



Don't get flummoxed by data estate modernization. Get focused.

A major North American bank uses Capgemini
and Google to modernize its data estate.

Despite decades of investment, banking, and financial services (BFS), firms struggle with delivering data to where it can be used most effectively while meeting risk and regulatory reporting requirements. These struggles have led to a shift in data strategy yielding control from siloed operations to a data management model utilizing a hybrid cloud architecture.

A shared understanding between client and partner of what a data estate means and how they collaborate is crucial.

A data estate is generally defined as the component technology making up a firm's data architecture. These include the data warehouse or storage architecture, the repository for raw data (e.g., data lakes), and data marts (analytics tools, software applications, and reporting tools) used to create access to the data. Many legacy data estates run on mainframes, are housed within on-premises data centers, and are accessible through multiple SQL databases and business intelligence (BI) tools or applications.

As an organization migrates to a modern data estate, many of these solutions are re-architected to operate in a hybrid cloud (a mix of private and public cloud and on-premises solutions) or 100% as cloud-native solutions architecture. A modern estate leverages technologies like NoSQL, a cloud-based data warehouse and data lake houses, and analytics tools like Google's Big Query. Given the

complexity of data and the need to manage it effectively, it is advisable to think less about the technology components and more about the sources of the data, the running and managing of data to feed multiple data requirements, and the surfacing of that data through applications, integrations, and analytics.

Data estate complexity can lead to a technology leader wondering where they should start or if they should start at all. The leader's choices are typically two-fold. First, they could choose an iterative approach that will yield benefits and ensure accurate results, but that takes time, or they could select a process that develops a modern data management foundation that treats data and insights as separate but equally important data assets. Either path requires a firm to invest in partnerships to augment resources, add technology capabilities, and address financial regulatory, governance, and security requirements.

The journey to better data is never complete. Even as we wrote this paper, many firms seek guidance on how their data will fulfill the demands of generative AI models like ChatGPT or Google's Bard. And while considering the future impact of these large language models, it's clear that those firms working overtime to modernize their data will be best suited to gain an advantage from these game-changing solutions.

Set yourself up for success by adopting practical steps to data estate modernization.

Modernizing data is complex. However, simplifying the discussion around aligning, accessing, building, running, and managing data to drive business outcomes is crucial to gaining support. We recommend the steps

shown in Exhibit 1 to frame the journey and ensure everyone, from the CEO to the business analyst, understands the steps to take.

Exhibit 1: Five core steps to modernize the data estate to deliver business outcomes

- 1** **Align** stakeholders with common goals and a clear view of value creation
- 2** **Assess** the current data estate; outline target adaptability, access, and controls
- 3** **Build** for future needs with a hybrid cloud for scale, access, and management
- 4** **Run** the data fabric based on how data is captured, composed, and consumed
- 5** **Manage** data through cloud-centric data governance model

Source: HFS Research, 2023

Align stakeholders with common goals and a clear view of value creation.

As part of their journey, a technology leader tasked with leading the data modernization efforts for their firm will need to gain executive buy-in, qualify partnerships, and define outcomes. In addition, they will need to build partnerships with firms that know the industry and can anticipate the technology requirements. For a global bank, changing the data estate can create risk, but overwhelmingly, HFS' polling of banking leaders indicates data is paramount to meeting strategic priorities (see Exhibit 2).

For large BFS firms, the challenges with data in silos limit profitability, inhibit transaction speed, and weaken the organization's ability to make the sound decisions its customers expect. The need to have data as an asset is critical to decision-making. In the bank's existing model, making timely decisions was challenging. For example, as is often the case, a bank will have terabytes of data; as such, the time needed to assess the accuracy, inputs, and dependencies cannot effectively be cataloged by human effort alone. Additional tools to automate discovery and assessment are crucial to modernize the

data estate. Capgemini worked closely with a large U.S. bank to make this happen. As the business leader from the bank shared with HFS,

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The amount of time it took and the volume of data was hindering business. We needed to modernize how we managed data to drive more holistic decision making.

