Standards-Based Connectivity Simplifies Enterprise Data Management and Unlocks Value

The 451 Take

Organizations today aren't just looking to use data for ad hoc projects; they want to build a pervasive data culture in which all relevant workers are enabled to leverage data to drive business value. However, with so many evolving data sources that typically flow throughout the modern organization, it can be difficult to see the forest beyond the individual trees. Challenges include disparate data silos that tend to cyclically reincarnate via new mediums and architectures, legacy data that remains difficult to incorporate into new systems and platforms, and new data sources that emerge on a rolling basis.

With data itself as the basis for data-driven insight, it is little surprise that 'investment in data management products/services' ranks as a top response when organizations are asked what measures they have taken to improve data culture. In 451 Research's Voice of the Enterprise: Data & Analytics, Data Management & Analytics 2H 2020 survey, 44% of respondents said their organization has made such investment. But in managing – and particularly in integrating – all this diverse data, many challenges remain.
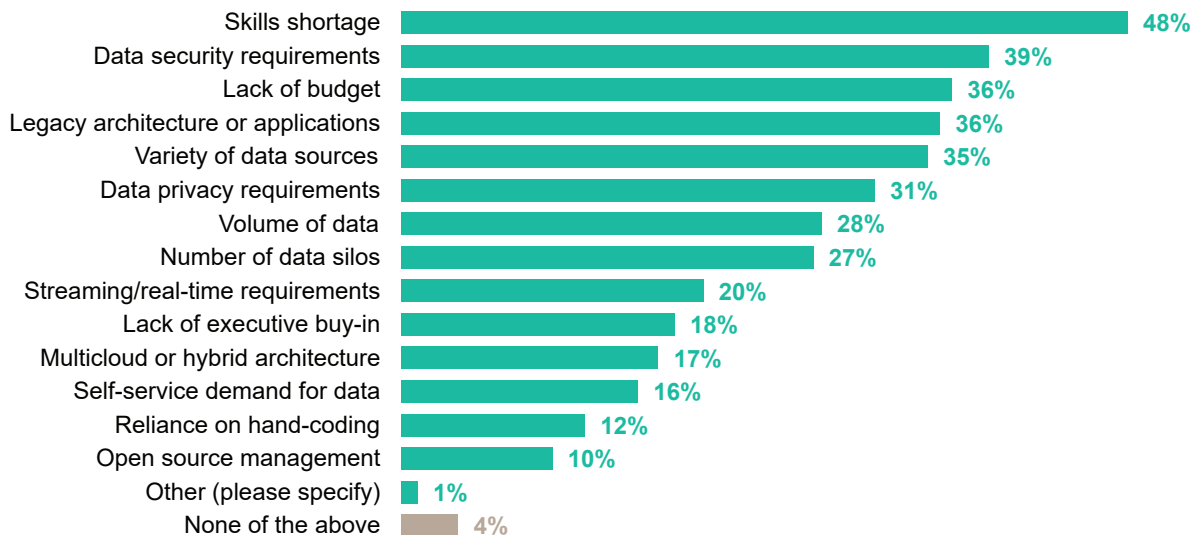
Some of these challenges are organizational in nature, and beyond the realm of simple technological intervention. Examples here include skills shortages and lack of budget. However, drilling into technology pain points speaks directly to the complexity of the modern data ecosystem and the underlying desire to rapidly synthesize data sources across the organization at scale.

Data Integration Challenges

Source: 451 Research's Voice of the Enterprise: Data & Analytics, Data Management & Analytics 2H 2020

Q. What are the biggest data integration challenges faced by your organization? Please select all that apply.

Sample Size = 370; Base: Data management respondents

Challenge	Percentage
Skills shortage	48%
Data security requirements	39%
Lack of budget	36%
Legacy architecture or applications	36%
Variety of data sources	35%
Data privacy requirements	31%
Volume of data	28%
Number of data silos	27%
Streaming/real-time requirements	20%
Lack of executive buy-in	18%
Multicloud or hybrid architecture	17%
Self-service demand for data	16%
Reliance on hand-coding	12%
Open source management	10%
Other (please specify)	1%
None of the above	4%

Among respondents to the aforementioned Data Management & Analytics survey, some of the notable technical integration challenges were legacy architecture and applications (cited by 35.7%); variety of data sources (34.9%); volume of data (27.8%); number of data silos (27.3%); and multicloud or hybrid architecture (17%). While technology alone rarely provides a comprehensive solution for such pain points, these challenges suggest that any integration technology used needs to offer an extensive array of connectivity, be capable of scale, and maintain compatibility with cloud and on-premises architectures.

The 451 Take (continued)

A comprehensive approach to data culture and data connectivity emphasizes the virtuous cycle of interdependency among people, process and technology. Some of the additional steps organizations have taken to improve data culture, appropriately, address all three elements. Based on data from the same 451 Research survey, 18.1% of organizations have fostered collaboration between data owners, data providers, data operators and data consumers. Another 25.6% of organizations report they have adopted processes to facilitate access to data. And on the technology side, 26.9% of organizations have invested in programs to reduce data silos and data duplication.

When an organization is ready to address technological integration challenges, several considerations must be made. Examples include:

· Is the technology rapid to implement, and simple to use?
· Will the technology be compatible with existing IT investments and legacy architecture?
· Is the technology compatible with both cloud and hybrid environments?
· Can the technology evolve to maintain connectivity with the 'long tail' of emergent data types?
· Is the technology's connectivity standards-based?
· Does the technology leverage automation to support scale and speed?
· Is connectivity technology at the heart of the provider's product strategy?

If the answer to these questions is 'yes,' then the organization can carefully proceed to considering how the technology might be incorporated into the broader efforts toward data culture.

Business Impact

DATA CULTURE IS ESSENTIAL. To move beyond ad hoc data use cases, organizations need to build a strong data culture. This requires pervasive processes and supporting technology that can help deliver relevant data to relevant stakeholders, in a fluid and continuous manner. Data connectivity needs to be rapid, flexible and scalable.

DATA INTEGRATION CHALLENGES ARE PERVASIVE. Organizations face many obstacles around data variety, volume and architecture – and data variety will only continue increasing. Common data sources may be relatively simple to integrate from a technical perspective due to availability of commercial products and support, but organizations must also be able to address the 'long tail' of emergent data types that may be less compatible.

SUPPORTING DATA CONNECTIVITY IS CRITICAL. Connectivity technology must be highly adaptable, easy to use and complementary to people and processes. Organizational structure is based primarily on individual skills and workflows that effectively engage human roles and responsibilities. By selecting technology that is simple to use and implement, organizations can accelerate outcomes.

Looking Ahead

The vast ecosystem of data available to the enterprise will only continue to diversify, and being able to gain holistic insight across these data sources will be critical to business success and sustained agility. As sudden market shifts such as the coronavirus pandemic have shown, customer behavior and interaction methods can rapidly change. New data sources are needed to optimize interactions and profitability, and historical data must be effectively combined with this new data to be understood in context.

Agile approaches to data integration, with quick implementation and rapid time to value, will help organizations make the most of the data available to them. Data availability within the organization, as well as its ongoing management, forms a foundational element of a pervasive data culture where workers can continuously drive business value with information.

More awareness of and access to data fosters collaboration and data literacy, helping the enterprise adapt amid evolving competitive pressures. Workers depend on business applications, and business applications depend on data. Therefore, continuously delivering the right data to the right applications needs to persist as an enterprise priority.