How to Connect
Data Silos

Using Governance to Define
Process and System

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Contents

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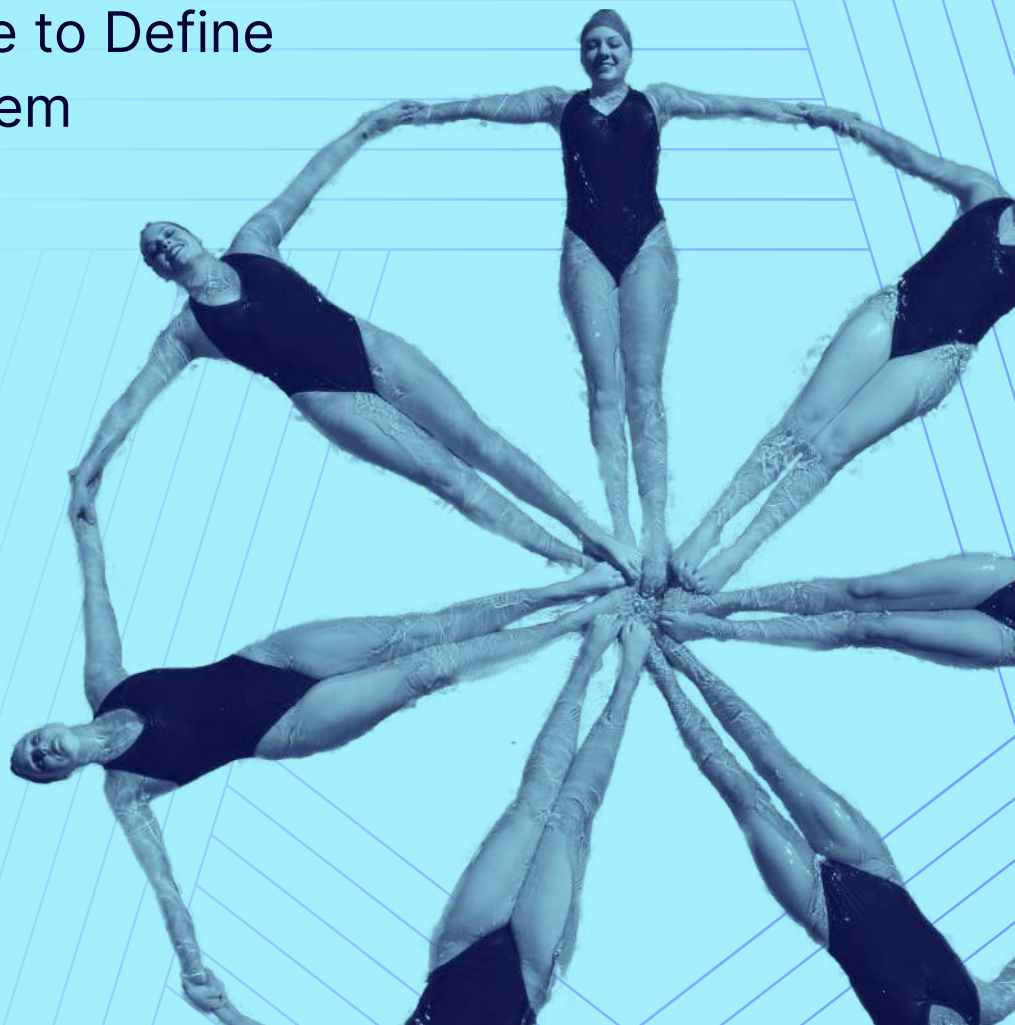
Introduction

Supplier data — a critical issue

Gartner predicts that by 2022, 90% of all corporate strategies will consider information as a critical enterprise asset and list it as an essential competency[1]. It means that large organizations now face the challenge of how to turn their data into a substantial asset.

Meanwhile, new companies are entering the market adopting a data-first mentality from the outset, which can often allow them to disrupt existing industries. However, challenges still remain — and this is especially true of supplier data.

Data has a tendency to become trapped in silos within the organization, hindering its wider use. Frequently, technology is used in order to solve data quality issues rather than governance. A governance framework must be established first, which is a supporting pillar for establishing process. In turn, process then defines system requirements, the reporting from which feeds back into the governance pillar.

This white paper will explore:

- Reasons why data silos still persist
- How lack of governance causes bad data and how to avoid it
- Using a governance framework to define processes and system requirements

We will explore how adopting a governance led approach unifies stakeholders across different silos in a way that enables the organization to explore new technologies or solutions.

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[1] Why Data and Analytics Are Key to Digital Transformation - Smarter With Gartner

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Chapter 1
Why do data silos persist?

For more than 50 years, ERP systems have become embedded within the data management industry. However, it has become increasingly clear they are not the right fit for all business needs, especially in terms of user experience.

Some organizations have turned to source-to-settle suites instead in order to circumvent some of the issues, but as Figure 1 illustrates, this solution still limits functional depth and flexibility. Stakeholders now realize that suites, like ERP systems, have failed to solve the issue of poor quality data as they are not designed for the huge variety in the supplier base. For example, some of the information relating to that supplier will be common — company name, HQ address, etc. — but some of it will be specific to the buying unit.

This has significant implications for who can add or modify what data relating to the supplier. Any Procurement technology leader that has encountered these issues in the real-world will shudder at the thought of trying to shoe-horn this complexity into a P2P system that's designed to manage purchase transactions.
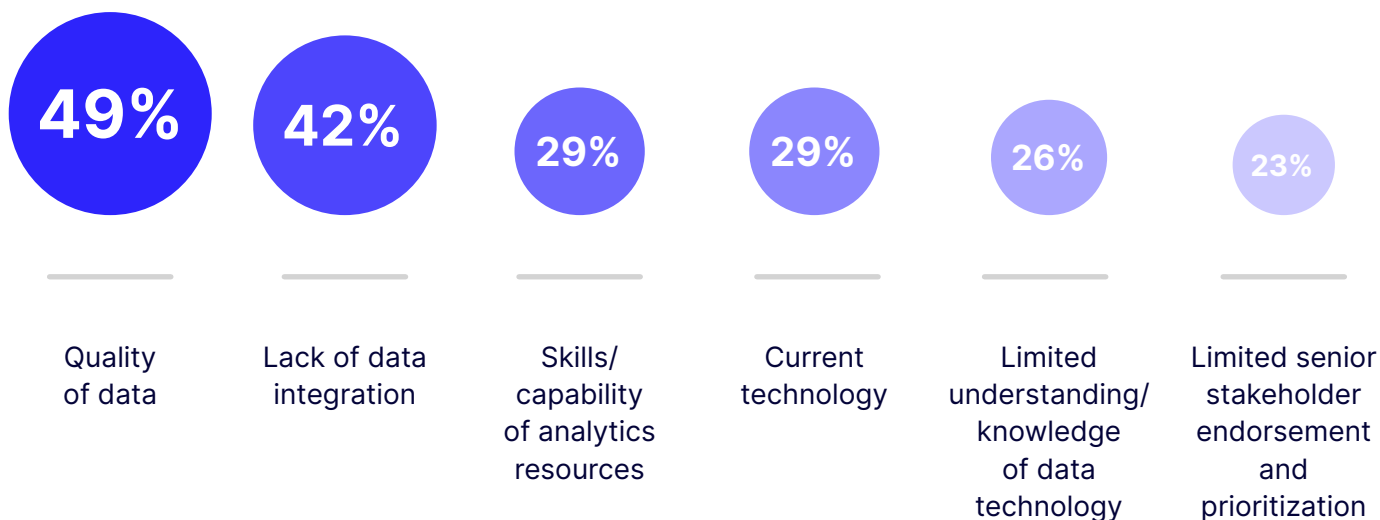
Figure 1: A suite approach limits functional depth and flexibility

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This has fueled the trend towards a best-of-breed approach. The acceptance of a one-size-fits-all system is disappearing and using multiple specialized systems with the right level of user experience is being adopted as the preferred option. The question then arises, how do we ensure data flows across these systems? How do we connect them?

