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Edge Strategies for the Next Generation of Infrastructure and Applications

Gain competitive advantage by providing optimal digital experiences for employees and customers

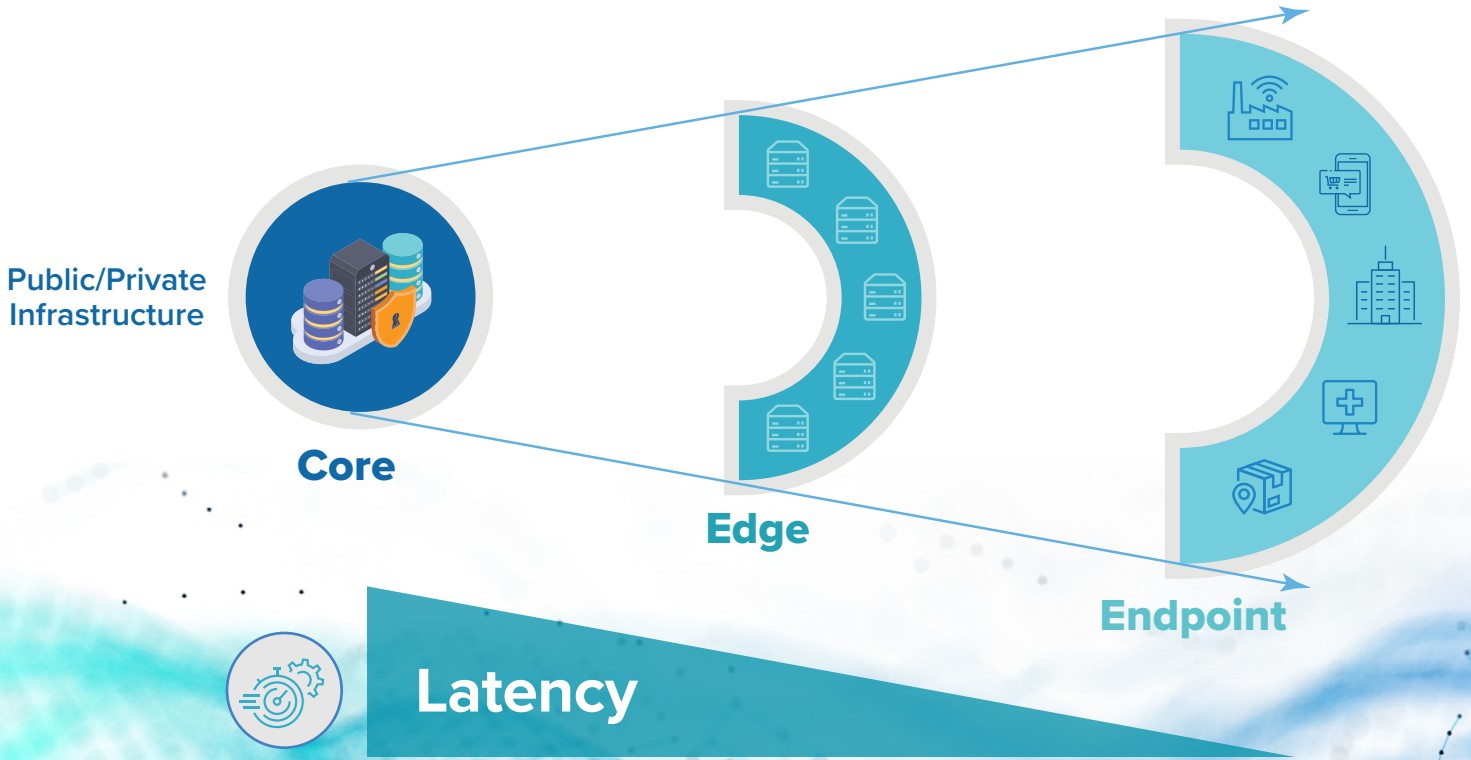
IDC
ANALYZE THE FUTURE

#US46871220

Research by **Dave McCarthy**, Research Director, and **Brad Casemore**, Research Vice President, Datacenter Networks

What Is the Edge?

A **distributed computing paradigm** that includes the deployment of infrastructure and applications outside of centralized datacenters and public clouds **closer to where data is generated and consumed.**



IDC Predictions

1

By 2023, **70%** of enterprises will run varying levels of data processing at the **Internet of Things (IoT) edge**. **70%** of **IoT deployment will include artificial intelligence** (AI) solutions for autonomous or edge decision making, supporting organizations' operational and strategic agendas.

