
SLOW DATA
KILLS BUSINESS
Improve customer experience with the right
data management system
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Introduction

We live in an era where customer experience trumps product features and functions. How do you exceed customer's expectations every time they interact with your organization? By leveraging more information and applying insights you have learned over time. Turning data-driven power into delightful experiences will give you the advantages required to succeed in today's climate of one-click shopping and crowd-sourced feedback. Whether you are a retailer, a banker, a care provider, or a policy maker, your organization must harness the power of growing data volumes, data types, and data sources to foster experiences that matter.

» 76 percent of organizations believe that untimely data has inhibited business opportunities.[1]

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For most enterprises, gaining a complete view of user experiences and context requires the modernization of legacy and disparate technologies, many of which have been designed to support siloed applications/functions in individual departments. The difference between modern and legacy platforms lies in their capabilities.

MODERN DATA PLATFORMS

Holistically support the digital transformation brought on by massive cloud, mobile, and social adoption while simplifying development and support requirements.

Support both transaction processing and analytics in real-time.

Empower organizations to deliver modern, data-rich applications amongst legacy applications, support on-prem and cloud deployment options, mitigate risk between open source and enterprise-grade software.

Featuring new market data from IDC, this eBook will highlight the motivating factors driving the evolution of the modern data platform and explain how organizations can benefit from a simplified, yet more powerful, data infrastructure.

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Chapter 1: Business Drivers

The digital evolution is driving the push toward the modern enterprise, where transactions and analytics complement one another to derive new, actionable insights before opportunities are lost. To meet these rapidly evolving market and consumer demands, organizations must accelerate their path to innovation. According to the IDC study of more than 500 organizations across the globe, speeding innovation was the top business priority for more than one-third (**33.9 percent**) of respondents, with streamlining operations (**31.9 percent**) coming in as the close second.[2]

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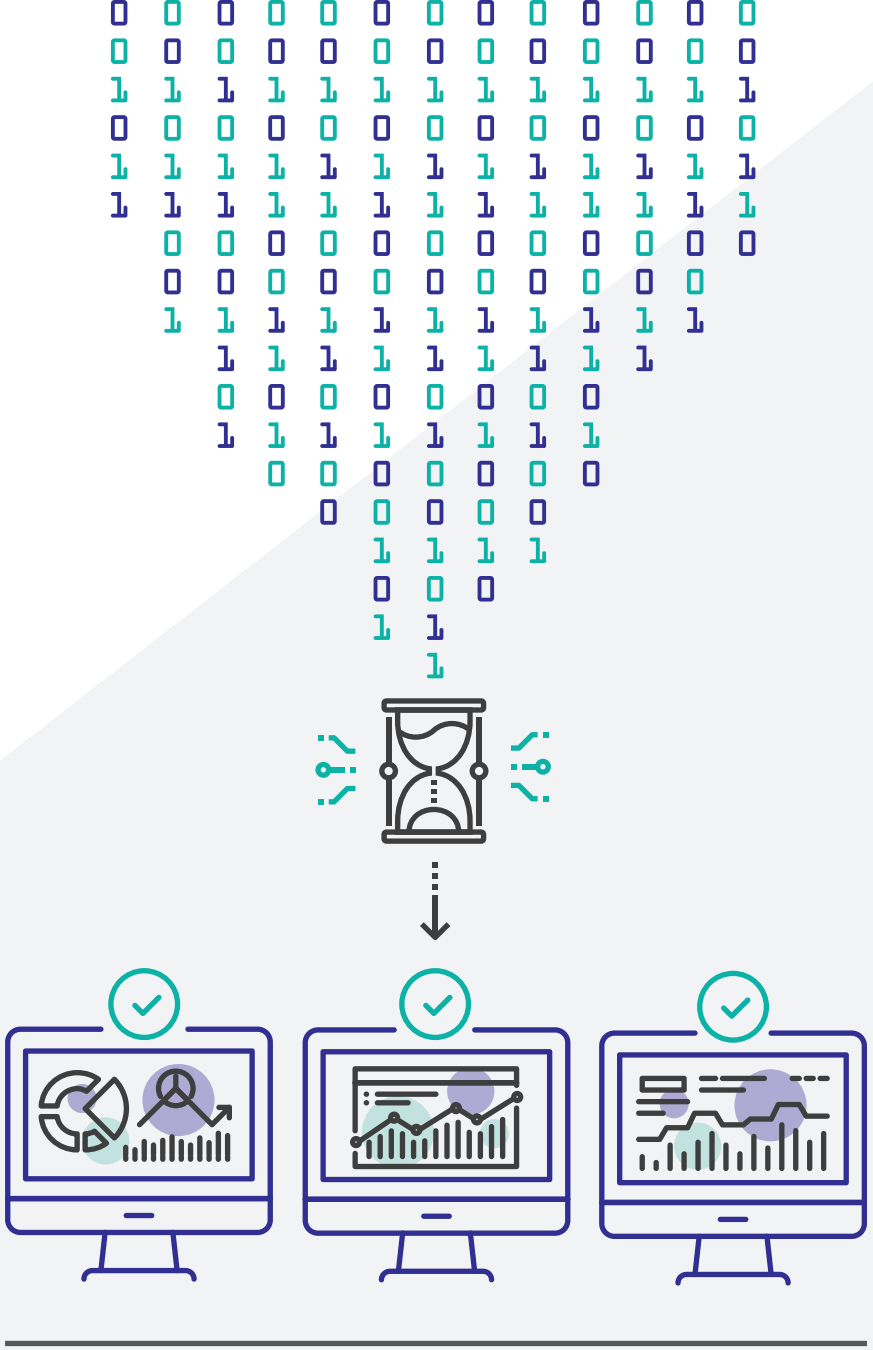
DATA LATENCY.