It remains a significant problem. It explains why respondents to Deloitte's Global Chief Procurement Officer (CPO) Survey in the last few years have listed data quality and data integration as the two primary obstacles cited to digital transformation (Figure 2). Although everyone has adopted ERP and P2P suites in the last 50 years, data quality and integration are not being adequately addressed.

Figure 2: Barriers to digital transformation for supplier management

49%	42%	29%	29%	26%	23%
Quality of data	Lack of data integration	Skills/ capability of analytics resources	Current technology	Limited understanding/ knowledge of data technology	Limited senior stakeholder endorsement and prioritization

Source: Deloitte Global CPO Survey, 2019

The reason why these obstacles persist is down to the fifty year legacy of having ERPs and S2Ps as the backbone of supplier data which has caused them to become intricately embedded into hundreds of workflows and processes, often in sub-optimal ways and frequently involving manual workarounds or hot fixes. The issue is compounded by the fact that relationships between organizations and suppliers represent some of the most complex relationships that can exist within the enterprise.

For instance, every organization will have a huge number of suppliers, and every function within the organization will have to conduct various activities with at least one type of supplier, if not many. These can range from purchasing marketing or consulting services, to products, goods, travel and so on.

Multiple parties are involved and, to make matters more complex, activities and parties that are involved vary depending on what is being purchased and where, where the supplier is located and the risks that need to be managed. This might be done through many different systems and across categories, some of which will be managed centrally and some locally with market facing functions, and many not even owned by procurement.

For example, for catalogue buying, one might use Coupa or Amazon Business. However, for services it is better to use companies such as Fieldglass, while Concur might be used for travel. There is a whole host of such specialized systems which offer more efficient user experience, specifically designed for the service being bought, used or offered.

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Figure 3: The complexity of integrated supplier data — global, local and cross-functional variation

Central procurement function activities

- Master Data Management
- Spend Management
- Category Management
- Contract Management
- Compliance
- Relationship, Risk & Performance Management
- Etc

Spend Cat. 1

Spend Cat. 2

Spend Cat. 3

Non-procurement function activities

Finance
- Master Data Management

Compliance
- Quality
- Health & Safety
- Data Privacy

Marketing

- Agency Management
- Payment/expense compliance

Information Technology
- Information Security
- Audits

Division 1

Division 2

Division 3

USA

UK

China

Japan

ERP

ERP

ERP

Decentralized (local) and operational procurement activities

Supplier Onboarding │ Master Data Management │ Req2Pay │ Contract Management │ Relationship, Risk & Performance Management │ Etc
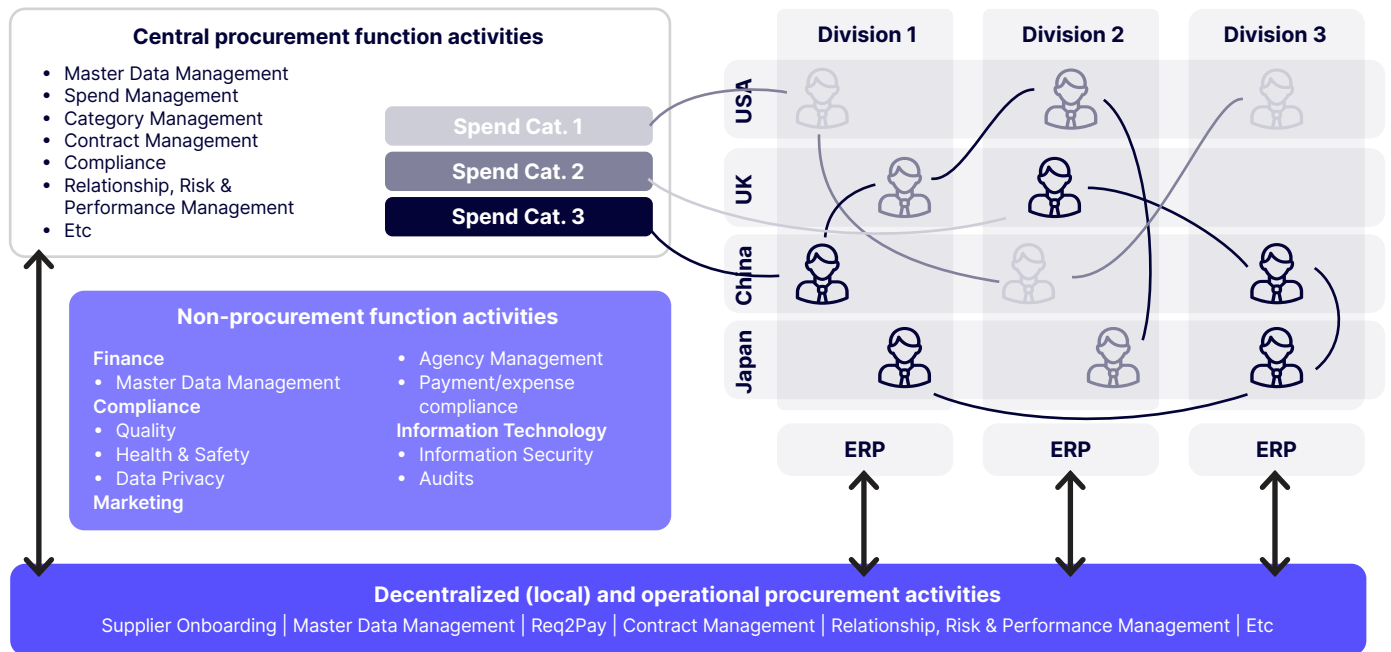
Figure 3 shows why it is imperative to develop a simple and systematic way of connecting the systems as well as making the data flow between them effortlessly. The complexity of the landscape makes it challenging to manage all aspects of curating good quality data within one system. It is not just a question of pooling data, but it is a question of how to support workflows that capture good data in the first place. Only when these two aspects are considered — both the curation and the capture — is it possible to understand why a one-size-fits-all approach, which is seen as less complicated, easier to operate and less prone to failure is actually the opposite.
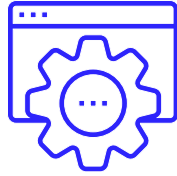
Another challenge that is especially true of supplier data is the level of variation and volatility that arises as every supplier has a different kind of relationship. The data, therefore, is high in volume and notoriously difficult to control.

