Unlocking Business Value with **AI-Powered** Data Analytics

Introduction

Welcome to the future of business

AI is making headlines today for good reason: the technology will change how we do business, make decisions, and go about our daily lives. Organizations must understand what AI is, its potential, and how it is evolving if they want to thrive in tomorrow's world of new possibilities. But what is AI? How will AI-driven analytics unlock value for your business? How can Tableau help you take advantage of it today?

This e-book will help you understand what AI is, why it matters, and how AI-driven analytics can benefit you—whether you're an analyst or a business professional.

What is AI?

Artificial intelligence (AI) is a discipline within computer science focused on enabling computers to do things in ways that mimic human intelligence–like recognizing objects or responding to human speech or making decisions based on new contexts a computer has never encountered before. AI is a broad umbrella term for different types of technologies, like machine learning (ML) and natural language processing (NLP).

What makes AI different from classical computing is that AI uses probabilities to make predictions about things–like whether a photo is of a cat or not–and it is able to learn from and improve upon these predictions. In classical computing, each scenario for identifying a cat would have to be explicitly programmed in an if-this-then-that fashion (if the animal has four legs, fur, and meows, then it is a cat), which is both time consuming and error prone.

Predictive vs. Generative AI

Although AI is an umbrella term for different technologies, we can broadly classify AI into two buckets based on its output:

Predictive AI

This type of AI has been with us for a while and its output is often numerical or binary in nature. It forecasts future data using historical data. Examples include things like forecasting revenue growth or the likelihood a deal will close this quarter, identifying spam or other objects, and the output from techniques like linear regression.

Generative AI

This type of AI is relatively new, and generates entirely new content similar to the data it was trained on (e.g text or images). Examples include ChatGPT's ability to generate conversational text, Dall-E's ability to generate novel images, and the output from techniques like neural networks. Generative AI is still based on predictions at its core, but the techniques it uses and the creative nature of its output set it apart.

Most of today's headlines are about generative AI and the business opportunities it's creating.

Generative AI and your business

Businesses will need to adopt AI to stay competitive in tomorrow's marketplace. This is because generative AI is enabling companies to be more productive, create more personalized customer experiences, design new business models, and develop new product strategies–all of which will potentially disrupt industries and empower businesses to move faster, optimize their operations, reduce costs, and get ahead of their competition in new and innovative ways.

Because AI has the ability to learn what's working and what's not, it can create virtuous cycles of improvement. For example, generative AI could be used to help new customer support reps be more productive in less time by automatically generating the most helpful responses to customer issues based on historical case data. As customers respond either positively or negatively, the AI could improve its approach by doing more of what creates a positive customer experience and less of what creates a negative one. This creates a win-win scenario: happier customers and a more efficient support team.

AI and Analytics

Data has always been a critical tool for the most successful companies, helping them make better decisions and be more efficient. We know from the State of Data and Analytics Report conducted in 2023 that 96% of business leaders say data and analytics improves decision making, and now, predictive and generative AI can make data analysis and consumption easier for everyone–and more powerful.

Business Intelligence (BI) tools can use AI to assist both analysts and business professionals with:

- ☑ **Easier data exploration**
- ☑ **Easier and faster data prep**
- ☑ **Faster time to insight**
- ☑ **Faster proficiency with data tools like Tableau**
- ☑ **Better data-driven decision-making**

In this e-book, we'll dive deeper into how Tableau's AI-powered analytics will unlock value and save time for analysts and business users alike.

How AI-powered analytics will unlock value for analysts

Analysts are the data heroes of every organization. They are the experts who clean, prepare, explore, and help us see and understand our data. Their skills are in high demand, and often they work in lean teams (or solo!) fielding a large number of requests. Bandwidth is always an issue, and many analysts:

- Spend time in unscalable activities like drafting one-off, ad-hoc reports

- Have little time to coach new analysts on best practices, data skills, and tools

- Face a dilemma between needing to move fast but also needing to be accurate with their analyses and results

- Perform repetitive tasks that, while requiring data skills, are tedious and time-consuming

In the next two to five years, we anticipate that analytics tools will become more natural language-driven, that AI will play a larger role in operationalizing and automating actions taken on data, and that many rote reporting tasks will become automated. People will continue to play a vital role in the analytical process, though. In fact, in a research paper on building a future-ready workforce in the age of AI, Deloitte Consulting notes that demand for

data scientists has risen 344% since 2013–and that companies' growing demand for employees skilled in analytics will continue to outpace the available supply. As one example, by 2031 Canada is projected to be short two million people to fill the data analytics jobs that will be available.

