

4 steps to create a data-driven business

Unlock your data to power actionable insights with
API-led data integration



Contents

Executive summary	03
Introduction: The data challenge	04
4 steps to bring API-led integration to your data	06
01 Build	07
02 Secure	08
03 Manage	09
04 Monitor	10
Customer spotlight: LendingTree	11
Unlocking, visualizing, and actioning data with MuleSoft and Tableau	14
Take Action	15
Customer spotlight: California Governor's Office of Emergency Services	16
Conclusion	18

Executive summary

Data is a powerful tool. Business and IT leaders are increasingly turning to data to gain insights that will inform everything from product strategy to hiring and recruiting. With that pivot from making business decisions based on anecdotes and hunches to data and insights, data strategy is becoming a popular topic.

Data strategy is a vast subject. Here are just some of the questions that you may be asking to inform your own company's data strategy:

- What is the most impactful data to collect about my business' operations, customers, employees, etc.?
- How can I integrate data from different applications?
- What's the best way to quickly derive the insights that my leaders need?
- How can I ensure data quality and integrity?
- Where should I store all this data?
- How do I ensure that the right people have access to the right data?
- How do I extract valuable insights from the data that I've already collected?

While there are many questions and concepts to consider, this whitepaper will specifically answer the question: how can I integrate and analyze my data to generate actionable insights?

As you'll read, data integration is contingent on four critical steps: build, secure, manage, and monitor. When done thoughtfully, these steps will enable your business to successfully deliver connected experiences that inform key actions and grow your business.

Introduction: The data challenge

In the last decade, we have seen an explosion of data growth, fueled by artificial intelligence, machine learning, mobility, and connectivity.

[IDC predicts](#) that the amount of data in existence will grow from 33 zettabytes in 2018 to 175 ZB by 2025. That is five or six times growth on an already large scale.

While companies once collected data for the sake of collecting data, there have been significant strides made to turn these raw data points into actionable insights. Companies that can successfully transform their raw data into insights capitalize on these insights as a business differentiator. They see the direct impact on their results.

Insights-driven companies are 23 times more likely to add customers ([McKinsey](#)), 9 times more likely to retain customers ([McKinsey](#)), 1.5 times more likely to report revenue growth of greater than 10% ([McKinsey](#)), and see 7 times faster growth than global GDP ([Forrester](#)).

In pursuit of these results, many companies have invested in a data organization led by a Chief Data Officer (CDO). But despite these investments, they aren't necessarily seeing this level of success – just eight percent of companies are successfully scaling their analytics to drive business insights ([McKinsey](#)). Why is that?

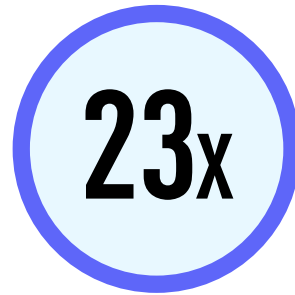
According to MuleSoft's recent [Connectivity benchmark report](#), 89% of IT leaders say data silos are the biggest obstacle to digital transformation. That's not surprising, given the average enterprise has data in 900 applications, and just 28% of them are integrated. Salesforce's recent [Enterprise Technology Trends Report](#) further identified that IT leaders say "disconnected data and systems" is the second-biggest customer experience challenge they face, behind "legacy systems."

To overcome data silos, data often must be integrated across multiple platforms, systems, and applications – and this complex integration is tough to do well. All too often, it’s the number one reason that causes new initiatives to fail. Organizations need an integration approach that allows them to unlock a data set once and empower teams to use it in their own experiences. The right integration approach will allow you to extract the full value of your data and apply insights to grow your business.

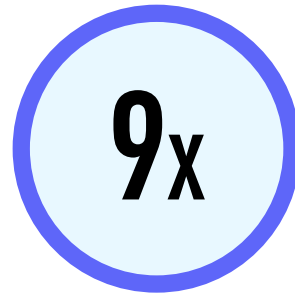
The next section will give you tactical tips to do this.

“Organizations need an integration approach that allows them to unlock a data set once and empower teams to use it in their own experiences.”

