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FUTURE OF
Digital Infrastructure

Building Digital Infrastructure to Achieve Business Advantage

RESEARCH BY:

Jennifer Cooke
Research Director,
Cloud to Edge Datacenter Trends, IDC

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Introduction

Digital infrastructure and platforms are the foundation for resilient business and competitive advantage in today's digital economy. The pandemic has illuminated how digital leaders that were further along on their transformation journeys discovered that they were far better equipped to adapt to unforeseen circumstances, ensure operational resiliency, and build new business value.

A New Approach to Digital Infrastructure

Shifts in population centers, the increasing occurrence of cyberattacks, rapidly expanding data volumes and compliance needs, the creation of business ecosystems, and the transformation to digital business have been driving the need for a new approach to digital infrastructure. These market forces are driving IT leaders to consider the best strategies and prioritize investments across the digital core, edge, and exchange of data.

Supporting IT Service

In order to create exceptional end-user experiences and enter new markets, these goals need to be anchored in the ability to support IT service in new locations and reduce friction across multiple distributed environments. This includes optimizing data and applications, integrating cloud capabilities, and scaling edge initiatives. Digital leaders are proving the value of digital infrastructure — now others are looking to follow suit.

To compete, IT leaders need digital infrastructure that:

- **Is ubiquitous and present** in all locations where business is conducted or data resides
- **Enables even faster access** to IT services and connection to all the right partners
- **Is easily consumed** through on-demand capabilities that can adapt at the speed of software

Why a Platform Approach to Digital Infrastructure?

Global market forces and the shift to digital business require a new approach to support resilient, agile operations.

Transformation to digital business

Businesses that have digital infrastructure in place have demonstrated the ability to withstand unforeseen circumstances, while being better equipped to innovate.

Cybersecurity and risk escalation

Organizations face escalating cybersecurity threats and are challenged to mitigate risk: **38% experience data security breaches, and 73% said ensuring data security is their top concern** with edge deployments.*

Shifts in populations and centers of commerce

The growth in the number of population centers and the distribution across more suburban areas due to COVID-19 have caused shifts in where data and people interact.

Creation of business ecosystems

Connecting to ecosystems is a force multiplier. Partners and the ability to exchange data and applications are table stakes in a digital economy.

Rapidly expanding data volumes and compliance needs

By 2025, 173ZB of data will be generated, much of it at the edge. Governing this data is challenging: One in four organizations reports being fined for compliance issues each year.*

*Source: IDC's Datacenter Operational Survey, 2020

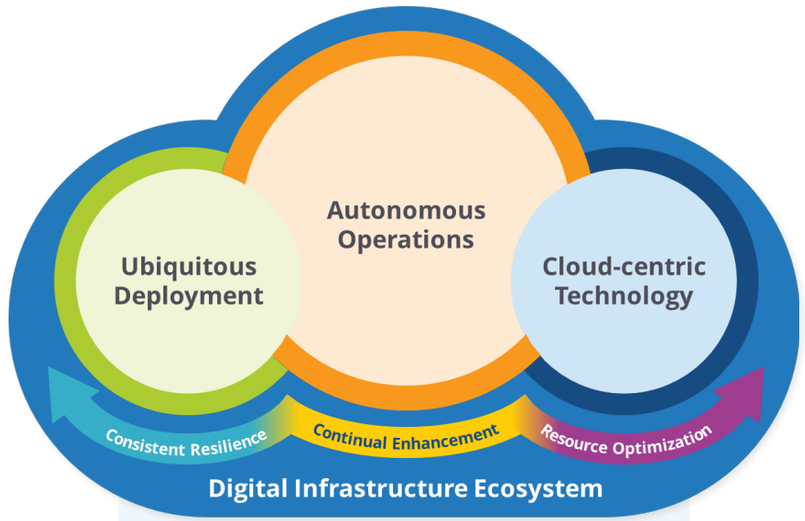
By 2023, digital infrastructure will be the underlying platform for all IT and business automation initiatives anywhere and everywhere. Such a platform needs to enable the frictionless exchange of data and operations across ecosystems from edge to core.