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Figure 4: Typical challenges with supplier data silos
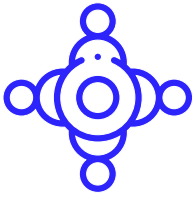
Diverse Stakeholders	Technology Integration	Data Quality	Variation & Volatility
Shared Services (Global)	Difficult to setup	Inconsistent	Many variations
Internal functions (local)	Costly to operate	Inaccurate	Changes quickly
Multiple systems (ERP, P2P, etc.)	Difficult to change	Incomplete	High volume
The supplier	Fails frequently		Hard to control

All of these challenges lead to a compelling temptation — which is to continue to fix the problem with more technology.

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Chapter 2
The central role of governance

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Contrary to popular belief, connecting silos in order to derive consistent, accurate data sustainably is not a technology or a system issue. It is a data governance issue. In fact, integrating systems has been a staple activity in enterprises for decades and integrating and connecting systems with the right expertise in place is simple.

The challenge lies instead in defining how the data should be captured, treated and kept up-to-date for the lifetime of the relationship with the supplier. Who is responsible for the quality of that information from an end-to-end perspective? Much of the time, suppliers are onboarded to a number of disparate systems, as we have seen in the technology stack diagram (Figure 1).

They are not onboarded to the enterprise. Their data enters the organization via systems that are structured differently and work in very different ways.

Overcoming the challenge

There are five key steps to take (summarized in Figure 5 below), which are as follows:

- Set up a data and information governance framework. This is an overarching framework including policies around the roles and responsibilities of the data owners and the ownership of data quality for the systems in scope, hand-off between systems and documentation and data security.

- A data-first company culture needs to be entrenched within the mentality of the company. It is essential to secure top-down buy-in from leadership and senior stakeholders to prioritize data excellence. This will ensure that messaging is embedded into the ethos of the organization, whereby data management is not dismissed as a back office or clerical activity, but is seen as a competitive differentiator, perceived as a priority and consistently curated. It needs to be understood that this requires a certain amount of time, effort and resources to be invested in order to be successful.

- Seek to unify all data and information. Deploy a supplier information management platform which is able to consolidate, integrate and govern the data across different systems.

- Establish a single-entry point for data. Processes for capturing excellent data must be defined and established upfront, rather than as an afterthought.

- Plan to progressively clean the history of bad data and information which has accumulated in all different silos over the longer period.

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Figure 5: 5 steps to get rid of supplier data silos

5 steps to get rid of supplier data silos

1 **Supplier Data & Information Governance**
Establish an overarching framework around Supplier Data & Information Governance.

2 **Create a data first company culture**
Top-down drive from leadership to prioritize the need for excellent data.

3 **Supplier data management platform**
Supplier information management platform to consolidate, integrate and govern data across systems.

4 **Control the entry point**
Define process in a way which yield excellent data.

5 **Clean-up the history**
Progressively clean-up the history of bad data and information.

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Pitching the benefits of governance

Organizations must understand and repeatedly communicate how governance positively impacts business efficiency.

As the adage goes: 'Only two moments matter in a piece of data's lifetime — the moment it's created and the moment it is used.' Ultimately, the quality of the data is created when the data itself is created and once this moment has passed, it is an arduous and sometimes impossible task to change the quality. However, the same data, irrespective of quality, will be used when it is being transferred across different systems or when it is being analyzed, and so on.

It is unfortunately usually only at this stage when problems with the data are identified, rather than at point of entry.

Such issues could be numerous: different data structures, wrong figures, wrong supplier information, data sorted into wrong categories, and more. A genuine challenge here is how can data be connected in a way that ensures good quality data throughout.

> Only two moments matter in a piece of data's lifetime: The moment it is **created** and the moment it is **used**.

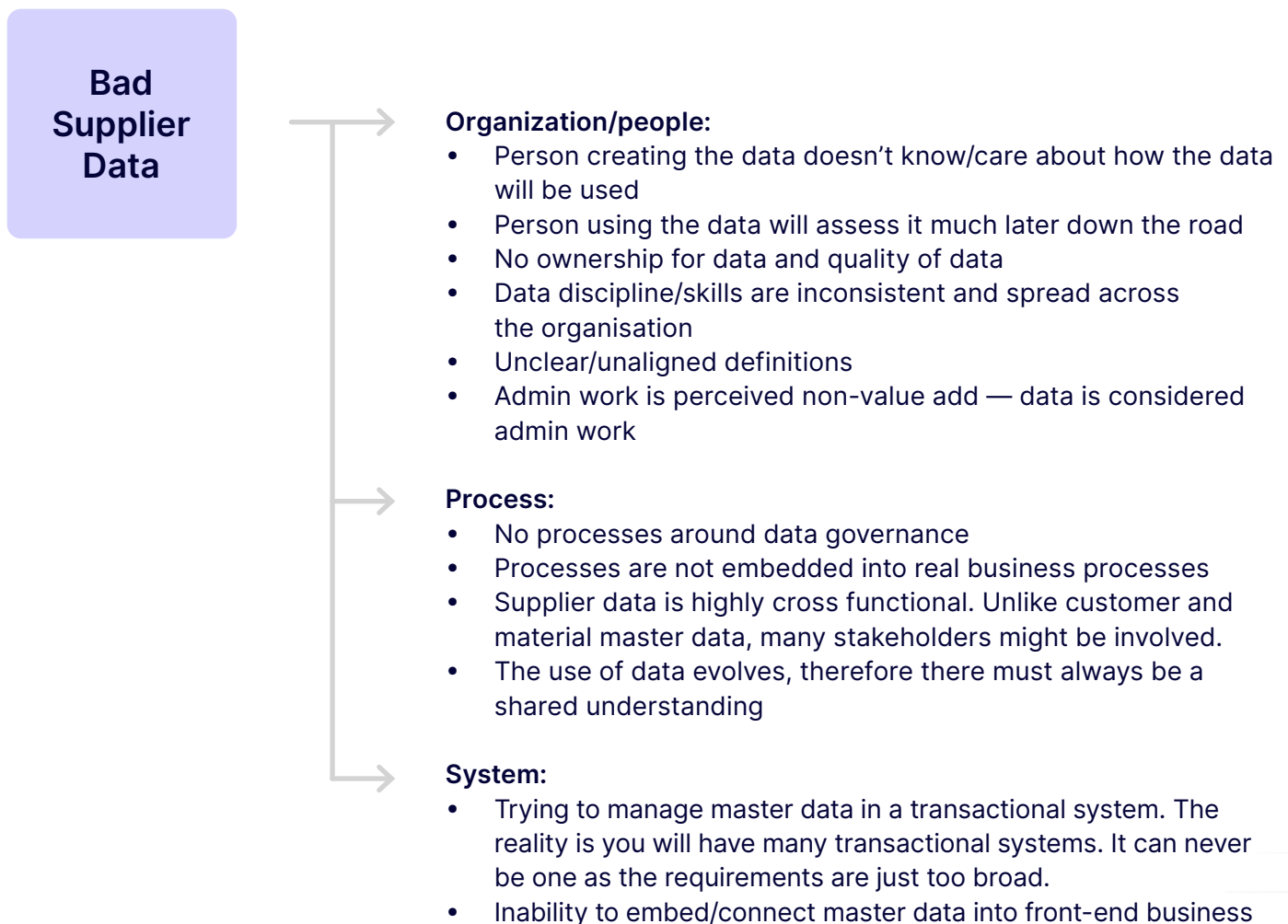**HICX**

Ownership: People, process and system

This is where ownership becomes important: Which department owns supplier master data in your organization? How does this translate into processes? What systems are involved? In many cases, this is yet to be determined but it is a vital step to complete before advancing further.