Insights-driven companies are:



**more likely to
add customers**



**more likely to
retain customers**



4 steps to bring API-led integration to your data

Let's start with what many organizations do when integrating two data sets: they write custom code. This may appear to be the faster solution, but it often drives up costs, slows innovation, and puts security at risk. As organizations perform more point-to-point integrations, the IT organization is forced to take on more complexity, shifting their focus from innovation to maintenance.

A better alternative is [API-led integration](#). This is a standardized way to connect data and applications with reusable, composable [APIs](#) designed to perform a specific role – such as unlocking data, composing data into processes, or delivering an experience. This means an IT team can unlock a data set once and empower teams throughout the organization to use that data in their own experiences, resulting in [3x faster project delivery](#), on average, and a 63% reduction in maintenance costs.

Here are four steps to bring API-led integration best practices into your organization, including key questions to ask potential vendors to ensure your integration platform sets your business up for future growth and success.

Build

The first step to API-led integration is, of course, to build APIs. Keep in mind that this is most easily done by developers who are familiar with API builds. If you don't have any developers available to you, look for a low-code tool that will support drag-and-drop integrations.

Start by writing APIs that unlock data from applications, cloud databases, and on-premises systems. Look for an integration platform provider that simplifies this process as much as possible. Developer productivity is a crucial resource, so make sure your developers define the APIs, and let the platform generate API specs and perform the rest of the heavy lifting.

Once all of your data is unlocked, write a series of APIs that orchestrates your data into functional blocks. For example, you may want to create an API that composes SAP and Salesforce data into a single block of customer data. Similarly, you may want to write an API that merges UPS and FedEx data into a single block of shipping data.

The final layer of APIs will power the experiences you want this data to feed into, such as an analytics platform, a mobile app for customers, or a website for employees. This layer of APIs should prep data for the format required for the experience.

Some integration platforms offer connectors, API templates, and other

resources out of the box to simplify this process and enable your developers to be even more productive. Make sure connectors exist for your most critical applications and databases so those can be integrated first as quick wins.

Finally, remember that your organization will likely deploy each API in more than one place, so look for opportunities to reuse APIs at every layer. Store them for reuse, including specs and integration best practices, in a central repository for reuse across the organization.

BUILD QUESTIONS TO ASK AN INTEGRATION PLATFORM PROVIDER:

- What's the process to build a new API? How long does this process typically take for a skilled developer?
- Which connectors exist already, and do they support my most critical integration use cases?
- How do you empower my organization to reuse APIs that we've already built?

Secure

Data integration can only be successful when [data security](#) is a priority, especially when integrating sensitive customer data, financial data, or regulated data categories such as healthcare patient data. Any breach, large or small, will destroy customer trust and deteriorate many of your larger data strategy goals.

Data security starts with eliminating vulnerabilities. Most of this functionality should exist in an integration platform, including mandatory policy configuration, tokenization, and network edge protection.

You'll likely want to implement layered security, meaning there is security around the perimeter within which the API is deployed, within the API itself, and on the data at rest or in transit. Here's an example of what that could look like:

- The integration platform is compliant with standards like PCI DSS and features like SSO and RBAC.
- A user applies Edge policies at the perimeter to act as a web firewall and protect against common attacks.

- A user adds a layer of security and governance by adding API policies such as automated IP whitelisting or client ID auth.
- Finally, the user tokenized PII data to avoid data leakages without breaking the API functionality or data formats.

SECURITY QUESTIONS TO ASK AN INTEGRATION PLATFORM PROVIDER:

- What security exists in your platform out of the box?
- Do you support layered security without sacrificing performance or availability?
- What type of encryption does your platform use?
- Is your platform compliant with ISO 27001, SOC 1, SOC 2, PCI DSS, and HIPAA?
- How do you maintain GDPR compliance for all of my data?

Manage

Once you deploy a new API, it's essential to manage it closely. Some common [API management](#) best practices include setting alerts, access management, and defining SLA tiers.

It is important to be thoughtful about which teams and individuals have access to APIs. Remember, the goal is to empower teams throughout the organization with APIs that unlock data, so open up API access to line-of-business users who will benefit from it.

A good API management tool will also let you track API usage if you need to calibrate governance and access down the line.

MANAGEMENT QUESTIONS TO ASK AN INTEGRATION PLATFORM PROVIDER:

- Can I manage, secure, and govern my APIs in a single place, or do I have to log in to different systems to perform this work?
- How do I provision new policies for an individual API? For all of my APIs at the same time?
- How can I monitor API usage and performance across the organization?
- Can I apply or alter policies without downtime?