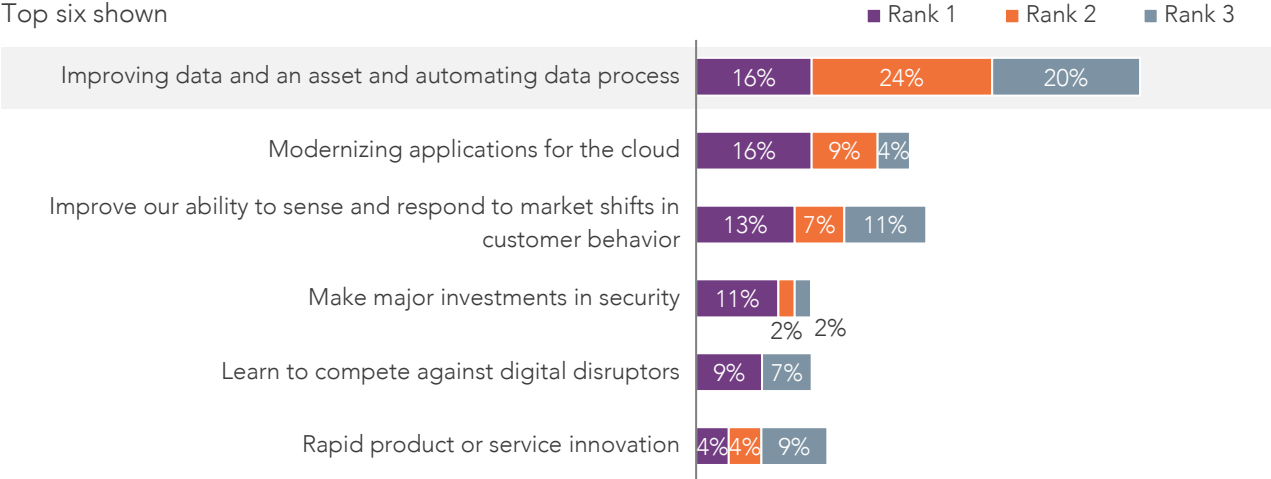
– Head of Integrated Data Services, major North American banking and financial services firm

In today's evolving financial markets, customer needs (from capital markets to retail banking) and regulatory requirements compound the need for data to improve as a working asset. To do so, different parts of the firm will need access to data pipelines that pull from a data estate encompassing all the bank's data assets. So while shedding light on driven alignment can be done, the real work is what comes next.

Exhibit 2: Sixty percent (60%) of banking and financial services leaders focus on data as their firm's strategic priority

Rank the top three initiatives you are currently undertaking to help meet your organization's strategic priorities.

Top six shown



Sample: HFS Pulse, 2022; n=59 Global 2000 banking decision-makers
Source: HFS Research, 2023

With firms dealing with legacy models of decentralized data, it is important to assess current data estate—the outline target adaptability, access, and controls.

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Instead, the data problem we were trying to solve was the lack of a unified data strategy across all our lines of business, preventing the surfacing of data consistently for our business to make quality decisions.

– Head of Integrated Data Services, major North American banking and financial services firm

While federated data addresses the needs of individual lines of business, the bank realized it must develop a holistic view of a new data management architecture. Therefore, Capgemini and the Head of Integrated Data Services implemented a 90-day assessment of the existing data estate. The assessment provided significant technical, process, security, user, and regulatory insights, but most importantly, it offered a clear view of the challenges the team would need to overcome. It led to the following core goals:

- Stop the federation of duplicate, disjointed data across multiple lines of business and architectures.
- Implement a data governance framework to meet the compliance and investment requirements for data accuracy and security without weakening the data asset.

- Develop a single data master plan where a federated line of business applications or automation capabilities can draw from a single source but contextualize data in relevant means.

With the assessment completed and goals agreed upon, Capgemini and the bank decided to bring in Google’s cloud teams to help craft the hybrid cloud model the future state required. Google helps bridge the legacy environment with new tools atop a singular data estate.

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As a partner to both the bank and Google, [Capgemini’s] role is to see our joint efforts are not seen as just a technology solution. Rather, they are part of the emerging operational culture in the bank. We aren’t successful if we aren’t proactively looking for new data uses, reducing time to decision, and improving the cost structures associated with a modern data estate.

– Ashvin Parmar, Vice President, Insights & Data Practice Leader at Capgemini

A centralized data strategy and federated model provides the adaptability to build for future needs with a hybrid cloud for scale, access, and management.