Did you know?

We predict that, thanks to AI, data analysts will have more time to focus on higher-value efforts like: AI modeling, analysis, validation, objective-setting, and answering open-ended questions.

To help pioneer these new data experiences, Tableau is developing AI-powered tools to address the challenges analysts face today. We're reimagining the data experience for data professionals and business users with Einstein Copilot for Tableau and Tableau Pulse.

## Save time and be more productive

Einstein Copilot for Tableau (expected in Summer, 2024) brings the power of generative AI to Tableau with a conversational AI assistant that helps analysts save time and be more productive. You can think of Copilot as an active, natural language-driven teammate who is always available to help you:

- Explore data faster
- Make data prep easier
- Automate repetitive tasks
- Become more proficient with Tableau, more quickly
- Improve visualizations and dashboards based on best practices

How does Einstein Copilot do all of this? First, it understands the context of your data, so is able to suggest relevant business questions for analysis right away–helping analysts avoid the "blank viz" problem and to quickly kickstart their analysis. You can ask Einstein Copilot to identify patterns, outliers, correlations–even the best approach for analyzing a particular data set. This helps you explore your data faster and to quickly find relevant insights regardless of your proficiency level with Tableau.

Second, Einstein Copilot simplifies data prep by letting analysts use natural language to create calculations
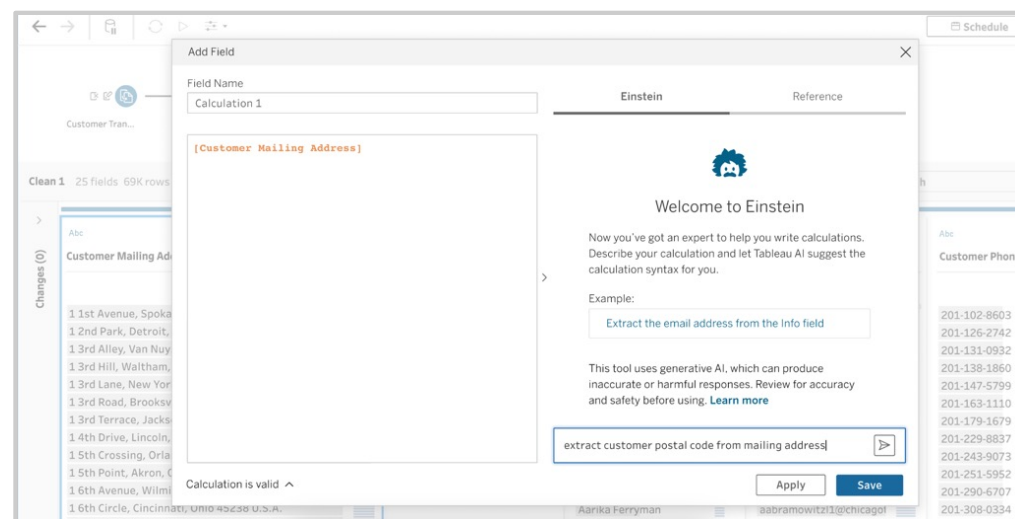
needed to clean data. For example, let's take a common scenario: say you have customer data in Tableau Prep and as part of your cleaning process you want to extract the zip codes that are embedded inside of the full address. That is, you want to pull these zip codes into their own column:
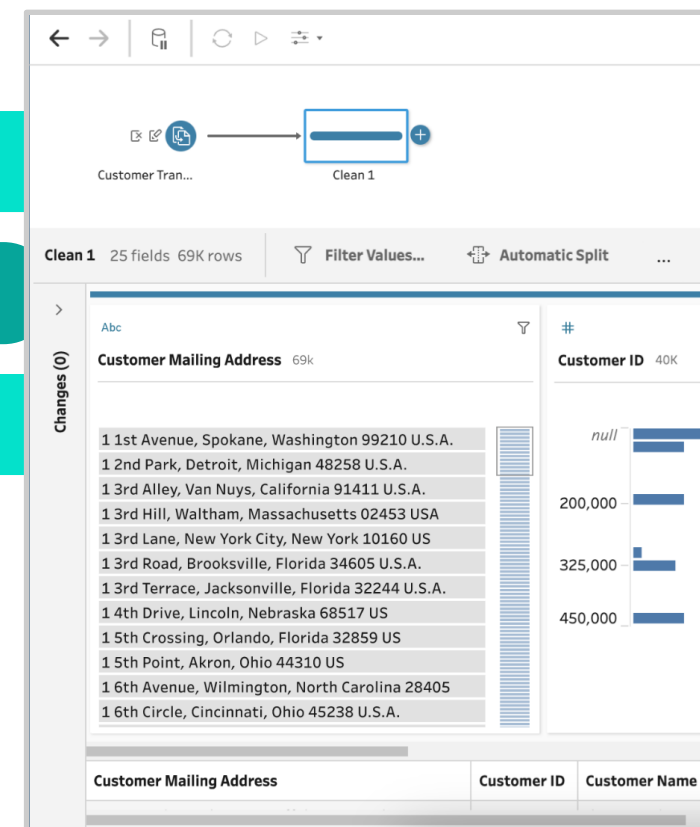
Zip codes embedded in full customer addresses.

