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Ensure Digital and AI Success with a Modern Hybrid Cloud Strategy Focused on Data and Workload Needs

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Introduction

Welcome to the digital decade where European CEOs anticipate revenues from digital products to increase by more than 50% in the next five years.

Enterprises require modern underlying technology capabilities to support their digital ambitions.

It is no surprise then that 86% of business leaders and 82% of IT leaders responding to IDC's 2024 *Future Enterprise Resilience Survey and Spending (FERS) Survey, Wave 2* (February 2024) reported that, despite economic uncertainties, their IT spending plans for 2024 are either higher than or the same as 2023.

Although IT budgets are strong, there is a laser focus on value, forcing IT leaders to align investments with business outcomes such as security, AI, cloud, and ROI. As a result, organizations have identified four critical technology domains that will remain immune to budget reductions, according to IDC's 2024 *FERS Survey, Wave 3* (March 2024):

1. Security, risk, and compliance
2. AI and automation initiatives
3. Infrastructure and IT operations optimization
4. Workspace solutions

AT A GLANCE

74% of organizations IDC surveyed in 2024 reported that they are deploying multicloud strategies. Among these organizations, 62% said they are in the process of transforming or modernizing their cloud environments to increase efficiency, sustainability, security, performance, and scale.

The future belongs to those organizations that are addressing their infrastructure needs by adopting cloud-native, open, and trusted hybrid cloud platforms and complementing their infrastructure with a well-integrated open data platform. Such organizations will be best positioned to thrive in the "AI Everywhere" era.

In addition, organizations are also investing in technology capabilities to enhance their digital operational resilience in response to evolving regulatory requirements, with a holistic view of governance, risk, and compliance (GRC). About 53% of organizations cite increasing GRC services/solutions spend and another 19% cite maintaining existing spend, according to IDC research.

IDC believes that delivering on critical business objectives, and particularly balancing innovation and resilience, requires a modern hybrid cloud strategy that combines flexibility and control for organizations. A modern hybrid cloud strategy is no longer an accidental array of infrastructure services, but a concerted shift from a cloud-first approach to an app-centric and data-centric approach to infrastructure. This approach results in an integrated, standardized, and consistent cloud architecture that brings application and data mobility, flexibility, cloud-native opportunity, and a balance between security, performance, and costs. IDC predicts that with generative AI

(GenAI) as a catalyst, by 2027, 40% of enterprises will rely on interwoven IT architectures across cloud, core, and edge to support dynamic, location-agnostic workflow priorities.

Digital leaders are already building a competitive advantage with an app-centric hybrid cloud approach, resulting in investments in modern, cloud-native applications and accompanying technology building blocks for success. The application development lead times of these organizations are 71% faster than average.

With digital revenues set to double in the next five years, having the right cloud infrastructure foundation is an imperative for success.

In this Spotlight

This Spotlight explores the hybrid cloud, cloud-native, and data capabilities stemming from the partnership between Red Hat and Cloudera and examines the impact of this deep integration of technologies on the provision of turnkey solutions to organizations. It analyzes the key differentiators of the joint technology offering and explains how it can help businesses to meet a wide array of business outcomes — from security and sovereignty to data readiness, hybrid cloud, and AI success.

Situation Overview

IT and business leaders are under pressure to address a series of dynamic and continuously evolving factors, including:

- **A Changing Regulatory Landscape:** Organizations must now comply with a raft of new EU regulations, including the Digital Operational Resilience Act (DORA), the Cyber Resilience Act, the NIS2 Directive, the AI Act, and the Corporate Sustainability Reporting Directive (CSRD).
- **Cyberthreats:** IDC's 2023 *FERS Survey, Wave 10* (December 2023) revealed the wide-reaching impact of ransomware attacks. The surveyed organizations cited multiple environments as being impacted by ransomware attacks, including collaboration apps, cloud environments, servers, web applications, and supplier systems.
- **Modern Applications:** Organizations are now tasked with managing multiple application environments, including VM workloads, cloud-native apps, low-code/no-code apps, and now AI-infused apps.
- **AI Readiness:** According to IDC's *FERS* research (April 2024), 90% of organizations in the Europe, Middle East, and Africa (EMEA) region have either already introduced or are undergoing proofs of concept (POCs) for GenAI applications, but are worried about skills, costs, and quality of output.
- **Sovereignty Principles:** Digital sovereignty is gaining strong traction in Europe, with IDC research showing that 8 out of every 10 organizations are already using sovereign cloud or planning to do so by 2025. At its most practical level, sovereignty objectives are aimed at establishing resilience and control of business IP, operations, and data.

