

Today's diverse data environment requires a single platform to operate as an end-to-end pipeline within a data fabric architecture without sacrificing flexibility, adaptability, or the ability to blend old and new data.

Unified Data Platform Weaves Distributed, Diverse, and Dynamic Data in Modern Environments

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Introduction

There is no doubt that data is key to an organization's success. In fact, most enterprises have access to more data than ever, but data by itself doesn't have any value. To see measurable business benefits from data, organizations need to first unlock its value in order to generate insights that drive decisions.

Most enterprises do not know what data they are currently managing. They also lack insight into how they are managing that data, how they can combine the data in more useful ways, and how to extract value that can be leveraged to benefit the whole enterprise. Doing so is key to developing enterprise intelligence (EI). IDC's Future of Intelligence framework highlights three specific capabilities that organizations need to develop enterprise intelligence:

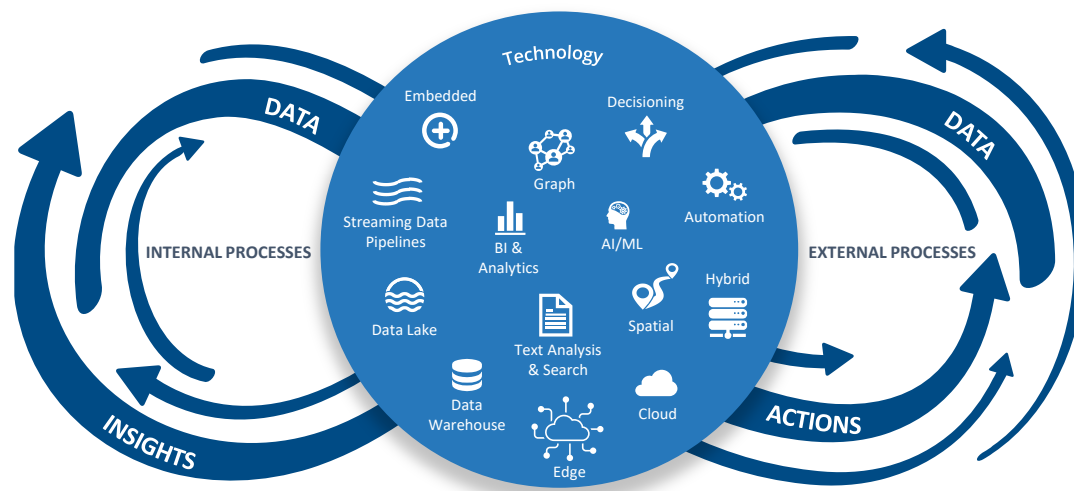
1. The ability to synthesize information from data
2. The capacity to learn from those insights
3. The ability to deliver those insights and learnings to all workers

According to IDC's January 2022 *Worldwide CEO Survey*, 88% of CEOs said they plan to sustain or increase technology spending in 2022 mainly to accelerate digital strategies, and data is a core enabling element of a digital strategy. Organizations have invested in technologies such as databases, data warehouses, enterprise applications, and data lakes for years. However, in a data culture survey conducted by IDC in 2021, only a third of data-oriented staff workers said that their decisions and actions were data driven. IDC's August 2021 *Future of Intelligence Survey* of 1,170 respondents found that the top 2 challenges to increasing enterprise intelligence were the lack of a long-term strategy and the inability to synthesize internal and external data sources (*Enterprise Intelligence Index Explained: Why Every Executive Should be Focused on Enterprise Intelligence*, IDC #US48346421). Organizations need to leverage investments made in data and analytics technologies to generate insights and drive actions, as shown in Figure 1.

AT A GLANCE

KEY STATS

- » 95% of organizations are integrating data across hybrid and multicloud environments.
- » 77% of organizations are integrating up to five different types of data in pipelines.
- » 65% of organizations are using at least 10 different data engineering and intelligence tools.

FIGURE 1: **Enterprise Intelligence on the Digital Transformation Platform**

Source: IDC, 2022

The Problem

Data is distributed, diverse, and dynamic, often arising from point solutions and not aimed at addressing organizational needs beyond specific applications. IDC survey results indicate that 65% of organizations are using at least 10 different data engineering and intelligence tools to integrate data coming from or going to up to 10 different data management technologies. Much of this distribution and diversity has grown out of the need to manage modern data alongside legacy data. Organizations have realized that to increase enterprise intelligence and generate business outcomes, they must be able to synthesize data into insights regardless of where the data resides. The notion of moving all enterprise data into a single repository for analysis is neither practical nor affordable.

