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Enterprise Digital Transformation Starts with Data Observability

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After witnessing the world's most advanced data companies achieve unparalleled market and financial success over the past decade, enterprises from across the globe are desperately trying to copy the hyper-scaler data playbook. Their goal is to optimize their data to be a competitive weapon and driver of innovation and business success.

This is a tall order, but with the right data transformation strategy, modern enterprises are taking a whole new approach to using data to drive business operations and realize better outcomes.

Open Source and Cloud Innovation Are Only the Start

The transition to the cloud and open source data technologies continues to accelerate as companies seek out the improved agility, performance, and returns on data exhibited by the world's data leaders.

Cloud and open source migrations, enticing as they may be, are not without significant challenges. Many large companies hope to move to the cloud but find themselves paralyzed by legitimate concerns of cost, reliance on expensive, existing on-prem infrastructure, potential migration difficulties and disruptions, experience, and privacy and security risks.

Although open-source and cloud strategies may improve the ability to innovate rapidly with the most advanced technologies, they often present their own challenges in terms of operations, scale, and talent gaps that limit immediate benefits. Many companies respond to their concerns by taking a middle path. They try to cobble together a complex mix of technologies, environments, and cloud providers to improve performance and agility without abandoning past investments and years of hard work in constructing their own big data systems.

The unfortunate result is they end up with enterprise data systems that are incredibly difficult to operate, scale, and optimize, despite huge investments in time, money, and resources.

Another critical market dynamic is the evolution of enterprise technology buying processes. Similar to the changes seen in other enterprise technology areas (e.g., APM and log management), strategic cloud purchases are no longer the sole domain of CXO-level decisions. Technology purchases are now often made by group leaders, middle managers, and even individual contributors. This change in buying behavior necessitates new GTM strategies that provide easy discoverability and access to cloud-based products that deliver immediate, tangible results. Users want to see benefits straight out of the gate without huge commitment of time and money.

Regardless of the challenges, market complexity and rapid pace of change have presented significant opportunities which we see materializing through two major trends:

- **First**, open-source SaaS vendors are moving fast to increase adoption.

- **Second**, large, traditional software companies are desperately rushing to launch cloud services to take advantage of customer cloud interest and upcoming migrations.

Although sophisticated open source technologies available as cloud services greatly expand the potential for enterprise data performance, scale, and agility, these advances alone don't guarantee the expected high returns on data that large organizations hope to achieve.

Enterprise spending on cloud has reached more than $129 billion in 2021.

Source: Statista

Data Drives Transformation

Enterprises—and eventually companies of all sizes—are missing the mandatory tools that provide comprehensive visibility into mission-critical data systems. Without these tools, enterprises can't effectively build, operate, and optimize their data systems, and that stalls their transformation efforts. As a result, they will consistently fail to achieve their goals and deliver promised results.

Advanced open-source, open-core and cloud technologies are great, in theory, but they don't do much for your business if you can't make them work the way they are supposed to or deliver the claimed performance, productivity, and operational benefits.

Within this rapidly evolving market landscape, the Acceldata team is seeing trends that indicate a push towards data observability as a critical facilitator for enterprise transformation. These include:

- AI/ML applications built on cloud and cloud-based ISV solutions (e.g., Databricks, Domino Data Labs, Sagemaker).
- Consumption via SQL-based cloud data warehouses and data lakes (e.g., Snowflake and Redshift).
- Data migration from RDBMS/SQL stores to NoSQL, cloud-based data warehouses.
- Data migration from NoSQL stores such as Hadoop to NoSQL, cloud-based data warehouses.
- Data movement, cloud-based ELT, and ETL startups are gaining market momentum.
- Cost optimization opportunities since cloud spend is the biggest trend, and optimization can be directly related to economic benefits.
- Growing importance of "data about data" which leads to several governance initiatives, where the previous generation products don't work.

Traditional Performance Management Solutions Don't Cut It

Some IT leaders ask, "Don't the existing application performance management tools and traditional monitoring approaches work with modern data systems?"

The simple answer is no.

Existing tools like New Relic, DataDog, and AppDynamics will continue to play an important role in monitoring and managing web applications that guide users through defined workflows to achieve specific goals or objectives. Fundamentally, these applications have low entropy and failures are deterministic and exhibit static behavior.

Data, on the other hand, is a complex, high entropy, living and breathing system. Hidden in data lie the universe's most complex realities and deep-seated truths: Consumer buying behavior, climate change, and disease proliferation are all examples of trends and patterns we can interpret through the proper analysis of massive amounts of data.

In order to extract value from real-world data, enterprises must be able to efficiently analyze vast amounts of data from many disparate sources with applications that are several magnitudes more complex than standard web applications. The combination of scale, complexity, system interconnectivity, and increased number of tools creates operational and management nightmares. The result is that data users and owners will—despite applying sophisticated technologies and significant operational resources—struggle mightily to gather real-time intelligence that delivers expected return on data.

Enterprises must address these fundamental questions with a data observability solution:

- Do our data pipelines effectively support our most critical business functions?
- Is the right data available when it matters most to help my business make the best decisions?
- Are the individual systems responsible for compute, analytics, ML/AI performing well?

The number of applications being built on top of unstructured raw, accumulating data is expanding at an unprecedented rate. Mastering data at scale is an existential challenge all enterprises need to address in the next several years in order to continue to thrive long-term in the modern economy.

Traditional performance management solutions are fundamentally unable to provide visibility into today's complex data systems, which are primarily distributed and unstructured.

Visibility allows enterprises to re-design, re-implement, and tune their data pipelines to deliver on financial and strategic objectives.

The New Approach: Enterprise Data Observability

In contrast, Acceldata's unified Data Observability platform cures operational blindness and enables enterprises to accelerate data success and dramatically increase corporate return on data. Acceldata provides a view across all enterprise data and correlates signals across multiple layers of IT operations, including data quality, infrastructure and security to predict, identify, recommend and fix data issues that impact business continuity and consistency. It allows enterprises to measure what matters in their data journey, adapt based on experiment outcomes, and successfully implement data strategy.

Visibility allows enterprises to re-design, re-implement, and tune their data pipelines to fully deliver on their financial and strategic objectives. This requires a framework for companies to tightly align their data and business strategies to ensure returns on data investments.

Acceldata's high-level approach and capabilities align well with the developing market trends described above and have enabled Acceldata to provide a comprehensive data observability solution to global, brand-name customers.

Introducing Acceldata's Data Observability Cloud

Acceldata launched the market's first "Data Observability Cloud" as an easy-to-access, instantly available service for enterprises adopting hybrid data lakes and cloud data warehouses. The Acceldata Data Observability Cloud enables enterprises to take advantage of real-time observability to:

- Build, operate, and optimize complex data systems across environments—e.g., hybrid data lakes and warehouses—and cloud providers with the highest level of data team productivity and return on data investment.
- Scale rapidly without loss of data quality across technologies, workloads, and applications.
- Align data and business strategies to ensure that enterprises satisfy business objectives and maximize return on data.
- Maximize internal data team expertise.

As complex enterprise data systems are deployed into production at a higher velocity than ever before, Data Observability—the ability to comprehensively monitor and understand how famously opaque data systems function and perform across the infrastructure, application, and data layers—will be absolutely critical for companies which seek to transform themselves into data-driven enterprises that can compete in a modern economy.