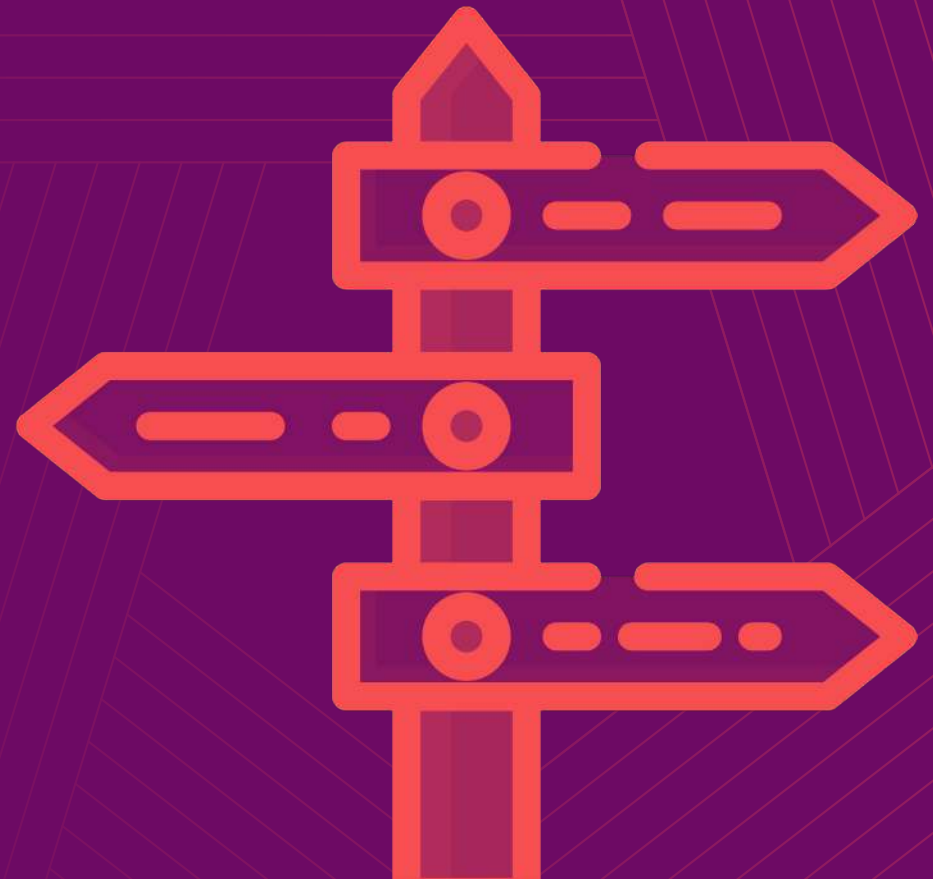


Implementation of Supplier Information Management

Multidomain MDM versus domain-expert
MDM approach



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Introduction

Different types of Master Data Management solution

Many enterprises looking to deploy Supplier Information Management opt for a Master Data Management (MDM) approach in order to capitalize on the benefits of authoritative data sources, data standardization and consistency; and readily available access to business intelligence.

MDM solutions are typically segmented into three categories, according to the domain coverage that the vendor of the solution provides, namely 'single-domain,' or 'domain-expert' MDM; and multiple and multidomain solutions.

Multiple domain MDM describes solutions from vendors that provide solutions for more than one domain but within different applications, while a multidomain MDM vendor provides a solution that manages all Master Data from within one application.

The multidomain MDM versus domain-expert MDM debate

Multidomain MDM solutions are often touted as the silver bullet for achieving a single source of truth and authoritative master golden records for an enterprise. Certainly, these solutions help to improve data quality across core elements. They enable a high level of data governance and data can be made available for business intelligence projects. This often leads to the wrong conclusion that multidomain MDM will achieve a lower total cost of ownership and a fair time to value compared to a domain-expert MDM approach.

In reality, multidomain MDM is an IT-led solution to a data problem and, as such, tends to have a narrower focus, which does not always consider wider business use cases for the data. Domain expertise is still required to fully realize the benefits of data integration and make them available to end users. From a supplier data perspective, while offering strong technical integration capabilities, generic MDM solutions lack the detailed context of integrating supplier data in the real-world, particularly with ERP(s), which becomes a big driver of cost in practice.

