



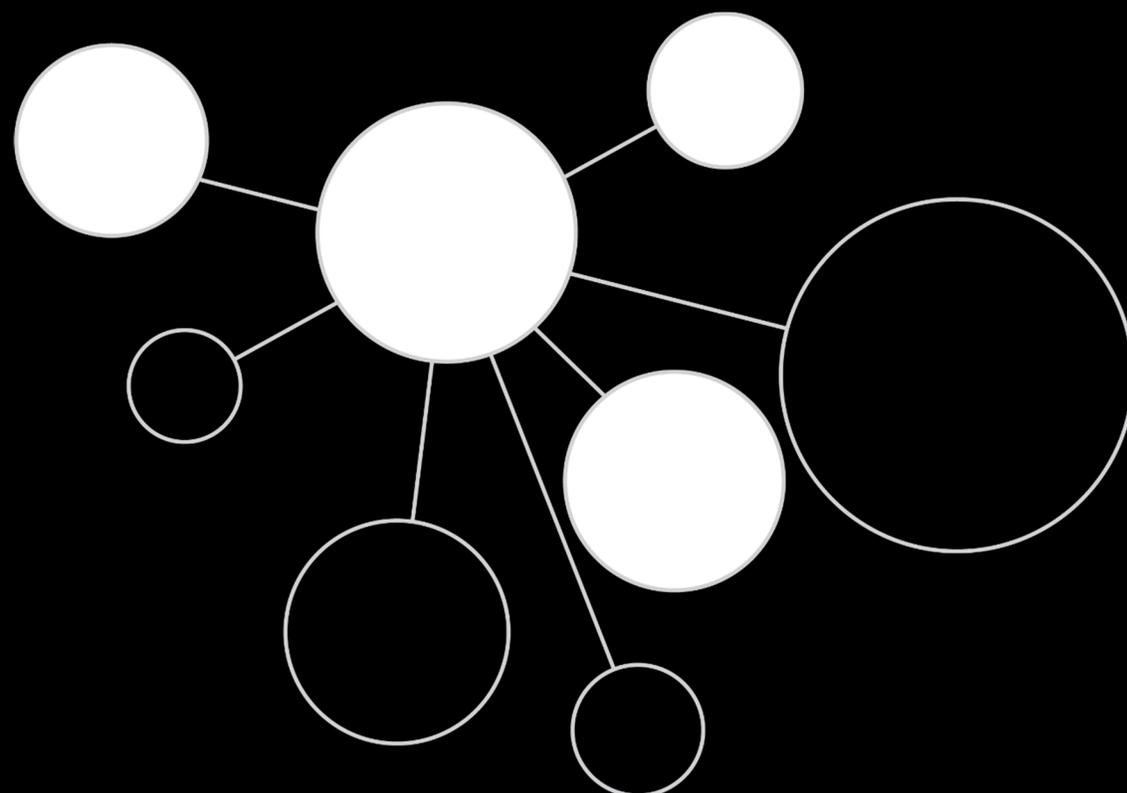
KEY CONSIDERATIONS FOR DATA CONNECTIVITY IN A NEW WORLD OF DATA

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INTRODUCTION

Extreme data growth combined with cloud adoption, the emergence of smart things, rapid artificial intelligence progression, and expanding ubiquitous internet connectivity is fueling a fourth industrial revolution, the digital business transformation. Developers face a wide spectrum of complex challenges navigating an entirely new world of data. From security to agility, scale and performant hybrid data connectivity, designing profitable next-generation applications is no easy feat.

“According to McKinsey Global Institute, linking the physical and digital worlds could generate up to \$11.1 trillion a year by 2025.”

Successful organizations must master connectivity to colossal volumes and varieties of data sources located everywhere to remain relevant. According to McKinsey Global Institute, linking physical and digital worlds could generate up to \$11.1 trillion a year in economic value by 2025¹. Early estimates cite business-to-business applications driving 70 percent growth. Businesses cannot afford to ignore this new universe of data.

Similar to previous technology waves, both incumbents and new entrants will be competing for data advantage. In the intensely competitive analytics niche, Sisense stands out from the crowd with impressive innovation and staggering growth while most other vendors in the same space are losing market share. Sisense was named one of Forbes’ Next Billion Dollar Startups, and named to the inaugural Forbes 100 Best Cloud Companies list. Sisense also surprised market pundits with strong Visionary placement Gartner’s Magic Quadrant for BI and Analytics Platforms.