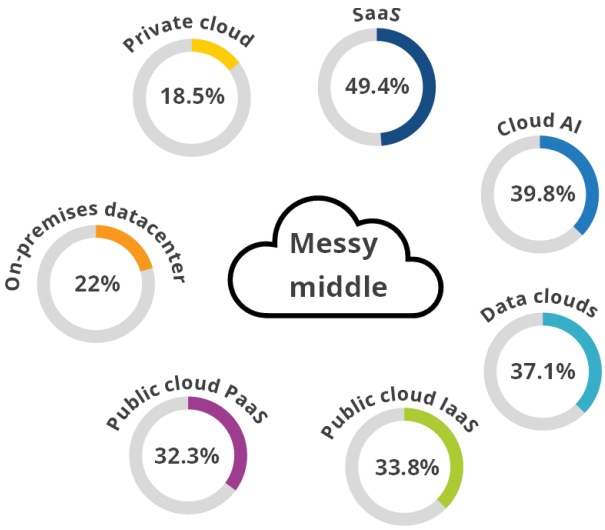
Organizations have to balance all these factors while managing technology complexity and technical debt, skills shortages, and tighter budgets.

IDC's research shows that while most organizations operate hybrid cloud environments today, 8 in 10 organizations are struggling to realize full value from their cloud investments as they strive to optimize the four critical technology domains listed in the introduction of this report.

This is because most organizations are stuck in a "messy middle" characterized by distributed and unconnected cloud environments (Figure 1).

Figure 1: Diverse Infrastructure in Use Today as Part of Hybrid Cloud Strategies

Q: Which of the following cloud technologies does your organization use or plan to use?

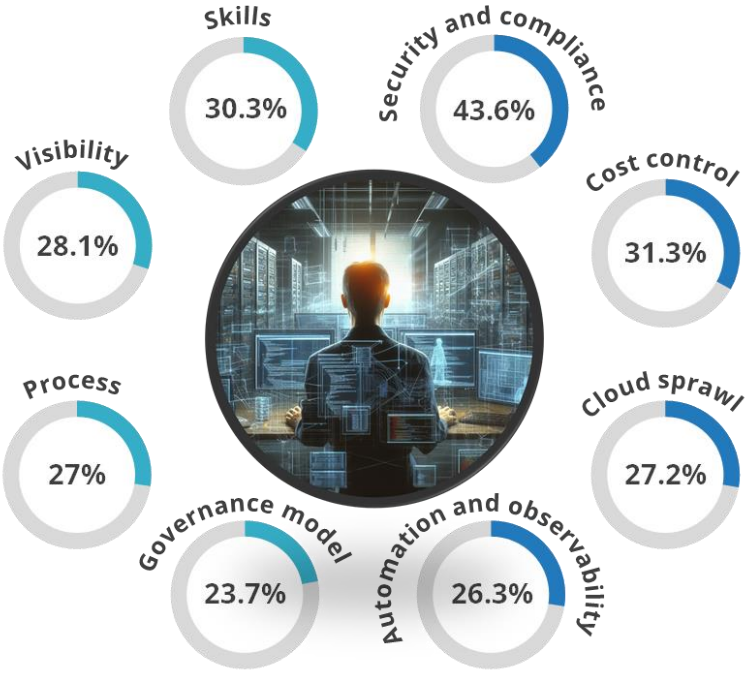


Source: IDC's *EMEA CloudOps Survey, 2024 (Europe = 925)*

The findings of IDC's *EMEA CloudOps Survey, 2024* reveal a diverse technology landscape, with organizations having a mix of SaaS, public cloud services, private cloud (defined as cloud-like infrastructure on premises), and traditional environments, as well as newer services such as niche data clouds, sovereign clouds, and AI environments. As most of these environments operate in silos and have overlapping data and features, the result is often widespread inefficiencies, heightened risk, and increased complexity. The challenges in the messy middle are wide ranging as shown in Figure 2 below. The most prominent challenges relate to security and compliance, lack of cost control, limited skills, and poor visibility and management.

