

Business Fit



Automation of SAP Master Data Management

Solving the dirty data dilemma and laying
the foundations for continuous change
and optimisation



in association with



Why this discussion, and why now?

Is manual data management holding back your business? Are data quality problems preventing you from getting the most value from your SAP systems, or are they adding complications to your S/4HANA migration plans? If you've been an SAP user for any length of time, the chances are that you will have answered yes to both those questions.

The benefit from any IT system is absolutely dependent on the quality of the data that underpins it – and that primarily means the master data. For most organisations, this will be the core set of business objects upon which transactions are performed, such as customer and employee details, product lists, physical locations, purchase histories and so on.

In SAP, maintaining master data quality has always been a challenge. Often, data has been entered and updated manually, for example via emails and tick-sheets, which can be time-consuming and error-prone. Often it resides in multiple silos, which can lead to duplication and inconsistency, and data management is manual and periodic, being cleansed and updated only at set intervals or before major system upgrades or migrations.

But with each generation, SAP adds more and more functionality and pulls in more and more data. Businesses are making greater use of SAP as a data hub, too. All of which means that the already-difficult task of managing master data manually is becoming impossible.

Instead, data quality needs to become an everyday activity, an integral and event-driven part of 'business as usual', and not a periodic (and highly time-consuming) exercise to try and bring things up to date and fix errors.

In short, it's time to get master data management off the critical path. No one should be doing these data management tasks on an ad-hoc basis. They are repeatable tasks that can be automated and built into how your organisation works – and increasingly, the requirements of governance and compliance are going to demand that this happens.

This means implementing continuous processes to keep your master data up to date, via advanced policy-based automation and role-aware workflows and approvals.

These master data management (MDM) processes can, and should, open up participation beyond just the IT team, enabling business execs to safely and seamlessly participate in the process as well, with all the speed and transparency benefits that can bring. This is essential because if users are to get the most value from data, the issues of data quality and MDM need to be in their hands – with the necessary guardrails in place, of course.

Master data: drift and automation

Master data may be core to a business – foundational, even – but it has a tendency to drift. Addresses and prices change, products may become unavailable, and of course purchase histories will evolve. These changes are typically event-driven and are often very repetitive or repeatable.

At the same time, our world is speeding up, becoming more digitalised and information-dense. This puts ever more pressure on core systems to keep up with the pace and depth of change. SAP customers have felt this pressure more than many, due to the complexity of SAP environments.

This complexity can manifest in a variety of ways. For example, SAP systems often have multiple data silos, which means that master data is stored in different places and is not always accessible or consistent. This can lead to errors and inefficiencies. In addition, SAP master data models can be complex and hard to understand, which can make it difficult to manage and maintain data quality.

And for those users migrating to modern applications, the journey to S/4HANA can be all-consuming. It soaks up so much attention and effort that it halts other plans and can reduce the focus on MDM.

SAP's Innovation Platform: BTP – Keeping the core clean

SAP has responded over the years with the release of tools to help analyse and optimise how systems perform. Probably the most significant of these is BTP, the SAP Business Technology Platform, which it calls the foundation of the intelligent sustainable enterprise. Optimised for SAP applications in the cloud, BTP covers areas such as application development and automation, data and analytics, and AI.

BTP has put process automation and optimisation firmly on the agenda, and many SAP users have purchased it as part of a broader SAP package. However, BTP is a toolkit, not a complete solution, and is too complex and expensive for some SAP users, especially those with small or medium sized systems.

In any case, which ever solution you are using as your MDM solution, many SAP users are encountering the same blocker. Basically, the quality, consistency and integrity of their data stands in the way of business progress – and this is not helped by the way that master data is managed.

Mapping the way forward

Increasing volumes of data and demands for MDM mean you need better and streamlined processes. What you want is a process that's automated and becomes an ongoing part of how you work. You also need to centralise your data in a single repository, simplify your data models, and integrate your MDM systems with other SAP and external systems to make it easier to share data and maintain consistency.

The other required change is even more fundamental. Most MDM processes today are heavily reliant on the IT team, not least because of the shortage of business-friendly MDM tools. Manual processes usually mean that master data degrades over time, and when it does so, it is often seen as being IT's job to fix it.

The real owner of the master data is the business, though. But without the right tools and the proper involvement of the business units, it is hard to get master data into shape even on a one-off-basis, let alone keep it there once it is where it needs to be.