Making a decision based on live data requires the ability to perform analytical queries with transactional data in real-time. Most companies, however, are basing decisions on data that is anywhere from 10 minutes to two hours, or even days, old.

These latencies make it impossible for organizations to capitalize on real-time and near real-time business opportunities. It is not surprising, then, that **76 percent of respondents reported that the inability to analyze current data inhibits their ability to take advantage of business opportunities** and 54 percent claimed that it also inhibits their ability to improve operational efficiency.[3]



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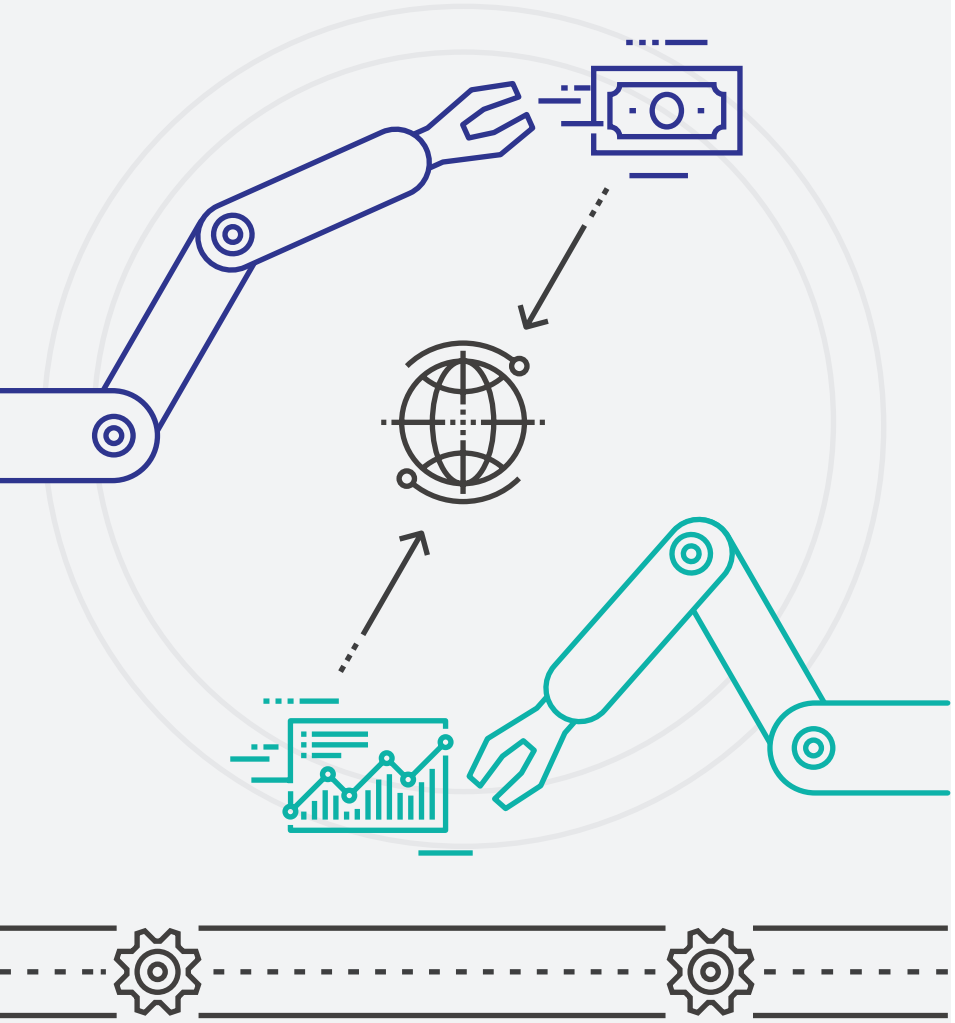

THE ROLE OF TRANSACTIONAL AND ANALYTIC DATA PROCESSING IN THE ENTERPRISE.