2

By 2023, over **50%** of new enterprise **IT infrastructure deployed will be at the edge** rather than corporate datacenters, up from less than **10%** today, resulting in an **800%** **increase** in the number of **apps at the edge**.

3

SD-WAN infrastructure will grow at a CAGR of **19.7%** to reach nearly **$6.2 billion in 2024**.

4

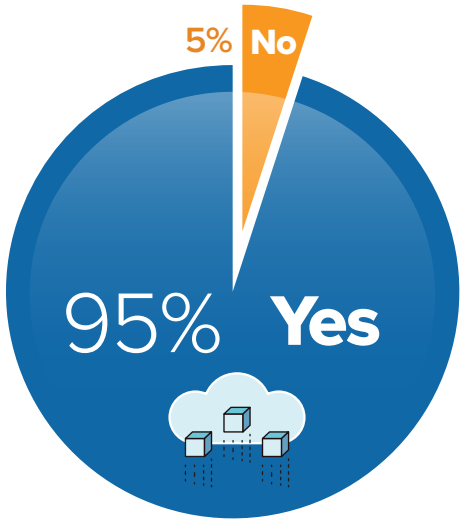
By 2023, nearly **20%** of servers that process AI workloads **using AI-optimized processors** and **coprocessors** will be deployed at the edge.

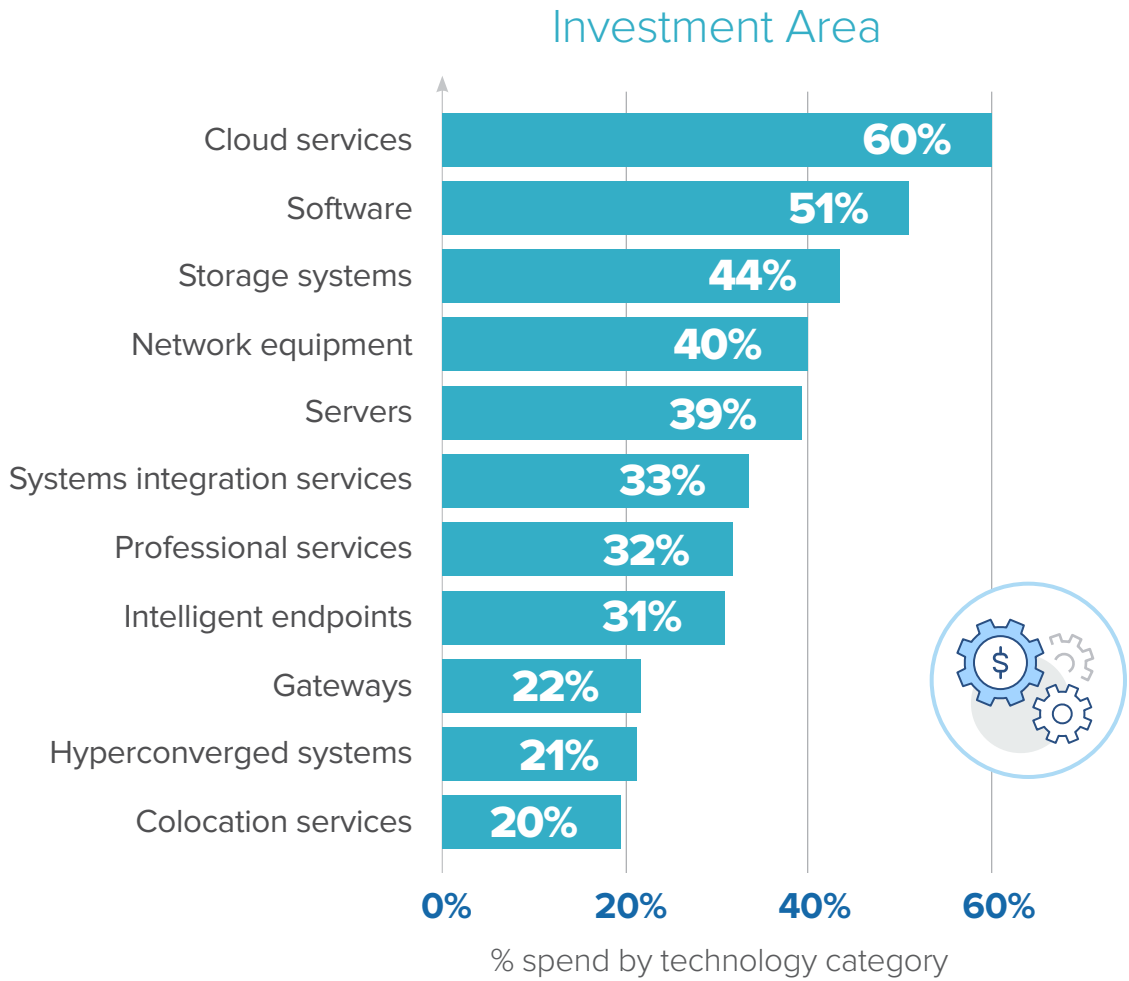
5

With the business criticality of digital trust rising, **25%** of **spending on security services** will be devoted to developing, implementing, and maintaining a "trust framework" **by 2025**.