What the Future of Digital Infrastructure Looks Like

Digital infrastructure does not just reside in central enterprise or cloud datacenters. It includes the resources that enable the shifting of applications and code for enhancing customer experiences (CXs), embedding intelligence and automation into business operations, and supporting ongoing industry innovation at edge locations.

To support a resilient, trusted, and compliant digital organization, digital infrastructure requires:

- Commitment to a digital strategy
- Rapid deployment of underlying resources
- Global capacity and capabilities
- Dynamic implementation of new services and policies
- Automation of IT operations and continuous process governance
- Commercial ecosystem integration



Digital infrastructure needs to be everywhere.

Digital leaders rely on a ubiquitous platform of trusted resources across all core, edge, and data exchange resources.

Source: IDC's Future of Digital Infrastructure practice

Digital Infrastructure Considerations for Core

1. Core datacenter resources need to accommodate cloud-centric and hybrid IT architectures.
2. Enterprises will accelerate their shift to hybrid-cloud digital infrastructure.
3. There will be a reevaluation of traditional enterprise-owned datacenters; COVID-19 is accelerating closures.
4. Core resources are transforming to optimize operations and drive innovation. This transformation will speed time to market for new products and services, and improve profitability.

WHAT'S DRIVING CHANGE?

- Shift to digital business
- Need to improve operational efficiency
- Demand for detailed metrics on cost and performance

By the end of 2021, **80% of enterprises will put a mechanism in place to shift to cloud-centric digital infrastructure**—twice as fast as before the pandemic.

Source: IDC FutureScape: Worldwide Future of Digital Infrastructure 2021 Predictions (IDC #US46470820)

GOAL:

An intelligent and autonomous core that creates business resilience and supports rapid delivery of new innovation

Digital Infrastructure Considerations for Edge

1. There is a need for infrastructure in strategic locations with local interconnection between user services and data, and access to clouds and ecosystem partners.
2. A distributed and remote workforce is driving the need for distributed security; centralized security is unable to adapt to new threats at the rate and scale required.
3. Ensuring optimized user experiences and reaching new markets means compute needs to be closer to users.

WHAT'S DRIVING CHANGE?

- Shift in populations and centers of commerce
- Cybersecurity and risk escalation
- Need for local analytics

38 billion
things in 2021

7 million
edge locations

39,000
core datacenters

Over 50% of new infrastructure needs to be local by 2023.

GOAL:

Scaling and extending digital reach

79% of organizations are planning to deploy more IT services at edge locations.
The shift to deliver IT service from edge locations will test an organization's ability to protect, manage, and optimize resources.

Source: IDC's Datacenter Operational Survey, May 2020

Digital Infrastructure Considerations for Data Exchange

1. There is growing demand for local data analysis and exchange to support digital workflows.
2. This requires flexible and secure connections to the richest ecosystems.
3. Connectivity and access to these ecosystems on a global scale fuels innovation and generates new value.

WHAT'S DRIVING CHANGE?

- Rapidly expanding data volumes and compliance needs
- Shift to digital business
- Access to commercial ecosystems

While the amount of new data created each year is growing at a CAGR of 28%, **less than 3% of the data currently created is analyzed for enterprise intelligence.**

Source: IDC's Global DataSphere study: https://www.idc.com/getdoc.jsp?containerId=US45687519

By 2023, **an emerging digital infrastructure ecosystem will be the underlying platform for all IT and business automation initiatives** anywhere and everywhere.

Source: IDC Future of Digital Infrastructure 2021 Predictions (IDC #US46470820), October 2020

GOAL:

Harnessing a platform to maximize value from data and ecosystems, and create digital advantage

What Can Digital Infrastructure Deliver?

The emerging digital infrastructure ecosystem will ensure ever-faster delivery of innovative hardware, software, and abstraction technologies to support reliable digital services and experiences.