Normally, you'd have to create a calculated field using specialized functions to extract the zip codes, and these data prep calculations can be complex and time-consuming. With Einstein Copilot, an analyst can simply make a request in natural language, by typing something like, 'extract customer postal code from mailing address.'

Einstein Copilot understands the natural language request, and creates the calculation for you—which you can then vet before deploying:


Asking AI to extract zip codes in natural language.
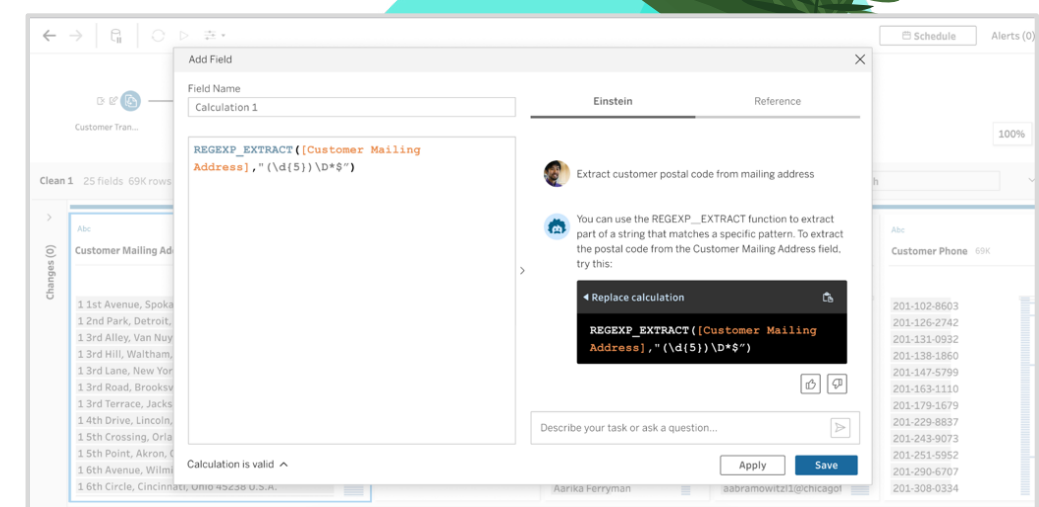
Einstein Copilot creates custom calculations on the fly for human vetting.

All that's left to do is to name the calculation and apply it! This saves analysts time and reduces the chance of accidental errors dealing with complex calculations. It also helps new analysts–or those less familiar with Tableau–become proficient faster.