Monitor

Regardless of how perfectly you built your API, issues are bound to arise, and you must resolve them quickly.

No matter where you host your APIs or what technologies you run them on, make sure you can monitor them all from one place. As your organization invests in more APIs, you'll quickly realize why this is so important.

From this single pane, monitor all your APIs and integrations, and track the health of your entire network. For example, you might:

- Identify which metrics are relevant to you and use built-in and custom dashboards to monitor them.
- Set alerts and functional monitoring to be alerted when there is an issue.
- Track business metrics in the same place as IT metrics to ensure you're getting ROI on these APIs.
- Conduct root-cause analysis when there is an outage or performance issue.

You can also use this single pane to visualize dependency mapping, which will allow you to identify and resolve issues quickly without additional disruption.

OPTIMIZATION QUESTIONS TO ASK AN INTEGRATION PLATFORM PROVIDER:

- How are my APIs, applications, and systems visualized for me to monitor?
- Can I drill into events to perform root cause analysis?
- What tools do you have available to help me monitor the health of all my APIs and applications in real-time?

LendingTree



LendingTree is an online loan marketplace for various financial borrowing needs, including auto loans, small business loans, personal loans, credit cards, and more. LendingTree also offers comparison-shopping services for autos, home improvement pros, and education programs. Together, these services enable the company to serve as an ally for consumers looking to comparison shop among multiple businesses and lenders who will compete for their business.

Challenge

LendingTree's business units were disconnected from one another, making it impossible for sales or service teams to view 360 data about a customer and limiting management's ability to improve service operations.

LendingTree faced disconnected sales and service operations – in part because 16 different business units were generating data about customers and lenders. The disconnect made it very challenging for LendingTree to move consumers through the sales process because no one system had a full view of who a consumer was and what services they were currently using.



“LendingTree can now leverage MuleSoft to integrate data directly into the relevant systems, completing new integrations in just a week instead of months.”

Plus, LendingTree had no way to capture or analyze data about its call center operations and performance, leaving business leaders wondering why customers were calling in and how they felt about the support they received. This limited the business’ ability to improve customer service or grow the business in a meaningful way.

Solution

LendingTree deployed Salesforce to create better visibility into their customer data throughout the sales cycle, support more customers on digital channels, and provide a better experience for its partners. With Salesforce as a single source of truth, service and sales teams have a complete view of the customer across departments and can make targeted and informed recommendations that improve consumers’ financial well-being.

LendingTree’s success would not have been possible without MuleSoft – which gave LendingTree the ability to keep customer data up-to-date across all systems and databases in real-time. This ability enables the online

loan marketplace to better engage and track service cases. Now, all of an individual’s loan application history is available in a single console, empowering agents to help customers with all of their loan applications instead of just one element.

The integrations available through MuleSoft have also made it easier for LendingTree to launch new capabilities. Instead of investing time and resources to build custom integrations, LendingTree can now leverage MuleSoft to integrate data directly into the relevant systems, completing new integrations in just a week instead of months.

Tableau provides visibility on top of this integrated customer data to uncover cross-sell and up-sell opportunities for LendingTree. With Tableau, LendingTree has also strengthened and optimized its customer acquisition and [digital marketing efforts](#).

LendingTree also deployed several other Salesforce products to better engage its customers:



Sales Cloud and **Service Cloud** to create a customer-centric view across sales and service teams.

Experience Cloud to increase visibility for vendors and consumers.

Quip to build a more integrated and collaborative marketing asset management process.

Lightning Service Console to visualize all relevant customer data on one screen.

Einstein, Marketing Cloud, and **Datorama** to better visualize marketing data and improve targeting and customer acquisition.

Results

Since moving to Salesforce, LendingTree has seen each of its business units grow 100%. This growth wouldn't have been possible without MuleSoft, which integrated 16 different business units to bring all of that data into one place. MuleSoft's integration also empowered LendingTree to reduce development times by 65% with pre-built connectors.