Figure 2: Challenges Arising from a Diverse Infrastructure Landscape

Q: What are your organization's main challenges regarding cloud operations?



Source: IDC's *EMEA CloudOps Survey, 2024 (Europe = 925)*

Escaping the Messy Status Quo in the "AI Everywhere" Era

Addressing traditional hybrid cloud challenges requires organizations to take a modern approach to their hybrid cloud and data strategies. Only then can they address their pain points and enable preparedness for the "AI Everywhere" era.

AI has become an inflection point for the technology industry, with GenAI capturing curiosity, interest, and imagination, and even leading to some fears.

Already, half of the large organizations (5,000+ employees) that participated in IDC's *FERS* study believe GenAI is disrupting their business, and 80% of all organizations believe it will do so in the next 18 months.

"IDC expects worldwide spending on AI solutions to exceed $500 billion in 2027, more than three times what enterprises spent on AI solutions in 2023. In the 'AI Everywhere' era, seizing opportunities responsibly will be critical for success. As AI investments grow, a focus on business value, data governance, and data management will be paramount."

Over a third of tech leaders believe GenAI is already disrupting their business, and another third believe it will do so in the next 18 months. Savvy organizations are the ones that see AI and GenAI development as a catalyst to modernize their technology foundation.

The Value of Modern, Trusted and Data-Centric Hybrid Cloud

Almost all organizations have AI strategies and early initiatives in place, but not all are able to take them to production. Among the top factors preventing success are inadequate infrastructure performance and availability (cited by 36% of organizations in IDC's April 2024 *FERS* research). Other significant barriers include a lack of access to required data sets, security concerns, and excessive costs.

As a result, IDC believes that in the next 12–18 months new investments by organizations in AI and GenAI projects will focus on:

- Building hybrid cloud infrastructure. Organizations will seek to balance their cloud and datacenter infrastructure investment to capitalize on business-relevant data sets residing in any environment for their AI needs.
- Utilizing external AI platforms related to AI orchestration, development tools, AI models, and external data sources for speed.
- Leveraging enterprise tools based on open standards and frameworks across the stack to ensure control, resilience, cost efficiency, and compliance.
- Implementing ecosystem-based turnkey solutions that combine scale, security, and data capabilities to expedite time to market and overcome skills barriers.

A vast amount of business data is in on-premises environments and resides in silos. But this needs to be leveraged for fine-tuning large language models (LLMs) with business-specific data.

In IDC's opinion, organizations that take an open and trusted platform approach to their architecture — deeply rooted in openness, security-by-design, hybrid features (flexibility, choice, and wide integration), and broad ecosystem support — are likely to be the ones that can accelerate their AI and digital journeys. Such an approach will help them to derive value from their existing infrastructure investments.

IDC believes an integrated combination of hybrid cloud infrastructure, cloud-native application building blocks, and a data platform embedded with cloud principles can help organizations to overcome the various hurdles seen in the market.

The addition of a data platform with hybrid cloud and cloud-native infrastructure can help in the areas of:

- End-to-end data governance
- Data security and monitoring
- Any cloud data integration
- Data quality for multiple use cases
- Data performance and mobility
- Modern, cloud-ready database services
- Open architecture to embed control, sovereignty, and resilience
- Scalability and cloud-like developer experience

Cloudera and Red Hat OpenShift: Delivering Modern, Trusted Hybrid Cloud Building Blocks Fit for a Digital, Data-Driven Business

Red Hat, the open source technology vendor, and Cloudera, a hybrid platform for data, analytics, and AI, partnered nearly four years ago to offer an open hybrid cloud data architecture to run critical workloads successfully. With continuous co-engineering, the joint solution combines Red Hat's enterprise-ready container platform, OpenShift, with Cloudera to provide a data-ready, open infrastructure for all organizations. The joint solution brings OpenShift's open, scalable, and secure infrastructure components along with Cloudera's self-service analytics and security and policy-engine–driven governance.