Increasingly, the advice is: 'Evaluate a solution based on business requirements, rather than data problems to fix.'

Achieving fastest time to value

In this study, based on interviews with practitioners, we assessed the typical project roll-out for a multidomain MDM solution compared to that of a domain-expert MDM implementation for supplier data. Based on the activities that comprise an MDM implementation, we charted the average timeline of the multidomain MDM approach in the areas of discovery (or scoping), implementation and change requests, against that of the domain-expert approach.

In this comparison, it is possible to identify and present evidence for those precise points within the two comparable projects where the nature of supplier data is such that it causes delay to implementation and is a blocker to unlocking business value when the multidomain MDM route is favored over the domain experts.

Chart 1: SIM implementation - multidomain MDM vs domain-expert MDM

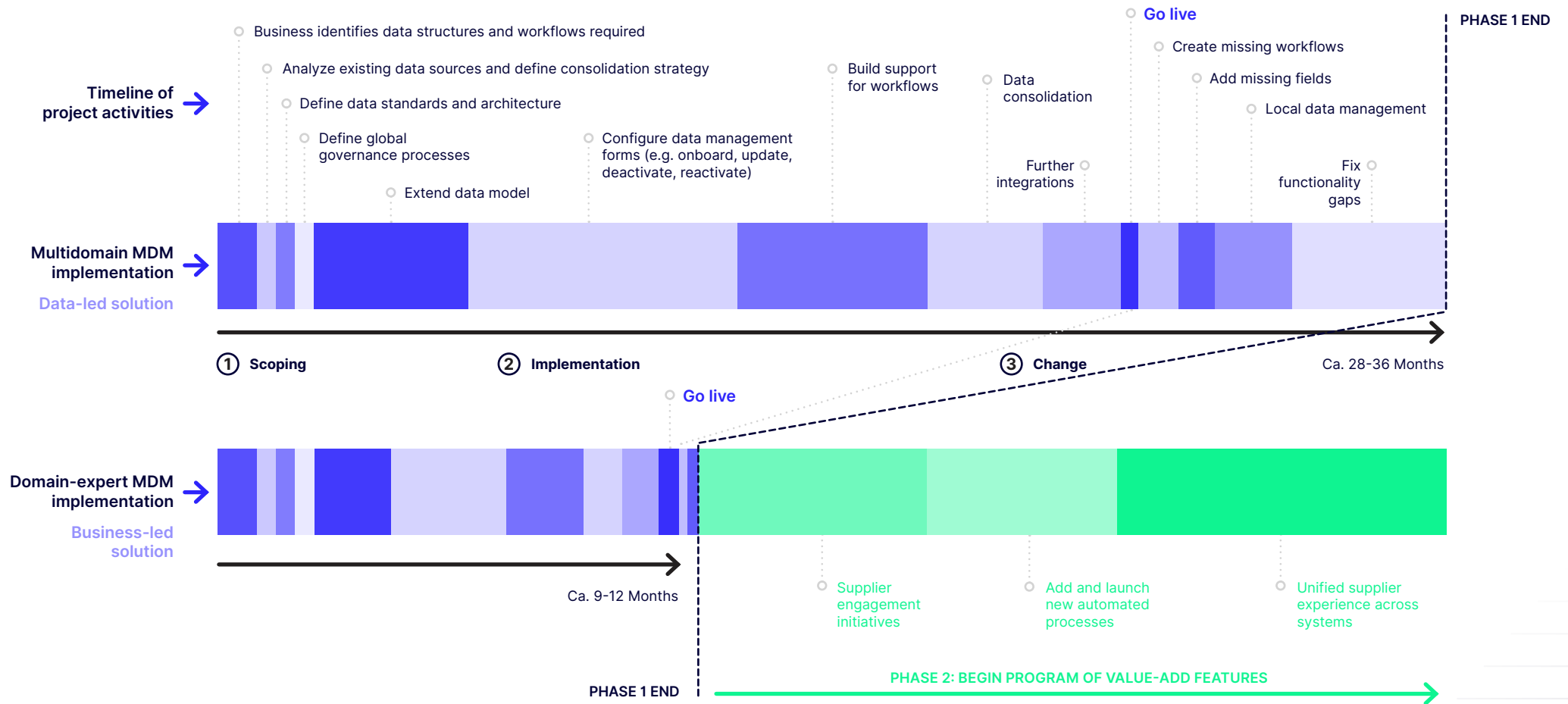


Chart 1: Shows a typical MDM implementation project, the standard activities and the comparative time taken.