But there's more: Einstein Copilot can also create entire visualizations based on directions given to it in natural language, while suggesting the most compelling way to tell a data story with advice based on best practices.
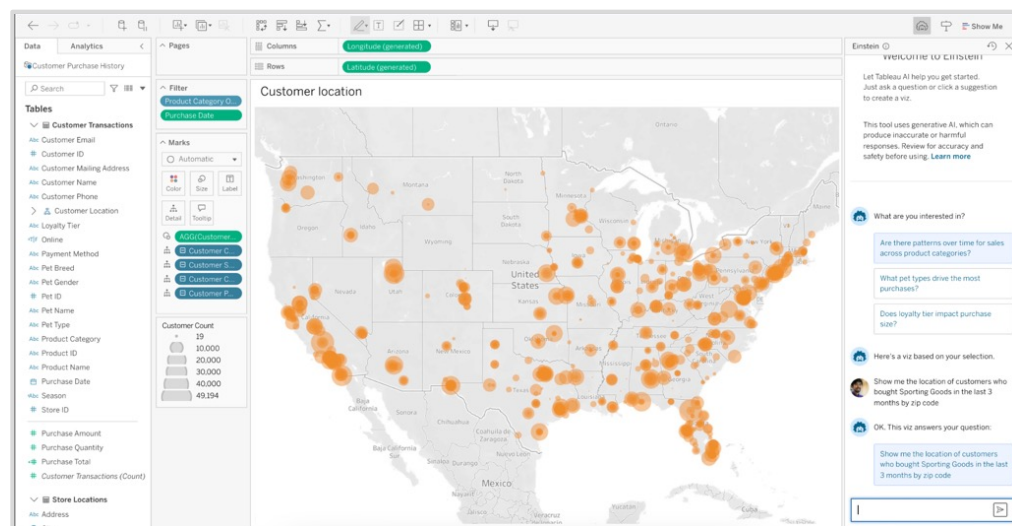
Einstein Copilot creates custom calculations on the fly for human vetting.

Scale insights across the business

Analysts often find themselves creating ad-hoc reports for different stakeholders or needing to calculate the same metric for different teams who rely on different dashboards. Previously, if an analyst wanted to create and share a metric in Tableau, they might have had to create a new dashboard to calculate each new metric–creating a lot of overhead work and maintenance.

Enter Tableau Pulse (releasing in December 2023). Tableau Pulse is a reimagined, AI-powered data experience that decouples metrics (used to guide decision-making) from dashboards, enabling users to receive personalized, relevant metrics directly within their flow of work (Slack, email, etc.) or from a centralized metrics overview page in Tableau Cloud.

There are significant time saving and scalability benefits for analysts with this approach. First, analysts will be able to quickly define a metric once, store it in a central repository in their Tableau Cloud site, and then seamlessly reuse it across their organization–without needing to create underlying dashboards to define and calculate these metrics.

Second, analysts can save time by taking advantage of the AI infused throughout. Tableau Pulse understands the context of your data, and can make suggestions about which metrics might be most relevant given your specific data set–and how best to calculate them.

Beyond metrics creation, Tableau Pulse's insights platform automatically detects drivers, trends, contributors, and outliers (and more) for any given metric–and can alert subscribers to unusual changes. These insights are summarized in natural language and easy-to-digest visualizations that help users quickly understand and take appropriate action.

Finally, users who want to consume a metric can easily self-serve by searching for–subscribing to–a relevant metric with just a few clicks. This ensures teams are aligned to the same critical numbers and that these metrics are consistent across the business. Analysts no longer need to oversee permissions to metrics on a case-by-case basis.

