

The new 'art' of data modernization.

Why are leading organizations now taking a strategic, holistic approach?

POINT OF VIEW

In today's highly competitive times, the leader most willing and able to keep their mindset and their tactics fluid, rather than dealing only in absolutes, will be the leader best placed to win.

Winning the commercial battle

Modernizing an organization's data is really to modernize an organization itself. It involves the advancement of an organization's technology, operations, and processes. Historically, companies have favored an incremental approach to data modernization, addressing the most immediate points of pain and then subsequent issues as they occur. However, the incremental approach did not address the core issue: accessing the data that is frustratingly inaccessible, fragmented, and locked away in disparate silos.

What's needed, is big picture thinking.

A broader, more flexible, fluid stance.

At Hitachi Vantara, we believe that leaders must take a step back and start thinking about data modernization in a broader, more flexible, more holistic sense. Navigating these five steps will let you continue your data modernization journey without disruption and optimize data modernization outcomes.

1 Strategic approach to data modernization

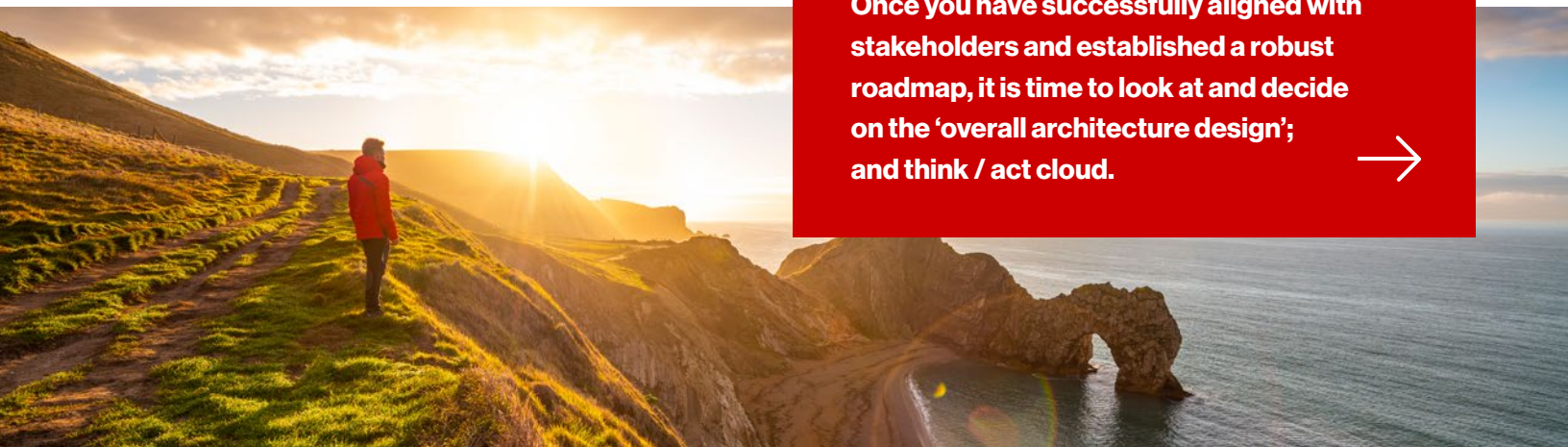
Data is the most important organizational asset. Therefore it is imperative to take a holistic, strategic approach to data modernization: an approach that brings different stakeholders to the table to agree on the business drivers and end goals your enterprise wants to achieve by modernizing your data.

Using our extensive experience in transformation, we suggest four steps that will help you understand and address the needs of different stakeholders, while maintaining your focus on high-level data issues to deliver the optimal data architecture.



- **Gain Visibility** – Get your team on board. List key business drivers that will have a significant impact on the performance of your business. Agree to specific KPIs.
- **Dive Deep** – Focus on the key business drivers and high-level data issues and goals. Determine whether your data is quickly accessible and reliable.
- **Create Blueprint** – Develop a roadmap with data architecture that would work best for your organization. Establish DataOps and data governance practices.
- **Measure Performance** – Set up a virtuous continuous improvement cycle by involving all the stakeholders to get more out of your data.

Once you have successfully aligned with stakeholders and established a robust roadmap, it is time to look at and decide on the 'overall architecture design'; and think / act cloud. →



2 Think/act cloud

Designing the overall architecture involves not only choosing the right cloud technologies, but also the correct times to deploy them as you repurpose or retire other elements. But, how do you do this? How do you know which technologies will be the best fit? And when?

It is vital to take stock. To weigh up where you are currently and then formulate a clear idea of where you would like to get to. This will help you:



Structure and communicate your transformation roadmap.



Define and agree on a migration strategy so the cloud architectures can best serve your data accessibility and response needs.