SISENSE GREW OVER 1,032 PERCENT OVER THE LAST THREE YEARS².

Sisense is thriving while competitors are struggling. What are Sisense’s secrets to success? They constantly innovate. Sisense designed a unique cloud analytics solution that includes a vast library of digital era data source connectors. They keep development teams focused on reinventing optimized user experiences.

TO SWIFTLY ACHIEVE MARKET DIFFERENTIATING DIGITAL ERA DATA CONNECTIVITY, SISENSE TURNED TO CDATA SOFTWARE.

Windows of opportunity close quickly. Agile connectivity is essential to thrive in the digital era. In this white paper, we will discuss the current state of connectivity, share key data connector selection criteria and explore why world-class vendors go to market with CData Software.

¹ [Unlocking the potential of the Internet of Things](#), McKinsey Global Institute

² [Sisense Recognized for Rapid Growth in Record Year](#), Deloitte

CURRENT STATE OF DATA CONNECTIVITY

Today's data landscape is a labyrinth of numerous diverse data source types and cloud apps. Despite enduring security and data privacy concerns, companies continue marching to the cloud at a steady pace. As a result of this truly transformational trend, the center of data gravity has shifted.

Cloud-based, on-demand Software-as-a-Service (SaaS) applications bought on a per-seat, per-month or usage-based model are far more profitable for developers than previous sales models. In the first-ever Subscription Economy Index™ (SEI)³, Zuora revealed subscription revenue in 2017 grew eight times faster than S&P 500 revenue. In a movement led by the four largest publicly traded software companies, cloud SaaS models have become the new normal.

PROFIT OR PERISH

Connector strategies used by developers to unify and monetize data from a growing list of data sources will seal the fate of digital era software. Although many integration vendors claim connectivity is easy, that is a myth in the new world of data. The realities of connecting to massive volumes and varieties of data residing everywhere are incredibly challenging. Each data source type might have unique nuances with drivers, APIs, volume transfer limitations, proprietary query languages and difficult data gravity performance issues.

“Connector strategies used by developers to unify and monetize data from a growing list of data sources will seal the fate of digital era software.”

EMERGING DESIGN PATTERNS

Leading software engineers are adopting contemporary design patterns to overcome common digital era data challenges. To sustain a distinct competitive advantage, performant connectivity to the new world of data is crucial. The physics of data gravity alone dictate a continued need for fast, reliable, and secure hybrid data connection options.

³ Subscription Economy Index™ (SEI) <https://www.zuora.com/2017/11/17/the-first-anniversary-edition-of-the-subscription-economy-index/>

In a cloudy, big data world, movement of data is daunting, expensive and undesirable. Even with fast networks, dedicated routing and improved caching, software architects need to design solutions with distance, bandwidth, throughput, and latency performance considerations in mind.

As we all know, the only constant is change. Modern connectors need to be flexible enough to accommodate continuous changes to underlying endpoints transparently without downtime.

BUILD VERSUS BUY



Best-in-class connectors can effortlessly plug into future-friendly architectures, buffer constant changes and offer peace of mind. Rarely will it make sense to recommend coding connectors that already exist. How will investors rationalize that decision? Does losing time to market building connectors justify any perceived licensing cost savings?

INTEGRATION WITH 100 OR MORE DATA SOURCES HAS BECOME “TABLE STAKES” FOR MINIMALLY VIABLE PRODUCTS IN THE DIGITAL ERA.

Custom connectors must be secure and functional in the real world. The byzantine new world of data is complicated and risky. Data source vendors and enterprise accounts often require third-party connector certifications. Certification alone is expensive and time-consuming, requiring data source vendors to agree to engage in the process mutually.

