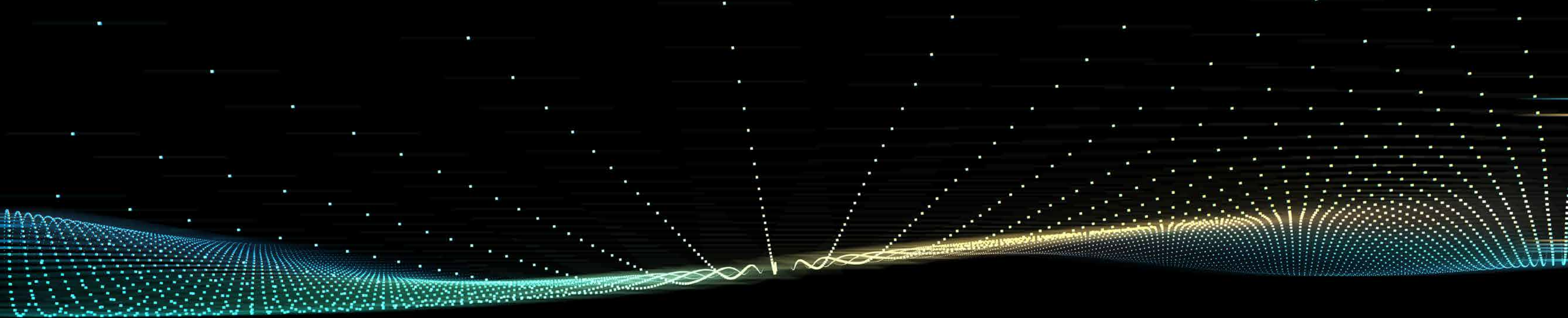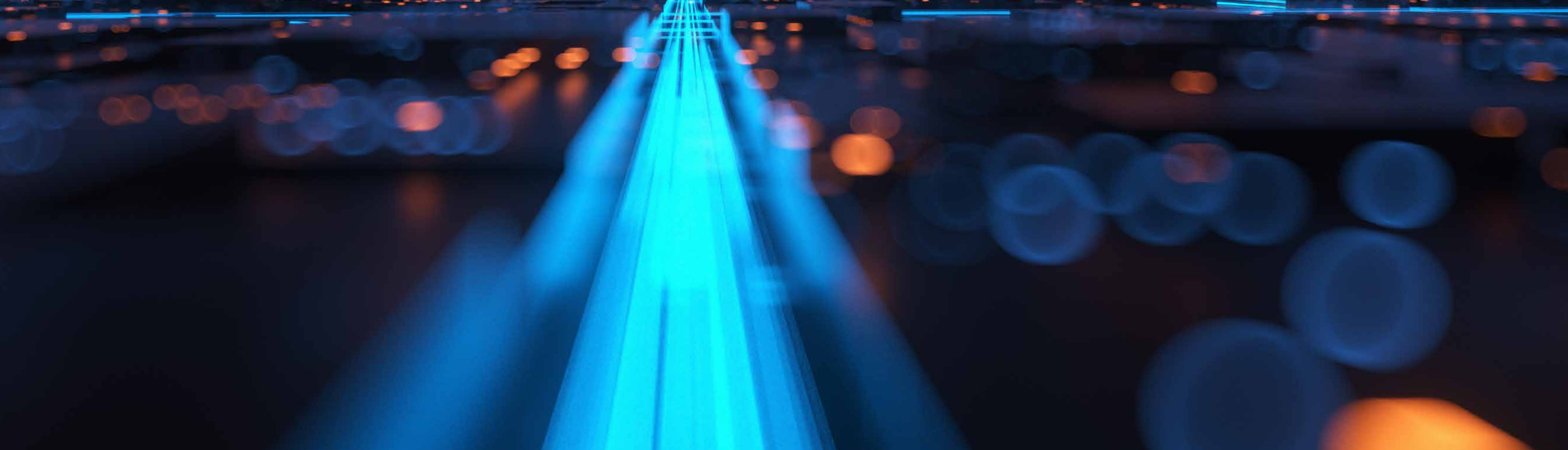# Your Guide to the 5 Next-generation Data Virtualization Innovations Driving Greater Business Value

Data, data everywhere. Critically important to business success, every organization yearns for consistent, well-governed data that is easy to access and use. The next generation of data virtualization is proving to be the solution to this challenge. This ebook will cover five next-generation data virtualization innovations and the business value they provide.