Deep-dive on strategy participation and implementation for stakeholders.



Determine how and when each application in the scope of your transformation will be migrated to the cloud.



Build data lakes and platforms as needed to implement the modern data architecture.

It is perhaps easiest to envision the whole application modernization proposition – how applications should and will be treated moving forward – in terms of an iterative maturity curve. One that can then be revisited, and replotted as necessary, on an ongoing basis.

At any given time, management and key stakeholders should consider which applications across the portfolio can be **rationalized** or **repurposed**, and which should be **re-hosted** (lifted and shifted), **re-platformed** (containerized), **re-factored** (to be cloud-friendly), and **re-architected** (cloud-native).

With a migration strategy in place – clear, defined, structured, and iterative – as well as an agreement on which cloud architectures will best serve your data accessibility, availability, and response needs, it will then be time to build modern data fabric.



3 Modern data fabric: data lakehouses and the modular approach from edge to core to cloud

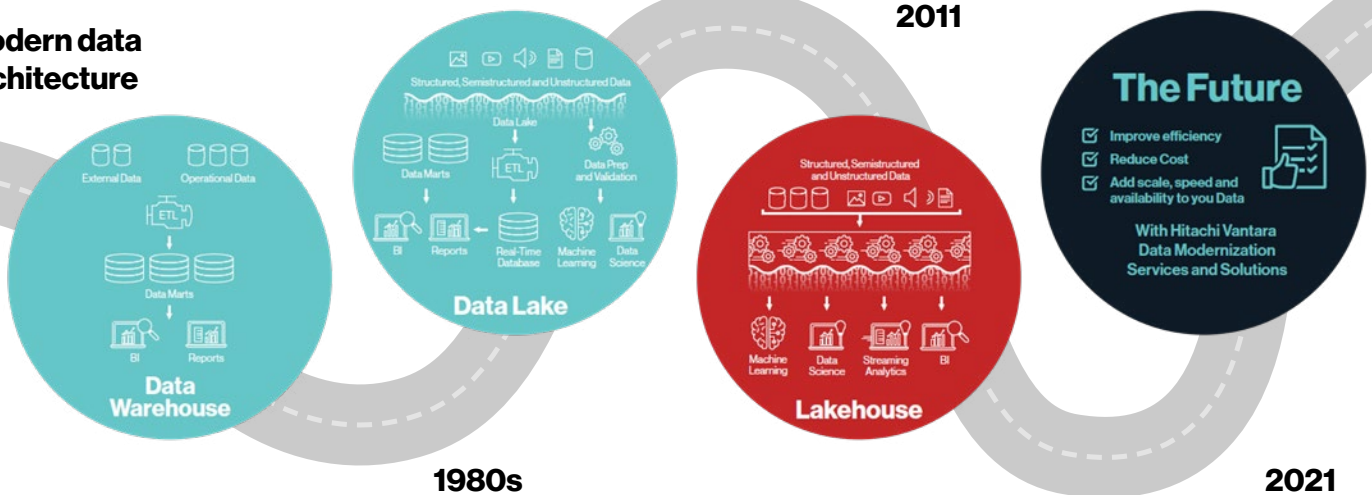
Because of the complexity of multi-cloud environments, you must build architecture and a set of data services that provide consistent capabilities across a choice of endpoints.

At Hitachi Vantara, we believe that an emerging design concept called “data fabric” can be a robust solution to building a modern data architecture. Create a design to orchestrate a modern, self-service data infrastructure by connecting data producers and data consumers through a flexible, dynamic and metadata-driven architecture.

With Data Warehouse, Data Lake, and Data Lakehouse approach, the data is moved physically from one place to another. Both storage and computing power are used to manage it all. Since data is often widely distributed between different geographical locations, the increase in the number of data sources and complexity of unifying the data sources becomes challenging.

The evolution of data fabric architecture

Modern data architecture



Data fabric lets you create a distributed data environment where all data is connected and can be seamlessly accessed by data management services and utilized by end-users or applications. Data fabric lets you:

- Meet the data management challenges, such as the high-cost data integration cycles, the rising demand for real-time and event-driven data sharing, and more.
- Take a data-centric view of IT infrastructure across the environment – endpoints, transport, storage management, data management, ecosystem integration, applications, and services – while maintaining your organization’s security policies.
- Accelerate business insights by automating ingestion, curation, discovery, preparation, and integration from data silos across your business.

As soon as you have taken control of the data and put its power to work for your organization, start finding a better way to develop and deliver analytics with DataOps.



4 DataOps at the intersection of data management and governance

With the exponential accrual of structured and unstructured data, organizations are challenged with data management and governance every day. Taking charge of data requires a solid data strategy and reliable methods to access, integrate, cleanse, govern, store and prepare data for analytics. DataOps is a solution to these challenges.