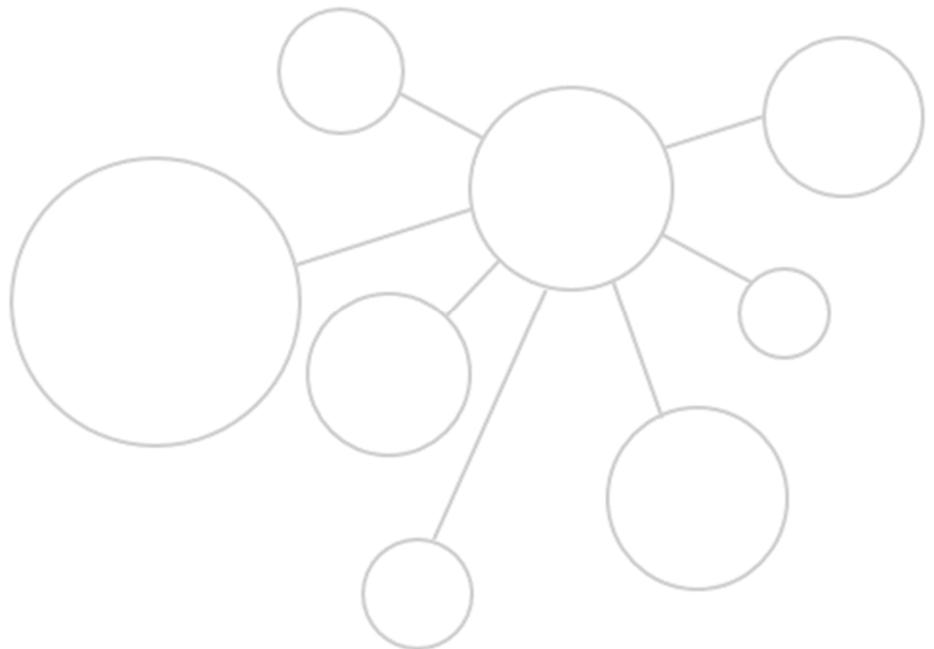
Keeping custom connector code up to date in the SaaS app realm of daily updates requires considerable time and resource investments. Can your development team commit full-time connector maintenance and technical support staff over the entire lifespan of your application? Is connector

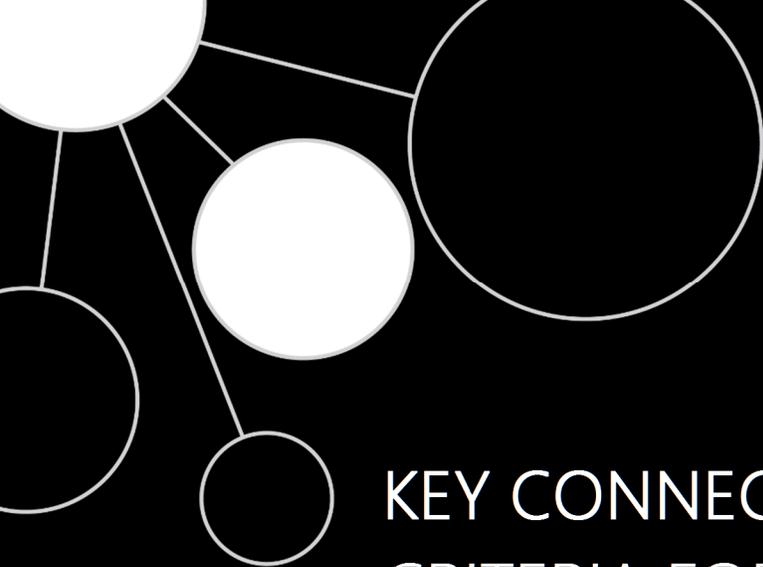
maintenance the optimal use of investment funding to maintain a strategic competitive edge?

There are many reasons why savvy, sensible developers buy connectors over attempting to build and support them. Partnering with a dedicated connector vendor delivers the following compelling benefits.

- Empower customers with choice and more data sources
- Increase digital era data sources to access untapped markets
- Expedite development team speed to market up to 10x faster
- Allow developers to work in true areas of expertise
- Future-proof data connectivity and integration
- Reduce connector maintenance and technical support
- Amplify market reach through reseller and distribution channels
- Reduce security and data privacy risks
- Protect everyone from expensive cloud host lock-in
- Ensure accountability to keep customers happy

In the following section, we will share key connector evaluation criteria.





KEY CONNECTOR SELECTION CRITERIA FOR THE DIGITAL ERA

The term connector is broadly used and frequently misunderstood. Definitions range widely from full-featured drivers to POC quality code or thin wrappers around web services. Beware of connectors that are actually code you maintain. To help you select the best real connectors, here is a list of clarifying questions.