In short, advances in generative AI are creating new ways that data tools can help analysts be more productive and save time–whether by making data prep easier, helping analysts become more proficient with tools more quickly, automating insights, or suggesting best practices in areas like metrics definition and viz creation.
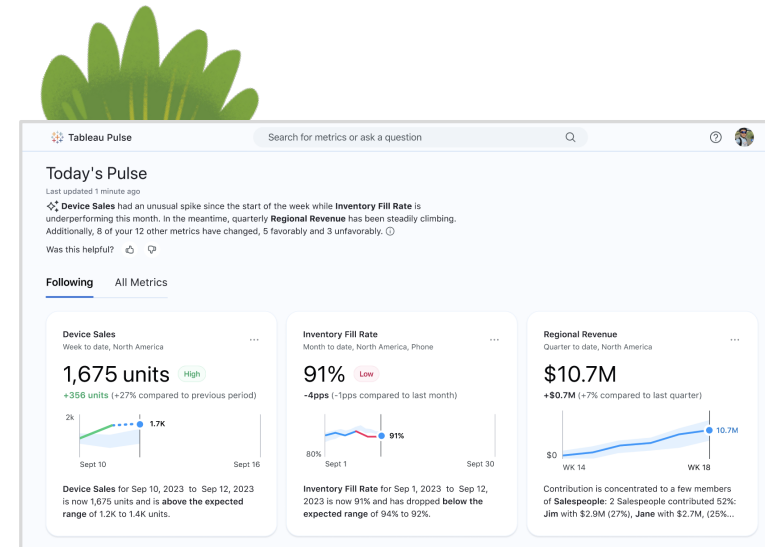
Metrics digests can be viewed from a centralized overview page in Tableau Cloud.
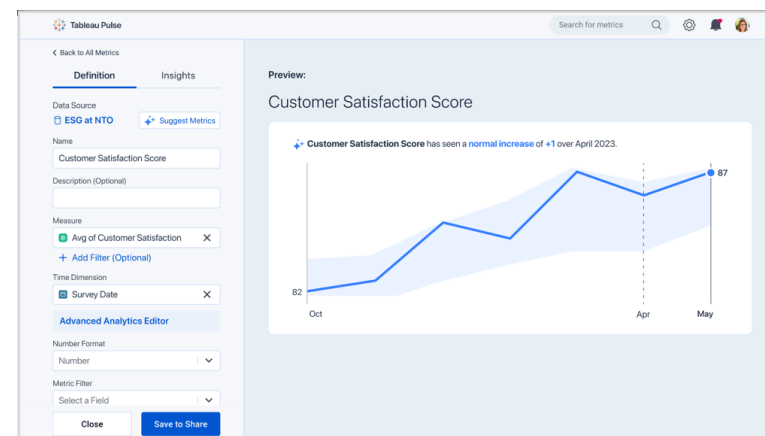
Metrics can be created in Tableau Pulse in just a few clicks, using AI for guidance.

How AI-powered analytics will unlock business value for business users

It's never been more important for businesses to be data-driven. In today's world of AI and big data, companies that can successfully use data to help lower costs, be more efficient, forecast future outcomes, and make better decisions have a competitive advantage over those who can't. The arrival of generative AI only amplifies this, since the technology is creating new ways for companies to arrive at data-driven insights—and decisions—faster.

The challenge many companies face is that many employees who could benefit from being more data-driven aren't engaging with data. In fact, two thirds of executives say they are uncomfortable accessing or using data! Why is this?

We think we know the answer. How Tableau AI and Tableau Pulse are reimagining the data experience, but in short: data tools can still be hard to use and understand if you aren't an expert. At Tableau, our mission is to help **everyone** see, understand, and take action on data, so we've thought hard about how to reimagine the data experience in a way that makes it more personalized, relevant, and smart—yet also scalable across your entire business.
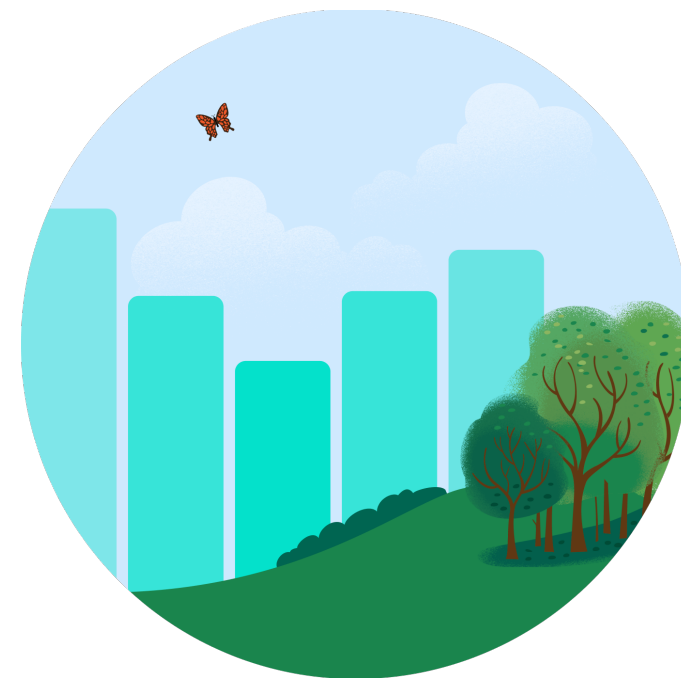
Empower your business partners to be more data-driven

