



# Building a Data Fabric for Analytics with Tableau

Accelerate time to value with self-service analytics and modern data governance built to scale



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## Introduction

Data is the heartbeat of the modern enterprise. Technology has progressed to the point that data-driven decision making is the norm and data literacy is often prized above all other skills.

Every business is now a data business, and this evolution has significantly impacted the means to manage data. Processes that once worked fine to capture, store, process, and manage data have been outpaced by the growth in volume and varieties of business data, exposing vulnerabilities in information architectures. Business demands that data management programs be more innovative, flexible, agile, and deliver better user experiences. The needs of business teams to access information are grinding against IT's needs to manage it, resulting in a space race of shadow IT workarounds and data technologist gatekeeping.

**The mission is clear:** organizations must tackle data architecture and integration challenges strategically in order to deliver on the promise of a trusted data foundation. Without prioritizing that, their competitive advantage, compliance, and budgets will continue to be at stake.

This is why data fabric designs have quickly grown into being the North Star of data management for the enterprise. In the simplest of terms, data fabrics are a set of data management tools that work together to help manage, share, and use every kind of data, regardless of where it is located.

Data fabrics enable businesses to self-serve data analytics with right-sized data governance and unite business users and IT together around a shared vision of high-quality, connected data for everyone, regardless of where data is located. They create a world where multiple styles of management-federated management, centralized governance, and self-service-function together seamlessly.

The ability of data fabrics to unlock data, connect applications and dynamically adjust to changing data landscapes is central to the future of work and underpins transformation initiatives, powering everything from increased automation to digital-first experiences. Organizations that pivot to this rapidly composable design empower more people—developer and non-developer alike—to use data in a secure and frictionless way.

Businesses manage

**10 TIMES  
MORE DATA**  
than five years ago.

Businesses average

**900  
APPLICATIONS**  
with only one-third  
of them connected.

**9 out of 10  
IT LEADERS**

say data silos create  
cost inefficiencies,  
data integration errors,  
inaccuracies, and unintended  
deletions, disrupting business  
and breaking trust.

Source: [IDC Whitepaper](#), sponsored  
by Tableau, *How Data Culture Fuels  
Business Value in Data-Driven  
Organizations*



## TABLEAU PRODUCTS THAT SUPPORT DATA FABRIC

**Tableau** →

**Tableau Data Management** →

(includes Tableau Prep Conductor and Tableau Catalog)

**Tableau Advanced Management** →

**Tableau Prep Builder** →

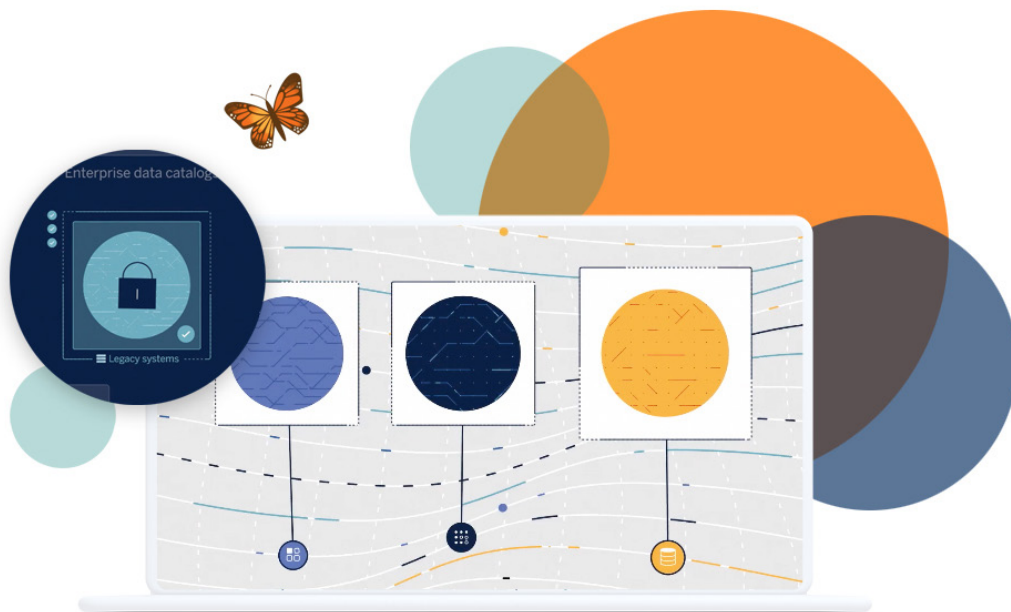
(comes with Tableau Creator license)

The Tableau suite of products (see side bar) support and enhance data fabrics to accelerate this transformation. People love Tableau because it's easy to use regardless of skill level, encouraging widespread adoption of data analytics. Tableau champions self-service by allowing users to discover and prepare relevant, context-rich data with built-in governance. It gives customers the flexibility to connect to data where it lives and supports the reality of modern federated data environments. To support the scale that customers need, Tableau enables data automation and operationalization throughout the full data lifecycle and delivers trusted, high quality data for analytical use.