Scoping

During the scoping phase, there will be four main activities, as shown on Chart 1 on the previous page:

- 1) **Define the data structures and workflows required** to support operational needs in managing supplier lifecycle
- 2) **Analyze existing data sources and define the consolidation strategy.** Understand the structure of the existing ERPs and other systems and determine what is in the existing systems
- 3) **Define data standards** to support process design, ownership and management; and master data architecture
- 4) **Define global governance processes** to determine data stewardship, ownership and implementation of data policies

Define data structures and workflows required

Working with a domain-expert rather than a generic MDM provider means that the enterprise will benefit from the expertise of the provider in the field, resulting in a fuller understanding of the full scope of the project from day one.

Without this, it means that operational features and functionality have to be added later, which causes delays, adds cost and can undermine confidence in the project. Planning for these requirements upfront and at the earliest stage means that the right questions can be addressed head on - with no surprises later.

Multidomain MDM often only has support for at most several, simplified workflows or processes. In actual fact, however, there are over forty standard (or 'core') minimum required workflows or processes for a large complex organization to implement (often including multiple permutations of those) in order to fully manage the supplier lifecycle and govern data globally, while allowing for necessary centralization combined with local independence.

Chart 2 on the next page provides an overview of the standard required processes, although it must be borne in mind that this is **before** enterprise specific requirements are then added.

A domain-expert will be able to advise on these workflows and processes with a very clear understanding. Knowing these requirements from stage one means that the scope of the project is in full sight and this preparation is a factor in hugely reducing the time to implement in the domain-expert MDM journey.

One of the reasons is the ability to leverage best practice. There is trial and error in the ideation of these workflows before they are perfected. If you are using a generic MDM provider, on the other hand, then these are built from the ground up and so do not benefit from the iterations that have already been identified and incorporated into a domain specific solution.

Chart 2: Core minimum required processes

Onboarding

- Onboard parent entity
- Update parent entity
- Block parent entity / unblock processes
- Supplier (legal entity) onboarding, facilitating as a single request across multiple ERPs collection of
 - Purchasing location
 - Bank account
 - Payment
 - Contact information
 - Manufacturing location
- Supplier extension process facilitating extending existing information (and determining whether to use new or existing information) across multiple ERP records relating to:
 - Purchasing
 - Bank account
 - Payment
 - Contact information
 - Manufacturing location
- Governance of all global onboarding requirements to allow the system to automatically determine based on a large set of criteria what is required (e.g. sustainability, food safety, health and safety, quality, information security, data privacy etc. at a granular level by supplier type, commodity, location, supplier location, business unit etc.
 - Extend initiative to supplier
 - Update initiative
 - Launch new review
 - Update expired document / certificate

- Deactivation / reactivation
 - Supplier level deactivation process
 - Relationship level deactivation process
 - Supplier level reactivation process
 - Relationship level reactivation process

SAP specific data management

- Purchasing organization extend process
- Plant extend process
- Purchasing organization data update process
- Plant data update process

Lifecycle processes across all data structures

- Add new location (allowing for a specific process to be tied to the type of location: purchasing, payment or manufacturing)
 - Initiated by internal user
 - Initiated by supplier user
- Add new contact
 - Initiated by internal user
 - Initiated by supplier user
- Update location data
 - Request change – internal user initiates a request for update
 - Initiated by internal user as a change request
 - Initiated by external user as a change request
- Update bank account
 - Request change – internal user initiates a request for update
 - Initiated by internal user as a change request
 - Initiated by external user as a change request
- Update contact data
 - Request change – internal user initiates a request update
 - Initiated by internal user as a change request
 - Initiated by external user as a change request
- Add new contact
 - Initiated by internal user
 - Initiated by supplier user
- Deactivate location
- Reactivate location
 - Deactivate bank account
 - Reactivate bank account

Local data management

- Ability to assign locations, bank accounts and contacts for use across company codes
 - Location extend process
 - Contact extend process
 - Bank account extend process
- Ability to deactivate (block) / reactivate (unblock) at local level across all data structures
 - Local location deactivation process
 - Local location reactivation process
 - Local bank account deactivation process
 - Local bank account reactivation process
 - Local contact deactivation process
 - Local contact reactivation process

Analyze existing data sources and define consolidation strategy

Variations between systems can sometimes be complicated. The key requirement is that your solution lets you flexibly define your data model and how areas interlink.