Today's enterprise often consists of two separate data processing arms: Transactions and Analytics. Understanding the role and requirements of each arm enables organizations to better understand their limitations and opportunities when it comes to processing and analyzing data to positively impact the business.

Transactions typically involve the processing of data in relation to regular operations conducted by the business and are optimized for write, not query, speed. Analytics are optimized for query performance and provide organizations with insights based on specific questions.

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THE PATH TO REAL-TIME ANALYTICS GOES THROUGH ETL (EXTRACT/TRANSFORM/LOAD).

Data often needs to move from transactional systems to analytics, increasing complexity and latency that slows the business down and can lead to missed opportunities. Transactional data processing is often limited in its ability to quickly perform analytic queries, while analytics data processing depends on first moving and pre-processing data from transactional systems, making it impossible to deliver valuable real-time insights.

According to the IDC study, 86.5 percent of organizations use ETL to move at least 25 percent of all enterprise data between transactional and analytical systems. **And nearly two-thirds (63.9 percent) of data moved via ETL is at least five days old** by the time it reaches an analytics database.[4] This is a critical obstacle for most organizations that want to deliver the right customer experience in the moment.

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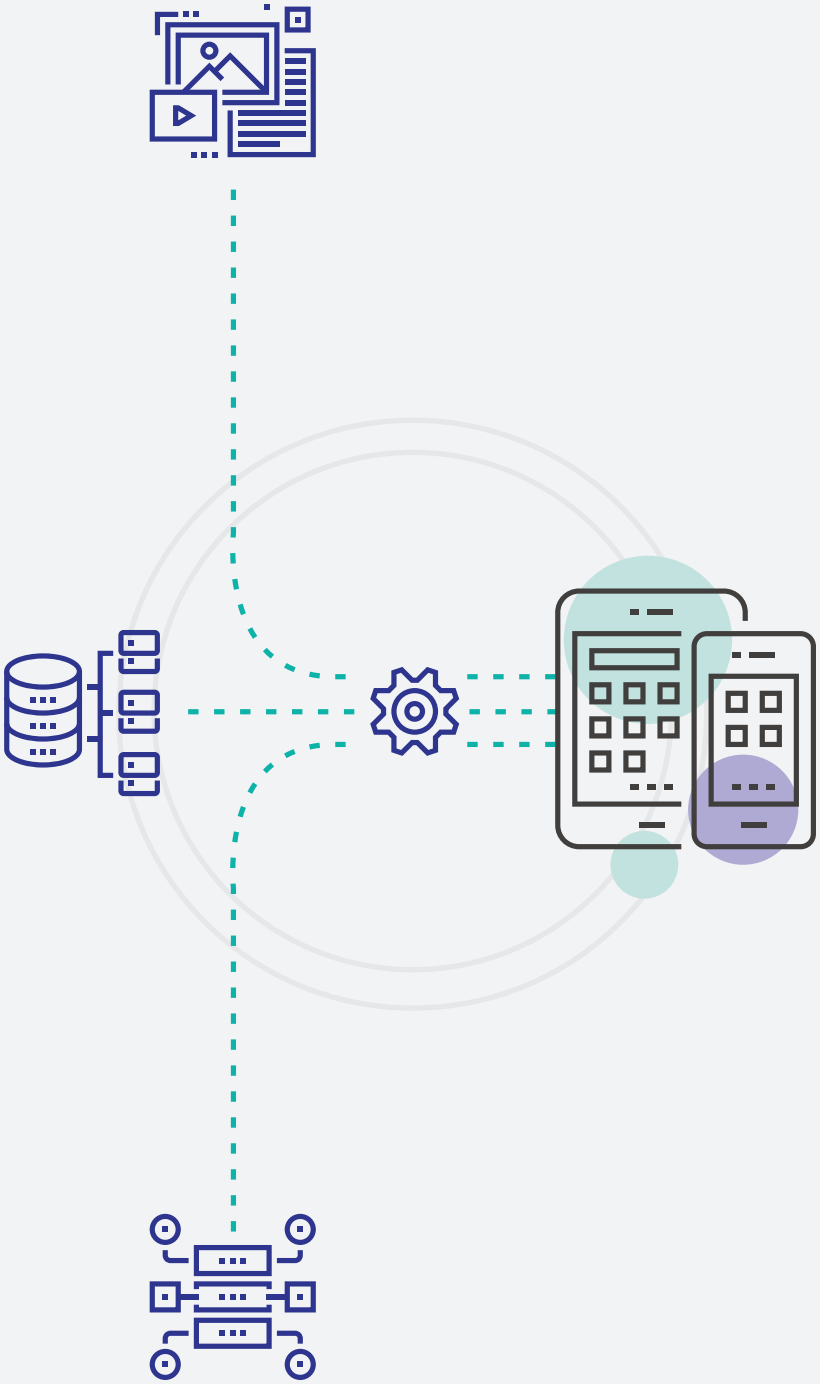

CURRENT DATA INFRASTRUCTURE CHALLENGES FOR APPLICATION DEVELOPERS.