Lack of data governance and ownership is the primary reason why connecting data silos is so difficult, as summarized in Figure 6.

Figure 6: What makes connecting data silos so difficult?

Short Version: Lack of Governance (and ownership)

Root Cause:

Bad Supplier Data

Organization/people:
- Person creating the data doesn't know/care about how the data will be used
- Person using the data will assess it much later down the road
- No ownership for data and quality of data
- Data discipline/skills are inconsistent and spread across the organisation
- Unclear/unaligned definitions
- Admin work is perceived non-value add — data is considered admin work

Process:
- No processes around data governance
- Processes are not embedded into real business processes
- Supplier data is highly cross functional. Unlike customer and material master data, many stakeholders might be involved.
- The use of data evolves, therefore there must always be a shared understanding

System:
- Trying to manage master data in a transactional system. The reality is you will have many transactional systems. It can never be one as the requirements are just too broad.
- Inability to embed/connect master data into front-end business

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Reasons why organizations fail the governance challenge

The reason most organizations have failed to solve this problem, and it may seem trivial when simply reading it here, but it is because it is easy to get overwhelmed by the enormity of the task. It is challenging.

As a result, companies turn to quick solutions instead as they do not want to delve into the 'Pandora's box' of tackling the challenge across multiple delicately connected systems and different stakeholders head on. Common perceived 'quick win' options (Figure 7 below) that prove unviable or come with long-term drawbacks include:

- Trying to manage data in a way that the ERPs require, rather than for business needs

- Undertaking data cleansing. As organizations realize that feeding data from transactional systems to other systems results in poor data, they might resort to data cleansing exercises to solve their issue. However, as data is cleaned, new bad data is created. Organizations effectively enter a process of never-ending data cleansing.

- Introducing policies. By mandating how data should be handled via a series of rules, the hope is that these will be followed in order to guarantee better quality of data. It has been proven in the past that it does not work effectively as it is very difficult to police and manage in such a way.

- Outsourcing. A tempting option is to obtain external assistance. However, a problem that is difficult to fix internally is invariably even more difficult to fix using external resources.

- Use a data provider. A common approach is to attempt to solve the problem by using a data provider such as Dun & Bradstreet or LexisNexis to normalize or standardize data, as both have this type of data. However, updating 'new' data back into the systems of record carries great risks which no one is willing to take.

- Multidomain MDM. IT might argue that, by sacrificing functionality, at least data will be better as it will be in only one system. In reality, it leads to persistent data issues that are difficult to address.

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Figure 7: Why do most fail to solve the challenge?

Most organizations fail to solve the challenge as they look for 'quick wins'.

Single System
Believe that a single system will provide them good data.

Driven by the ERP
Try to manage data around how their ERP needs it.

Data Provider
Send it to D&B, BvD, etc. to fix.

Data Cleansing
Believe that bad data is solved by cleansing it.

Outsource it
Because it's too much effort we 'ship' with the intent for someone else to fix.

Policy
Too scared to do anything we find comfort in defining policy for others to follow.

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Rejecting these in favor of governance and _proactive_ management

These are the approaches many organizations will most likely try to deploy before they realize they should look it from a different perspective, namely that of data governance.

What makes data governance a sustainable approach is that it ensures high quality data throughout. Ironically, data governance is often misunderstood, but in reality it is straightforward to understand. In the case of supplier data, it is merely a framework for proactively managing supplier data.

The keyword to focus on is 'proactively' rather than 'retrospectively', which occurs in most cases. What this means is that companies must define what data means for them and how it will be used. They must make sure that it is created specifically for people who will use it, while also ensuring that there is a process in place for cleaning it continuously, rather than as a one-off.

This means embedding it into the real business processes. All too often, siloed data management functions are set up centrally, which is a mistake because it detaches people who create the data from people who will use it.

Figure 8: Breaking the vicious cycle with governance — a sustainable approach to ensuring high quality data