Understanding the real challenges

For many SAP-using organisations, the main thing they “know” about data quality is that you need clean data before carrying out a major SAP upgrade or migration. But what do you do after that? The data will inevitably get dirty again if you do not have governance in place, so you implement a periodic data cleansing and enrichment process to restore data quality.

Sadly, this is wasted effort, because it can only ever be a temporary fix. The real challenge - and opportunity - is to tackle the root issues, particularly those that lie within the master data management (MDM) domain. So instead of simply accepting that core data objects inevitably drift over time, we need to learn why they drift and fix that instead.

The best approach today is to use an MDM platform and relevant tools to establish the continuous processes that we mentioned earlier, but we cannot simply automate existing activities. We must also take the opportunity to discard the old idea that responsibility for MDM should lie with the IT team.

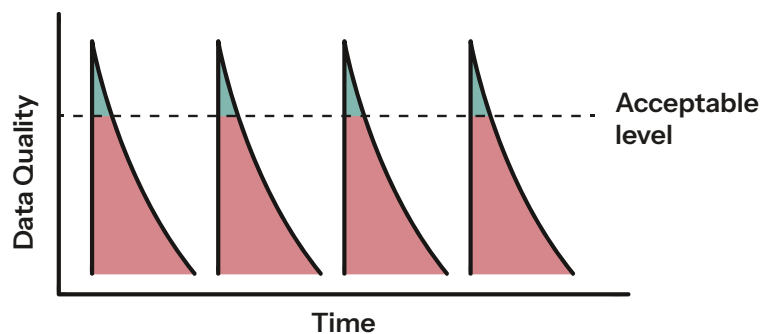
Too many organisations today are conditioned to the idea that IT loads the data and takes care of MDM. If there is a problem, you call IT to fix it. The fact is, though, that the master data relates specifically to business processes, so it should be a business issue.

Of course, IT teams do not normally want to get involved in business processes, and conversely, we do not want users manually editing master data. This is where process automation comes in, allowing users to see only what is relevant to their role and to the task at hand.

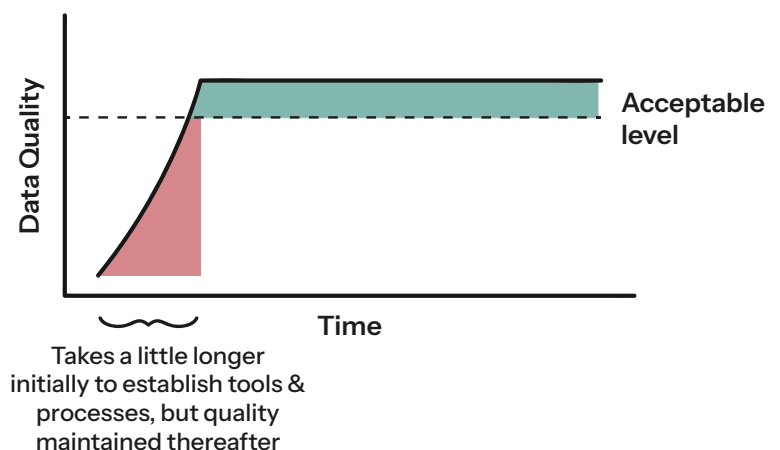
Fortunately, with advanced policy-based automation and role-aware workflows and approvals we can safely widen participation in the MDM process. With the right approach, business units should be able to seamlessly participate in the process - although because we will build it into their ‘business as usual’ workflows, users may not even be aware that they are carrying out MDM activities.

Our goal here is to automate and standardise our business workflows, making them faster and cleaner. The system can then kick off a workflow, for instance when a change happens or is requested.

Traditional approach
(periodic cleansing projects)



Process based approach
(Automated inclusive continuous)



1: Solution requirements

Drawing on the above, we can set out a number of guidelines for the MDM solution process. First, don't start with data cleansing, or even with data governance. If you get MDM right, then clean and well governed data should come as a natural consequence of that.