Edge Technology Investments

95% of new edge solutions will be built on cloud-native platforms

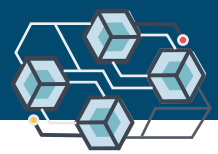




n= 637 Source: IT Infrastructure Deployment for Edge Survey, IDC, June 2020

Factors Driving Edge Adoption

Technology



1. **Latency-sensitive applications:** Such apps require faster response times than cloud or datacenter infrastructure can deliver.
2. **Resiliency:** Ensuring the availability of data and applications in situations with limited network connectivity is critical.
3. **Scalability:** Scaling addresses concerns surrounding the abundance of data generated for analytics and AI use cases.

Business

1. **New products and services:** Leveraging real-time data can increase business agility and power new customer experiences.
2. **Security and compliance:** Whether due to government regulation or corporate governance, this factor must be met.
3. **Cost:** Transmitting data for centralized processing can be prohibitive.

Common Edge Deployment Locations

ROBO

Remote office/
Branch office

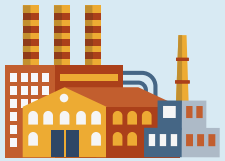
Telco

Multi-access edge compute

Edge Cloud Datacenters

Metro area datacenter facilities from cloud service providers

Industry Specific



Factories, warehouses, hospitals, retail stores, and other field locations

Industries and Use Cases

Manufacturing

Predictive Maintenance: Actionable intelligence derived from local data can improve uptime of critical equipment.

Quality Inspection: Vision-based analytics can spot defects and automate remediation.

Retail

Consumer Engagement: Physical stores can close the gap with online retailers by offering real-time promotions and recommendations.

Video Surveillance: Behavioral analysis can detect a crime before it happens.

Healthcare

Pharmaceutical Research: Lab equipment generates large data sets that require local analysis.

Customized Treatment Plans: Connected equipment at hospitals can monitor patient vitals and facilitate new treatments.

Public Sector

Smart Cities: Efficient use of government resources can reduce energy consumption and improve maintenance operations.

Disaster Response: Situational awareness of people and equipment can be enabled where networks may not be available.

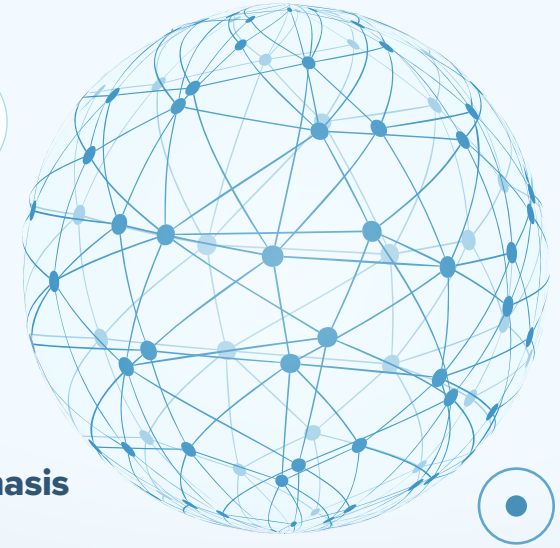
Logistics

Fleet Management: Condition-based maintenance can be based on observed real-time usage.

Asset Tracking: Identification of location, environmental control of sensitive cargo, and assurance of integrity can occur.

Edge Solution Design Considerations

- **Edge is driving a new type of hybrid** – a common infrastructure that can exist on premises, in the cloud, and in various edge locations.
- **Edge should be treated as an extension of core resources,** with a common development platform and management tools.
- Edge solutions often require a **higher emphasis on automation**, **remote management**, **analytics, and security** due to the lack of local IT personnel in edge locations.



- According to IDC research, **84%** of organizations have either **implemented a hybrid cloud** or plan to do so in the next 12 months as they shift from closed, proprietary systems to open, standard platforms that allow mixed workloads to coexist.
- **Organizations should start with proven reference designs** that can be extended to meet deployment-specific needs.