The Vicious Cycle

Bad data leads to inefficient process

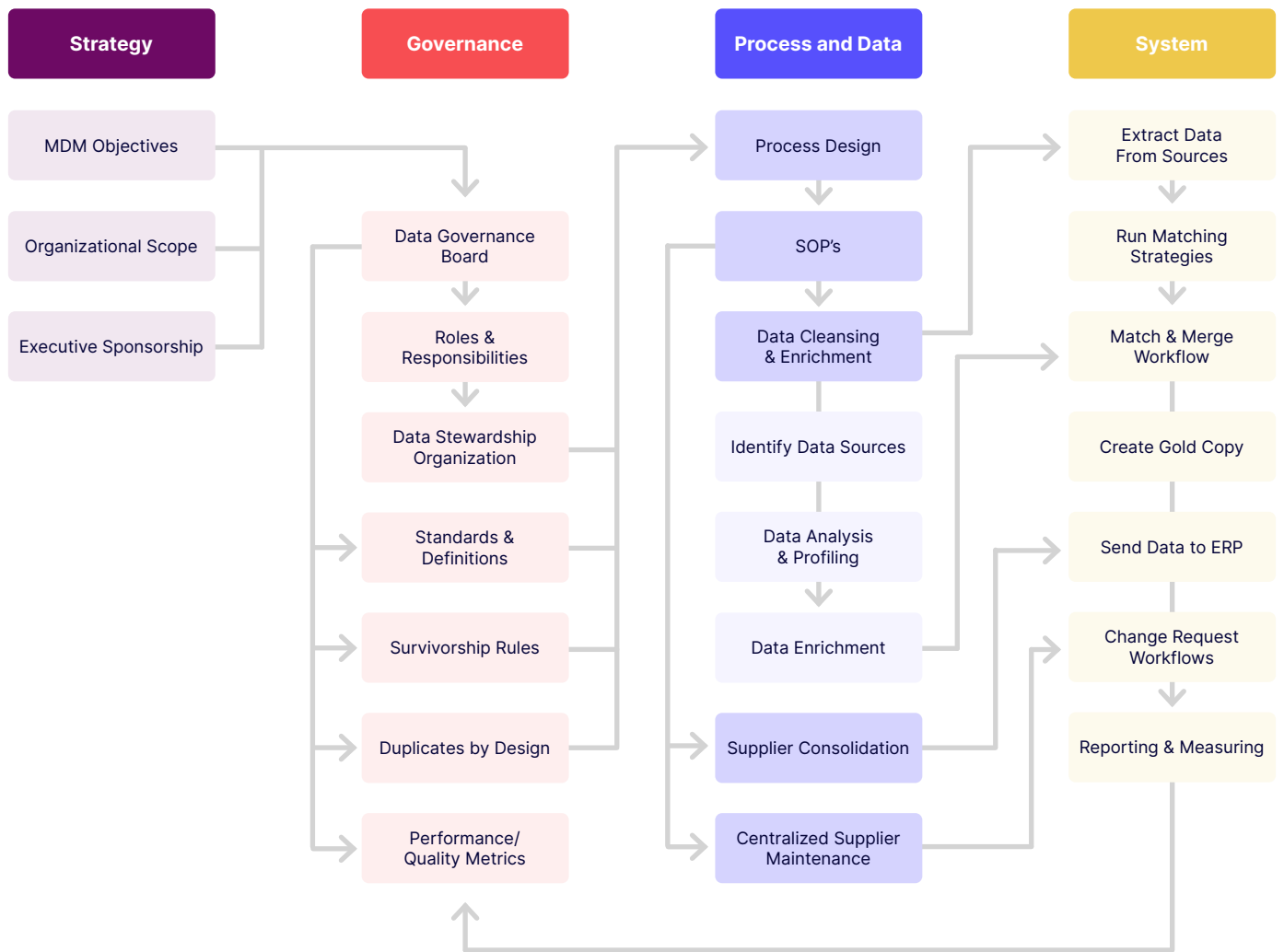Inefficient processes leads to bad data

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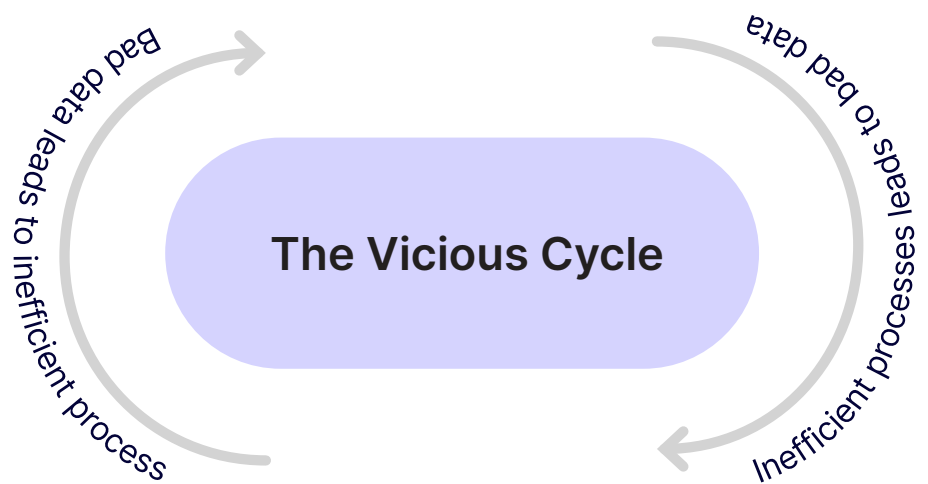
Deploying a governance framework successfully

When deploying a framework within an organization, the correct approach and methodology are essential and governance is also not a standalone part of the solution.

There are four components (see Figure 9):

- **Strategy**. Having clear objectives and executive sponsorship from the top-down and aligned to governance, data processing, and lastly the system.

- **Governance**. Setting up a data governance board. To illustrate, when the data is centralized or shared across multiple different silos, it requires an appointed person who can undertake decision-making efficiently with the right representation. Clear roles and responsibilities must be set and organized, alongside standards and definitions. If this sounds familiar, it is because these are typical elements of company management and it is worth thinking of it in this way. The same functions are required for managing supplier data.

- **Process**. Once these have been set up, then the processes around clean up, consolidation and maintenance can be defined, which will enable leveraging the system to support objectives.

- **System**. To reinforce, the system is the least important factor, although many believe the issues lie in the technology. The system is a component, but it is not the final solution.

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Figure 9: Path to successful implementation of data governance projects

Strategy	Governance	Process and Data	System
MDM Objectives	Data Governance Board	Process Design	Extract Data From Sources
Organizational Scope	Roles & Responsibilities	SOP's	Run Matching Strategies
Executive Sponsorship	Data Stewardship Organization	Data Cleansing & Enrichment	Match & Merge Workflow
	Standards & Definitions	Identify Data Sources	Create Gold Copy
	Survivorship Rules	Data Analysis & Profiling	Send Data to ERP
	Duplicates by Design	Data Enrichment	Change Request Workflows
	Performance/ Quality Metrics	Supplier Consolidation	Reporting & Measuring
		Centralized Supplier Maintenance	

Governance and organizationally aligned definitions

When it comes to governance and definitions, everyone in the organization needs to be aligned.

It may seem trivial; however, the same term will have a different meaning to different stakeholders (Figure 10). For example, if someone is interested in a spend report, a 'supplier' to them could be an overall parent company. Someone dealing with invoices, orders and receiving goods will be focused on the delivery location while an employee in contract management is focused on the legal entity level of a supplier.

It is essential these terms are defined and aligned within an organization, as well as understanding what each system requires before data can be connected in a way that is sustainable and provides a platform for self-service.

Tasks can always be completed manually, of course, but such an approach is not sustainable long-term, especially within large organizations.

