



Using data-first modernization to accelerate digital transformation

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Digital transformation—the data-first way

Most businesses are undertaking some form of digital transformation—from basic IT modernization to digital optimization to the creation of entirely new digital business models. Their aim is to do more with the data they have in abundance. But simply doing more with data is not the same as making data a core component of your transformational strategy.

Data is the life force, used to create rich experiences, accelerate decision velocity, and deliver continuous innovation to move your business forward, faster. Since most businesses have a hybrid operating model where the apps and data that run the business are distributed across edge to cloud, unlocking new opportunities requires a data-first approach to digital transformation.

In short, digital transformation is incomplete without data-first modernization. Hewlett Packard Enterprise has developed a data-first modernization approach that elevates data as the preeminent organizing principle for the business. Here the entire business—IT and beyond—is focused on applying the right resources to cultivate, connect, manage, analyze, and act on data wherever it lives. It shifts the focus of digital transformation from infrastructure-centric transformation to data-centric value creation. It also prioritizes data accessibility when and where it is needed, regardless of where it lives, which comes with the additional benefit of helping eliminate data silos, proactively.

Now, we'll break down each action shown here that you can use to help accelerate your transformation.

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The HPE data-first modernization approach to your digital transformation helps align stakeholders on a common objective of transformation, as well as the actions necessary to accomplish it, which include:

- Simplifying data management and protection
- Securing your data across edge to cloud
- Achieving a cloud experience everywhere
- Creating connected experiences at the edge
- Embracing artificial intelligence (AI) and analytics at scale
- Harnessing the power of supercomputing
- Rethinking sustainability as a catalyst to drive transformation



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Simplify data management and protection

The complexity of data management—the ability to store, access, protect, and mobilize data across the lifecycle—has the potential to limit agility and innovation and increase risk. Businesses recognize the dilemma. A recent study from ESG found that 74% of respondents acknowledge that their data management capabilities can't keep pace with business requirements.¹

One practical and powerful step toward simplifying data management is to adopt storage as a service (STaaS) on-premises. This allows you to free up IT resources for more strategic tasks that would be traditionally spent managing infrastructure—without compromising data sovereignty, compliance, and regulatory requirements. The change from owning and maintaining data infrastructure to now bringing a self-service cloud operating experience and cloud consumption model to your data, everywhere it lives, empowers you to simplify operations and move faster—while maintaining control of your data on-premises. It empowers the line of business (LOB) and application admins to accelerate app deployment by effortlessly self-provisioning storage without going to the public cloud. And it enables IT teams to transform from operators to service providers and start managing business outcomes instead of infrastructure.

But data is growing exponentially. To effectively utilize data while protecting against data loss and ransomware threats, you must modernize data protection across edge to cloud. HPE offers data protection as a service (DPaaS) solutions that enable you to modernize data protection for your service-level agreements (SLAs) with backup capabilities, ransomware protection, and disaster recovery capabilities.

¹ "Why Being a Data-first Leader Matters," 2022. Data referenced was derived from ESG's Data Management Maturity Study of 750 IT Decision Makers, commissioned by HPE, November 2021, as summarized in this eBook.

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Additionally, the HPE solutions such as data fabric technology simplify the management of data by enabling direct access to different data types and formats stored across multiple physical locations. With a data fabric, you can centralize, process, and index files, objects, databases, and real-time and batch-streaming data into a single logical data backbone that can be accessed by any authorized user. Instead of negotiating access rights and copying data to secondary systems, data teams can focus on data analysis and pipelines required by a data-first business.

Simplifying data management and protection speeds you down the path to data-first modernization.