Unlocking, visualizing, and actioning data with MuleSoft and Tableau

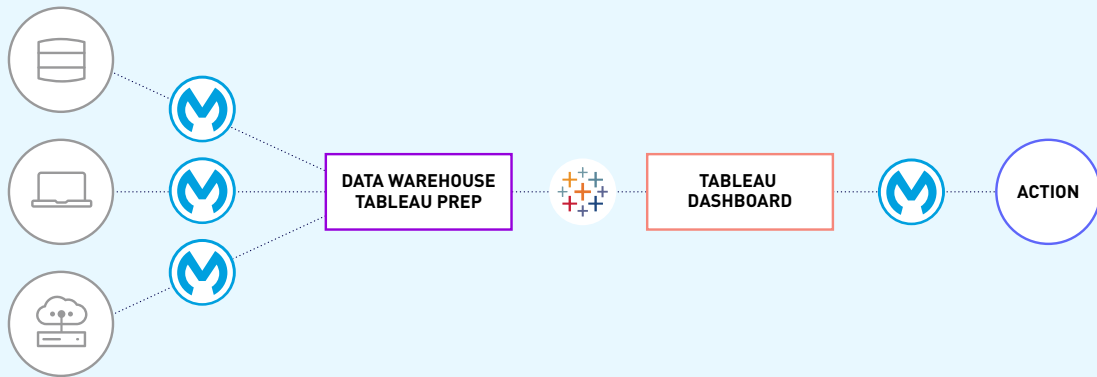
Once your data is unlocked and integrated with APIs, analysis within a platform like Tableau is simple and powerful.

As discussed in the previous section, a layered approach to APIs unlocks and orchestrates data, and preps it for a given experience. For example, after you have performed this once to power a customer mobile app, you only have to build one additional experience API to integrate this data for a Tableau dashboard.

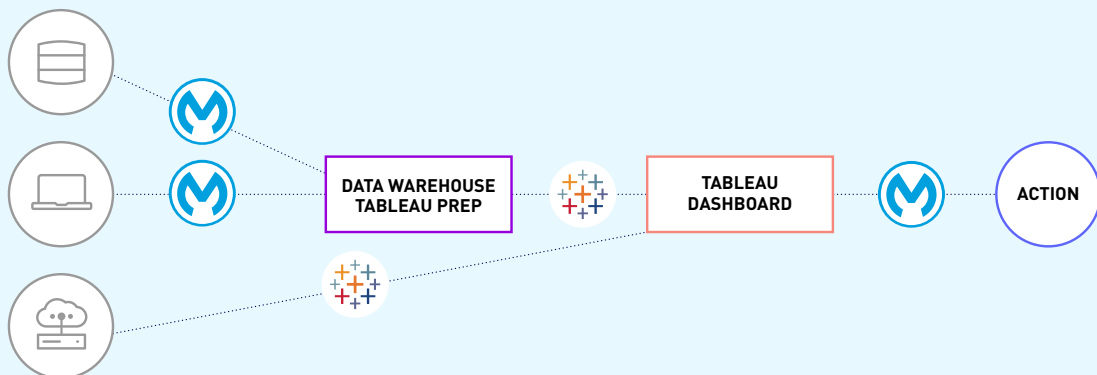
The data is already integrated and composed; it just needs to be prepped for visualization.

MuleSoft and Tableau have a strategic partnership to enable this type of data flow. Here are some examples of how this might look.

EXAMPLE 1



EXAMPLE 2



In the above examples, MuleSoft performs API-led integrations for some or all of the data sources. These could be applications, databases, or other systems, in the cloud or on-premise. They likely leverage existing connectors and integration templates. This data gets integrated in real-time into a single location; this could be anything from a data warehouse to a published Tableau data source. Tableau then queries this data source every time a dashboard is opened to visualize the most up-to-date data, integrated and prepped for visualization. You can combine this with data that is directly connected to Tableau via Tableau's native connectors.

Make sure to build orchestration into your APIs to ensure data is properly prepped for a Tableau dashboard. For data that is being composed, especially from system levels into experiences, it's important to translate that data into the appropriate format for consumption by end-users. Look for out-of-the-box tools to govern, transform, extract, and load data into various formats, and to expose it in a structured, business-friendly fashion.

And remember, you should reuse integrations like these. This creates a strong backbone of data for your organization to build upon with additional digital experiences for employees, customers, and partners.

