WHITE PAPER

Buy vs Build – Data Connectivity and Investments in Data Enablement

Focus on Holistic Data Operations and Insights

Today's business leaders are focused on opportunities to improve the value of data used across the organization. Data informs every piece of the enterprise – everything from critical decisions, customer experience, and product launches to operations, marketing, sales, logistics, and a wide assortment of other business processes. Having data in the right place at the right time is imperative to an organization's success.

There are many pathways to data democratization and data accessibility. Whether an organization is embracing data fabrics, focusing on DataOps, or amplifying their data integration processes, it is important to note that no single system works best for every situation. Ultimately, data consumers want speed and accessibility: the quicker they can integrate, the more agile the organization can be, which frees up IT teams to readily support major corporate initiatives.

This guide will explore how to evaluate data connectivity solutions effectively and efficiently to build a modern, reliable, and stable data access layer. Discover the tradeoffs of building custom connectivity in-house versus selecting fully supported, commercially tested, and industry proven solutions.

Connectivity Should Support Enterprise Data Culture

A reliable data access layer propels business forward, democratizes data, and enables data driven decisions throughout the organization. Let's explore what a data access layer should include, the benefits of adopting this approach, and what hurdles prevent organizations from realizing the value of real-time data.

The Right Tools

If a tool can't get the job done, it's the wrong tool. Expecting IT to spend hours, days, or months developing, testing, and maintaining code for the connectivity and integration of data is an example of using the wrong tool. This approach is time consuming, expensive, and hard to maintain. Since application interfaces and integration requirements change constantly, IT becomes consumed by maintaining or re-coding the integration points to ensure data accessibility. This approach does not meet the needs of the business community for agility and flexibility.

Commercially available connectivity and integration solutions remove the long development cycles of custom IT coding. Modern tools provide businesses with an expedited approach to data accessibility. Providing the right data integration tools ensures the data community is able to meet their growing needs.

Operationalizing Data

In today's high-velocity, instantly changing world, speed is the priority for the enterprise. The faster you integrate data for decisioning functions, the more quickly an organization can respond to the needs of their customers and the more successful they will be. It is no longer acceptable for integration projects to take weeks or months to get underway. Data connectivity and integration must happen at the speed of data. Leveraging the methodology of DataOps meets the instant data needs of analytical and reporting teams. DataOps incorporates the agile methodology to shorten the cycle time of analytics processes. Thus, lengthy ETL (extract, transform, load) and IT development cycles cannot meet the instant data requirements or align to DataOps approaches needed by the data analytics communities of today.

Prebuilt connectivity solutions always deliver the fastest time-to-data across the various systems used by data teams for analytics, BI, and reporting needs. Modern data connectivity and synchronization solutions embrace the DataOps methodology by reducing data cycle times and minimizing IT investments or support.

Future-Proof Integrations

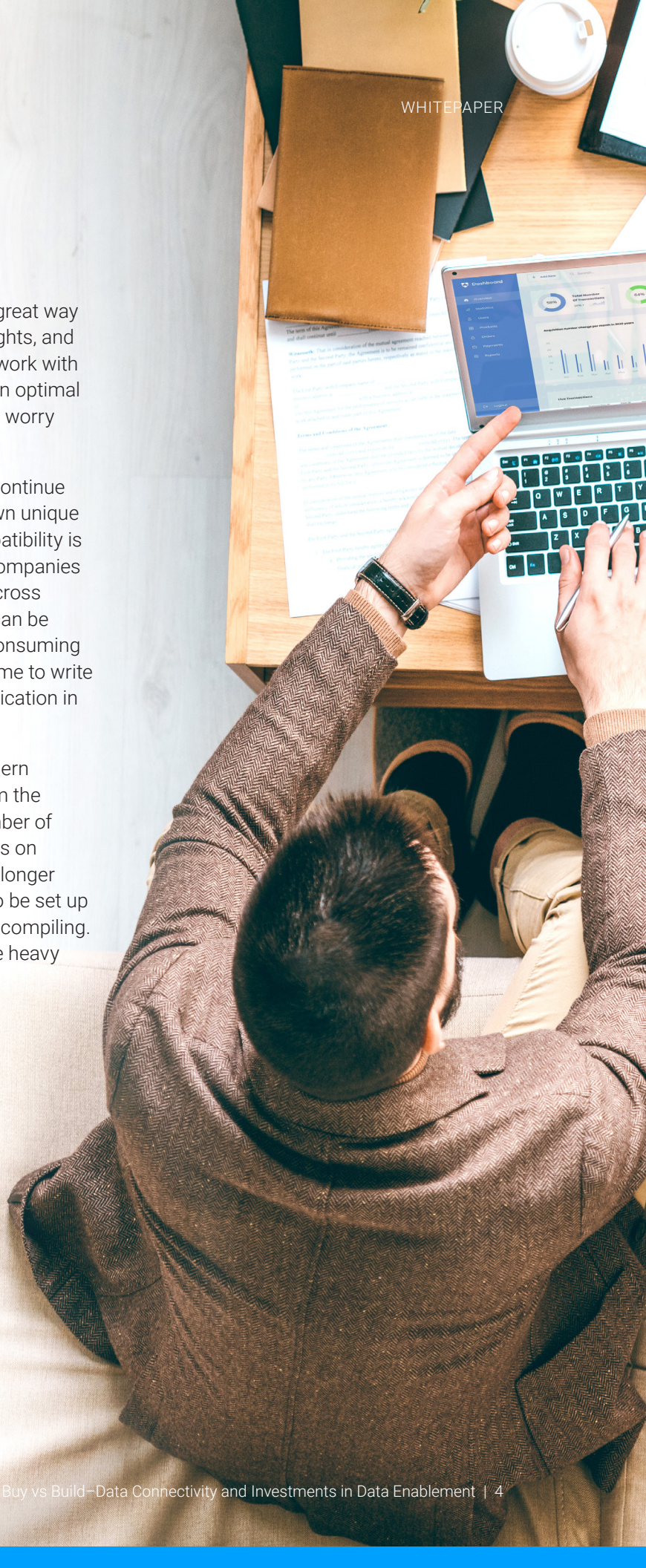
Implementing innovative software solutions is a great way to keep pace with competitors, gain valuable insights, and drive business value. However, these tools must work with other applications, systems, and sources to obtain optimal business benefit. Organizations shouldn't have to worry about how to orchestrate them together.

