance scorecard.

S.No	Requirements	Development distribution		Target (Zt)	Mean (Zm)	Standard Deviation(SD)	Zst
		Standard	Custom built				
1	Availability of product in the e-commerce system once the product is released in the MDM system			22 min	20 min	0.8	2.5

Improve:

This is the phase where we realize the customer's requirements by identifying, evaluating and selecting the right improvement solution. The best practices of ASAP methodology can be put to use here. This is also the phase wherein we need to develop a change management approach to assist the organization to adapting to the changes introduced through solution implementation.

We also complete the performance scorecard to find out the performance improvement percentage.

Control:

The success of this phase depends on how well we did in the previous phases. During this phase we need to keep a strict vigil on all the parameters that were identified for improvements and ensure that they are within the acceptable ranges.

Conclusion:

Thus by integrating six sigma process with ASAP methodology and by usage of various six sigma tools we can guarantee successful MDM implementations.

Related Content:

<http://www.6sigma.us>

For more information, visit the [Master Data Management homepage](#)

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