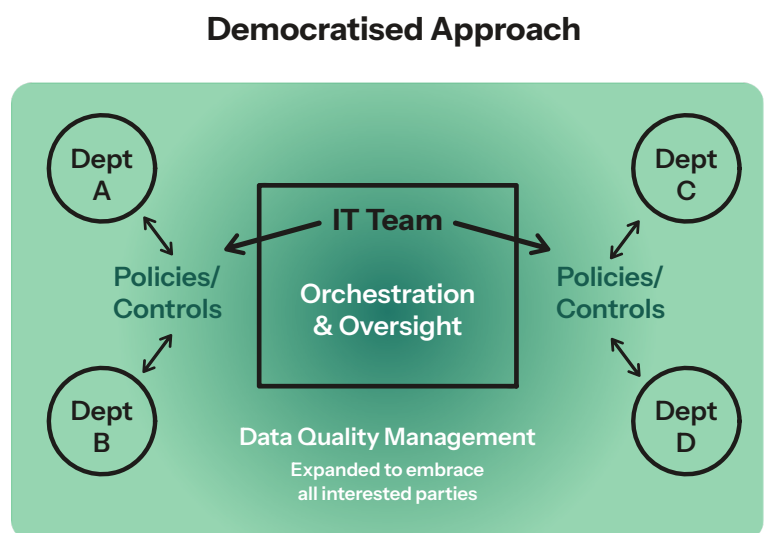
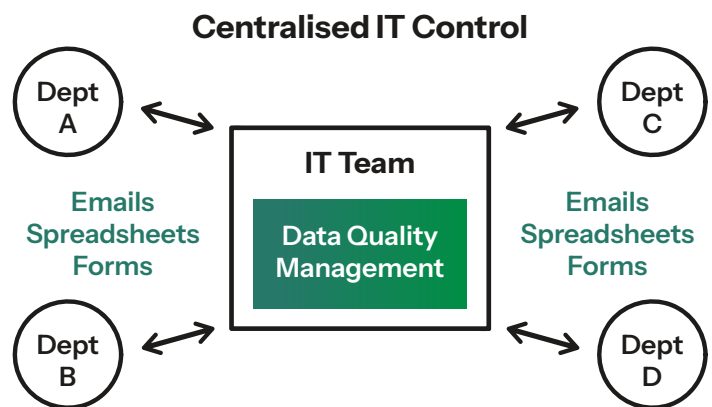
Start instead by understanding your 'business as usual' and derive from that the business processes and rules as they relate to master data. Then look for master data owners within the business - IT should be the MDM enabler, not the master data owner.

Work with business-side users and prospective data owners to identify, standardise and automate role-aware workflows that build a continuous MDM process into the day-to-day operation of the business. The automated workflow is how we move MDM out of IT and onto the responsible business people.

As we do all this, we must also pay close attention to user experience. Workflow-driven MDM is about permanently changing habits in small but significant ways, and making those changes stick for the long term. So we absolutely need the cooperation of our business-side users, and the best way to do that is to make it easier for them to do their jobs and get it all right.

Lastly here, it is essential to get the methodology right. MDM implementation does not have to be a "big bang", it can also be a piecemeal or bite-size approach, which is more digestible for many organisations. That means focusing on the business process layer but working object by object, so product objects, finance objects and so on.

It can also be useful, of course, to look for examples of organisations that have already gone through this process. Find out where they hit snags or hiccups, and how they overcame them.



2: Key steps and understandings

Get commitment from business and the users

The benefits of keeping everything up to date via automated MDM can be huge, but only if we can get the business fully on board. To do that we must directly involve the business execs who are responsible for actual decisions, and we need to improve the user experience and make it all seamless and simple to reduce the natural user resistance to change.

Process analysis

Business-side involvement and cooperation is also key to successfully setting up the necessary processes and workflows so that they work seamlessly, and without creating additional hurdles or burdens for our users. In particular, input and feedback from the users will be essential as we go through the process of identifying the areas and/or workflows to automate.

For example, adding a new customer to the master data needs approval. Who needs to be involved in that process, and what do we expect of them? Only once we have properly understood this process can we baseline it to a degree where we can create an automated workflow to speed the process and spread the workload.

IT's new role as orchestrator

Many of the advantages of automated MDM come from giving those business execs and users direct visibility into the master data. However, while policy-driven workflows allow the business to assume responsibility for routine MDM tasks, that does not mean the IT team is no longer involved. IT still has both visibility and control, but as an orchestrator, so it owns the rules not the data, and it enables the processes rather than executing them.