1. Who builds, supports and commits to delivering working connectors? Is it community led? Are professional services required?
2. Are the connectors officially tested and certified?
3. Does the connector use standard protocols and ubiquitous technologies like JDBC, ODBC, or ADO.NET?
4. Is industry standard ANSI SQL-92 SQL syntax fully or partially supported?
5. Does the connector support rich metadata discovery and data exploration?
6. Is the connector application-aware or generic? Are results delivered through generic SOAP and REST web services? Is further customization required?
7. Does the connector deliver complete and current functionality for an API or data source? If not, what limited functionality and updates are supported?
8. How is hybrid connectivity between on-premises, cloud and SaaS apps designed? What prerequisites or utilities are needed to use hybrid data? How will data gravity volumes, sizes, latency and proximity challenges be handled?
9. Are embedded replication, caching, and remoting capabilities available?
10. What large query performance features are available? Are streaming forward cursors, query folding, caching, microservices, and bulk API options available?

INTRODUCING

Based in Chapel Hill, North Carolina, CData Software is a market leading provider of the industry's fastest, premier connectivity solutions. For over 20 years, this self-funded, profitable, debt-free group has simplified connection experiences helping numerous software vendors go-to-market 10x faster. CData's partner integrations get cross-promoted through reseller channels, distributed by OEM partners, and actively marketed to 4,000+ direct customers.

CDATA'S COMPREHENSIVE PORTFOLIO OF CONNECTORS QUIETLY FUELS THE WORLD'S TOP DIGITAL ERA SOFTWARE VENDORS WITH DATA.



Connectivity is CData's core business – it is not an afterthought. The company specializes in building performant drivers and data access technologies for real-time access to data living anywhere - on-premises, in the cloud, in a SaaS app or a contemporary web service. All drivers include a proven SQL-92 engine with full-featured consistent access, dynamic metadata discovery, caching, replication, remoting, collaborative query processing, and more.

CData's proprietary framework enables them to write source specific code once, and share that across technologies including ODBC, JDBC, ADO, SSIS, BizTalk, and Mobile. New data sources are developed in weeks – not months.

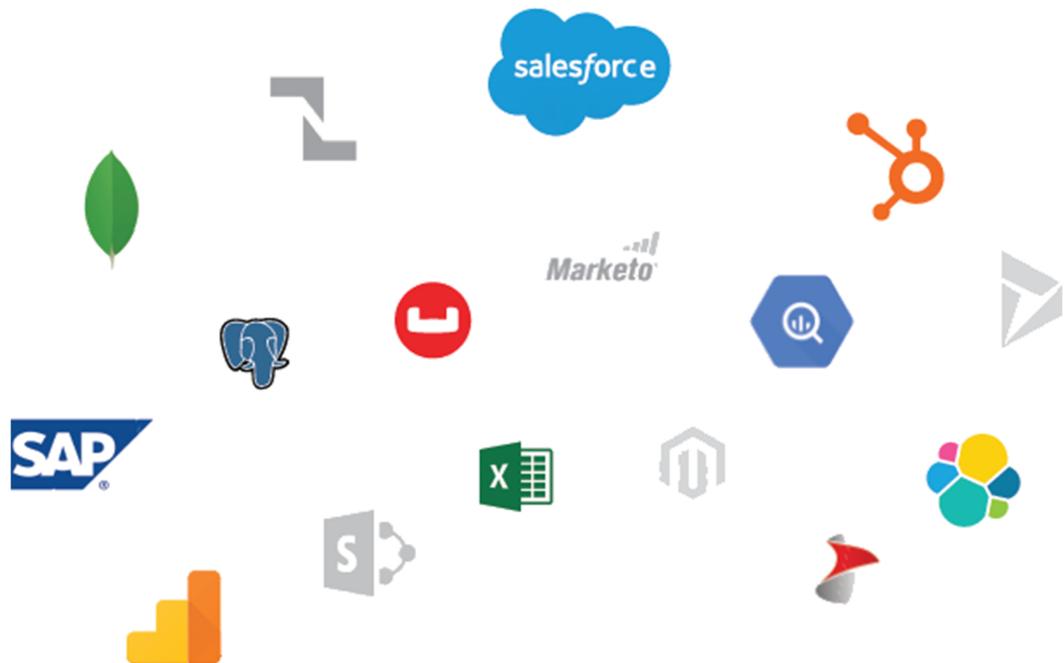
"CData's focus on performance puts them in a league of their own, making them an obvious choice."
Steve Dischinger,
Cambridge Semantics