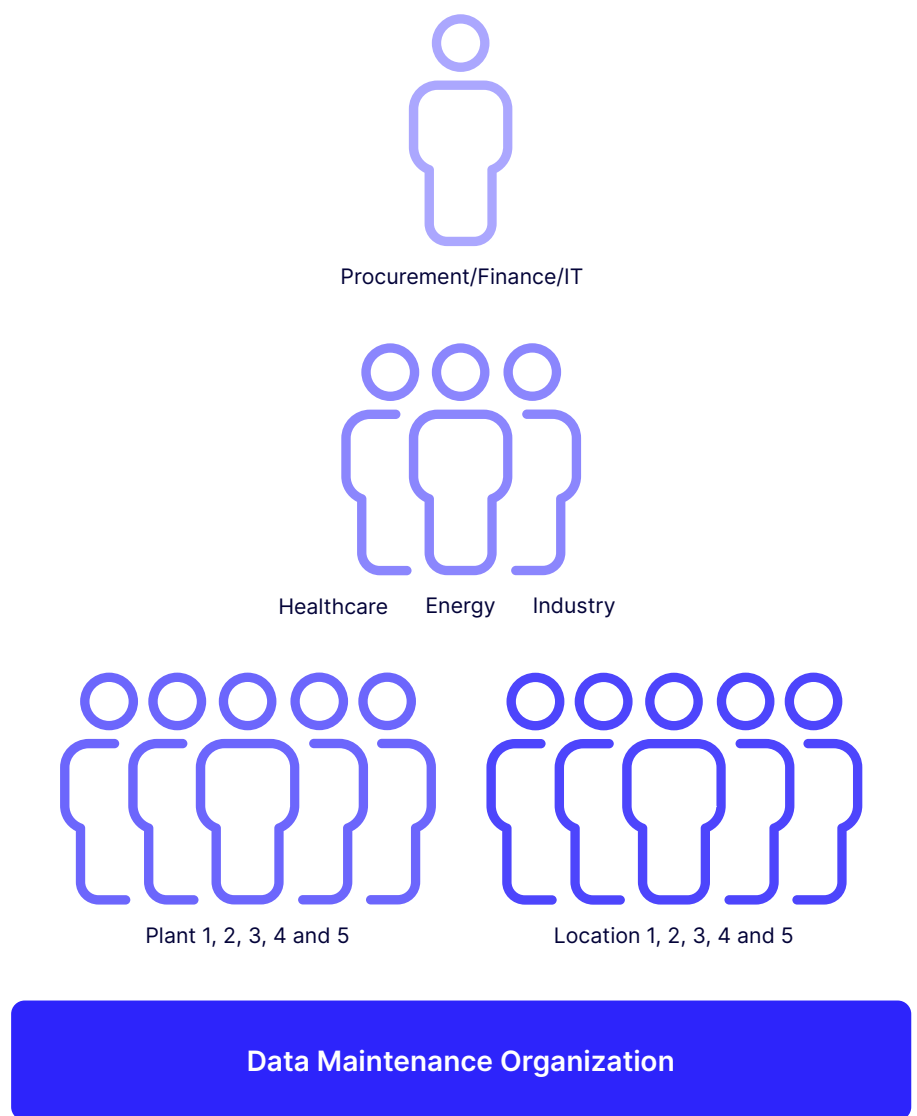## Figure 10: Clear definitions — What is a supplier?
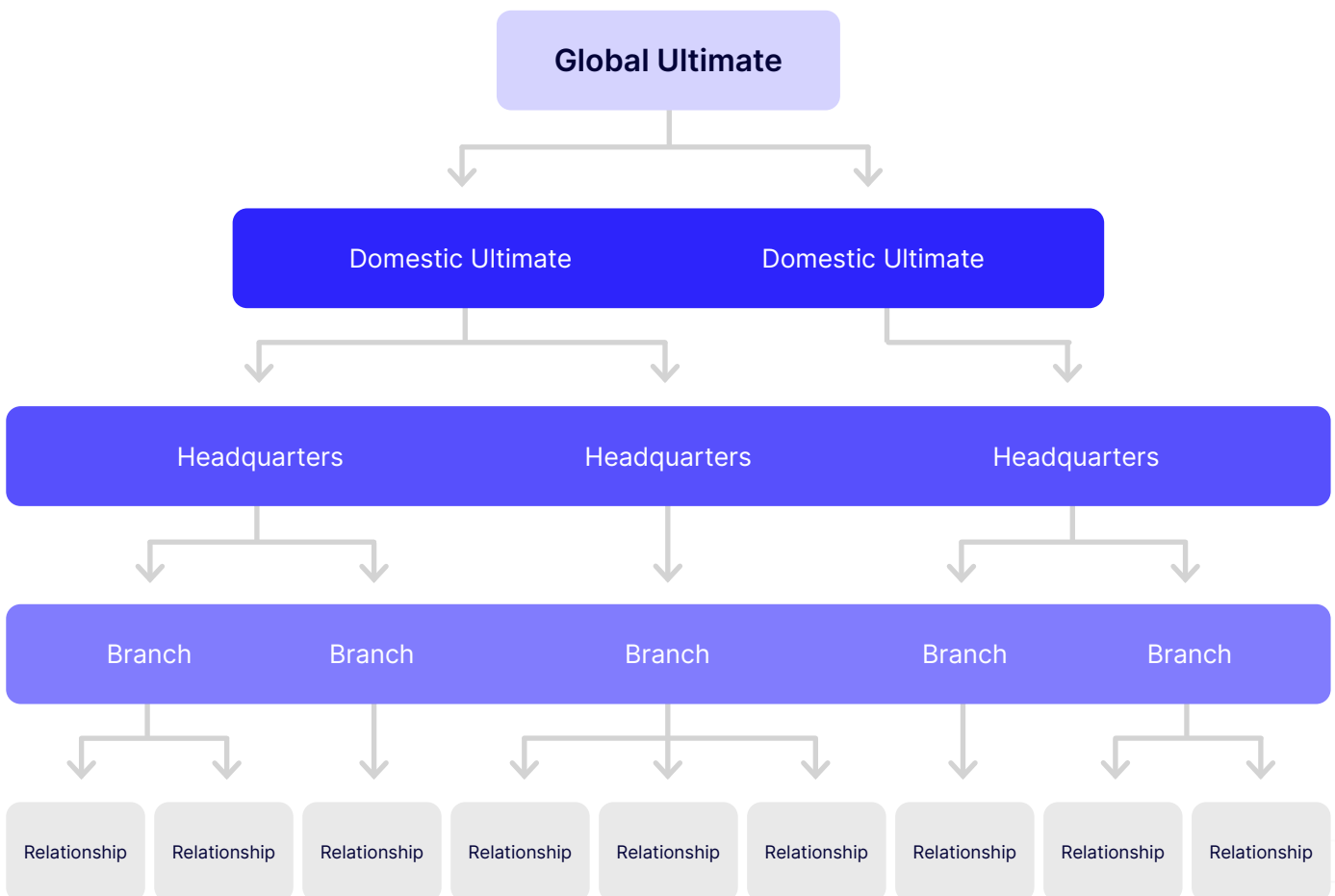
Unifying stakeholders

Another important area to address is knowing who data stakeholders are and therefore the lens through which they will view supplier data and governance. There are a number of key stakeholder views to consider:

- **The system view.** Regardless of whether it is an ERP, P2P or similar, any system is classified as a data stakeholder. They are not the master or the source but should be viewed as a potential consumer of supplier data.

- **The organizational view.** This could be local or internal. For instance, if an employee is based in Germany, they will be interested in viewing that data from that division. A supplier meanwhile will want to view data from the perspective of what is relevant to them specifically, which is why it is important to take steps to making the system as self-serviced as possible. Ultimately, suppliers are not interested in having to maintain the data nor are they interested in how it is maintained across multiple different ERP systems.

- **Analytical view.** This is a consolidated upward view of suppliers into hierarchies to provide an analyst or global organization perspective and would be used, for example, in reporting.

Figure 11: Supplier master data governance

Procurement/Finance/IT

Healthcare   Energy   Industry

Plant 1, 2, 3, 4 and 5   Location 1, 2, 3, 4 and 5

Data Maintenance Organization

There is a requirement for the governance structure to be tightly defined by the organizational point of view. A large organization cannot successfully operate without having defined roles, responsibilities and resources. This is essential for the execution stage.