NEXT-GENERATION BUSINESS VALUE	NEXT-GENERATION INNOVATION
Turn Data Silos into Opportunity	Tripling the Number of Data Connectors
Gain a Business Edge with Real-time Data	Introducing Streaming Data Virtualization
Support Analytics and Application Data Needs with One Data-as-a-Service Solution	Integrating API Management with Data Virtualization
Manage Data Assets for Competitive Advantage	Unifying Metadata Management, Data Catalog, Data Governance, and Data Virtualization
Drive Higher Returns from Cloud Investments	Adding Cloud Deployment Options including Docker

Where Data Virtualization Started

For the past 15 years, data virtualization has steadily evolved. Here is a quick breakdown of its history:

- First, it augmented data warehouses' historical data with complementary datasets.
- Next, it expanded, adding applications, XML documents, and files as sources and later big data and cloud sources.
- It also added more robust management tools to administer bigger teams and ensure reliability, availability, and scalability to meet SLAs.

- To meet the needs of more data consumers, it expanded data delivery formats while bolstering security, quality, and governance to ensure appropriate controls.
- With every release, it improved performance, taking advantage of new query optimization techniques and processor, database, and network performance advancements.
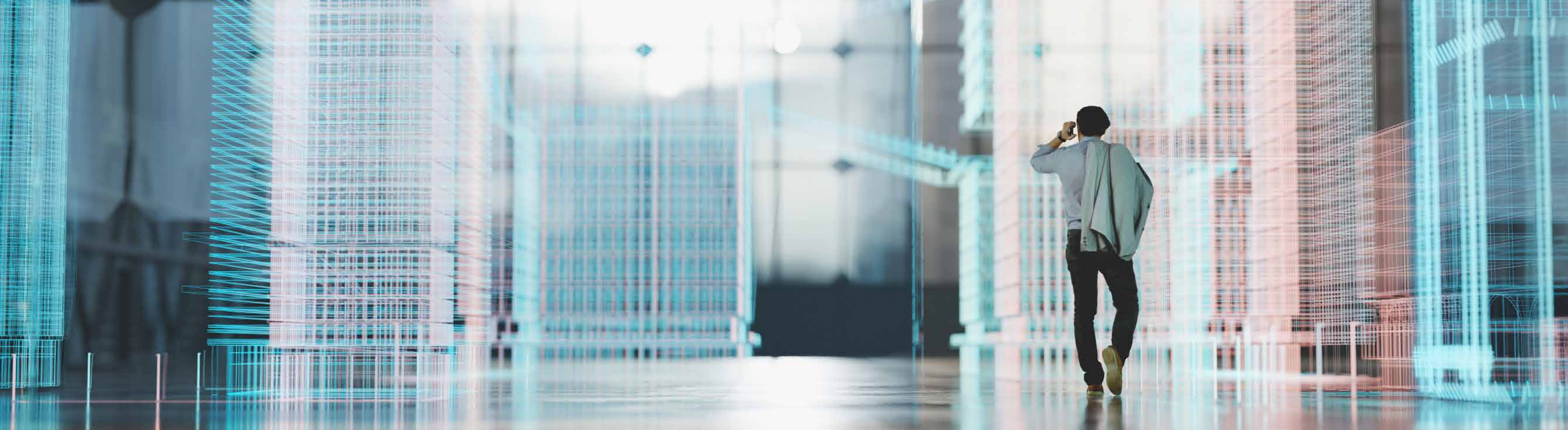
TIBCO Data Virtualization software has been on the vanguard of every one of these advancements, constantly adapting to meet the evolving needs of the world's largest data virtualization customers.

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Where Data Virtualization Is Today

Why is data virtualization so popular today? Because it adds value for your data consumers and your data providers in IT.

- **Data virtualization provides data consumers with:** business-friendly data, allows users to take advantage of the latest data across distributed data sources, and opens up self-service data access.

- **Data virtualization provides data providers with:** reduced IT costs through lower data engineering demand and fewer data copies, better governance and security controls across all your data, and the ability to meet demands at an enterprise scale.