Unfortunately, data connectivity and integration continue to be a major hurdle because each tool has its own unique environment. Thus, data and cross-system compatibility is an impediment facing many enterprises today. Companies expect IT to align, integrate, and provision data across their vast and complex data ecosystem so data can be consumed for business functions. This is time-consuming task for IT, who does not have the resources or time to write and maintain the integration points for every application in place inside of the organization.

Organizations that invest in industry-proven, modern connectivity and integration solutions free IT from the burden of integrating and maintaining a vast number of application connections, and allows them to focus on keeping the systems finely tuned. Businesses no longer need to wait months for data integration points to be set up or deal with system downtime due to recoding/recompiling. Using commercially available technologies do the heavy lifting to bring simplicity to integration.

Create Holistic Connections

Disparate, point-to-point integrations are the enemy of modern IT. Teams shouldn't have to navigate a maze of scripts and varying platforms just to access and work with enterprise data. The more one-off integrations built in-house, the less likely your data stack will work for the whole of the organization. Incorporating an existing integration platform, your IT team can deploy and add integrations that still fit a central vision for data connectivity, democratize data, and bring harmony to the data ecosystem.



Reduce Complexity

Data fragmentation breeds complexity, but your connectivity solution should foster simplicity in several areas:

Fully Integrated Access

Data analysts should be able to work with data in their analytics tools, without coding integrations — data should just be there, virtualized automatically.

Data Transformation

Solutions must support transformations between varying data models used in apps, databases, and analytics tools to reduce manual data transformation.

Simple Setup

Connectivity tools should simplify implementation, not slow it down — drag and drop UIs, thorough documentation and full product support simplify integrations in proven off-the-shelf solutions.

Data Resiliency

Data connectivity platforms increase efficiency and streamline processes. Some top benefits of leveraging a data access layer are:

Automate Manual Processes

The right solution running in the background can automate processes, improve data accessibility, and accelerate decisions across the enterprise.

Complete Traceability

Pre-built solutions provide an easily-accessible record of events and changes to your data, improving visibility and troubleshooting with clear and auditable data logs.

Integration Pliability

Having a data access layer that can quickly change and adapt to meet the evolving needs of the organization is imperative to propel businesses forward in a fast-moving market.

Options for Establishing Connectivity

Regardless of which path you choose, there will be some setup. The important questions to ask will therefore be: Are you to ready to reinvent the wheel? Do you have to build everything from the ground up, or can you get a running start with a solution that has already solved the very problem your organization is trying to avoid?

In-House Development

For enterprise leaders who want to save money, building in-house can be tempting. For the most part, building a solution in-house uses the talent and resources already on hand, and teams may have concerns about whether an outside solution can meet their organization's unique needs.

Software development kits (SDKs) and/or open-sources solutions can help speed up this process, so even those who choose to build their own solutions are not entirely without outside help.

There are many barriers to designing and maintain home grown connectivity. These are the top three challenges that make designing your own connections/integration points unsustainable:

Specialized Expertise

Data connectivity and integrations requires specialized skills due to the uniqueness of each application or source. Building something that works across all your complex data ecosystem is challenging and time-consuming for developers who do not specialize in integration.

Relational modeling is a superior way to connect sources, applications, and data together. This requires familiarity with API development as well as database standards such as ODBC, JDBC, and ADO.NET. The developer creating these connections, however, must be intimately familiar with the data models so they can design transformations across the different types of data from various sources into a unified format for easy use. Mastering these concepts and keeping up with changes in the field of data connectivity requires extensive training and dedicated skills, which can be difficult to find in many IT departments.