For example, if you have five different ERPs, then there should be one supplier in your centralized solution with five relationships

(these relationships could break down further into company codes, purchasing organizations or operating units – depending on your ERP), holding all the data attributes. Again, missing this step, or trying to return to it later, adds enormous amounts of work during the implementation phase that can be avoided.

Define data standards and master data architecture

There is often a high degree of overlap in master data, especially with large companies storing supplier data across many systems in the enterprise. However, enterprises often lack an approach or methodology for defining primary masters, secondary masters and slaves of master data, making integration of supplier master data a complex process.

This means that a path of least resistance is often chosen that suits the structure of the data in the ERP but remains sub-optimal for the business.

Even more important is not to fall into the trap of defining a supplier as it is defined in the ERP, or any other existing systems, as that structure will likely not work well across a heterogenous landscape.



Use Case 1: Redundancy

A company which has defined its processes on a standard ERP model will find that there is a lot of redundancy. They may have to, for example, collect certificates, such as for tax or insurance, multiple times over.

In reality, this information should be collected at a legal entity level and collected only once. This is not possible in a multidomain MDM scenario where the data is 'mastered' at address level.

When working with a domain-expert and deploying a flexible data model, the process for adding addresses is more efficient, as the supplier doesn't have to do redundant work, such as resubmitting forms in order to add an address that relates to a relationship or activity.

In the longer term, this improves both the supplier experience and the internal user experience.

Define global governance processes

Poor governance of supplier master data (stewardship, ownership, and policies) can lead to confusion in identifying critical supplier attributes and how they might be used or interacted with across the organization, as per the summary in Chart 3.

The lack of a holistic view leads to change requests further down the line when different use cases become apparent on an ad-hoc basis.

Conclusion

By not addressing all the issues upfront, it means that gaps in the generic, multidomain MDM approach are not noticed. They will, however, come to light during the implementation stages leading to a lengthy list of major change requests.

This, in turn, undermines confidence in the overall project. In the following sections, covering implementation and change requests, we'll provide specific examples of where the delays illustrated in Chart 1 originate.