Where Data Virtualization Is Going Tomorrow

Today's quickly changing business needs are driving next-generation data virtualization innovations in the following ways:

- **Customer Intimacy:** To understand the best way to engage and delight customers, businesses need 360-degree insight into customer activities and preferences.

- **Operational Excellence:** What happened? What is happening now? What will happen next? How can you improve? Data holds the keys to all these critical operational questions.

- **Business Reinvention:** Today's constantly evolving competitive landscape demands continuous reinvention. Data virtualization can help organizations see what's working, what's not, and adjust.

- **Cloud:** Despite the rising popularity of cloud technologies, data silos still exist. New cloud data silos require data virtualization to integrate and manage your data seamlessly.

- **Digitization:** Organizations must not only capture and process sensor data in real time, but also combine it with other data sources to maximize business advantage.

- **Business Self-service:** With a new class of citizen data scientists and citizen data engineers, enabled by self-service analytics and data preparation tooling, comes new demands for data.

Driving Business Value from Next-generation Data Virtualization Innovations

Responding to these trends with innovation, TIBCO's next-generation data virtualization solution can help you drive greater business value from your data in five important ways.

1. Turn data silos into opportunity
2. Gain a business edge with real-time data
3. Support analytics and application data needs with one solution
4. Manage data assets for competitive advantage
5. Drive more value from the cloud

Business Value 1: Turn Data Silos into Opportunity

Today, data is distributed across myriad applications, databases, marts, warehouses, and lakes, on premises and in the cloud. Simply accessing all your data is a huge challenge. Leveraging data virtualization can help businesses overcome this challenge, federating data across their data silos.

For example, one of the world's largest communications providers uses TIBCO Data Virtualization software to bring together customer data across more than 110 distinct sources for a 360-degree view of customer activity.

Innovation: Tripling the Number of Data Connectors

To help you achieve similar business benefits, overcome data silo challenges, and take advantage of continued technology innovations, TIBCO has tripled its connectors to nearly 350, including, for the first time, streaming data sources. TIBCO Data Virtualization software provides three to four times more out-of the-box connectors than any other data virtualization vendor.

Business Value 2: Gain a Business Edge with Real-time Data

Digital business is complex and relies on capturing both historical and real-time data. Yet, many organizations use distinct technologies and special teams to capture both types of data, creating a barrier to building applications that use both.

One of the world's most well-known pharmaceutical companies used TIBCO to help overcome this barrier in its manufacturing quality management application. Capturing both static information and streaming data, it identified manufacturing process drift and automatically alerted quality control staff to intervene. Through this intervention, the company achieved higher yields and lower costs.

Innovation: Introducing Streaming Data Virtualization

TIBCO Data Virtualization software removes the historical static data vs. real-time streaming data barrier, making it easy to combine your data at-rest with data in-motion and build applications that give you a real-time edge. Only TIBCO Data Virtualization software embeds dozens of streaming data manipulation functions and delivers over 90 streaming connectors.

Business Value 3: Support Analytics & Application Data Needs with One Data-as-a-Service Solution

Your internal users and external customers, including your analytics and application users, require a wide variety of data to service their diverse needs. While their use cases might differ, the data engineering requirements are similar, requiring developers to build data services that:

- Access and perhaps combine multiple, diverse data sources
- Transform data from native IT structures and syntax to the format and syntax your application can readily consume
- Synchronize the delivery of the data from your sources to your internal or external applications when requested

Data virtualization lets you serve all your users' needs within a single data-as-a-service (DaaS) solution.

Innovation: Integrating API Management with Data Virtualization

Beyond the DaaS flexibility and time-to-solution agility noted above, TIBCO's next-generation data virtualization solution integrates the TIBCO Cloud Mashery API Management Platform to securely externalize and monetize your data services.

Only TIBCO provides this combination of data virtualization and full API lifecycle management across internal and external data services: application-centric, datacentric, running in the cloud, on premises, or at the edge.