Selecting and Optimizing Edge Networks

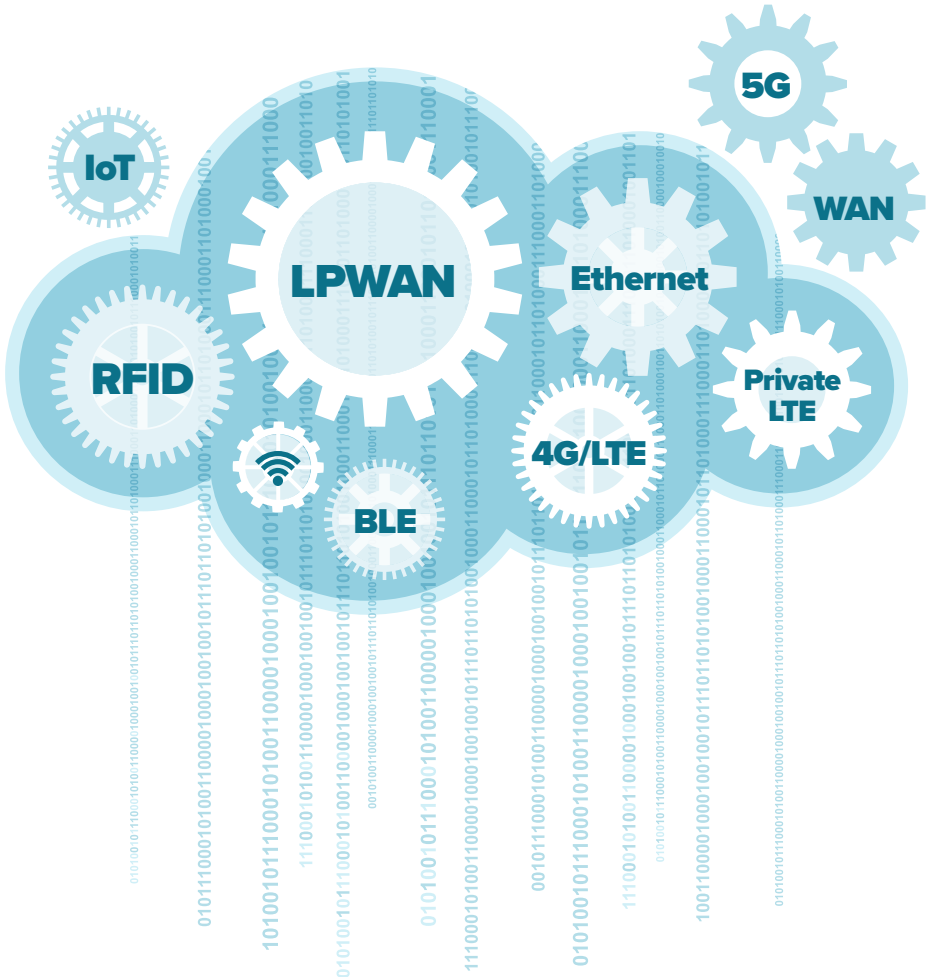
On the IT edge, SD-WAN provides a policy-based overlay that abstracts underlying transports, ensuring applications are supported and delivered optimally, securely, and cost effectively.

Policy-based automation enables greater agility, faster provisioning, and increased operational efficiencies.

On the OT edge for IoT, SD-WAN provides a policy-based overlay, abstracting underlays so applications and data get what they require.

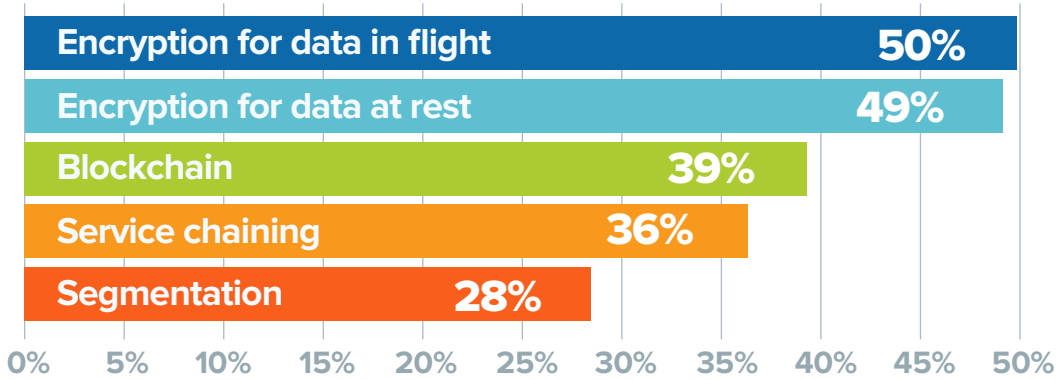
Underlay selection and management is an important consideration as use cases, bandwidth and latency constraints, and budgets vary widely across IT and OT edge scenarios.

