



# Five essential factors in migrating to the data cloud

On-premises data warehousing appliances rooted in 1990s technology are holding organizations back from realizing the promise of data-fueled business insights and artificial intelligence enabled by the cloud. Legacy platforms were developed at a time when off-the-shelf servers were too underpowered to handle and generate insights across large and complex datasets, but cloud platforms have rendered those forces obsolete.

The data cloud, pioneered by Snowflake Inc., has captured the imagination of IT and business leaders alike. The Snowflake Data Cloud delivers on the aspirations of legacy analytics capabilities, providing much greater functionality, scalability, flexibility and reliability. It can support modern workloads like artificial intelligence model training and significantly advance the democratization of data by enabling users to share and build upon each other's data studies, internal and external to their organizations.

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Enterprises are already aware of the value of moving data and analytics to the cloud. Global Market Insights estimates that cloud providers [will host the majority of data warehousing loads by 2025](#), and Deloitte's [2019 Data Modernization and Cloud Computing Survey](#) found that 91% of companies already have their data on cloud platforms, with more than half seeing data modernization as a key benefit.

Snowflake's scalable architecture bridges silos and enables organizations to unify their data in one place with consistent governance and quality standards. The platform scales seamlessly, enabling any organization to operate a single enterprise-wide data cloud across multiple public clouds and regions, and optimizes cost by handling compute and storage separately while staying within regional and industry regulations.

The Snowflake Data Cloud is a network by design that connects internal constituents, external partners and data and service providers to exchange and build upon data in secure, governed and compliant ways. It also supports a wider range of use cases than a data warehouse, including machine learning model training and real-time data integration. To fully realize these benefits, the first step is to shift the data gravity to the Data Cloud by migrating data and the associated assets in an efficient and timely manner.

In the past, migrating legacy data to cloud platforms has been a manually intensive process, but cloud-driven automation has cut the time needed for both migration and modernization while also mitigating the risk of human error. Deloitte's Migration Factory offering executed in collaboration with Snowflake, can substantially minimize the time needed for tasks like code migration analysis, legacy code conversion, ETL code conversion, and various others. Automation is what makes these dramatic time reductions possible.

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Deloitte has identified these top five success factors based on experiences using its Migration Factory offering to help clients across industries and the technology landscape shift to the Snowflake Data Cloud:

## 1 Focus upfront on migration strategy, business case and roadmap.

Start by identifying and prioritizing key pain points and opportunities. Look at the current state of data and the technology stack as well as any legacy business intelligence models and reports that rely on an existing warehouse.

Use a tool-driven approach to expedite bottom-up analysis of existing data objects to capture the most critical data points for planning. Automated code migration analysis and legacy code conversion can significantly reduce time in these early stages while also enabling a more comprehensive bottom-up review of existing assets and associated design. These tools can reverse-engineer existing applications to identify workload interdependencies, support roadmap definition and inform priorities.

Based on the migration strategy and approach defined, some existing data and reporting may be rehosted with minimal changes to the cloud platform while others may require reengineering to be cloud native.

The data gathered in these early stages creates the foundation for the business case, which includes total cost of ownership targets and estimated savings. This, in turn, informs the selection of a migration approach and target solution architecture as well as an implementation plan.

## 2 Use automation to help reduce migration risk and minimize business disruption.

This is critical to successfully and efficiently executing the heavy-lifting part of migration in which a baseline cloud environment is set up, legacy workloads migrated, integration testing conducted, and the legacy system eventually turned off. Automation capabilities also outfit existing applications with cloud-native capabilities and test migration success through parallel operations.

Organizations should conduct proofs of concept as required to evaluate the right cloud capabilities and automation to meet business needs. Any refactoring should be done based on cloud-native principles to support extensibility and connections to other applications with the objective being to make the new operations as efficient as possible. Use an automation-led approach to convert the underlying data structures and refactor data transformation scripts and jobs to reduce migration times. Existing ETL jobs, reports and applications should be prepared for redirection to the new target.

In some client projects, the Deloitte Code Converter (DCC) was able to reduce migration times by up to 75% in this stage. At the same time, automation using Deloitte DMask cut test data generation time by 75%.

Automation also aids in executing parallel runs and conducting end-to-end reconciliation of the legacy and new platforms.

Parallel runs of the legacy and cloud platforms help ensure that data has been migrated completely and accurately prior to cutting over to the new platform. This is also an opportunity to benchmark performance of the new platform and optimize where needed.

### 3 Embed DataOps during migration for streamlined post-migration support.

During the migration process, the organization should also be transitioning to DataOps, a discipline that uses an agile approach to designing, implementing and maintaining a distributed data architecture in production supported by a wide range of open source tools and frameworks. The goal of DataOps is to enable rapid innovation, development and deployment to reduce time to insight. It reduces error rates and supports collaboration across a wide variety of people, technology and environments.