Data management

DataOps replaces traditional data management practices, which were making it challenging to scale capabilities without compromising governance or security. Modern data management supported by DataOps brings people, processes and technology together to simplify management of structured and unstructured data at scale; facilitating access to data analytics while ensuring compliance.



The following DataOps framework elements can help you think holistically about people, processes, and technology.



Enabling technologies:

Use technologies such as IT automation and data management tools.



Adaptive architecture:

Deploy systems that allow for continuous integration (CI) and continuous deployment (CD).



Intelligent metadata:

Use technology that automatically enriches incoming data.



DataOps methodology:

Create a game plan for deploying analytics and data pipelines and adhering to data governance policies.



Culture and people:

Nurture an organizational ethos that appreciates and utilizes data and maximizes data assets.



Data governance

Traditional data governance approaches restrict innovation by placing IT leaders in constant conflict between making data analytics available to end-users to enable innovation, and meeting regulatory compliance policies.

DataOps addresses data governance by moving beyond traditional approaches, improving the ability to respond to regulatory requirements, and establishing the governance rules that accelerate analytics initiatives.

To become an insights-driven organization, IT leaders must:

- Align data governance plans with business goals. Establish a data governance board to perpetuate policies for data compliance and data lifecycle management.
- Initiate plans to mitigate lack of trust in data by identifying existing data silos across the organization and perceived poor data quality that could lead to challenges from compliance and business growth perspectives.

After deploying DataOps capabilities, start thinking about making analytics more efficient with AI analytics and MLOps.



5 AI analytics and machine learning operations

Getting full value from your data means, for example: taking in-the-moment decisions, predicting customer behavior, automating customer service, making operational forecasts, improving efficiency, and enhancing product offerings.

Delivering all this, requires artificial intelligence and machine learning (AI/ML) capabilities.

MLOps

Organizations are challenged to aggregate, understand and transform massive amounts of data into analytics so data consumers can use it and make informed decisions. This is where MLOps comes in.

MLOps uses automation to accelerate data ingestion and quickly develop, test, deploy, and monitor machine learning (ML) models. Plus, MLOps simplify the predictive process. In other words, MLOps is like DataOps. It is the fusion of a discipline – machine learning in one case, data science in the other – and the operationalization of projects from that discipline.

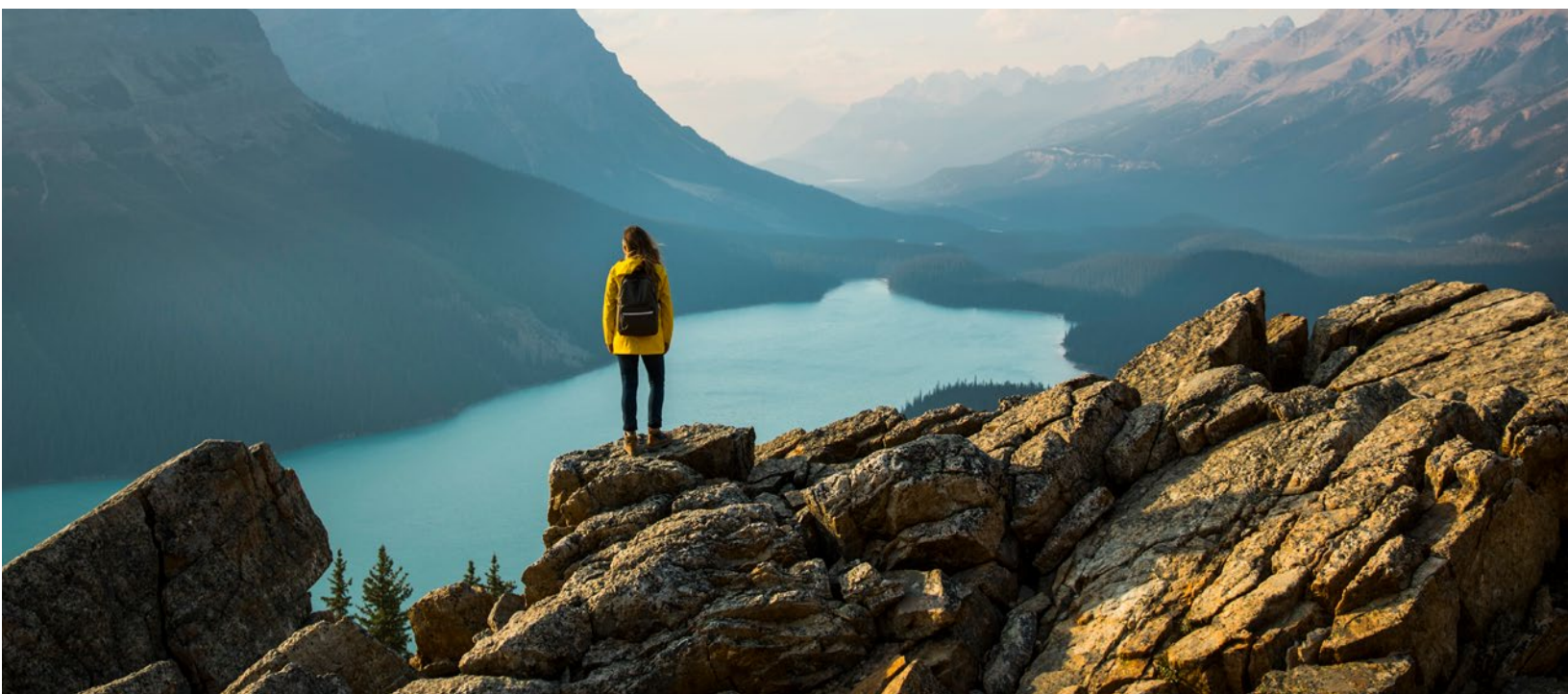
With data fabric and DataOps in place, you can develop plans to introduce artificial intelligence and machine learning (AI/ML) capabilities to unlock competitive business value.