As demand for data and analytics grows with the implementation of AI, businesses are looking to leap over traditional data hurdles with new data management designs. Tableau's approach to data fabric, centered on business value, propels business forward.

## Why data fabric is important now

The big picture of enterprise data is big—very big—and so is demand to access and understand it. While “big data” as a buzzword may have died down, businesses have continued to create volumes of data of increasing complexity at a high velocity. That won't change any time soon. Despite increasing headwinds challenging growth targets for most businesses due to shaky macroeconomic conditions, customer expectations aren't backing off. Now more than ever productivity, efficiency, and automation will be key to make smart, strategic decisions to shape organizational success, drive immediate value and reduce risk.



Expectations for using data continue to outpace the sophistication of the tools to meet them. Legacy business intelligence systems and multiple data storage solutions, as well as every new team and innovation, spin up more data silos with commensurate risks to duplication, poor data quality, security, and privacy. IT departments often manage this pressure by trying to restrict access and lock down data sources.

## The demand for data analysis is growing

Most business leaders have some degree of measurable proof that data and AI initiatives create value to their companies. Today, these outcomes are typically limited to IT organizations and single departments that experiment with unique business cases and use purpose-built applications and data repositories.

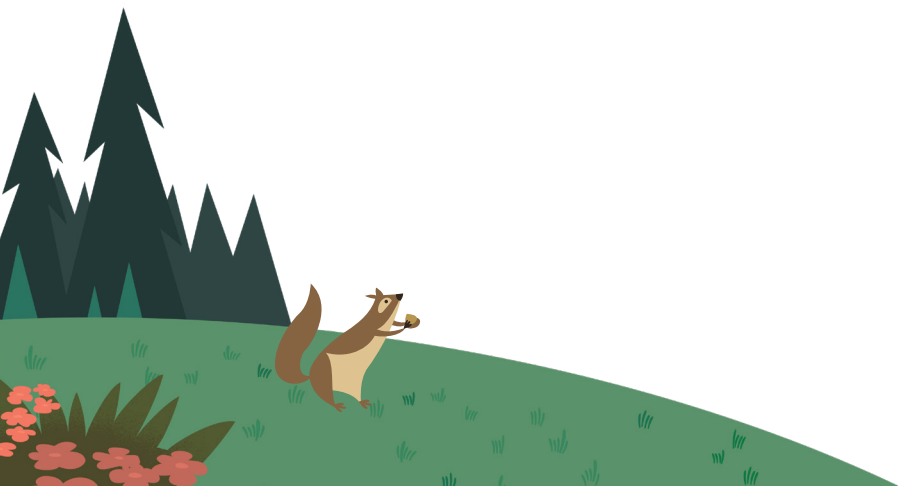
When businesses put a premium on understanding data, they quickly realize every employee needs to understand data, not just IT. In a [2022 Forrester Consulting survey commissioned by Tableau](#), 82% of decision-makers say they expect at least a basic data literacy from all employees in their department, surpassing project management, communications, and computer skills.

Businesses with mature data literacy efforts—the skills to analyze, explore, make decisions with, and communicate using data—yield dramatic benefits, including more innovation, better customer experiences, improved decision making, reduced costs, improved employee retention, and increased revenue. High-maturity programs report benefits 10% to 50% higher than low-maturity initiatives.

Businesses are looking to data fabrics to improve their data environments and management practices to meet the demands of their workforces. A [Mulesoft survey](#) reported that 36% of business decision makers characterized their approach to enabling non-IT users to integrate apps and data as mature. Nearly half said they are developing plans with a focus on self-service integration capabilities.

### Tech Republic

Tech Republic names Tableau one of the best BI tools for integration and ease of use.



## Data management practices aren't keeping up

Data consumers don't have a problem with the practice of data analytics, but in everything around it: finding relevant data, combining it effectively and to the right fidelity, securing and governing it, and trusting that it's the right data to answer their questions. Legacy data designs are slow and brittle, rendering them unable to support nimble data discovery or lifecycle management.