Through 2024, developing the ability to weigh the advantages and disadvantages across location, consumption model, and ecosystem access will have a major influence on where and how effectively CIOs can use digital infrastructure to improve business agility and resilience.

Ensuring application delivery, resiliency and flexibility, and adapting workloads at the speed of software will be the hallmarks of successful digital infrastructure offerings.

Most infrastructure delivered to businesses by enterprise IT organizations and service-provider partners will be **based on hybrid-cloud architectures with infrastructure bridging the cloud to the edge.**

Digital leaders will rely on key infrastructure KPIs and metrics tied to optimization, business value, and ongoing enhancement to drive C-level decision making.

Source: IDC's Future of Digital Infrastructure practice

Digital infrastructure enables ecosystems to accelerate innovation.
Digital leaders look for the right partners to create new customer experiences and maximize the value of data.

What You Need in a Digital Platform:

- **Ease of managing** diverse and distributed environments, cloud resources, and growing data sets
- **Ability to extend consistent performance** across multiple geographies and platforms
- **Access to dense ecosystems** to accelerate progress and interact with trusted partners as business goals continue to transform and evolve
- **On-demand consumption model** with transparency into cost and performance metrics for all resources
- **Rapid deployment** of infrastructure or shifting of resources to support new initiatives from core to cloud to edge
- **Advanced digital infrastructure control systems** enabling API integration to support IT and business automation initiatives

Steps for Transformation:
Use a Platform Approach to Build Digital Advantage

Organizations are focusing on business outcomes and improving experiences as central drivers for change. Market forces require a new approach to digital infrastructure and platforms to create digital advantage. Hybrid IT digital initiatives escalate the need for connecting data and platforms across core and edge resources.

Steps to building digital advantage:

1. **Transform WAN architecture** by removing the distance through an initial hub deployment. Expand capabilities to the edge and optimize last-mile connectivity.
2. **Connect to multiple clouds in strategic locations** with high concentrations of cloud and network providers. Establish a second hub for business resilience and continuity.
3. **Distribute secure infrastructure and edge services** to support DDOS/WAF, CASB, SASE, and other capabilities across hubs needed to locally secure digital interaction.
4. **Deploy edge computing** to support AI and machine learning solutions for local analytics of large pools of data. Establish cloud-adjacent data infrastructure to leverage cloud analytics and ecosystem exchange.
5. **Integrate ecosystems** and build out digital infrastructure at strategic exchange points for real-time participation in data marketplaces, industry exchanges, and B2B real-time processing.

About the Analyst

Jennifer Cooke
Research Director,
Cloud to Edge Datacenter Trends, IDC

Jennifer Cooke is Research Director for IDC's Cloud to Edge Datacenter Trends and Strategies team, which explores and analyzes the development and adoption of datacenter resources, including the physical facilities and infrastructure contained and connected within it. Jennifer's core research includes the worldwide forecast for datacenter infrastructure management (DCIM) solutions as well as adoption of smarter datacenter technologies that form the foundation for delivering agile and resilient IT service. She follows the technology changes and market forces impacting enterprise and service-provider datacenter operators.

More about Jennifer Cooke

Message from the Sponsor

Platform Equinix brings together and interconnects foundational digital infrastructure with all the right places, partners, and possibilities needed to achieve business advantage. Equinix operates 220+ IBX datacenters in 63 strategic markets across 26 countries and is committed to reaching 100% renewable energy usage globally, minimizing its carbon footprint and advocating for a sustainable future.

Enterprise leaders can use the Global Interconnection Index to benchmark their digital strategy and progress, across industries, to learn what it takes to be ready to adapt to any new normal. Learn more about global interconnection trends and how enterprises, service providers, and partners can use interconnection and digital exchange to accelerate their digital advantage.

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IDC Research, Inc.
5 Speen Street
Framingham, MA 01701
USA
508.872.8200

idc.com

@idc

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