AI analytics

Artificial Intelligence (AI) is changing the nature of analytics. The value comes from AI's ability to parse enormous amounts of data, without direct human supervision, and identify patterns and anomalies that can then be transformed into analytics.

AI analytics – including predictive analytics and machine learning – is at the heart of the digital transformation wave. They are easier to run from within one central storage system (as opposed to across multiple systems or dealing with constantly moving data from one storage system to another for analysis). Unsurprisingly, the data lakehouse model provides a better foundation for analytics.

If you have set a solid foundation with data fabric across your edge to core to cloud, supported by DataOps and MLOps practices, you are ready to deliver AI-driven analytic solutions to drive customer experiences, operational excellence and gain a competitive advantage.



Talk to the team you already trust.

On average, 85% of data analytics projects fail. Yet, with the right approach, 90% of those same projects succeed. The key? Managing them as strategic business initiatives – not isolated IT work.

Partner with Hitachi Vantara for your data modernization project so you can:

- Realize project outcomes 30-50% faster
- Maximize return on investment in just 6 months

Our five-step process can help you to:

1. Identify key business goals – and tie data projects to those goals.
2. Design the perfect multi-cloud environment to unlock scalability and cost savings.
3. Deploy a modern and secure data fabric with automation.
4. Build a DataOps culture to govern data through collaboration, new processes and toolchains.
5. Unleash machine learning at scale to help manage mission-critical environments.

Are you ready to modernize your data?

Hitachi Vantara offers an assessment tool to help you evaluate your organization's data maturity.

We Are Hitachi Vantara

We guide our customers from what's now to what's next by solving their digital challenges. Working alongside each customer, we apply our unmatched industrial and digital capabilities to their data and applications to benefit both business and society.

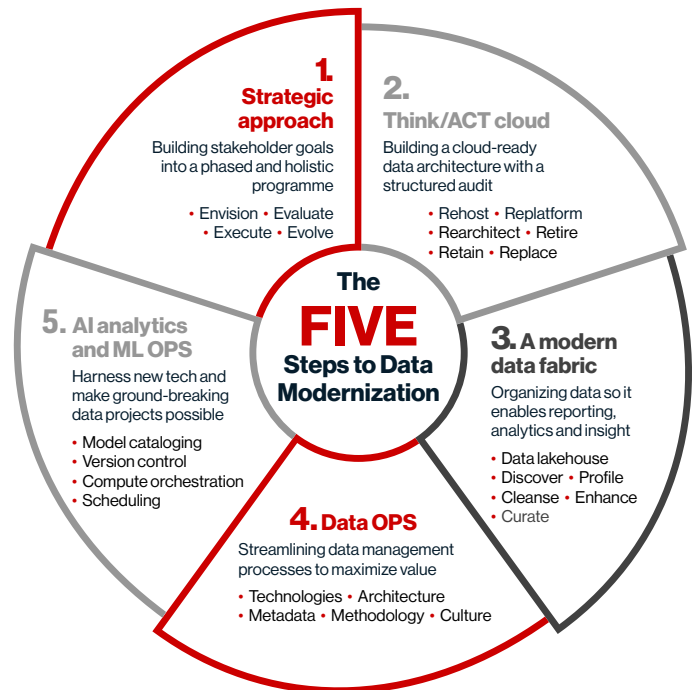
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