The combination of an open, container platform with next-gen data analytics capability as a turnkey solution has never been more relevant for organizations seeking to accelerate data-driven innovation without compromising data security, costs, or freedom from lock-in. This is because the benefits address the key challenges organizations face in scaling AI workloads to production.

According to IDC, the benefits to users include:

- Access to modular infrastructure to scale compute and storage separately, providing a cost-effective solution for hosting both compute-intensive and data-intensive workloads.
- A consistent data experience for developers and data engineers to deploy and manage the full data life cycle in secure datacenter environments.
- Access to cloud-native capabilities with predictable cost and management control in private environments.
- Open source benefits such as freedom from lock-in and data mobility in hybrid cloud environments to leverage business-relevant data in private clouds for AI and analytics purposes. Openness also brings flexibility and choice for organizations to select open LLMs that are relevant for their business needs.
- Suitability for AI workloads that require hardened security, self-service, and highly agile compute environments to meet growing sovereignty and AI regulatory compliance requirements.
- The ability to power multiple use cases from AI to modern app development to analytics, test, and full-scale production implementation.

How the Joint Solution Serves as a Trusted Infrastructure Foundation

Trusted infrastructure is about architecting an IT infrastructure that includes capabilities to address sovereignty, governance, and compliance needs.

Amid rising ransomware threats, security remains a paramount consideration when modernizing infrastructure for AI and digital objectives. At the same time, resilience and freedom from lock-in are critical. Savvy organizations seek to balance resilience and security by investing in platforms such as OpenShift, which utilizes an open source model with enterprise-grade security shell, giving customers control over their security schema while mitigating lock-in risks.

In-built security capabilities such as role-based access controls, certifications, encryption, and continuous monitoring help DevSecOps teams meet the governance requirements of their organizations. Similarly, manually ensuring compliance with industry and security standards, as well as corporate and regulatory policies and requirements, can be daunting. Policy-based automation, enforcement, and assessment at the infrastructure level help build a resilient infrastructure foundation.

Cloudera's data security and governance features complement Red Hat's infrastructure security to deliver a complete and robust "build-and-innovate stack," enabling developers to innovate at the speed of their ideas.

"IDC estimates that by 2027, G2000 companies will double their investments in trusted infrastructure to ensure legislative and sovereignty compliance and protection of regulated and GenAI workloads."

IDC expects predictive and GenAI applications to become top drivers of trusted infrastructure requirements, especially as IDC research reveals that GenAI applications will account for an increasing portion of the typical organization's application mix in the next 18–24 months. At the same time, security and privacy concerns were identified as the top barriers.

The combination of security, privacy, and sustainability considerations are strongly influencing European organizations' decisions on infrastructure and vendor selection, with an emphasis on security, cost optimization, hybrid support, and openness as core requirements.

The Red Hat-Cloudera solution addresses the technology barriers of traditional hybrid cloud effectively. However, IDC believes that an additional differentiator of the joint solution is its ability to unlock the value of data for the “AI Everywhere” era by embedding data privacy, governance, trust, and protection into a developer-friendly container platform. This helps mitigate risks and builds in compliance and security right at the design point of AI workloads, making it suitable for heavily regulated industries such as healthcare, financial services, and manufacturing.

IDC also believes that enterprise-class data security and cloud infrastructure reliability can support new-age requirements such as adherence to data sovereignty and compliance with industry-specific regulations such as DORA.

The solution is relevant because IDC predicts that over the next 12 months CIOs will direct 35% of their infrastructure-as-a-service (IaaS) data storage budgets toward solutions for data sovereignty to achieve regulatory compliance. Meanwhile, financial services organizations are already investing in open, trusted, and supported infrastructure to demonstrate resilience before DORA comes into effect in January 2025.