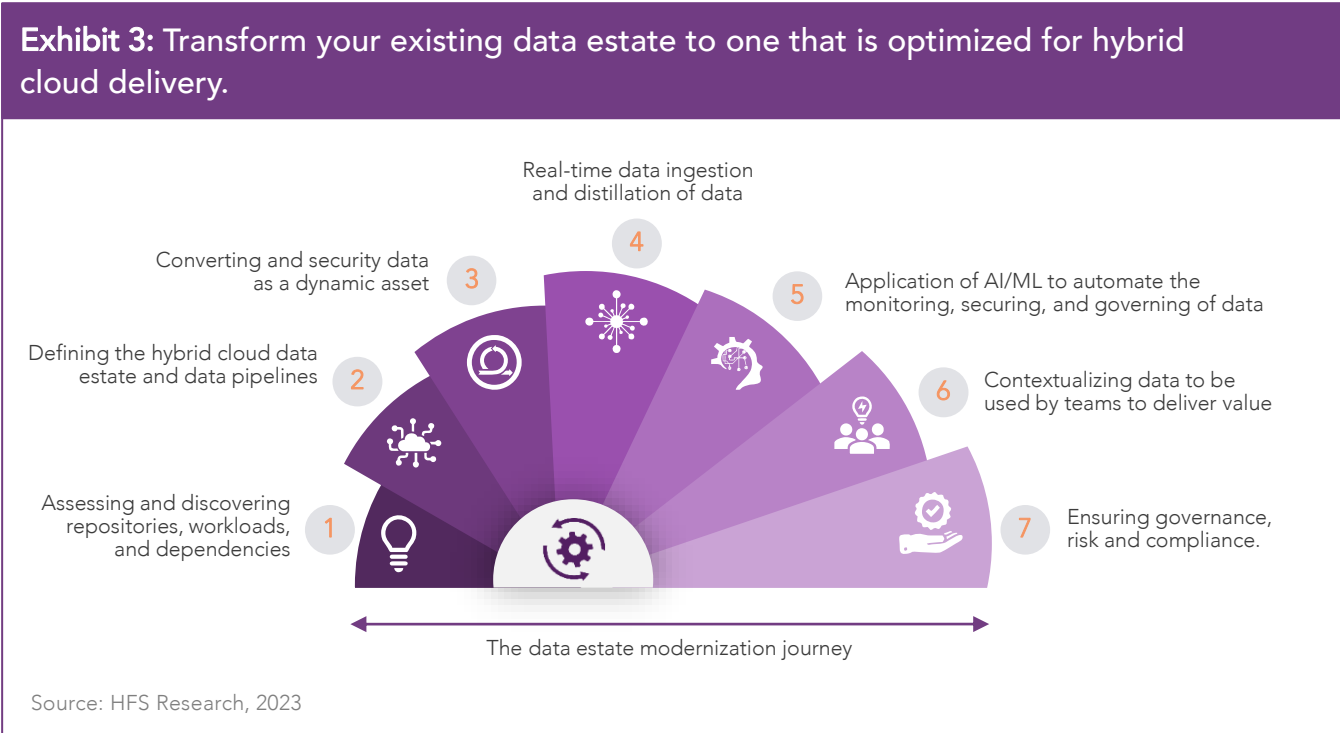
Bringing in technology and services partners is essential to data estate modernization. As illustrated in Exhibit 3, the journey from a current model to a target hybrid-cloud solution is a multi-step process with many aspects happening in parallel. With many moving parts, the technical knowledge, frameworks, and tools to accelerate the discovery to deliver a run-time environment will likely require inputs from external partners. Therefore, it is worth bringing your technology partners early and sharing the assessment and delivery targets if possible.

In the case of this North American BFS firm, Capgemini and Google were selected as partners to aid with their data estate modernization efforts. Capgemini brought domain expertise, familiarity with BFS business

processes, and automation tools from assessment to management. In addition, the bank saw Capgemini provide additional skills and methodologies for transforming data workloads with minimal business impact.

“ Capgemini’s primary value is they had business and IT context right from the start. They understood our legacy environment and had the engineering expertise to help us with our data challenges.

– Head of Integrated Data Services, major North American banking and financial services firm



The bank has multiple cloud partners, but it chose Google because it could deliver the artificial intelligence (AI), machine learning (ML), analytical requirements, and the high amounts of storage and computing needed. In addition, having trusted partners brings many benefits. For instance, Capgemini brought a strong partnership with Google's Cloud Platform team to help expedite data conversion and incorporate automation tools to accelerate both the proof of concept and migration phases. This saved money and time in the journey and amplified the value of the partnership.