HPE can help you simplify data management and protection

- Help ensure that data remains always on and fast to power your applications
- Protect data from ransomware, cyberattacks, and disruptions
- Enable data to be accessible everywhere it resides, across edge to cloud
- Democratize data with self-service access to diverse types from a single solution
- Empower data innovators to unlock the full value of your data

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Secure your data across edge to cloud

With the rate of cyberattacks at an all-time high, protecting your data, people, processes, and technologies requires constant vigilance. Today's highly distributed edge-to-cloud environments, coupled with a proliferation of devices and systems at the edge, are stretching the boundaries of traditional and legacy security approaches—putting your data at ever-increasing risk. In the first half of 2022, one source found that ransomware breaches alone jumped by 13% year over year,² yet only 30% of businesses today feel that they are effective in closing their IT security gaps.³

Businesses can close the gaps by implementing security end-to-end to ensure data is not compromised. This requires that the integrity of the software and IT operating systems processing the data workloads is automatically and continuously verified—from silicon to the cloud—wherever the data lives. The hybrid and highly distributed nature of today's IT landscape also requires security to be designed into systems running your applications and workloads to ensure your data is protected within a trusted operating environment.

Security, when done right, helps businesses manage organizational risk by proactively understanding and addressing potential weaknesses in the organizational operations and the IT systems processing your data. Introducing security into a digital transformation project early is critical to ensuring that the project follows secure-by-design principles and can reduce time to market and prevent delays caused by identifying security issues too late in the development lifecycle.

² [Ransomware threat rises: Verizon 2022 Data Breach Investigations Report](#), Verizon, May 2022

³ [2022 Global Study on Closing the IT Security Gaps](#), Ponemon Institute sponsored by HPE, January 2022

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The priorities for data security in a data-first modernization approach revolve around ensuring that the confidentiality, integrity, and availability of the data are maintained. Encryption should be used throughout the data lifecycle—in motion, in use, and at rest, as well as being securely destroyed once it has served its purpose. Data should be made available to users as transparently as possible while enforcing the appropriate access control restrictions, following the concept of least privileges based on specific user roles and responsibilities. Data should also be protected and backed up using an approach appropriate to the criticality of the data, and backups should be tested regularly to ensure they can be quickly restored in case of a cyber- or availability incident. By taking a risk-based approach to the data security architecture and involving the security team early in the project lifecycle, organizations can transition securely into the new operational model.

HPE can help you secure your data across edge to cloud

- Manage operational risk effectively
- Transform security into a risk enabler by following secure-by-design principles
- Gain comprehensive IT compliance, corporate governance, and regulatory compliance
- Protect valuable data assets with zero trust enabled technology solutions designed to protect against advanced and persistent threats automatically and continuously
- Help ensure continuous data protection throughout its lifecycle
- Authenticate users and access to data with robust access controls and policy enforcement
- Encrypt data wherever it lives without negatively impacting productivity

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Achieve a cloud experience everywhere

The apps and data that have moved to public cloud are enjoying the simple, fast, agile operating experience. But that is still only small percentage of apps and data. The rest don't enjoy the same cloud experience. They've had to stay put where they are in your colocations, data centers and more and more, at the edge, for lots of good reasons like data gravity, sovereignty, compliance to name a few.

As a result, the question is no longer, "which applications should move to the cloud and which should stay on-premises?" The new question is, "how can you bring a consistent, modern cloud operating model across all your workloads and data?"

The answer is to bring the cloud operating experience to your on-premises environments through data-first modernization.

Achieving a cloud experience everywhere is key to data-first modernization because embracing a cloud-everywhere model provides the freedom to choose the right location for data and workloads—in short, to industrialize the data supply chain. The HPE GreenLake Edge-to-Cloud Platform delivers a cloud experience for your workloads while also providing the benefits associated with on-premises data management, such as local control, enhanced security, and heavy-duty computing power and storage when you need it.