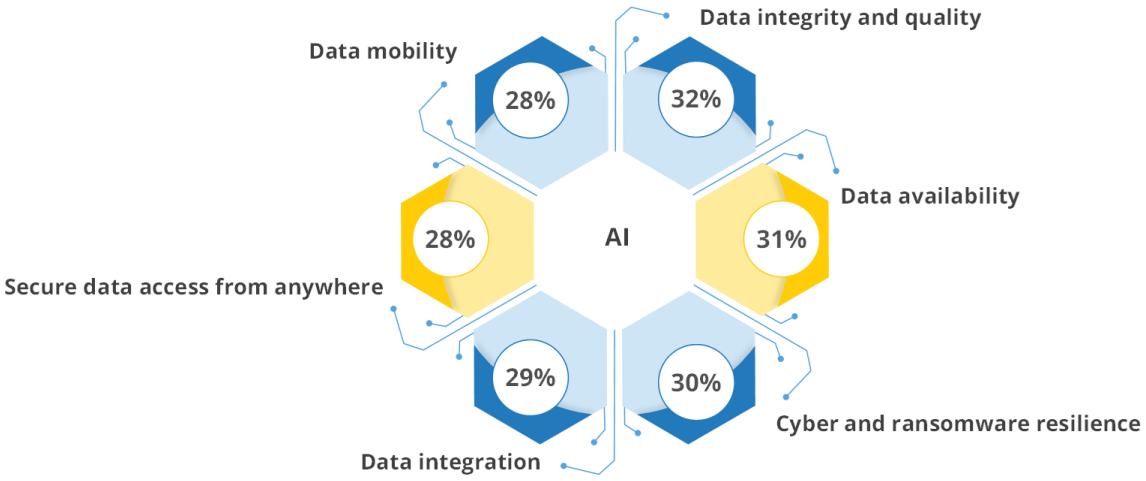
"GenAI still represents a small portion of overall enterprise AI strategies, with IDC research indicating that predictive AI and interpretative AI still have a significant role to play. A key differentiator of the joint solution is its ability to meet the requirements of a multimodal AI strategy."

Together, Red Hat OpenShift and Cloudera deliver a modern, trusted hybrid cloud that balances resilience and innovation for AI-driven IT leaders.

The joint offering from Red Hat OpenShift and Cloudera facilitates each of the data capabilities desired by organizations to support their AI strategies — data integrity and quality, data availability, resilience, integration, secure access, and data mobility (see Figure 3 below).

Figure 3: A Robust Data Foundation Underpins AI Strategies in Hybrid Cloud

Q: Which of the following data capabilities are or will be essential for your organization's current or future AI strategy?



Source: IDC's *EMEA CloudOps Survey, 2024 (Europe = 925)*

Challenges

There is no doubt that open, trusted, and flexible platforms will become more strategic for organizations desiring modern hybrid cloud. While Red Hat and Cloudera together provide the required technological capabilities, customer success hinges on many factors beyond technology. One key barrier is the lack of skills and limited experience in AI slowing down adoption at scale. Organizations can overcome some skills challenges by capitalizing on features

such as trusted automation, policy engines, templates, and blueprints to address non-technical barriers. Developing a strong data and governance strategy, connecting platform projects to desired business outcomes, and continuously monitoring risks are other important prerequisites for success. Red Hat and Cloudera could become strategic partners of customers by co-innovating and embedding more automation capabilities. They will also need to work closely with systems integrators (SIs), independent software vendors (ISVs), and managed service providers (MSPs), as such companies often fulfill the role of advisory and services partners for organizations starting their digital and AI journeys.