Data governance aspects

Governance and data quality will derive from automated MDM as a side benefit. By their very nature, properly programmed rules engines and workflows can ensure that governance is complied with and good quality is maintained, along with responsibility, tracking and auditing information.

- ✓ Business commitment
- ✓ Process analysis
- ✓ Workflow automation
- ✓ Policy orchestration
- ✓ Data governance

Example solution: Maextro specifics

To illustrate how a modern approach to SAP Master Data Management can work in practice, let's take a look at a software offering in this space from the sponsor of our paper - Bluestonex. We will not go into a lot of technical detail, and please note that nothing we say should be taken as an endorsement or recommendation of any product or service.

It can be very useful, however, to run through a specific example to provide an idea of how some of the key principles can be translated into practical reality.

Building on SAP's Business Technology Platform

BTP is a cloud platform-as-a-service that provides a broad range of additional capabilities for SAP users and applications, especially around business processes and integration with other applications and data sources. BTP is there in many or most modern SAP installations (as cloud credits), but as mentioned earlier, it is a toolkit, not a solution, so you need to learn how to use it and then build on it, and for many SAP users this is too complex and time consuming a task.

Maextro aims to solve this challenge by providing a ready-made MDM hybrid methodology and framework that is based on an SAP ERP backbone installation and then augmented via BTP for user interface, analytics & API micro services. This way, it takes advantage of its many capabilities. It abstracts BTP's complexity, while still providing enough flexibility to customise the total solution for the individual organisation's needs and processes.

Configurable rules and policy-driven workflows take over the heavy lifting, automating what were manual processes into exact and standard workflows. This can reduce the chance of user error, minimise or eliminate inconsistencies and ensure an audit trail.

Workflow rules ensure consistency and compliance, providing features for data quality, lineage and security, and bringing data governance almost as a side-benefit. There are also specific features to address key aspects of data privacy regulations such as GDPR and CCPA. These include data masking, data pseudonymisation, and data retention.

Tailoring and transparency

As well as providing standard coverage for SAP objects to enable faster adoption, Maextro also allows you to define and change your data model where a more tailored approach is needed. Task tracking provides transparency into the data management process, both for the requester and approver, and ensures things don't get forgotten.

In addition, Maextro leverages BTP's analytics capabilities. Because you now have MDM audit trails, you can also get insights into data management tasks and requests, detect hotspots and problems, and so on.

There's also a variety of tools to help you find and explore your data, for example you can search for data by keyword, filter by criteria, and visualise and analyse data in a variety of ways, including statistical analysis, machine learning, and predictive analytics.

Example solution: Design thinking

Other very important aspects that need to be addressed include data sharing and access. Maextro answers this by providing the capability to share data via secure links, embed data in web pages or export data to other applications - the latter includes integrating with a variety of BI tools, such as Microsoft Power BI and Tableau. There is also a Maextro mobile app that allows users to access their data and analytics on the go.

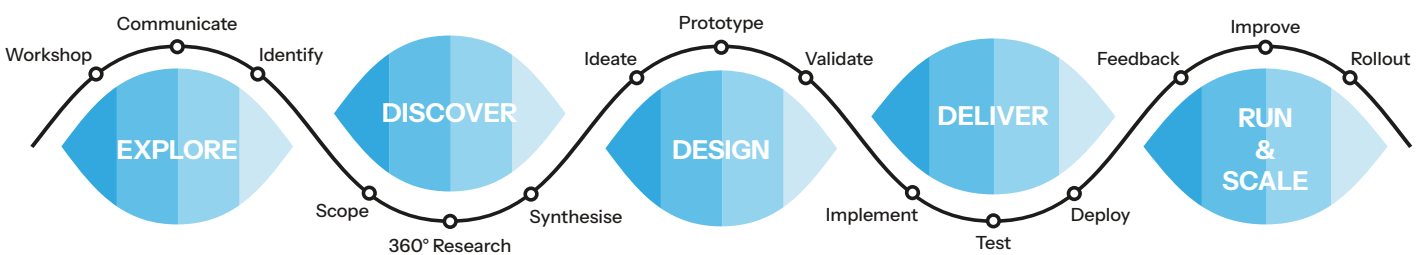
User-centred design

It's not the technology as such that is key to a successful MDM implementation, but identifying and understanding the business processes and workflows, and collaborating with the users to smooth and automate those. In this way we build them into the users' normal working day, make MDM an automatic background activity and stop data quality from declining over time.