In a [recent survey of 1,000 U.S. office professionals](#), 57% said quickly finding the files and documents they need is one of the top three problems their businesses have to solve to support remote work in the future.

IDC found [less than 2% of new data was saved and retained in 2021](#). The rest was either ephemeral or temporarily cached and subsequently overwritten. Absent processes at scale that determine what data should be stored, enterprises lose historical data and throw doubt on the quality of data available.

## Data management is still in the hands of the few

Organizations are taking the right steps to build Data Cultures by prioritizing data-driven objectives and upskilling departments. But the technology foundation continues to reinforce traditional constraints. It is still built for the few: the technical experts.

How many data governance projects have you seen launched solely on enterprise data catalogs or warehouses? Typically, projects stop there or take years for the benefits to reach the business, where needs already have evolved. This holds organizations back from true transformation.

As the number of users and the amount of data increases, companies should rethink how to open up data to more people. Availability, compliance and optimization across enterprise data become priorities for everyone as well as facilitating knowledge sharing between business users and data owners. In the next few years, organizations will iterate on data fabric designs and utilize a DataOps approach that helps IT and the business work better together to rapidly realize success and build a true Data Culture.

Traditional data management practices put IT and business leaders in separate camps, tasking IT and technical data stewards with defining who can get what data and how it is modeled. But that leaves out business users, who know about the business, know what the meaning of the data is and how it is related, and know which values are incorrect and can help enrich the content metadata.

Top three roles most likely to have requirements for unlocking and integrating data:

**49%**

**DATA ANALYSTS**

**44%**

**BUSINESS ANALYSTS**

**42%**

**CUSTOMER SUPPORT**

Source: Mulesoft, in collaboration with Deloitte Digital, [2022 Connectivity benchmark report](#)



## Tableau and data fabric

At Tableau, we believe in the democratization of data—the people who know the data should be the ones who guide the management of the data. We've aligned our engineering investments, partnerships within the ecosystem, and overall vision with the evolution of the data landscape to enable self-service analytics with any data, no matter where it lives.

All data fabrics are built on the premise that data integration and governance is an ever-evolving spectrum where different kinds of data and content demand different kinds of management. All deliver integrated and semantically-rich data from across enterprise applications and systems to data consumers. Finally, they all require periodic evaluation of data processes as workforce skills change and new use cases develop.

While the typical data fabric is a “hub and spokes” model, with a central data management system that determines which data can be pushed out to business units, Tableau takes the opposite approach. Tableau provides the tools needed to ensure business needs drive and provide input into data management practices and design. The journey of data within Tableau begins with business users.

This difference is profound. Tableau data fabric capabilities converge within the platform itself, so business consumers who already use it can continue unabated, new data explorers can build analysis skills, and IT can manage data to drive a Data Culture transformation. The entire platform ultimately becomes a collaboration zone for enterprise-wide analytics.



**Once people are confident with data, they will want to ask richer questions and create new data assets for themselves. In practice, this means that data must be well-described, well-governed, and accessible.**