Future Outlook

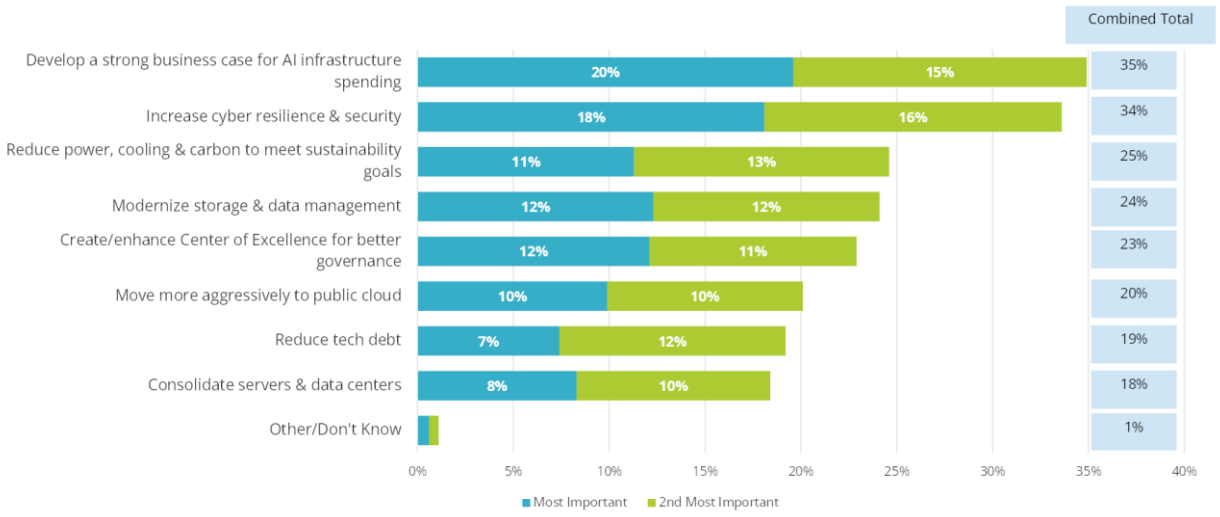
AI, security, and value will remain top of mind for organizations and shape how IT and business leaders approach their infrastructure strategies.

"There is a high sense of urgency around infrastructure strategies, with 60% of respondents to IDC's FERS research indicating that their spending on digital infrastructure is currently poorly aligned with the business goals it is expected to serve, and 39% admitting to overspending on infrastructure."

As seen in Figure 4 below, building the case for AI infrastructure is seen as the most essential step to meeting business goals. However, organizations need to ensure that their AI infrastructure is not another silo, but part of a modern, open hybrid cloud so they can leverage the right data sets residing in private environments. Other criteria include security and resilience, sustainable infrastructure, and modern data infrastructure.

Figure 4: Essential Digital Infrastructure Needs to Meet Business Goals

Q: Considering your digital infrastructure priorities for the next 18 months, which of the following is the most important for achieving your business goals? Which is the second most important?



Source: IDC's 2024 *FERS Survey, Wave 3*, March 2024 (n = 887; weighted by IT spend)

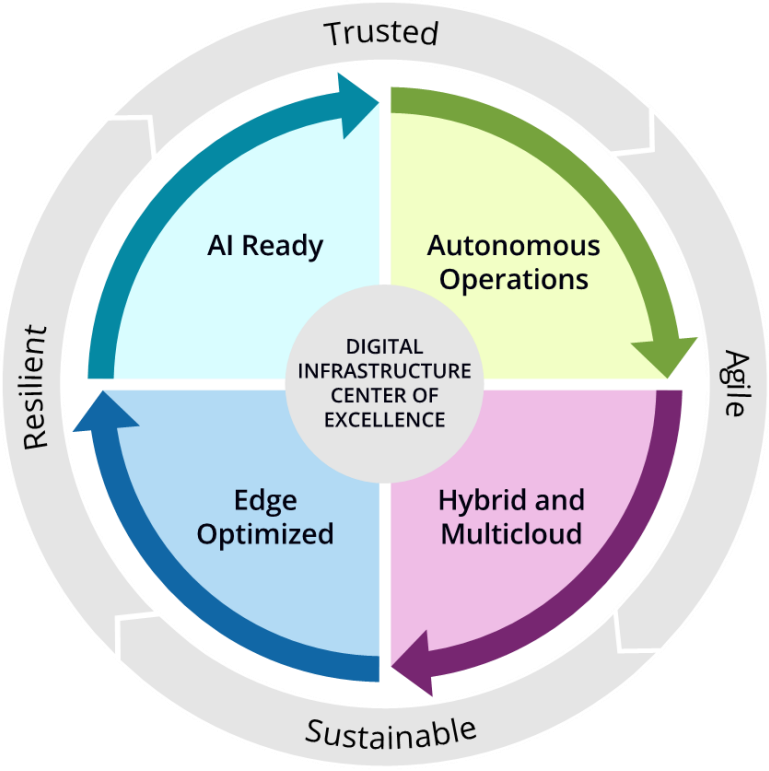
IT and business leaders also need to be aware of cloud-native trends in the market owing to VM-related market disruption. The findings of IDC's *CloudOps Survey, 2023* indicated that most organizations expected a significant portion of their total applications to be cloud native in 2024 and beyond. This was especially true of digitally leading organizations, where 56% of them expected more than a quarter of their applications to be cloud native, compared to just 38% of less digitally savvy organizations.