Take Action

For organizations considering integrating data for analysis within Tableau, the end goal is certainly not just a dashboard. Instead, the dashboard consumer is likely trying to make a critical decision based on the insights derived from the analysis. Therefore, it's important to remember that the end goal is not a dashboard but the next action that is informed or highlighted by the insight.

It may be that you want to visualize data to know how to think about it or drive a larger conversation. Perhaps this is enough action for your organization.

If you want to take it a step further, consider embedding a next-step action button into your Tableau dashboard to reduce swivel-chairing or [automating next steps with APIs](#) to simplify common procedures.

CUSTOMER STORY

California Governor's Office of Emergency Services



The mission of the [California Governor's Office of Emergency Services](#), or CalOES, is to prepare for, protect against, respond to, recover from, and mitigate the impacts of all hazards and threats. It is responsible for coordinating statewide disaster response and recovery activities, managing public safety communications, and keeping a stockpile of necessary supplies on hand to support when California's 38 million residents need them most.

Challenge

CalOES was on the front lines of the fight with COVID-19 in Spring 2020. The team at CalOES knew it would require a big response, likely in the form of PPE distributions, but they had no way of quantifying what would be needed given the unprecedented size of the crisis.

Solution

CalOES turned to MuleSoft, Tableau, and Salesforce to deploy [a comprehensive PPE management system](#) that gives the state a single, automated, consistent place to go for ordering, filling, distributing, and measuring California's PPE needs. There are three key parts to the management system:



- The **Donation and Supply Intake Portal**, built on Sales Cloud's Web-to-Lead, allows CalOES to organize and validate supply offers and streamline the procurement process.
- A **Procurement Management** app, built on Service Cloud, allows logistics and commodities staff to track and manage the procurement lifecycle, including where supplies are in the process, the amount and source of funding used to purchase the supplies, how long it takes to acquire and then distribute them, and so on.
- The **Public Health Ordering System (PHOS) / Medical Resource Request Triage and Adjudication System**, also built on Service Cloud, streamlines the ordering process for State staff and its customers working in hospitals, clinics, and more.

Across each step, MuleSoft integrates a complex web of data from Salesforce and third-party systems to power each part of the PPE management system. This includes integration into Tableau for visualization and analysis.

Tableau helps CalOES inform future decision making, determine resource/capacity planning, and keep the public informed. This has enabled CalOES to gain new insights about their supply chain and logistics pipeline, which they use to brief the public and inform planning for future scenarios.

Speaking of the impact of Tableau, Grady Joseph, Assistant Director of Recovery Operations for CalOES says, "This has unlocked the insights about our supply chain and our logistics pipeline, which we are using to brief the public, hold ourselves accountable, and inform our planning for future scenarios."

Results

With MuleSoft, Tableau, and Salesforce, after just a two-week implementation, CalOES integrated and analyzed the most mission-critical data and responded quickly and effectively to PPE requirements throughout California.

Automation capabilities and data-driven processes sped up order filling time to an average of two days. Distribution tools enabled the movement of PPE supply to healthcare workers, farmworkers, tribal governments, and even school districts. In just 45 days, CalOES sourced \$2 billion in PPE and has delivered over 1 billion units of PPE to front-line workers to date.

Conclusion

The sheer amount of data organizations must connect, analyze, and act on continues to explode.

This is creating massive hurdles for many companies across every industry. But this isn't something that IT leaders can leave on the back burner – to stay competitive and meet evolving customer needs, creating a data-driven business must be prioritized. Many organizations today are successfully transforming data into insights by taking an API-led approach to integrating data.

Check out this [demo](#) and see how MuleSoft and Tableau enable you to unlock, analyze, and act on all of your data.





MULESOFT, A SALESFORCE COMPANY

MuleSoft, the world's #1 integration and API platform, makes it easy to connect data from any system — no matter where it resides — to create connected experiences, faster. Thousands of organizations across industries rely on MuleSoft to realize speed, agility and innovation at scale. By integrating systems and unifying data with reusable APIs, businesses can easily compose connected experiences while maintaining security and control. Through API-led connectivity, customers unlock business capabilities to build application networks that deliver exponentially increasing value. MuleSoft is the only unified platform for enterprise iPaaS and full lifecycle API management, and can be deployed to any cloud or on-premises with a single runtime.

MULESOFT IS A TRADEMARK OF MULESOFT, LLC., A SALESFORCE COMPANY.