– Tableau Data Culture

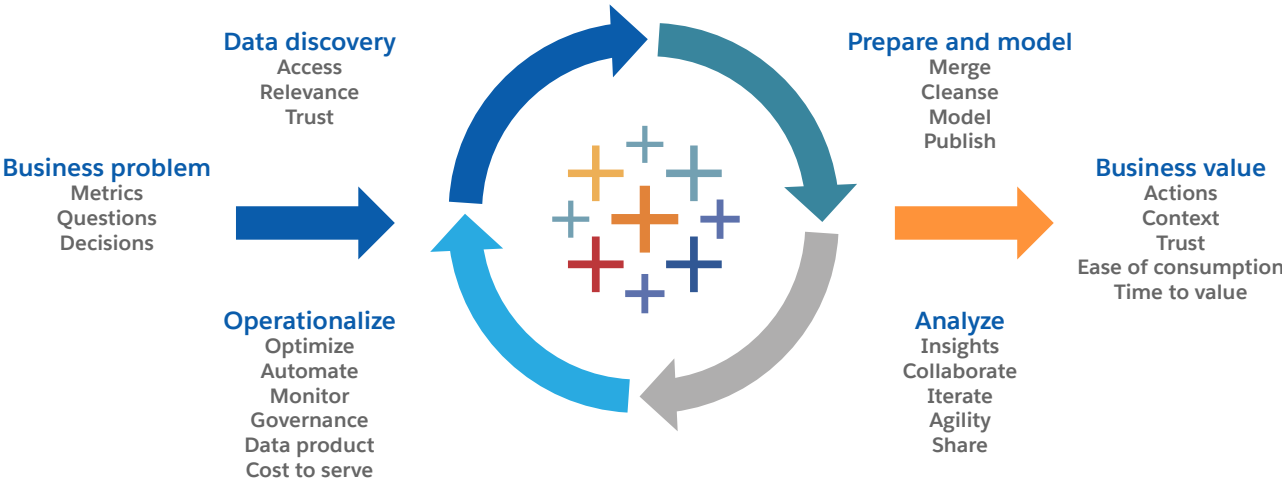


### Time to value

One of the biggest barriers to creating a Data Culture can be summed up in one word: access. Traditional environments often lead to a battle between the business-side to be data-driven and IT-side responsibilities to properly secure and govern a continuously changing data environment. The motivation for IT to deny access is understandable: if done incorrectly, a policy change could allow too many people in an organization to gain access to sensitive data.

Data fabrics dissolve this tension by encouraging IT and the business to work together, building a bottom-up methodology composed of subject matter experts creating metadata, business rules, and reporting models to inform governance and security at the enterprise level. This is where you can really see the value in Tableau’s approach, where everyone across the enterprise can work how they like to work and at the speed of their business. The business has rapid access to data in a way they are already familiar with, while IT has the capability to scale their data governance programs.

### Tableau supports analytical pipelines essential to data fabric designs



Data discovery enables data fabrics to answer business questions by composing and curating all of the necessary data regardless of location. The Tableau discovery experience is designed for business value, with built-in governance for scalable self-service and tooling designed to deliver personalized results and recommendations across workflows.



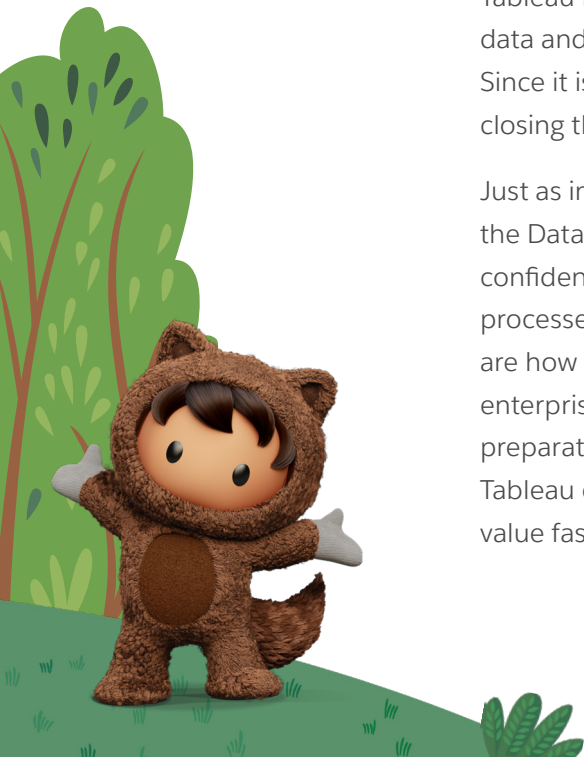
A typical workflow consists of composing a new data set by reusing some existing data, adding newly available data, doing some data preparation to merge and cleanse the new data, modeling the data for the specific business need, and then publishing and sharing the newly-modeled Tableau data source back into the [Tableau Catalog](#) for analytical use.

In the future, Tableau Catalog will include additional content beyond just data that is already in use within Tableau. This includes Salesforce data and metadata exchanged with upstream data sources and enterprise data catalogs. Once data is found, Tableau's augmented analytics capabilities, from automated modeling to guided natural language queries, are powerful and trusted to help organizations leverage their growing amount of data and empower a wider business audience to discover insights.

Data can only provide real value if you trust it. Tableau provides in-context visibility into data quality so users can easily identify if it meets their requirements. Quality indicators such as data quality warnings and refresh failures are available today as part of Data Details when viewing a dashboard or within Tableau Catalog. Additionally, details to help understand data context and relationships to other data sources are included as well. You can see who authored a source or workbook, when it was authored or refreshed, and who is using the data and how it is related to other Tableau content.

Rarely is raw data in the cleanest or right state for analysis. [Tableau Prep](#) changes the way traditional data preparation is performed in an organization by providing a visual and direct way to combine, shape and clean data – without writing code. Tableau Prep makes it easier for analysts and data owners to quickly wrangle the data and certify it so that they can spend most of their time generating insights. Since it is a part of Tableau, sharing outputs across teams becomes frictionless, closing the gap between data preparation and analytics.