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Chapter 3
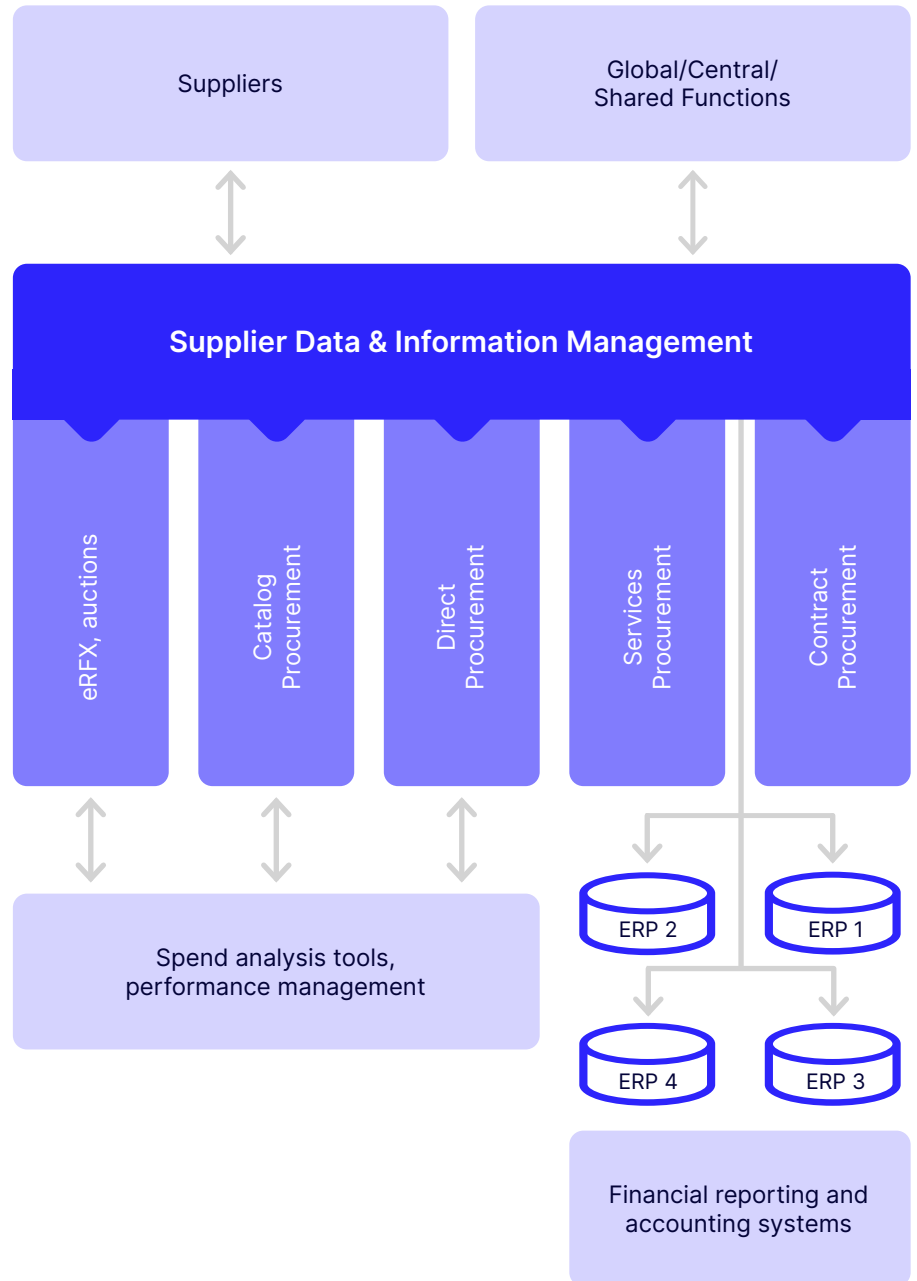# Defining processes and system requirements

The most sustainable way of managing supplier data is by creating and controlling a singular entry point. It is much simpler to funnel data through one entry point down into different systems rather than creating multiple different systems and then struggling to bring it all together.

The most sustainable way of managing supplier data is by creating and controlling a singular entry point. It is much simpler to funnel data through one entry point down into different systems rather than creating multiple different systems and then struggling to bring it all together.

To demonstrate, it's worth considering an analogy around how an ocean clean-up needs to be executed. Many would believe that cleansing is the real key in this scenario, however, that is not true. Richard Thompson, a famous environmentalist, stated in order to clean up the ocean, 95% of the activity needs to focus on how to stop pollution, while mere 5% is the clean-up itself.

The same holds true when it comes to data, data silos and bad data. The challenge is not data cleansing or integration but deciphering how to centralize and gain control over the entry point as quickly as possible, after which ongoing clean-up becomes much easier. Some data records will not even be used over a longer period of time which means such data will start to clean itself. In order to do this in a sustainable way, gaining control as quickly as possible is the primary goal — as the clean-up will follow.

Figure 12: Singular entry point

Suppliers

Global/Central/Shared Functions

Supplier Data & Information Management

eRFX, auctions

Catalog Procurement

Direct Procurement

Services Procurement

Contract Procurement

Spend analysis tools, performance management

ERP 2

ERP 1

ERP 4

ERP 3

Financial reporting and accounting systems

The next phase in the process is bringing the data together, that is, data consolidation and integration. To reiterate, cleansing is not relevant at this stage. Details such as whether it is written 'Limited' or 'Ltd' are not important. The main point is to centralize the data as quickly as possible. This will be supported by a system which will help to pull data in, match it and merge it to create a 'golden record' which is linked to multiple different records within various data silos. This process cannot be fully outsourced.

However, it should be completed by a data management or maintenance organization as they will understand upfront from experience the stakeholders and the use cases for the data. This is also not a task that can be completed in an Excel sheet; a system will make it drastically easier, as there are many activities and component parts (and points of potential failure) to consider, as Figure 13 shows.

Figure 13: Data consolidation and integration
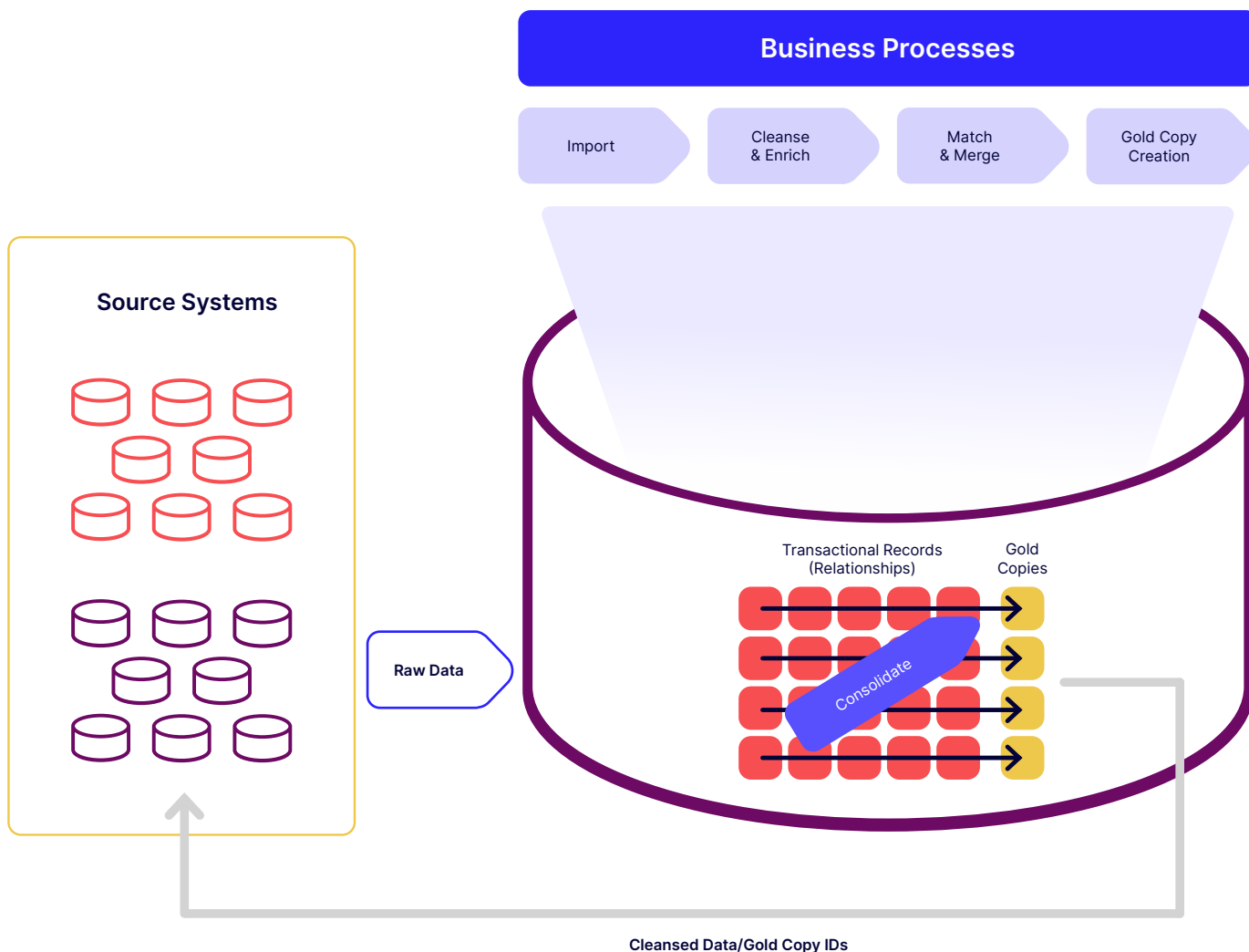
The final part of making the process sustainable is incorporating the idea of lifecycle management around supplier data. What is needed here is a system that can be directly initiated by front-end business users and suppliers, allowing them to work together in a collaborative manner. It needs to incorporate a single-entry point and become synchronized directly and automatically into any system which requires it.