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[At Google, our efforts for our customers are] to support every stage of the data lifecycle through transactional data management, analytics, warehousing, data lakes, and AI/ML solutions. In addition, we do our best to develop solutions based on open standards—so our customers benefit from future-ready solutions. We are also proactive at bringing in our ecosystem of partners to meet specific customer or industry needs.

– Simon Brown, Partner Solutions Architect,
Smart Analytics at Google

The bank cited Capgemini's Industrialized Data and AI Engineering Acceleration (IDEA) as a factor in building its future data needs. Capgemini's IDEA solution offers continuous innovation of how data is governed, accessed, monitored, optimized, and analyzed in the context of changing business needs. In addition, with its Big Query, cloud-native database, storage offerings, and ability to augment or replace mainframe data technologies with cloud-native technologies, Google's Cloud provides alternative greenfield and brownfield options for technology teams at the bank or Capgemini to implement and leverage.

Regulatory compliance also drives data modernization. The Basel Committee on Banking Supervision (BCBS) 239 exemplifies how external regulations highlight gaps banks must address to comply with security, data aggregation, and reporting. BCBS 239 acted as both a business and technology accelerator.

IT and business must collaborate to run the recast data fabric based on how data is captured, composed, and consumed, utilizing cloud and on-premises data estates in an interoperable manner.

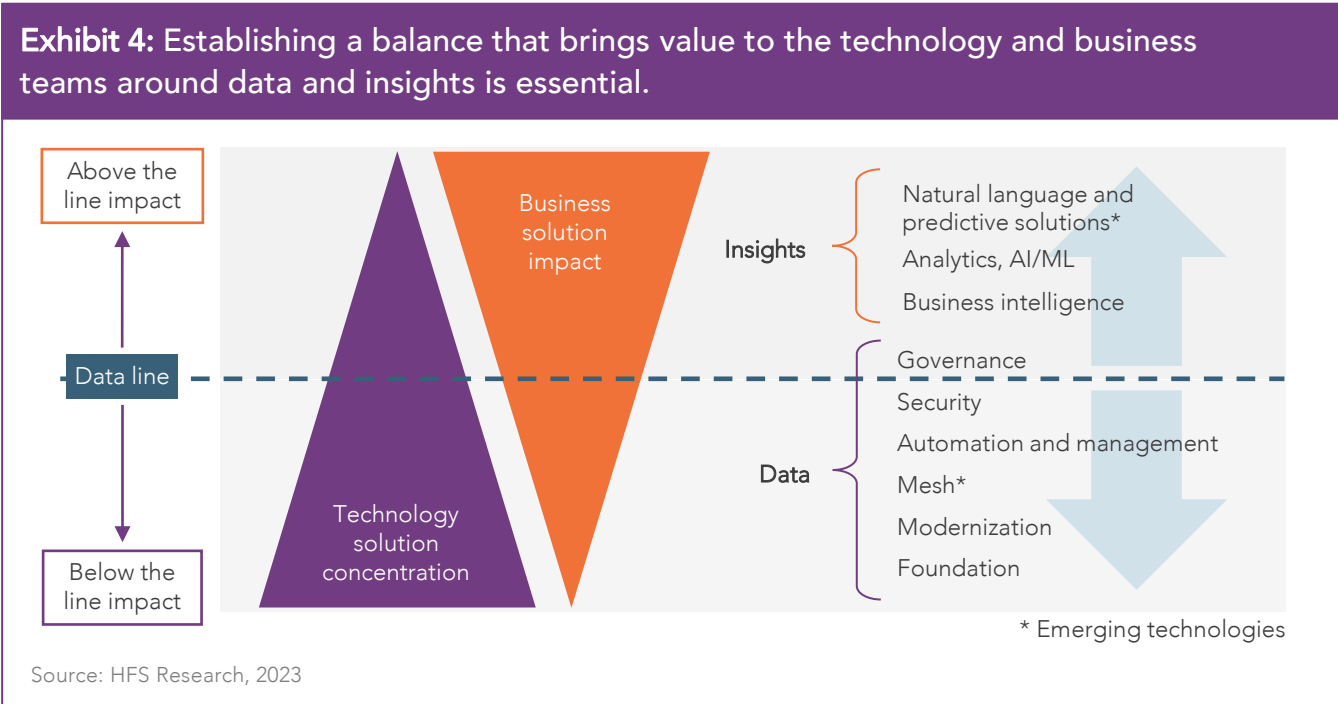
Modernizing your data estate must fit how technology serves the business needs. As Exhibit 4 illustrates, to be successful, our BFS client focused on upgrading its core data systems using a foundation model suited to the extraction and loading of data into tools that could present business insights, provide 360-degree views of the customer’s assets, improve transaction quality, and meet evolving governance requirements.