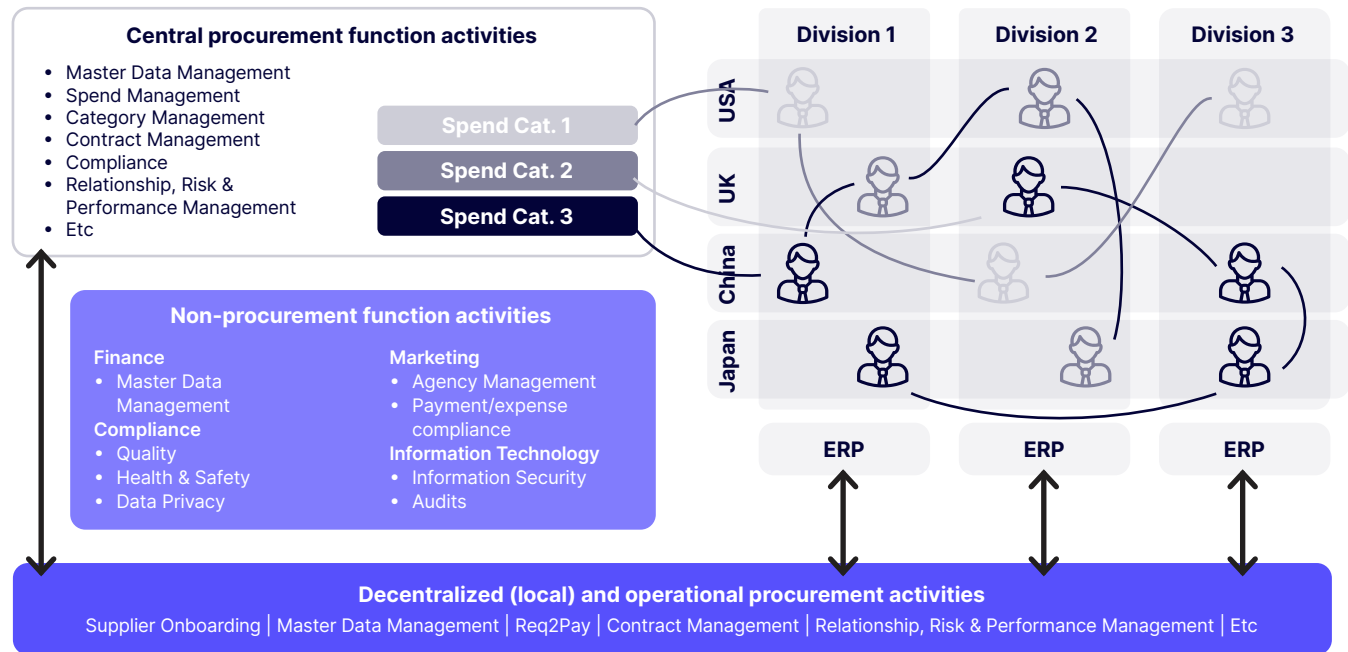


Chart 3: Processes spanning global, local and cross functional organizations, yielding a large number of variations and permutations in the business requirements that will need to be considered.

Implementation



Multidomain MDM means longer implementation times

Based on interviews with practitioners, it was found that the main activities during this phase take significantly longer with multidomain MDM implementations compared to the domain-expert MDM approach. The two most cited reasons for this are (1) lack of flexibility in the data model and (2) having to build customizations from the ground up.

We analyzed the responses in relation to the following implementation stage activities, as highlighted on Chart 1, to determine the differences between the approaches:

1. Extending the data model
2. Configuring data management forms
3. Building support for workflows
4. Data consolidation
5. Additional integrations
6. Go live

Extending the data model

During this phase of implementation, customers discover they need to define the data model quickly and flexibly, without the overhead of a fixed database structure. Our analysis shows that this is where the first series of delays are often encountered. If more requirements are discovered, then the typical solution in multidomain MDM is to add another table.

Tables must be added manually to the database and the method is complex, thus nearly always triggering the need for an implementation partner. In other words, it is not self-service, which adds not only time but also increases the total cost of ownership.

On the other hand, by using a domain-expert, the enterprise automatically has access to an extraction layer, which means that extending the data model is possible in a browser-based UI, self-service format. Unlimited flexibility is achieved due to having a data model structure that supports this method out-of-the-box.

Configure data management forms

This takes time, as there are, for example, branching rules and numerous conditions to be considered. Suppliers must be able to easily manage their master data and trigger change approval workflows before going into the ERP/P2P system.

Therefore, customers will need the flexibility to make adjustments during the build process, as many rules and conditions are often uncovered 'on-the-fly' during this phase.

Further, many issues are often not considered at this stage, and so, through being overlooked, they add to the list of change requests that come later down the line (see section 'Change Requests').

Build support for workflows

This takes far longer in a multidomain MDM scenario as generic MDM vendors are often limited to a small number of basic workflows only. For example, the tools for ETL (extract, transform, load) are separate. This means more licenses are needed, which is frequently an extra cost that was not in the original schema and which needs justification while creating unpredictability.

Our analysis shows that there were no 'extend' workflows in the cases reviewed, which raises a question around the existence of the local data management component. Furthermore, it is not possible to undertake localization from the UI. Instead, it requires technical expertise, again accounting for part of the longer duration of this phase in the multidomain MDM timeline, represented in our diagram on Chart 1.

Similarly, the ability to customize workflows is also missing, which means that factoring in the cost for a third-party low code platform will also be necessary. In the worst-case scenario, some customers are unaware of this at this point, so it creates hugely significant change requests later to overcome all manner of issues, from missing fields through to missing workflows.