If a supplier wants to change or update a piece of data, it would be done in one place, which would synchronize the data appropriately and in accordance with the appropriate governance model, to the right system (Figure 14).

Figure 14: Data lifecycle management
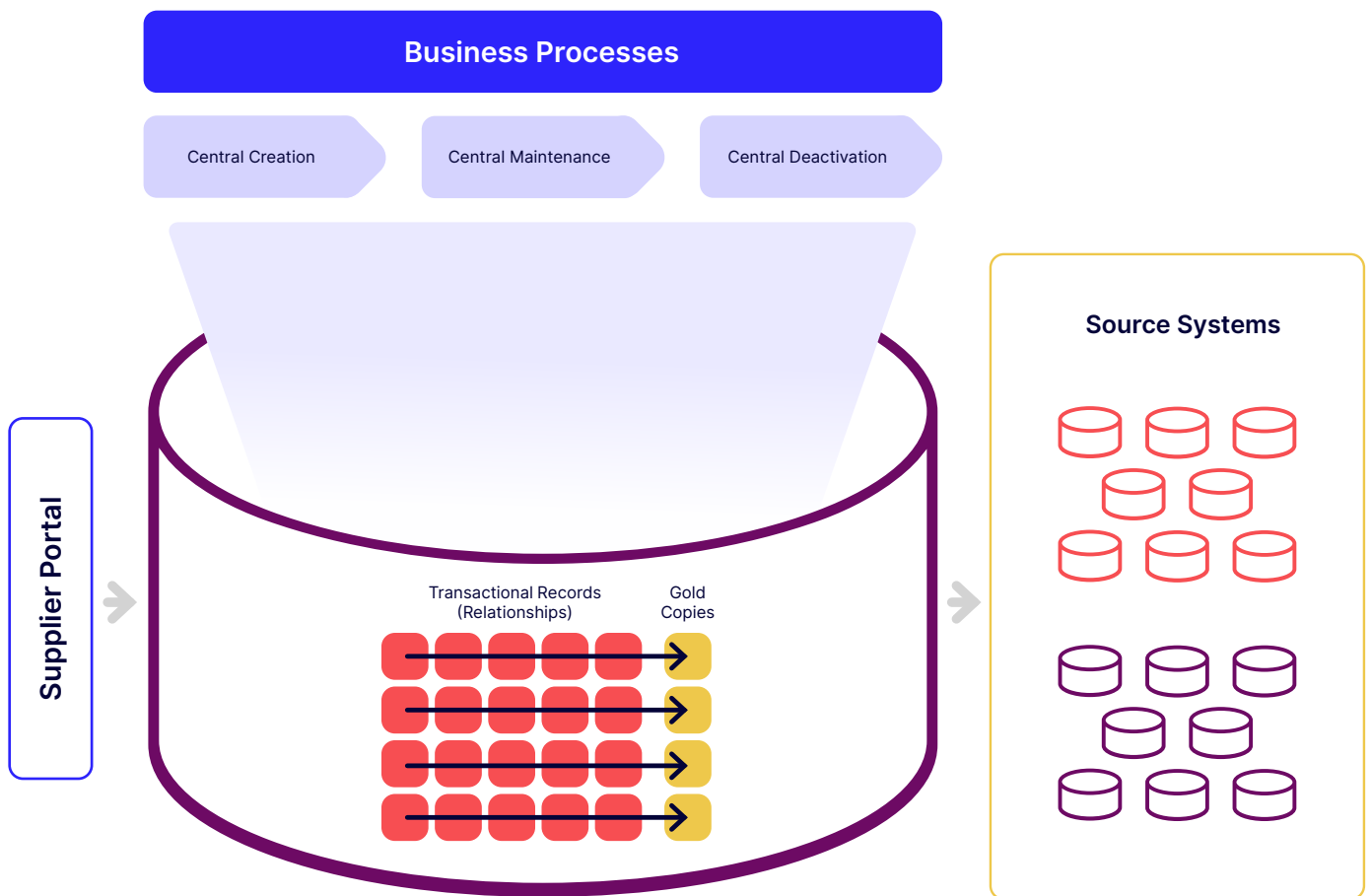
Conclusion
The key
next steps

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There are a few key takeaways to remember:

- Connecting data silos is not about systems or integration or data per se, it is a data challenge and data governance issue. Organizations must first tackle the questions of governance and set clear objectives. It is a cultural shift as data quality should be a priority, not an afterthought. Many tasks can be done retrospectively. However, to be done efficiently they must be thought of in advance and pro-actively.

- Executive buy-in is imperative to success and whilst most organizations with a digital agenda have started to prioritize this, many still have a way to go until senior level sponsorship is introduced

- Data cleansing should never be done in isolation as it is a waste of resources if bad quality data is continually created at the same time

- A very important factor is to not try and use transactional systems to manage master data as it has led a lot of companies to 'dead ends'. The reason this has happened is because transactional systems are not designed nor able to hold all the data as they are not fit for purpose. When organizations first started using them there was a notion that they are able to manage supplier information, which has been concluded is not true, as it purely fulfills the need of that transactional system.

Last but not least, get started! The whole process is daunting which is why many organizations hesitate. Once the research has been completed on how to implement it, it is straightforward. This is due to the fact that companies are concerned about the data cleansing, which as demonstrated, is only 5% of the task.

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HICX is the Low Code Platform for Supplier Management.
We enable business to find, maintain, and re-use trusted Supplier Data and Information across their Enterprise, across any spreadsheet, app or system. Our solutions enable your businesses to be more reliable, flexible, and scalable. Building from a rock solid platform of good quality data, we help businesses become digital in supplier management, third party management, compliance and risk, master data and finance management.

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