One of the benefits of cloud platforms is that they enable functions such as data integration, data transformation and data consumption to be automated and consumed as managed services. As you develop an enterprise-wide schedule for functional and technical upgrades and institute data quality reports, use managed services wherever possible. Cloud scalability can also accelerate processes and reduce the time required for tasks such as sourcing. Redirect any savings to investments in new initiatives like machine learning.

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## 4 Address change management and operating model impact.

Adopting a data cloud strategy can change organizational culture by enabling wider communities to use data. Change management should be ongoing throughout the migration. Be sure to identify dependencies and key stakeholders and understand the current state of the organizational model.

Additionally, it's important to focus on minimizing disruption to the business through training, evangelizing process change and communicating the benefits of the new environment to business colleagues. Stakeholders should be addressed directly in order to answer questions and address concerns.

During migration, continually test to ensure migration is meeting technical requirements and providing desired outcomes to the business. An enterprise governance framework for post-migration data management should be created and deployed. The goal should be to inform the organization about what information it has, how it is used, who is responsible for it and how it should be managed.

Analyze the current organizational structure to find efficiencies that can be gained from using the new cloud-driven capabilities. Among the operating model changes you should expect to see are:

-  Business and IT stakeholders jointly govern the platform through teaming and collaboration. Ownership is clearly defined.
-  Cloud governance policies are created and implemented at the enterprise level.
-  Departmental attribution of usage is easier, providing visibility and insights for cost management.
-  Data classification and application tiers are put in place to help define availability and backup and disaster recovery requirements.
-  Manual change management on premises becomes an automated process in the cloud.
-  Application portfolios are standardized and rationalized.
-  A common dashboard and reporting views are established.
-  Most manual operations are automated.



## 5 Take a holistic approach to identifying future use cases beyond migration.

If you are like most companies, migrating to the data cloud will open new paths for innovation and insight. Think beyond current requirements to new use cases the cloud enables, such as robotic process automation, intelligent business process management, business process automation, virtual assistants and digital twins. Unlike legacy data warehouses, the Data Cloud supports a growing menu of analytical tools that use machine learning to enhance predictive capabilities and identify hidden patterns in the business.

The Data Cloud also prepares organizations to unlock the vast new opportunities for business improvement through AI by transforming engagement so that computers interact on human terms. [Deloitte's State of AI in the Enterprise](#) survey found that 64% of business leaders believe AI enables a competitive advantage, 54% have increased spending on AI projects by 400% or more this year and 74% plan to integrate AI into all enterprise applications within three years.

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Look for these opportunities for AI to deliver new business value:



Automate last-mile operations by removing humans from low-value activities.



Generate hyper-intelligent insight through machine learning-based analytics.



Use automation to engage people on human terms with hyper-personalization.



Enable rapid ideation and testing of new products, markets and business models through improved understanding of customer preferences and prototyping platforms like virtual reality.



Secure the business from risks such as fraud and cybercrime while improving the quality and consistency of data and transparency of data use to enhance trust.

# Bottom-Line Impact

Some Deloitte clients that have migrated to the Data Cloud have seen reductions of up to 70% in the cost of storage and computing, while gaining 75% more elasticity in supporting demand with lower total operational costs.

While the long-term benefits of data modernization alone are a powerful argument for adopting a data cloud strategy, projects usually pay for themselves quickly based on savings and infrastructure costs alone. Forrester estimated customer [ROI of 612%](#) and \$21 million in average benefits over three years. Many customers have seen substantial cost savings in just the first 12 months.

Those are just the hard dollar savings. Organizations can also realize payoffs in such areas as:



Enabling new product innovation and the resulting top-line growth;



Automating decision-making through real-time processing, learning and action;



Transforming talent ecosystems by enabling a culture of ingenuity and risk-taking;



Augmenting human tasks with machine intelligence;



Building alliances and ecosystems to drive innovation and growth; and



Reimagining operating models.

Migrating to the Data Cloud need not be an arduous or painful experience. By actively engaging with specialists vs expert advisors through each step of the transformation process and taking an automation-led approach that mitigates the risk of human error and cuts cycle times, immediate business benefits can be realized rapidly.

**Ready to get started?** To learn more about how Deloitte's Migration Factory offering can enable an efficient and reliable means to reach your future-state platform visit, [deloitte.com/us/en.html](https://deloitte.com/us/en.html)

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## About Snowflake

Snowflake delivers the Data Cloud—a global network where thousands of organizations mobilize data with near-unlimited scale, concurrency, and performance. Inside the Data Cloud, organizations unite their siloed data, easily discover and securely share governed data, and execute diverse analytic workloads. Wherever data or users live, Snowflake delivers a single and seamless experience across multiple public clouds. Snowflake's platform is the engine that powers and provides access to the Data Cloud, creating a solution for data warehousing, data lakes, data engineering, data science, data application development, and data sharing. Join Snowflake customers, partners, and data providers already taking their businesses to new frontiers in the Data Cloud at [Snowflake.com](https://Snowflake.com).

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