By clarifying how data and insights fit into a firm’s data modernization efforts, you can more effectively develop a plan to capture, compose, and consume data across your organization:

- **Capture:** Collecting data into a master data estate will allow for a universal approach; it is securing, governing, and distributing the data to individual groups and systems. However, without outlining the architecture of the data estate in terms of data quality and controls, data will quickly revert to a federated model.

- **Compose:** Assembling data into insights is increasingly automated by analytic, artificial intelligence, and machine learning tools. Use tools built for augmenting how the data is contextualized for the user.
- **Consume:** The goal is to increase the ability of data and information to drive timely, high-quality decision-making. Consuming accurate data creates a value cycle of capturing even more data and improving the business in measurable, long-term ways.

Data estate modernization is the foundation for delivering business insights through AI/ML tools. A firm can promote more effective implementation, adoption, and innovation based on use cases by adopting a hybrid cloud approach. In addition, firms can increase productivity and customer satisfaction by building an architecture to deliver and promote the use of data.



It is essential to manage data through a cloud-centric data governance model.

To succeed in data estate modernization, converting from a federated data model to one that can be managed and governed effectively is critical. The bank's need for "ground to cloud" and "cloud to ground" strategies exemplify this need for flexibility in its data model. Its data management is not about centralizing the data but rather architecting how it manages data across multiple data programs, from storage to warehouses to data lake houses.

A data estate ecosystem mindset puts data to work as an asset, fueling products, decisions, and insights. Approaching data as an asset extends the availability of technology and business operations to jointly identify opportunities, improve operational efficiencies, and increase the effectiveness of transactions across the bank and its customers. Moreover, as the trust and usability of data improve, data can evolve into a product. With data-as-a-product, a bank can grow its offerings or create new cash flow across its lines of business and its partners.

The major BFS firm stresses the importance of relationship and trust with its partner to apply its understanding of the bank's people, process, and technology and be proactive with new ideas and solutions. For example, the partner worked collaboratively to identify the cloud partners and select how each could bring the functionality needed for different programs. By separating the needs of the front office versus mission-critical data systems, the bank could apply its frameworks and domain knowledge with the hyperscaler's BFS and data offerings to develop an optimized environment that met operational and regulatory requirements.

The Bottom Line: Break data estate modernization into manageable components, starting with assessment and ending with a clear path to sustainable value.

Modernizing your data estate requires equal effort from technology and business teams to achieve success. Due to its complexity, investing with partners who bring the right mix of experience, resources, industry knowledge, and technical understanding is crucial. In addition, choosing the right partners should bolster co-innovation capabilities to ensure the business benefits from real-time insights' new functionality, flexibility, and features. Finally, as new paradigms such as Generative AI are transforming the customer experience, ensuring the quality and integrity of the underlying data becomes of paramount importance.

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Our current and future data efforts must not be treated as a line of business or a single line of business problem. [Establishing my role ensures] our program is taken very seriously at an enterprise level.

– Head of Integrated Data Services,
major North American banking and financial services firm

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Joel looks after HFS Research's software and applications services. As firms adopt a cloud-native operating model, software-as-a-service (SaaS) is the primary way of getting things done. His research delves into how companies, service providers, and software vendors architect and deliver code via the cloud. Joel's research covers the latest trends in developing code on microservices architectures while using containers and Kubernetes to adopt and integrate SaaS solutions into complex business workflows. Topics Joel is passionate about include edge computing, the role of 5G in cloud services delivery, governance and compliance, low-code, and go-to-market strategies for software and services.



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About HFS

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HFS Research introduced the world to terms such as “RPA” (Robotic Process Automation) in 2012 and more recently, Digital OneOffice™ and OneEcosystem™. The HFS mission is to provide visionary insight into the major innovations impacting business operations such as Automation and Process Intelligence, Blockchain, the Metaverse and Web3. HFS has deep business practices across all key industries, IT and business services, sustainability and engineering.

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