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HPE can help you achieve a cloud experience everywhere

- Deliver services faster with an agile development pipeline on-premises, speeding time to market with the cloud experience in your locations—self-serve, consumption-based, scale up and down, and managed your way
- Gain visibility and control with one operating experience across your hybrid cloud estate
- Access, share, and unify data seamlessly while meeting compliance, governance, and sovereignty needs
- Achieve cost control and transparency by enabling you to track usage and spend while optimizing costs
- Build the foundation for AI / machine learning (ML) and analytics where the data is—at the scale you need, including high performance computing (HPC), on-premises
- Free up resources and trapped capital while engaging in the circular economy by monetizing and upcycling assets you no longer need, helping you transform more sustainably

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Create connected experiences at the edge

Delivering the cloud experience everywhere can be challenging because data is not just in your data center or in the cloud. Much of it is at the edge, where data is exploding and where data-first opportunities allow you to gain insights and act instantaneously.

Leaving data insights and value locked away at the edge is not an option. The edge is “where the action happens,” whether your edge is a point of sale in a retail store, in the trunk of an autonomous car, on a factory line, or in a hospital room. The edge is a source of real-time data about your customers, your products, and your operations. To get the maximum value from edge data, you must process the data right there and then be able to share the data and insights across the business.

For manufacturing, the optimal location for creating, analyzing, and deriving insights from data could be by robots and sensors on the factory floor. For energy companies, it could be on an oil rig, or it could be from a power grid operating system.

HPE experts help you assess your environment, balance your priorities, and create connected experiences at the edge—and help you advance as a data-first business. Experts can define and validate use cases, integrate the data and analyze it, and apply advanced techniques like AI/ML to help you capitalize on your opportunity at the edge.

This data-first approach will enable you to analyze and act on your data in real time and establish immersive new experiences, more predictive operations, and new products and services.



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Embrace AI and analytics at scale

Analytics and AI are two distinct technologies that can work together to power your business decisions and drive insights from data. While the technology you use depends in part on the business outcome you seek, for both AI and analytics, data is the necessary input to derive insights and innovations. And a data-first modernization strategy is designed to give your business the competitive advantage that you can only achieve when you embrace analytics and AI at scale to deliver transformative insights across edge to cloud.

Getting your data into a state where data scientists can access and use it is a fundamental challenge that can be very time-consuming.

To illustrate, a leading global provider of medical imaging systems was developing a new platform to enhance X-ray solutions and workflows for medical professionals. They were looking to build an AI ecosystem for continuous learning while meeting strict security and compliance requirements. By partnering with HPE, this customer was able to reduce AI-related research costs, and ultimately deliver innovative solutions to the healthcare market more quickly.

From pilot to production, HPE can help you accelerate innovation by tapping into flexible AI solutions that give you the scalability, performance, and cost controls you need. And uncover hidden insights with advanced analytics solutions helping you to transform your business from edge to cloud.



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Harness the power of supercomputing

The rapidly changing world presents organizations with increasingly complex problems. But with AI and supercomputing, these problems can become opportunities and even competitive advantages. The explosive data growth resulting in billions of parameters needed for AI/ML models and the need to move larger and complex AI/ML models from POC to production is driving the convergence of AI and supercomputing. Exceptional performance, speed and scalability delivered in an economically viable consumption model is vital to meet these emerging challenges. And as this convergence happens, organizations will have the ability to gain faster, smarter, and more accurate insights and business process improvements.

Here's an example where HPE helped a customer overcome these obstacles so they could focus more on what matters most to their business. The manufacturer's typical test car featured up to 23 sensors capturing radar, lidar, sonar, and video data, delivering tens of thousands of simulations each second and requiring transfers of 50 TB daily. The data further needed to be validated for accuracy. Crunching the data to perform the validation required serious compute power. The auto maker applied HPC as a service directly where the data lived, avoiding data transmission problems, and removing the need to create their own HPC environment.

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HPE is an established leader and provides one of the most comprehensive portfolios of AI and supercomputing technologies, tools, and support services for enterprises to secure competitive and operational advantages. While not everyone needs an exascale system, our AI and supercomputers solutions designed with researchers, data scientist, engineers and IT professionals in mind, and our collaborative approach brings these technologies to more organizations—whatever the size. Focused on improving business outcomes and accelerating insights makes HPE the partner of choice for AI and supercomputing solutions.