SEE THE WORLD AS A DATABASE

"CData's performance, rich query engine, and innovative design made them an obvious choice to partner with."
Rod Hamlin, Redis Labs

One of CData's unique differentiators is the presentation of connected data in a familiar, user-friendly virtual database view. Developers can query data using industry standard SQL language – eliminating learning curves and eradicating painful, proprietary code approaches across an extensive library of over 110 data source types. For a current list of supported data sources, please visit <https://www.cdata.com/drivers/>.

CData values the importance of choice, open standards, and best-of-breed solutions. Their connector ecosystem spans the entire universe of digital era data sources - SaaS, NoSQL, and Big Data Sources, through established standards like ODBC, JDBC, ADO.NET, ODATA, and JSON. Development teams from both CData and data source vendors jointly commit to delivering optimal solutions to enhance user experiences. This combined effort is one of the secrets to successfully navigating constant change.



CONNECT WITH CONFIDENCE

CData's creates and owns the complete connector IP stack – 100% of it. Developers that purchase connectors from CData don't need to worry about security or accountability risks of running data through open source code or third-party systems. By embedding CData drivers, applications can directly read and write data, synchronize data, and backup data.

To ease the pains of continuous data source change, CData engineers are completely committed and focused on continually enhancing, extending, and expanding the connector driver portfolio. The teams continuously test drivers against data source, protocol, and API changes, preventing downtime in downstream applications or services.



Businesses of all sizes partner with CData to standardize, expand and improve hybrid connectivity. For OEMs and ISVS, CData offers flexible white-labeling, embedding, and licensing options. A variety of distribution options allows startups and established firms more choice and control over profit margins than usage-based models.

CONCLUSION

"Our customers don't just buy software; They solve a problem with assurances it will be maintained."
Christopher Hoffman
CData Engineer

Developers in the digital era need to build robust applications that can retrieve and process massive datasets from an entirely new world of data that is constantly changing at speeds that were once inconceivable. Coding custom connectors rarely if ever makes sense today. Don't build connectors, buy them.

By partnering with CData, developers can seize unprecedented opportunities to enter new markets and deliver more value from data to customers, creating "sticky" applications that users love. CData's industry-leading library of over 120+ connectors slashes architectural complexity, expedites time-to-market and continues to support profitable growth over time with reliable connections to any data, anywhere. CData vendors have enjoyed lucrative early mover market advantages that have left the competition scrambling to catch up a decade later.

RECOMMENDED NEXT STEPS

In this white paper, we examined the current state of connectivity, provided key hybrid connector selection criteria and explored why world-class solutions go to market with CData Software. To learn more about CData's offerings and connectors for developers, ISVs, and OEMs, please refer to the following list of suggested educational resources or contact a CData expert for personalized assistance.

- CData Software website <http://www.cdata.com>
- CData Client References <https://www.cdata.com/showcase/>
- CData OEM Offerings <https://www.cdata.com/partner/oem/>

About CData Software

CData Software is a leading provider of data access and connectivity solutions specializing in the development of standard drivers and data access technologies for real-time access to online or on-premise Applications, Databases, and Web APIs. You can reach the company via email at info@cdata.com, on the World Wide Web at www.cdata.com, or by calling US: (800) 235-7250 or International: (919) 928-5214.

About the Author

Jen Underwood, founder of Impact Analytix, LLC, is an analytics industry expert with a unique blend of product management, design and over 20 years of "hands-on" advanced analytics development. In addition to keeping a pulse on industry trends, she enjoys digging into oceans of data. She writes for InformationWeek, O'Reilly Media and other tech industry publications. Jen has a Bachelor of Business Administration – Marketing, Cum Laude from the University of Wisconsin, Milwaukee and a post-graduate certificate in Computer Science – Data Mining from the University of California, San Diego. For more information, please see jenunderwood.com.