Combining both cloud-native building blocks and data building blocks is a way to become future ready from a technology perspective.

What Good Looks Like

In IDC's most recent *Future of Digital Infrastructure Sentiment Survey*, 77% of organizations indicated that they believe digital infrastructure is important or mission critical for the success of their digital business strategies.

Figure 5: Digital Infrastructure Framework



Source: IDC's *The Future of Digital Infrastructure, 2024: AI-Ready Platforms, Operating Models, and Governance* (#US50614724)

IDC's Future of Digital Infrastructure Framework (Figure 5) provides infrastructure strategists, digital business leaders, and DevOps and data science innovators with a shared model for considering how innovation across infrastructure technologies and cloud services markets provides opportunities for business disruption and for gaining competitive advantage. The most effective organizations will both anticipate and exploit these critical transformations.

Conclusion

Nearly half of tech buyers plan to spend more on cloud connectivity and interconnection services than their original 2023 cloud budgets. In addition, research shows that 40% of tech buyers will consciously spread their resources, skills, and development efforts across several clouds, addressing their infrastructure, data, and application needs via the various cloud-native offerings of these platforms.

These investments and strategies are shaping the modern, open hybrid visions of digitally savvy organizations.

IDC Recommendations to End Users:

- Data sits at the heart of an AI strategy, and ensuring the security, privacy, integrity, and quality of data are imperatives for success.
- But a data strategy cannot exist in vacuum; it needs an underlying cloud-like platform to bring agility, scale, and infrastructure security.
- Combining these two factors while balancing other requirements — such as the ability to leverage existing data in traditional environments, mitigating cloud migration risks, and benefiting from skills and experience on familiar hybrid cloud platforms — will be essential for success.
- An open, trusted technology foundation can help ensure organizations comply with the evolving regulatory landscape and adhere to sovereignty and resilience principles.
- Solutions that combine best-of-breed capabilities to unify infrastructure building blocks with data building blocks can accelerate the time to market for AI initiatives.

As organizations modernize and look to seize AI and digital opportunities, they should do so with a modern, trusted, data-centric hybrid cloud. And as they do that, they must consider open, ecosystem-based technologies with AI-friendly capabilities.

MESSAGE FROM THE SPONSOR

Red Hat and Cloudera offer a combined solution that helps enterprise companies securely manage the complete data life cycle, putting data to work faster and reducing time to value. Cloudera on Red Hat OpenShift aggregates and visualizes data to derive actionable insights in a secure, hybrid open source environment. The unique solution addresses infrastructure needs across on-premises, hybrid, and multicloud environments to meet enterprise-level analytics, data strategy, and machine learning requirements. Learn more.

About the Analyst

Archana Venkatraman, Senior Research Director, Cloud Data Management, IDC Europe

Archana Venkatraman leads IDC's European CloudOps and governance research as well as cloud data management research.

As part of her CloudOps focus, Archana analyzes the multicloud management and operations market, cloud economics and FinOps, observability, and cloud consolidation, as well as cloud governance and control. A big focus of her research is on cloud value realization, cloud-native success, and operational excellence.

As part of Archana's cloud data management research, she focuses on multicloud data management, data protection and availability, archiving, regulatory compliance, software-defined and object storage, modern data management, container data services, cloud data mobility, and SaaS data governance.

Before joining IDC, Venkatraman was the datacenter editor at *Computer Weekly*, the digital magazine and website for IT professionals based in London.

Archana is based in IDC's London office. Follow Archana on Twitter at @archanatweets.

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