Data consolidation

Data consolidation involves the matching, merging and synchronizing of data. Most customers consolidate around the data structures of the ERP - but this avoids having to tackle one key issue head on, namely how do you get the ERP view of the data, which is based on straightforward addresses, to become a business-ready, usable, hierarchical version? By hierarchical we are referring to the identification of a supplier as a legal entity that has multi-faceted relationships with the organization that involve different addresses, e.g. invoice addresses, ordering addresses, bank account address, which are all dependent on factors such as the relationship type, the interaction with the enterprise and the business unit involved. When the 'data problem' is referred to in Procurement, this strikes at the heart of what the enterprise is really missing.

As most enterprises consolidate around the data structures of the ERP, then typically introducing hierarchy becomes a wholly separate effort, which is accounted for in the implementation and change request timings shown in the comparison on Chart 1.

Again, both time and extra cost needs to be accounted for. For example, in an Informatica environment, to overcome the lack of hierarchy, it sells a separate solution on top, namely Reference 360. This is designed to enable business user self-service – in order to then accomplish building hierarchies. It is one of the reasons why multidomain MDM is viewed as an IT centric tool and its use cases are predominantly geared towards delivering data for analytics, rather than operational use cases.

With domain-expert MDM, there are the benefits of both without the need for further investment in other software tools to plug gaps.

It is this expertise that makes the difference between a business-friendly implementation with accurate integration of data versus one that is non-business friendly and can lead to complicated and error-prone integrations, such as overriding one another's data in separate systems, which was another variant considered in the timelines as projected in Chart 1.

Data migrations

As mentioned, domain-expert MDM providers will be better at helping business users understand how they need to own and govern their data and tightly linking the solution to these requirements. It is why there is a focus on discussing the organizational model very early on in the scoping phases to help with smooth data migrations.

Additional integrations

Any further integrations that are additionally required (such as category solutions, sourcing, contracts & negotiations) are also much faster during the implementation stage in a domain-expert approach.

In this business-led view, the focus is on capturing data relevant to the supplier relationship rather than creating a new vendor record, which means data can be transformed easily to all systems, as shown in Chart 4.

This not only makes implementation easier, but systems can also be swapped out as needed when needs change in the future.



Use Case 2: Match, merge and sync

Scenario: There is one record for a supplier in a total of four SAP ERP systems. The objective is to extract these records from each ERP and match them together, in order to create a global record that aligns to these four records, one for each ERP.

Multidomain MDM approach: Using the structure of the ERP, the records will be consolidated, and a vendor master built around supplier addresses, which is referred to as 'mastering at address level' in MDM speak. This is very easy from a technical and data migration point of view because what is loaded and subsequently integrated back maps on a 1:1 relationship.

Outcome: Creation of an address-based supplier record. The data remain incorrect as addresses may map to order-location, or some map to manufacturing location, so there will be duplication. Some ERPs have limitations where they need to create a separate vendor record (e.g. per bank account), because the ERP fails at automation if multiple bank accounts per record are maintained.

Distinctions between supplier, location, or parent level data remain opaque.

Domain-expert MDM approach: A non-flat – or rather 3D – data model that is based on more sophisticated data structures with suppliers as legal entities and supplier-locations being treated as separate structures is deployed. However, in this case, how do you give the business confidence in the write back? When you turn on integration, how can it be proven that this information is going to be created correctly in the different ERP systems, which might have different set-ups or different account groups?

Solution: There must be the ability to 'preview' exactly how the data will flow back into the ERP system. This enables 100% validation and that field by field for each ERP system there will be 100% consistency.

Go live

As Chart 1 has shown, from a time perspective, the actual 'go live' phase itself should be no different in either approach – it is a process of load the data and load the users.

However, there are soft benefits in the immediate aftermath of the domain-expert approach. The go live is smoother, as it is often at this stage that the missing components within a multidomain MDM solution really come to light, which creates the need for significant change requests, which can damage the confidence in the overall solution and therefore hinder the wider aims of the project.