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Sustainability is increasingly interwoven into the fabric of businesses. To address a growing carbon footprint, businesses are incorporating sustainability initiatives into their digital transformation. In fact, Accenture Research found that enterprises linking digital and sustainable transformation are 2.5x more likely to be among tomorrow's strongest-performing businesses.⁴

But achieving success in those initiatives is not trivial and requires a new mindset. The HPE data-first modernization approach brings that mindset front and center, offering guiding principles of sustainability as a catalyst.

Managing your overall IT estate with sustainable asset management methods can address transformation roadblocks often experienced with creating a budget and maximizing capacity. For example, HPE experts can show you how to access new sources of funding with end-of-life technology when you engage in asset upcycling—freeing up capital from IT assets with residual value. In addition, deploying certified pre-owned (CPO) technology can save money, bridge gaps, and help maximize capacity with multi-generational infrastructures.

What is no longer of use to you can be saved from landfills and re-inserted into the circular economy for longer use, all while putting capital back into your budget. For example, one global company, funded approximately 25% of the platform refresh for the mission-critical payments platform it built leveraging the HPE GreenLake platform in response to the accelerated growth of online transactions.

⁴ [The European double up](#), Accenture Research report, January 2021

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Similarly, a global management and technology consultancy dedicated to the financial services and energy industries focused on creating circularity—keeping tech in use longer, upcycling, and finding untapped value in their IT estate. In this case, the sustainability initiatives enabled them to reduce CO₂ emissions, save 1.2 MW of energy, and avoid 8.3 mt of landfill waste while also benefiting from cash infusion to fund innovation.

The HPE data-first modernization strategy enables you to integrate sustainable practices into every stage of the IT asset lifecycle and advance your position in the circular economy.

Advance your sustainability agenda with HPE

- Think data-first—Process data sustainably across edge to cloud by looking at your data holistically
- Leave no IT behind—Manage your multi-generational IT estate, edge to cloud, as one sustainable economic unit
- Make it observable—Track and meter every component, workload, and service
- Operate at peak efficiency—Do more while consuming less to drive optimal utilization
- Drive circularity—Make choices from design to operation to end of life, optimizing the reuse of assets

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It has been said before, but we can't overlook the reality that every business is unique and at a different stage of its digital transformation. That's why finding a partner like HPE to help you accelerate with a data-first modernization strategy and approach is key.

Data-first modernization requires a strategy focused on the data domain. Such an approach needs to incorporate the entirety of the distributed business, edge to cloud. And, as the guidance is data-first, the strategy needs to incorporate all the functional domains that data touches.

The thoroughness of the strategy—and the effectiveness with which it guides you to simplify data management and protection, secure your data across edge to cloud, achieve a cloud experience everywhere, create connected experiences at the edge, embrace AI and analytics at scale, harness the power of supercomputing, and rethink sustainability as a catalyst to drive transformation—determines the difference in achieving data-first modernization for your business.

Accelerate your digital transformation with HPE

Our experts can help you break the transformation journey into easier steps, helping you speed up along the pathway to achieving a modern, data-first organization. The goal of data-first modernization is a data-first operating model. The HPE GreenLake platform can help you accelerate data-first modernization by bringing the cloud to your distributed apps and data where they are.

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To provide further support as you move to a data-first operating model, HPE utilizes its edge-to-cloud adoption framework. The data domain is intrinsic to that framework, and through a data-first lens, it assesses and addresses capabilities that include data strategy and governance, data architecture, security, lifecycle management, data ingestion and processing, data consumption, and data knowledge.

Beyond operationalizing data itself, the framework connects data to other operational domains such as strategy, governance, security, applications, innovation, engineering, DevOps/DevSecOps, and operations. As data first is a cultural shift, the framework also connects to the domains of people and processes. The HPE GreenLake platform and HPE Edge-to-Cloud Adoption Framework help you accelerate and de-risk your transformation to a cloud operating model across your IT.

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