On both IT and OT edge networking, organizations seek to mitigate the complexity of the entire network life cycle.



Edge Security

Q. What security requirements does your organization consider when adopting edge infrastructure?



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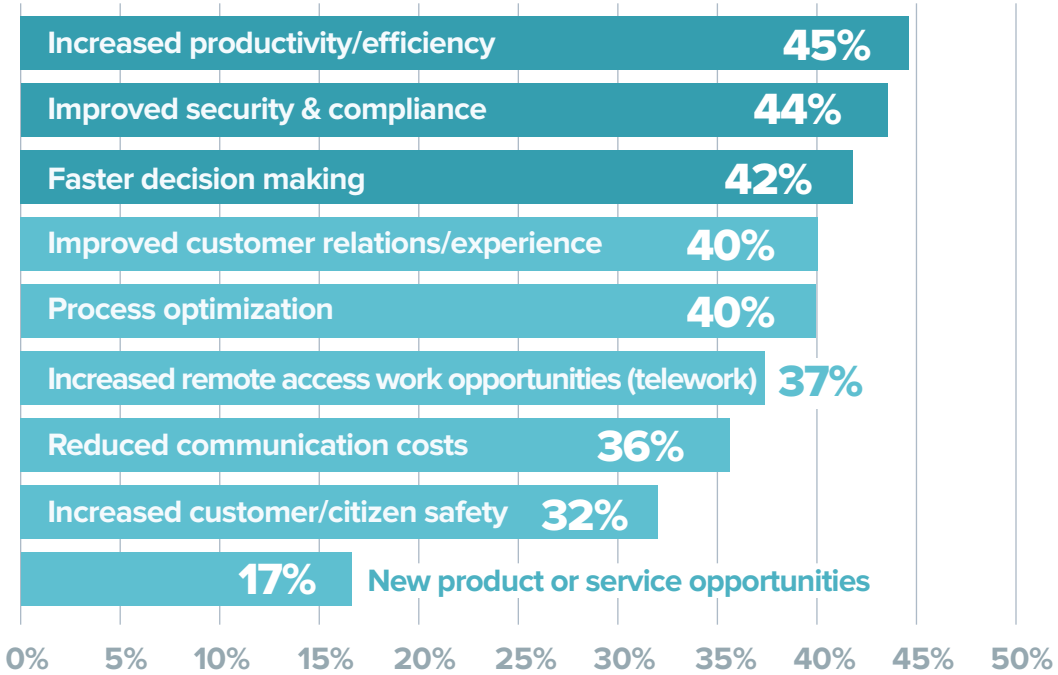
Edge locations typically do not have the same level of physical security as core datacenters, which warrant the use of zero-trust frameworks. **Identity and access must be managed for both users and endpoints.**

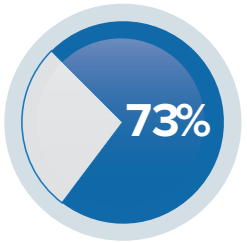
The convergence of networking and security functions as a cloud service is called **SASE (Secure Access Service Edge)**, and the concept is **shaping buyer expectations for a security architecture** that better supports SD-WAN, cloud, and network security.

Policies and procedures need to reflect a unified security approach that covers both core and edge resources.

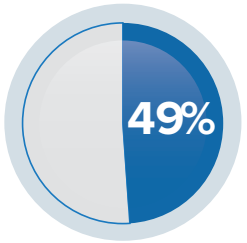
Edge Outlook

Q. *What business benefits do you expect edge adds/will add to your organization?*





of IDC survey respondents **view edge as a strategic investment;** another **17%** say it is **required** by business operations



have either **deployed edge** within the last 12 months or **planned to** do so within the next 12 months

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Message from the Sponsor

More than 15,000 organizations around the world trust SHI to help build and deliver $11 billion worth of technology solutions that meet their business needs. SHI's helpful solutions experts can deliver a full range of services to assist with the strategy, deployment, and management of edge computing solutions at scale.

For more information on how SHI can help you successfully leverage the edge as part of your hybrid computing environment, visit SHI.com/next-generation-infrastructure