Business Value 4: Manage Data Assets for Competitive Advantage

Data is now everywhere, making it hard to understand, use, and manage. Seemingly simple questions become difficult to answer, including:
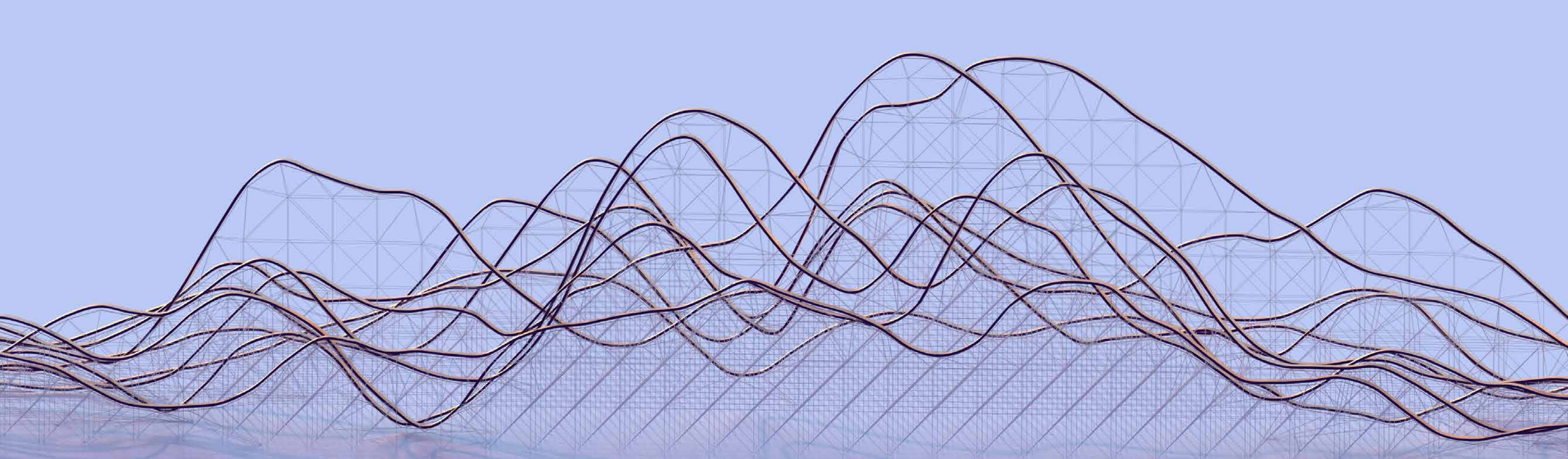
- Operations: What systems are involved in fulfilling customer orders?
- Analytics: What is the best sales dataset for my analysis and how was it developed?
- Compliance: Where do we store and process personally identifiable information?

In the past, metadata management, data catalog, data governance, and data integration solutions existed in data management silos, limiting organizational success.

America's largest dental plan provider understood the importance of taking a more integrated approach to managing customer data. With TIBCO, it created a unified solution, leading to better customer experiences, lower costs, and new revenue opportunities.

Innovation: Unifying Metadata Management, Data Catalog, Data Governance, & Data Virtualization

TIBCO Cloud Metadata software is a next-generation enterprise metadata management solution that spans all your metadata. It delivers the data context, coherency, and control you need. Only TIBCO provides both next-generation metadata management and data virtualization together as one unified solution—for all your data across your entire enterprise.

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Business Value 5: Drive Higher Returns from Cloud Investments

Moving to the cloud doesn't automatically solve all your data problems. It can add a lot of complexity in the form of greater data distribution, more silos, and a new set of moving targets as workloads migrate from on premises to the cloud.

One of Belgium's largest banks used the TIBCO Data Virtualization solution to span on-premises and growing cloud data silos. With one virtual place to go for data, no matter where it was stored, the bank now better supports a wide range of use cases.

Innovation: Adding Cloud Deployment Options Including Docker

TIBCO Data Virtualization software continues to extend its menu of cloud-deployment options across leading cloud platforms, including:

- Amazon Web Services (AWS)
- Microsoft Azure
- Google Cloud Platform
- Easy deployment to Docker engines
- Upcoming Kubernetes option

These cloud options provide flexibility to drive higher returns from your cloud investments in the context of your evolving topology and business data needs. Only TIBCO provides all this choice along with the other next-generation data virtualization innovations.

The Time for Next-generation Data Virtualization Is Now

Over the past 15 years, data virtualization has advanced to address an ever-changing business and technology landscape. This innovation continues today. TIBCO, a data virtualization pioneer and leader, has been the trailblazer every step of the way. And TIBCO's next-generation data virtualization solution continues to set the pace.

Learn more about TIBCO Data Virtualization software and how you can achieve greater business value from your data.