Just as important as having the right capabilities in place is having everyone in the DataOps practice understand and comply so that users will have trust and confidence in the analytics they'll use to make data-driven decisions. Repeatable processes enable you to scale. Taken together, DataOps and data fabric designs are how business data owners can provide rich context and a holistic view of enterprise data and analysis. By facilitating the iterative process of data discovery, preparation, modeling, analysis and operationalizing context around data, Tableau can help push refined data back into the data fabric, which helps drive value faster.

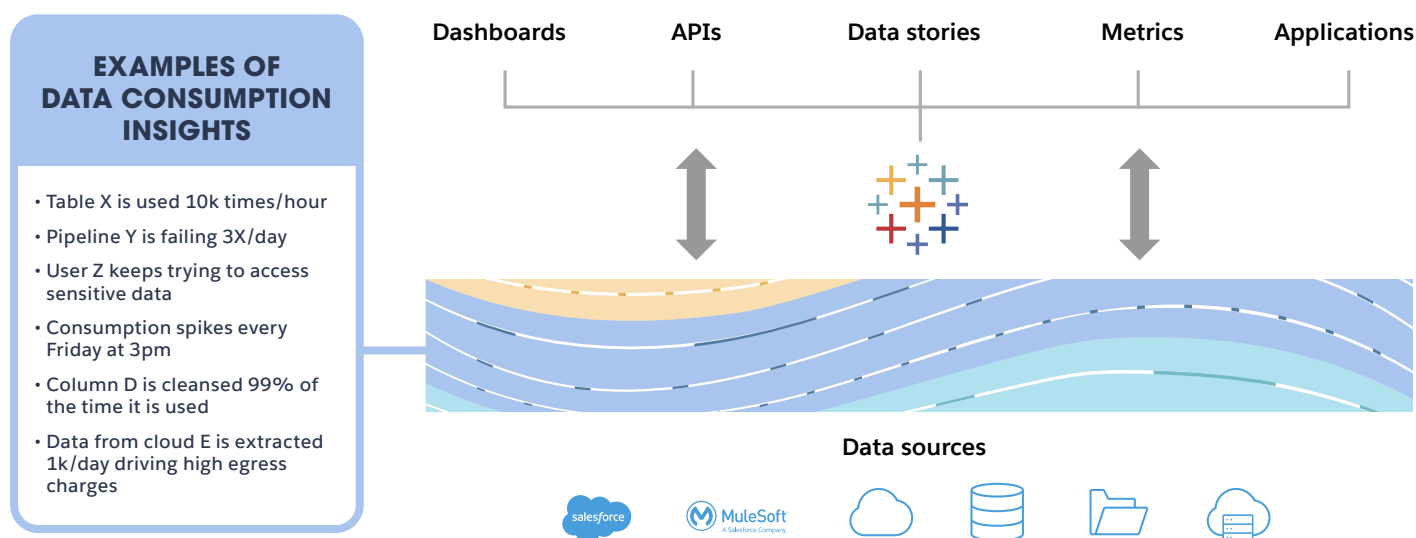


## Understanding data

Everyone across an enterprise can do their job in context and more efficiently with a data fabric. Seeing and understanding data is only part of the data journey. People need to be able to explore their data, too – and, alternatively, understand how data is being consumed. Data consumption spans the data fabric, so your organization needs insights from data sources all the way to the “last mile”.

Tableau enhances data fabric designs through a unique view of data consumption, optimizing operational costs while ensuring data freshness and performance with intelligent suggestions for dashboards and data pipelines.

An understanding of data consumption this granular surfaces insights into how money is being spent, identifies opportunities for optimization, and reduces cost to serve.



The “last mile” in data analytics is the final stage that connects data analysis to actionable insights. But this stage is also where problems with data management and collaboration are most visible to everyone. Business users don’t know where to find the data they are looking for or don’t know if they can trust the data they find, and IT doesn’t know how data is used once it leaves their centralized stores, so they can’t help businesses get what they need.

Tableau dissolves this tension by truly supporting self-service data consumption. Through Tableau's semantic layer, every data source has a data model that provides standardization and transparency. The model simplifies raw data by associating it with business-friendly metadata and is a means for using schemas for quick analysis.