Tableau Pulse unlocks a new, AI-powered way to empower your business partners with data. Instead of **business users** having to manually open and navigate through a Tableau dashboard to look for insights, Tableau Pulse uses AI to deliver natural language digests directly to **them in their** normal workflow (Slack, email, Tableau dashboard, embedded into Salesforce, products, applications, or web portals) or through a centralized metrics page in Tableau Cloud.

Powered by AI, Tableau Pulse auto-generates natural language summaries of the trends, forecasts, and outliers specific to the business questions. It also learns which insights are the most meaningful to the user based on usage and feedback–learning what's critical over time. In the future, Tableau Pulse will be able to make recommendations based on a business user's specific context, helping them get from insight to action faster.
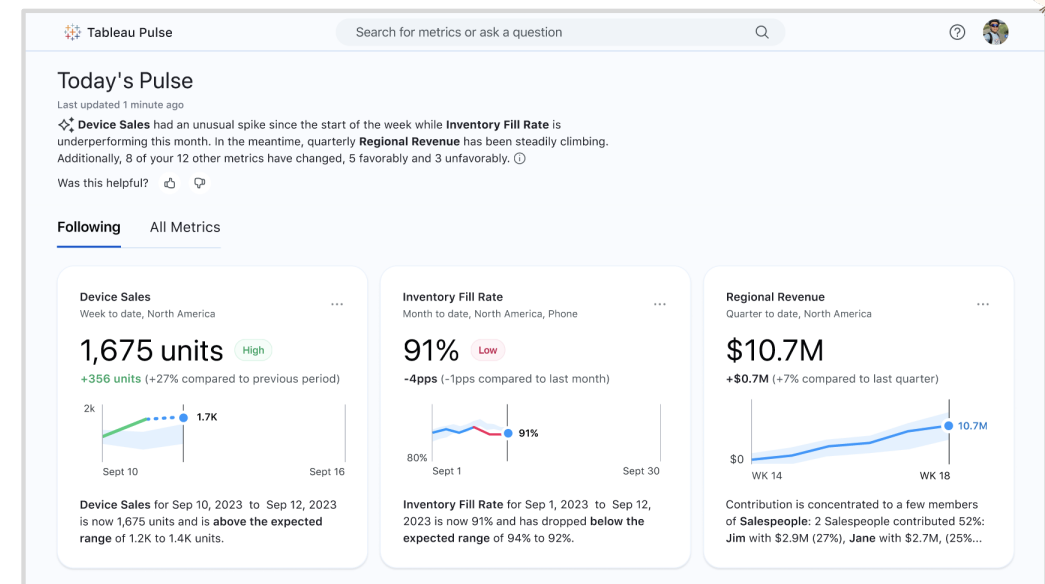
Metrics can also be viewed directly from a central page in Tableau Cloud.
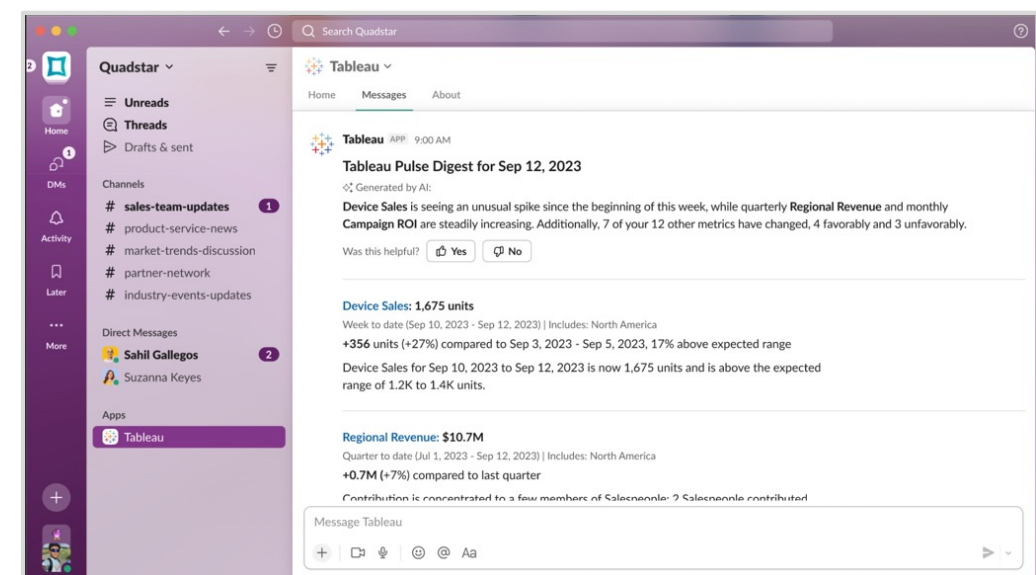
Natural language metrics digests can be received via Slack.