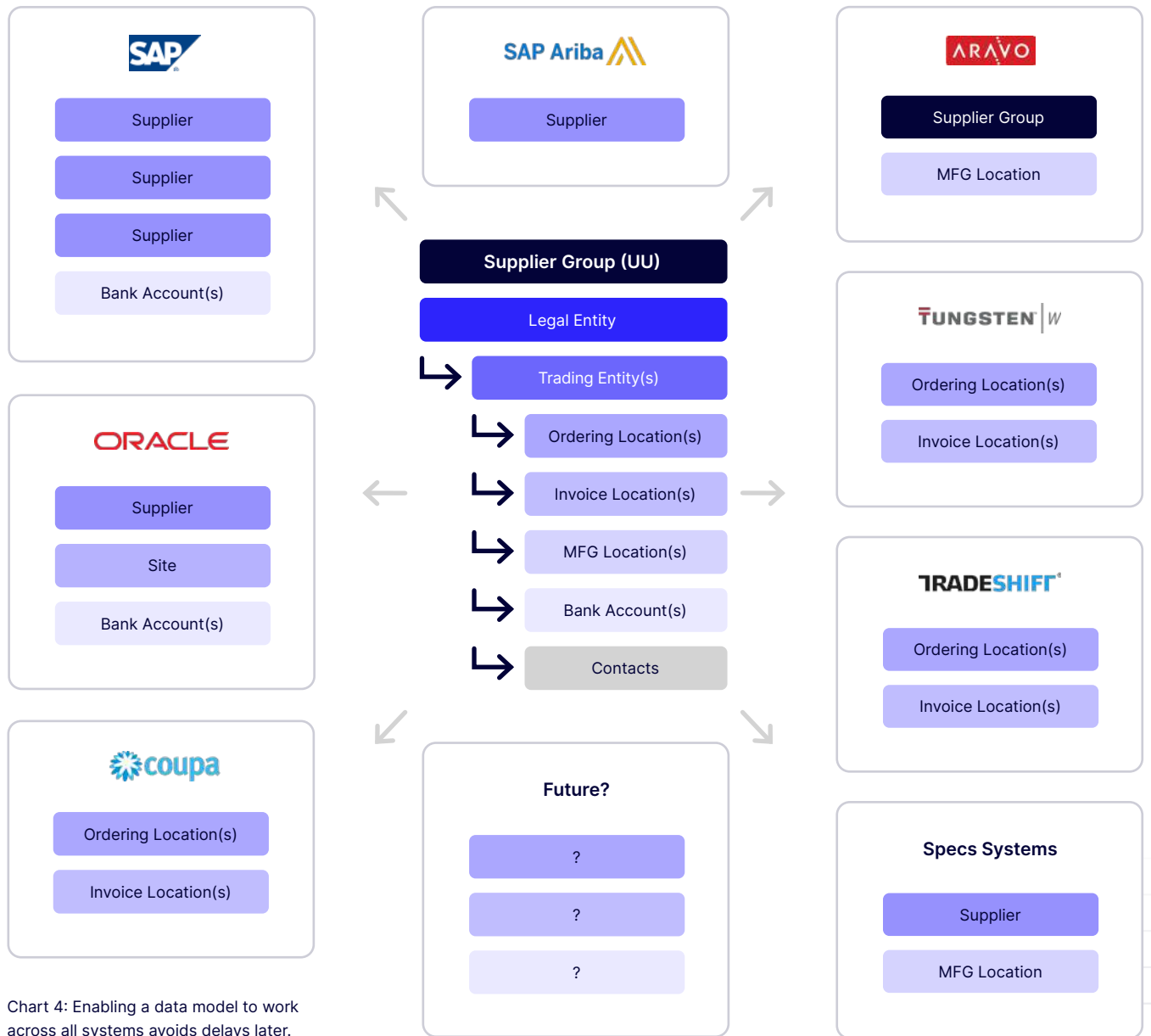


Chart 4: Enabling a data model to work across all systems avoids delays later.

Change Requests

Multidomain MDM means building from the ground up

As this document has identified, previously unidentified issues will now need to be tackled during the change request phase. It is during this phase that many enterprises realize that, far from being able to implement an MDM solution by mainly sweating existing infrastructure as had been hoped, considerable extra investment is required and much more time will now be lost.

Many realize that generic MDM means having to build all operational aspects of the solution from the ground up. It often involves identifying new software in order to plug gaps, which would not have been in the original budget. For example, extra budget will need to be made available in order to specifically deal with hierarchy, such as Informatica's Reference 360. This adds a high degree of unpredictability to the project.

While some change and tweaks are inevitable (as shown in Chart 1, this phase is common to both approaches), most of the change requests are simply not needed when working with a domain-expert.