As part of this, we move responsibility for the mechanics of MDM away from the IT team and into the business where it belongs - again, this is a consequence of getting the methodology and implementation right, not of some technological magic bullet.

Maextro deals with this by putting the methodology at its core, then encapsulating this in technology and layering it all over the BTP service platform. As part of the refocus on making master data the responsibility of the business, it also offers self-service analytics, allowing users to create their own data analysis reports and dashboards without the need for assistance from IT.

Where design thinking meets enterprise architecture



- Cluster of Innovation - Opportunities
- Heatmap of Innovation Opportunities
- Selected Innovation - Opportunity
- Use-Case Definition
- Stakeholder Map

- Research Summary
- Qualtrics Surveys for Insights
- As-is User Journey
- Persona

- Storyboard for Selected Solution Idea
- Lo-fi Sketches
- Clickable Prototype
- Visual Design
- User Story Results
- Usability Lab Results

- Productive Solution
- Customer Acceptance Report
- Roadmap for Scale

- Improve and Enhance

Wrapping up

Whether you are an SAP user or not - but especially if you are - master data is crucial to your business. Having a consistent, accurate and correctly-governed foundation of customer, supplier, product and other data is vital to the proper functioning of almost any organisation. Increasingly, it is also a legal and regulatory requirement.

It's essential then to manage that master data - and not as it's been done in the past, via one-off cleaning or rebaselining exercises, done on a periodic or ad-hoc basis. Instead, we need to tackle the root issues that can bring in inconsistencies and errors.

That means eliminating data silos and using process automation to seamlessly build routine master data management (MDM) tasks into your business workflows. That way, your master data should always be clean and on track, without overburdening your business users.

The best approach today is to use an MDM platform and relevant tools to establish continuous processes for keeping master data updated. And an important premise while doing this is that responsibility for this shouldn't solely lie with the IT team as it has done in the past - IT still needs to set the guardrails and manage the technical side, but day-to-day data management needs to happen within the business.

Fortunately, with advanced policy-based automation and role-aware workflows and approvals, participation in the MDM process can be widened. With the right approach, business users should be able to seamlessly participate in the process.

There are several important corollaries here. First, while good MDM technology is necessary, it can only be effective if you or your SAP partner get the methodology right. That means the primary focus needs to be on processes and workflows, which in turn means business-side involvement and cooperation are key. Input and feedback from the users are essential.

It also means not biting off too much in one go. Make sure you adopt a methodology that allows you to implement MDM in stages, perhaps working object by object.

Once you have this kind of process foundation in place, it removes a barrier that has traditionally held up progress with many major SAP-centred changes and initiatives. This can include business/digital transformation, SAP landscape consolidation, system migration and generally taking steps to move towards the Real Time Enterprise nirvana.

About

About Freeform Dynamics

Freeform Dynamics is an IT industry analyst firm. Through our research and insights, we help busy IT and business professionals get up to speed on the latest technology developments and make better-informed investment decisions.

For more information, visit www.freeformdynamics.com

About Bluestonex

Bluestonex, a software and services company based in Shropshire, United Kingdom, bring together a new & specialised consulting design approach, with specialist skills and competencies in SAP technology. Focusing on User Experience & SAP Digital Transformation programmes, Bluestonex believe that by arming users with the right tools for the job, tools which streamline day-to-day tasks, organisations will reap tangible benefits and significant measurable savings through automation. In 2015, the Bluestonex founders identified a gap in the SAP Master Data Management market and worked tirelessly to develop the right solution to resolve it.

Maextro burst into life as the premier (no-code) SAP Data Management & Governance solution, enabling organisations to maintain a transparent view of data processes within core ERP. Fully configurable, to model business requirements, business rules and workflows, Maextro enables users to create, maintain, and consume reliable SAP data without fear of costly manual errors. The latest Bluestonex solutions offer SAP users further opportunities via UI5 applications and the core Maextro engine. These opportunities range from human-centred solutions, data processing automation and now extend into business process automation. Whatever the requirement, Bluestonex offer a collaborative team of SAP recognised experts, to create & deliver the ideal Data Management and Process Automation solution.

For more information, visit www.bluestonex.com or maextro.co.uk

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