In addition, Pulse is able to suggest additional analytical questions to deepen and to help business users' insight and to help them get the most out of their data–so you can make more informed decisions.

Advances in generative AI can help business users engage with data and quickly get actionable insights–without needing to invest time in becoming a tool or data expert. Empowering more employees to be data-driven can drive better decisions and help ensure a company is well positioned to take advantage of the benefits using data confers.

These new opportunities to unlock more business value using AI-powered analytics are only the beginning. Generative AI is in its early stages, and the technology is advancing rapidly. Each new breakthrough will offer new ways for companies to innovate and compete, and the future looks bright for those who are able to harness their data to take advantage of them.

Tableau Pulse helps you understand the "why" behind your insights by letting you question your data in natural language and then select the most relevant results.
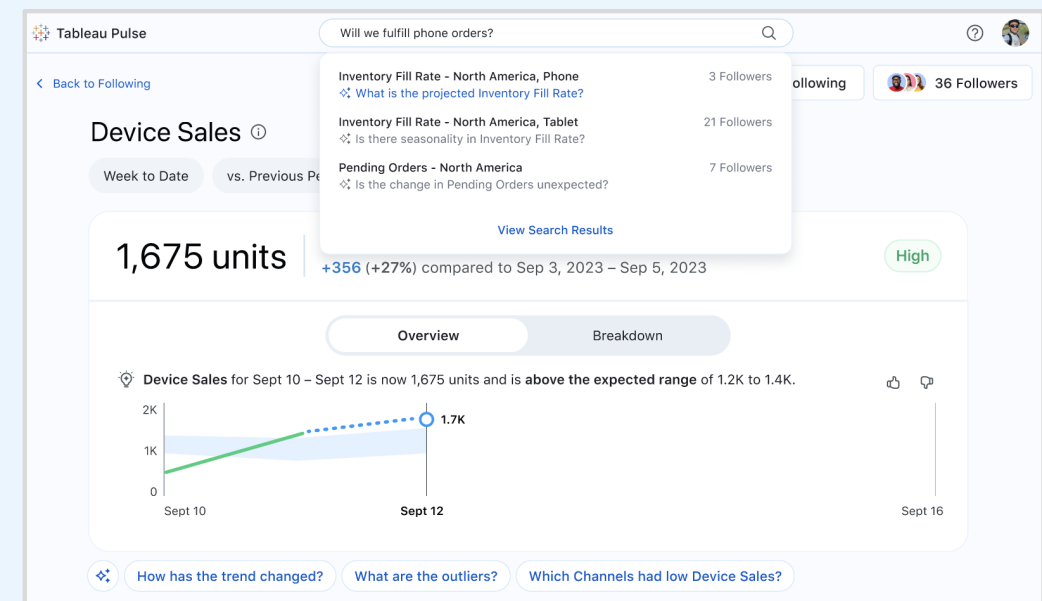
Using natural language to explore data in Tableau Pulse.

Salesforce is the customer company. We make cloud-based software designed to help businesses connect to customers in a whole new way, so they can find more prospects, close more deals, and wow customers with amazing service. Customer 360, our complete suite of products, unites your sales, service, marketing, commerce, and IT teams with a single, shared view of customer information, so that your company can become a customer company, too.