We asked practitioners what the typical change requests are following go live of a multidomain MDM solution, the most common of which being:

Create missing workflows

A common shortfall is the availability of workflows. As we have seen in Chart 2, business users need much more sophisticated workflows than those that will be supported by multidomain MDM. Frequently, enterprises will buy extra licenses from third-parties to obtain the low code functionality needed in order to re-do the workflows.

Add missing fields

There will inevitably be new fields identified that are required for the system to work. In the multidomain MDM scenario, this will involve having to lock in resources from IT in order to resolve. By using a domain-expert, on the other hand, there is the ability to manage and adapt the data model through the UI.

Local data management

In multidomain MDM, IT would define the project as 'There are four ERP systems and these need to be linked together.' This is achieved by linking the records together using supplier address, but this is not the business requirement.

The business requirement is to uniquely identify and collaborate with suppliers and their data – including at local levels, with specific permissions depending on factors such as the business unit and relationship.

Fix functionality gaps

There will be gaps in functionality that require customization through low code. A missing or deficient functionality commonly mentioned is the supplier portal. Also, when using a domain-expert approach, it is possible to run 'initiatives' in order to accommodate new workflows, or perhaps one-off events, such as the bulk collection of new certificates from suppliers. If you are using a low code add-on, this will require an app developer to sit down with the business, understand it, and then design and update the app in order to add new steps into the workflow. These requirements arise not only during the change request phase but will also do so on an ongoing basis. Obviously, it is far more rapid and far less costly just to add a new initiative than it is to find a new developer.

Conclusion

Benefits of working with a domain-expert from the outset

Overall, the feedback from interviews with practitioners has revealed that each phase is slower with multidomain MDM, which significantly delays time to value. It also adds to the total cost of ownership both in terms of implementation and on an ongoing basis. It delays, or in some cases removes, a number of soft benefits, such as increased competitive advantage (for example through more efficient collaboration with suppliers).

Architecturally, there are many moving components that make multidomain MDM far more complex compared to a ready-built, out-of-the-box solution.

For example, depending on the specific set up, it may involve configuring Pega to work with Informatica Supplier 360, Supplier 360 to work with Informatica MDM and then configuring Informatica Reference 360 so that it can connect up with the rest of the MDM environment and also with Pega. This adds a further drawback, as long-term maintenance of multiple products is also more complicated and one-part upgrades can have knock-on effects, which is not a danger with an integrated solution.

There are also licensing considerations to bear in mind with this approach. For example, low code platforms may charge by case type. Therefore, a project estimate that starts with three cases being in scope quickly becomes a requirement for around forty cases – as per Chart 2. This means not only higher costs during implementation, but also it increases the annual recurring cost. Licensing costs go up and predictability decreases, which is unfavorable to the business, especially if new funds are not available until after another budget cycle.

Operational benefits

Multidomain MDM is an IT led data solution that will not fix business problem. It suits analytical use cases, such as those being driven by the CFO who wants insight into multiple assets across the business. However, if you also want operational benefits, then multidomain MDM is not the answer. In terms of supplier data specifically, it is not just about analytics, but also the supplier lifecycle management use case in order for the data to be accurate at all.

As Chart 1 shows, while the implementation and build still has a long way to run in the multidomain MDM approach, the next phases of digital transformation – those that build long-term value (shown in green on the chart) – will already be being rolled out in the domain-expert project lifecycle. These could include:

- Supplier engagement initiatives
- Add and launch new automated processes
- Unified supplier experience across systems

With multidomain MDM, meanwhile, it becomes more of a build project, in which multiple components must be integrated in order to achieve the same functionality. In reality, rather than a multidomain versus domain-expert debate, it is better described as a packaged solution versus a build debate. And while the CFO's needs are for data insight and transparency, the key for any CTO is whether the business is being served. In the case of domain-expert MDM, the answer is yes. The approach allows users to do far more without the need of IT. Domain-expert MDM enables the enterprise to build confidence with business users, which also helps with subsequent adoption and to an overall higher level of ongoing success.

Beyond that, the value-added activities that can now be initiated provide valuable steps towards the wider goal of moving from 'supplier relationship' to supplier experience and success management.

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