The Solution

Organizations that put data first in their effort to improve enterprise intelligence are unifying disparate and dynamic data by using composable, integrated architectural solutions. These can be in the form of a data fabric, data control plane, or data mesh. This approach requires a unified data platform capable of behaving as a single data definition, access, and delivery resource to operate end-to-end pipelines within a data fabric architecture. The platform must do this without sacrificing flexibility, adaptability, and the ability to make timely, trusted, and contextual data available to decision makers, increasing operational efficiency and enterprise intelligence.

Benefits

According to IDC research, putting data first to increase enterprise intelligence drives quantitative and qualitative business benefits. In particular, organizations with excellent enterprise intelligence experience quantitative business benefits that are 3x–4x greater than those of organizations with poor enterprise intelligence. From the 2021 *Future of Intelligence Survey*, IDC has seen that:

- » 35% of organizations with excellent EI experienced improvement in their revenue growth compared with 12% of organizations with poor EI.
- » 48% of organizations with excellent EI showed an improvement in customer acquisition rate compared with only 10% of organizations with poor EI.
- » 51% of organizations with excellent EI saw improvement in their employee retention rate compared with 12% of organizations with poor EI.
- » 56% of organizations with excellent EI experienced better time to market with new offerings compared with 15% of organizations with poor EI.

A single platform that unifies data into a fabric benefits organizations by reducing the number of different tools and technologies, minimizing the need for multiple and diverse skills among data workers, and streamlining service agreements with technology vendors. Reducing the number of disparate components also simplifies implementation and operations, reducing data security and governance risks, improving data management efficiencies, and improving more opportunities for reuse out of foundational definitions and services built on top of data.

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A unified data platform that leverages modern microservices enables composable serverless functions that provide efficiency, flexibility, and scalability, without the need for infrastructure management. These data functions can be toggled on or off as needed. Unifying data into a fabric requires transparency that can be provided by intelligence about data — the metadata that defines data and the ontologies that define semantic relationships across distributed, diverse, and dynamic data. A unified data platform enables data access and discovery while also maintaining one point of control to enforce quality, governance, and security of data access, provisioning, movement, transformation, and delivery. Unification of data into a fabric improves data utilization across the company, from IT and analytics efficiencies to business users' trust in data and the ability of data scientists to drive actionable insights — ultimately improving data-driven outcomes across the board. Organizations that have implemented modern data technologies and methods have reported a 40% reduction in the number of exceptions occurring in pipelines and a nearly 50% improvement in the ability to deliver solutions on time.

Considerations: Integrating Legacy Data

One platform that unifies data in modern environments cannot focus only on new data and technologies — it must also be compatible with legacy components. Rip and replace is not an appropriate option in many cases, and full replacement of legacy solutions with modern technology is not going to happen overnight. Regardless of where organizations are on the spectrum from legacy to modern, a holistic approach to unifying and controlling data is required.

Trends

When looking to implement one platform that can operate end-to-end data pipelines without sacrificing flexibility, adaptability, and scalability in the unification of data into a fabric, organizations should consider the following trends:

- » **The availability of open source software for data cataloging, engineering, and orchestration.** Open source software can provide the benefits of community innovation and support. However, it may be costly to implement because it requires deep technical expertise in infrastructure and software to integrate into an end-to-end solution. A more likely alternative is a modern data platform that leverages open source software projects within its code base, benefiting from modern innovations and open standards.
- » **An ever-growing number of organizational roles that work with data.** From technical to business, from operations to strategy, and from the back office to the front office, more people are working with data daily to complete tasks, make decisions, and affect business outcomes. Modern data platforms should have self-service options to support diverse users with varying degrees of technical knowledge and capabilities.
- » **The emergence of DataOps.** Borrowing from the lean and agile principles of DevOps, including continuous development, testing, and deployment of data applications, DataOps adds statistical process control to continuously test data. Modern data platforms should support the discipline of DataOps CI/CD methods and continuous testing of data within pipelines to improve the efficiencies of data workers and deliver high-quality data to improve data-driven outcomes.

Conclusion

The cost of poor-quality, inaccessible data is too high to ignore. Modern data environments require a modern data solution that can enable data-driven organizations. Technology that unifies, refines, uncovers, and manages distributed data, within appropriate controls, can help organizations unlock a wealth of insights. Weaving highly distributed, diverse, and dynamic data into a unified fabric can benefit all organizational levels, reduce operational costs, and deliver better business outcomes.

About the Analyst



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Stewart Bond is Research Vice President of IDC's Data Integration and Intelligence Software service. Mr. Bond's core research coverage includes watching emerging trends that are shaping and changing data movement, ingestion, transformation, mastering, cleansing, and consumption in the era of digital transformation.

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