Delivering the ultimate customer experience demands high performance and quick response times. But, this is independent of the many sources streaming data into the application or the type of mixed workloads the application requires (processing large volumes of transactions while executing complex predictive analytical algorithms). Adding to the complexity is the need to support more data types (structured, unstructured, etc.), larger data sets, and an accelerated path from analysis to action introduced by mobile users, IoT/sensor data, and fickle / constantly emerging trends.

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MULTIPLE DATABASES INCREASE COMPLEXITY

Often, to support the different types of data and applications required, companies utilize several database systems across the organization, which means the data is saved and stored in disparate places and formats. Each database may be unique to the application, data, and workload type.

More than 60 percent of respondents to a recent IDC survey reported having more than five analytical databases, and more than 30 percent have more than 10.[5]

The majority of respondents have more than five production transactional databases, while 25 percent had more than 10.[6]

Companies now have the challenge of harnessing that data and determining how to extract value from it by applying it to business operations – making sense of all the data by tying all the sources to an individual customer, patient, citizen, investor, etc.

NEW DATA TYPES

- ✓ Relational
- ✓ Internet of Things
- ✓ Streaming sources
- ✓ Sensor data
- ✓ Document
- ✓ Key value
- ✓ Video/audio/image
- ✓ Object
- ✓ Geospatial

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Chapter 2: What is a modern data platform?

By combining analytic and transactional data processing, including a range of data types in support of digital transformation, a modern data platform lies at the heart of a data-driven business.

A data management platform is a centralized computing system for collecting, integrating, managing, and analyzing large sets of structured and unstructured data from disparate sources at massive scale (distributed as well as single server) and can support multiple use case scenarios and workloads (transaction processing and analytics) with native data and application interoperability.

There are three central pillars to a modern data platform.

It must **support all data types** and **workloads** in a single architecture.

It must incorporate **database management**, **interoperability**, and **analytics**.

It must be **reliable** and provide **high throughput** and **low latency**.

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CONNECTING INSIGHT AND ACTION

Why do companies need a consolidated data platform? Because disparate systems create a disconnect between insight and action, resulting in a delay in the feedback loop that drives the ultimate customer experience. A consolidated data platform helps companies achieve their core (IT-related) business objectives, while simplifying architecture, reducing cost, speeding innovation, and streamlining operations.

Managing multiple databases is complex, expensive, and introduces latency issues. As data itself grows more complex, deploying a unique database and data integration system for each business need creates unnecessary complexity. It means tactical decisions cannot be supported as long as data is segregated into transactional and analytical databases. Most users need a broad variety of data type support that goes well beyond what native relational database management systems (RDBMS) provide. Lastly, the rising costs of database management is cost prohibitive to many organizations. The maintenance of many databases leads to excessive cost and complexity in the data center.

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Chapter 3: Delivering ultimate data-driven experiences

How do you define the ultimate experience for your customers, partners, and stakeholders? What data do you need to ensure all of the information can be accessed for both guiding a decision and executing intelligent, data-driven actions?

To answer these questions, you must first identify your organization's data infrastructure needs. This includes understanding where your data resides, how often and by what means it is accessed, and how it is to be analyzed.

Companies no longer need to choose between data from different sources and having real-time access to information through robust analytics. They can access data how and when they want and have the ability to make the data actionable in real-time. Modern data platforms can unlock your data and transform your business.

» Answering these questions will help you identify your organization's data infrastructure needs.

- Where is your data located?
- How often is it accessed? And by what applications?
- How/where is new data "routed" into your organization?
- What data is being analyzed? Current? Data lakes, etc.?
- Where are the biggest gaps in your data infrastructure?

Conclusion

Primary access to data can deliver significant benefits to company operations and customer experiences. As more and more data is generated by companies and their customers, it is important to be able to easily access and analyze this information and use it to inform business decisions and real-time customer experiences. A modern data platform simultaneously supports analytical and transactional decisions and streamlines data infrastructure costs, driving more intelligent insights across the entire organization.

What a consolidated data platform means for your business

- Streamlines operations and reduces IT infrastructure costs
- Personalizes customer experiences the moment it matters most
- Helps IT and Line of Business leaders gain a strategic seat at the table

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1-6: IDC InfoBrief, sponsored by InterSystems, Choosing a DBMS to Address the Challenges of the Third Platform, May 2017