Tableau's metadata capabilities also promote reuse, remove stale or unused data, and continuously improve data availability and performance. Reusing existing, relevant content cuts down on duplicative work, making more time for analysis. Tableau promotes reuse by intelligently recommending data sources based on enterprise-wide usage patterns and lineage; for example, identifying the most frequently used database tables. By providing insights via metadata into data reuse, Tableau helps data managers understand what data is being used, by whom, and at what frequency to help them prioritize source cleanup. Site owners and creators can also certify data. For data users, data certification is visible to help drive trust and reuse across data sources. Finally, Tableau intelligently pushes down operations to external data sources like data warehouses whenever possible for fast flow execution and reduced data movement cost.

## Evolve data investments

Data fabrics are composed of a range of capabilities that are interoperable and independently changeable, so businesses can mature the design at their own pace. By supporting multiple data delivery styles and diverse environments simultaneously, you don't have to change everything at once. You've likely laid some groundwork already with existing data integration, virtualization, and semantic layers that will enable you to access data spread across the enterprise.





## **Tableau designed its approach to data fabric with specific capabilities and support for building on existing investments. These include:**

**Access to data no matter where it lives** through more than 100 connectors (and counting!) and an API library for accessing data sources regardless of whether they are relational, operational, analytical, SaaS applications, or files or if they reside in the cloud, on-premises, on the edge, or a combination. Tableau has first class connectivity to Salesforce data, extensibility through Mulesoft, and an SDK. Tableau can access metadata from data sources to create a virtualization layer to reduce data movement, and enable seamless analytics workloads and applications across environments.

**Support for new data types and storage solutions** useful for processing large quantities of structured and unstructured data via data lakes or warehouses, like [Amazon Redshift](#), [Google Big Query](#), [Databricks](#), [Snowflake](#), and [Microsoft SQL Data Warehouse](#).

**Secure data access and sharing** for data owners to share access to groups of tables for use across different workbooks, data sources, and prep flows. Securely manage access, agile physical database management, reduced data proliferation, and centralized row-level security.

**An analytics catalog with a complete picture of data across the enterprise** and how it is connected, enabling data curation, visibility into data lineage, support for impact analysis, and quality indicators. Integration capabilities with an enterprise data catalog to exchange metadata and provide the right information and governance within the context of both applications.

**Self-service visual and direct data transformation** for quick and easy analysis, rapid iterations, and reduced burdens on upstream data owners.

**Metadata-driven automation and optimizations** that apply AI and machine learning to analytic pipelines, including data preparation and data quality processes. In the future, Tableau will use metadata to feed information back into the data fabric, creating an automated feedback loop and strengthening the fabric.

**A business-driven semantic layer** that enriches analytics data with business context and meaning, improving discovery and comprehension of relevant data and for consumers to better understand the data.

**Support for DataOps to operate at scale** designed to be API-first for DataOps tooling and integration with overarching data and analytics landscapes.

## Conclusion

Future leaders will continue to cultivate analytics as the area that drives the most return and value for their enterprise—both financially and for innovation. With a data fabric design as the backbone, they will have a clear way forward to a trusted data foundation.

Here are three recommendations for organizations that are planning to add value to their data fabric with Tableau:

- 1. Start with the business needs.** One of the most important parts of the journey is understanding what business value you are trying to achieve. Accelerate this process by identifying the core business goals and outcomes early, who benefits from which data, how existing data maps to these business impacts, and where the opportunities and hurdles are. By starting with business needs, use cases surface and pave the way for a business-led information architecture strategy that your data fabric can adapt to.
- 2. Bring the business and IT together.** Data fabrics set a flexible framework to rally the enterprise around a shared vision of high-quality, trusted data. Leaders who follow this design will start to outperform competitors due to the relentless focus on collaboration and flexibility, without sacrificing governance and security along the way. When everyone across the enterprise can use data in a way that is relevant to them and make data-driven decisions intuitively, you can achieve a data culture at scale.
- 3. Don't reinvent the wheel.** Data fabrics can use existing data management stacks and improve them through enterprise-wide integration. You can start small with what you have today and mature your data fabric design over time. Tableau can deliver value today and help you on your journey.

Talk to your account representative to learn more about bringing your data fabric vision to life with Tableau or visit [tableau.com/data-fabric](https://tableau.com/data-fabric).

## About Tableau, a Salesforce Company

Tableau helps people see and understand data. As the world's leading analytics platform, Tableau offers visual analytics with powerful AI, data management and collaboration. From individuals to organizations of all sizes, customers around the world love using Tableau's advanced analytics to fuel impactful, data-driven decisions. For more information, please visit [www.tableau.com](https://www.tableau.com)



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