Maintenance and Support

The sources, applications, and tools organizations leverage across the enterprise are constantly being updated. This means your IT team must constantly stay up to date with every integration to guarantee that data connectivity remains active and data continues to flow appropriately across the organization.

Unfortunately, many times updates can cause a problem with the network and data process, and the organization won't know about it until something goes wrong. IT must then scramble to get the problem resolved as quickly as possible. Regrettably, IT departments are not staffed to handle these scenarios and the data blockage goes on longer than it should. Interruptions in the data often result in lost of business and reputation.

Evaluating ROI

The question of build versus buy is a common question organization often struggle to answer. Building requires in-house expertise, organizational technical support, and identifying how agile home-grown solutions can truly be. Even if the company has the specialized skills and resources to develop the data connectivity needed, it should evaluate the ROI over the projected lifespan.

The decision to build or buy is not one size fits all. Organizations must answer some of the following questions to make the appropriate decision:

- How long will it take to build a custom solution rather than implementing a pre-built one?
- How will core projects be impacted in the time it takes to build this ourselves?
- Who is going to build this inside of our organization? Do we need to hire new team members?
- How fast can we adjust or provide a new solution that addresses the changing needs of our business and data community?
- How are we going to maintain connectivity system code in the long run?
- What might be the total cost to develop, debug, maintain, and enhance this custom solution in the future?
- What are the commercially available solutions on the market, and can they solve our problems at a reasonable cost?
- How easy will it be to pass off responsibility for this project to another stakeholder should need arise?
- How is connectivity central to our business model? Are we prepared for the task of making connectivity a core responsibility?

Data connectivity is not a side project or an item to be added to a crowded to-do list. Creating custom solution means redirecting or hiring resources to work on data integration as a key initiative. This takes valuable time away from existing projects and/or require you to create a new department whose sole purpose is managing data connectivity.

The decision to build your own connectivity solutions takes serious thought – especially if there are affordable commercially available option that are fully supported and easier to implement.

Unified Data Access for Applications

The average enterprise manages hundreds of applications in their technology stack. One way to simplify connectivity between all these platforms is with a common data access layer.

Drivers are data connectors that wrap APIs inside a standardized SQL layer using longstanding database standards, such as JDBC, ODBC, and ADO.NET. By abstracting the underlying API inside a SQL layer, drivers make that API automatically compatible with every tool that can connect to these standard database interfaces. And nearly every application in existence is compatible with these proven standards.

This is significant because APIs are not standardized, and every application's APIs are unique. Rather than building a solution that runs custom API calls to every tool, you can simplify your connectivity workflow by using standards-based drivers.

Standards-based drivers provide instant access to data in real-time with simple SQL queries, rather than custom API requests. This removes the complexity of having to create and maintain connectivity across various API models. Using pre-built standards-based drivers is inexpensive and reliable, and the hard work of making all the diverse tools work together is quickly solved.

Implementation is simplified, as well. To set up a connection, install a connector and authenticate the underlying data source to gain complete access to all the data you need, whenever you need it.

CData: Standards-Based Connectivity for Every Need

CData Drivers offer the highest-performing standards-based data connectivity available on the market today, with connections to over 250 data sources and counting. These drivers are maintained around the clock by our team, meaning your organization will always have acces to the data they need when they need it.

CData Software also offers platform adapters and plugins for everything from full data integration technologies like MuleSoft, BizTalk, and SSIS to more traditional reporting software, such as Excel, Power BI, and Tableau.

Additionally, CData offers custom driver development. If you require a unique solution to meet your business requirements, we will design, develop, and maintain the connection for your organization. This model works well for data source vendors who need APIs and integrations to help expand their user base and is a great option for original equipment manufacturers (OEMs) who wish to embed connections into their tools and applications.

Building and maintaining custom data integrations is more work than IT should take on, is not a good use of expensive IT resources, will continue to cause data latency throughout the organization. With CData, you don't need to sacrifice the core of your business to meet your data connectivity needs.

As the leading provider of data connectivity solutions, CData makes it easy to connect, integrate, and automate your enterprise data without the headache of maintaining those integrations. We have helped thousands of other enterprises, OEMs, and database providers with connectivity, and we'd love to help you, too. Browse our extensive product library for yourself or get in touch with us today to discuss your data connectivity needs.

CData Software makes it easy to connect, integrate, and automate your enterprise data, solving even the most complex data fragmentation challenges. Leverage the CData Platform to connect your Big Data, BI, analytics, low-code, and ETL tools to live data from 250+ popular enterprise data sources, including on-premises and cloud applications, relational and NoSQL databases, web APIs, and more. CData empowers IT, data analysts, and lines of business to make the most of their organizational data with easy-to-use, powerful, and secure data connectivity software.

Learn more at www.cdata.com.