



CIO Technology Playbook 2023

Where **Smarter** Leads the Future



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Executive Summary

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CIO's **Business and Technology Agenda** in 2023

Digital Infrastructure: Keystone for Business Transformation

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Organizations will Continue to Run **Mission-Critical Workloads** in Traditional DCs and Private Cloud

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Businesses across vertical industries, both in technology savvy as well as emerging countries across Asia/Pacific are changing at blistering pace. Digital technologies are redefining the competitive landscape, lowering traditional barriers to entry. Data-driven innovation is underpinning businesses’ ability to deliver hyper-personalized customer experience, create new sources of revenue using value-added digital services built around existing products, as well as accelerating the design and delivery of new and exciting products and services that enhance customer experience.

The advent of digital technologies is having a profound impact on an organization’s sustainable competitive advantage, creating a paradigm shift in the role of CIOs who are now seen as disruptors and change transformation agents, which not only requires much greater collaboration with Line of Business but also a much deeper understanding of the business.

This InfoBrief draws insights from a custom research commissioned by Lenovo and AMD for which 906 IT and business decision makers (ITBDMs) from select organizations across Asia/Pacific were surveyed. The research will provide insights into CIOs and IT leaders business and IT investment priorities, key challenges and spending imperatives in transforming their digital infrastructure to modern future-ready environment to accelerate their digital business agenda.

In the following page, we will summarize the key insights and key takeaways for CIOs to consider for 2023.



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The following are 7 key insights IDC observed from our research of over 906 IT and business decision makers (ITBDMs), as well as strategic imperatives for CIOs that IDC believes will help Asia/Pacific organizations gain a competitive edge in 2023:

Key Insights		Considerations for CIOs in 2023
#1	Global economic malaise remains the top-of-mind concern for CIOs. Stubbornly high inflation, soaring energy and raw material prices, and supply-chain constraints due to unfavorable geo-political developments are likely to dampen the business growth in 2023, which will have a debilitating impact on their digital transformation (DX) agenda.	Organizations that are leveraging digital technologies to optimize supply-chain, improve asset utilization, and significantly increase their agility and resilience will be in good stead to compete and succeed in a rapidly changing and volatile economic environment and competitive landscape.
#2	Digital Infrastructure will be the cornerstone of organizations' ability to generate as much as 43% of their revenues in 2027, up from 27% in 2022, from digitally connected products, services and customer experiences .	Technology will be the cornerstone of successful DX of organizations; however, CIOs need to be taken a more strategic approach to investing in new and disruptive technologies apart from modernizing their legacy infrastructure and applications to drive digital business success on a sustained basis.
#3	Asia/Pacific organizations are accelerating their shift to hybrid / multi-cloud in the next 2 to 3 years. IDC's research showed that 63% of the organizations have repatriated workloads back from the public cloud to private cloud and/or traditional DC infrastructure . A majority of customers are not running all workloads exclusively in the public cloud. Organizations have painfully learnt that public cloud does not offer the best application experience and performance, cost optimization for the myriad traditional and born in the cloud workloads, as well as address the rapidly evolving security and regulatory compliance requirements. Availability of AI-powered observability, provisioning, management and remediation software technologies have made private cloud with public cloud like-experience a reality.	Availability of AI-powered observability, provisioning, management and remediation software technologies have made private cloud with public cloud like-experience a reality. Migrating workloads exclusively into the public cloud may not be a prudent approach for large and mid-sized organizations. CIOs need to build a strategic roadmap for running workloads across private and public cloud options based on the business and technology value that the various deployment options offer.
#4	Customers will continue to run more than 50% of their mix of core mission-critical or business-critical workloads on traditional DC infrastructure, systems and platforms, and private cloud infrastructure in the next 2 to 3 years. Private cloud will increasingly be the platform of choice for organizations to run modern born in the cloud business critical applications as well as traditional and legacy applications being modernized. Many of these business-critical workloads are intrinsically built and optimized for traditional compute systems and platforms for highest level of performance, transaction throughput, low latency as well as highest levels of security because these workloads are an organization's core system of records.	Private cloud is a viable and compelling option for Asia/Pacific CIOs to modernize and migrate the legacy business-critical applications which will give them highest levels of performance while at the same time providing data security and meeting regulatory compliance requirements. Majority of the mission-critical workloads being modernized will move to private cloud than public cloud.

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#5	<p>Modern single unified data management platform for myriad data types will be the cornerstone of digitally transforming organizations' data-innovation journey. Only 8% of the organizations surveyed have adopted a single unified data management platform for seamless mobility of data across multiple clouds, as well as integrating data across containers and at the edge to meet the most demanding business SLAs and outcomes.</p> <p>Organizations will likely continue to heterogenous mix of storage and data management systems and platforms for structured and unstructured workloads. In addition, the rapidly expanding edge infrastructure will add another layer of complexity as customer grapple with running workloads with very distinct personas and data access, analysis and security requirements across multiple private and public clouds inkling traditional core DC.</p>	<p>CIOs will need to simplify their data management – access, analysis and cyber resiliency and consistently across the vast expanse of their digital infrastructure to fuel data-driven innovation for sustained competitive advantage in the digital economy.</p>
#6	<p>Edge will be the next-frontier of digital innovation and organizations across vertical industries – manufacturing, travel, logistics, energy, utilities and healthcare. IDC's research shows that 88% of the Asia/Pacific organizations are either using or planning to use edge computing in the next 12 months for business operations.</p> <p>Adoption of edge compute enables organizations to create new and exciting digitally enabled business outcomes and customer experiences, while driving operational efficiency and agility, as well as resource optimization.</p>	<p>Organizations will need to chose the right technology partner that will help them integrate their edge infrastructure with rapidly expanding multi-cloud environment for seamless and consistent IT operations. Technology vendors who can help organizations embrace autonomous IT operations delivering ubiquitous application experience at the edge will be in a strong position to support the CIO's business and technology agenda in 2023 and beyond.</p>
#7	<p>A little more than 80% of the organizations in Asia/Pacific indicated that they are using or intend to use AI-powered applications in the next 12 months to drive business and technology outcomes.</p> <p>AI applications enable CIOs to analyze large volumes of information and create real-time insights to drive customer engagement and customer experience, managing growing complexity of a rapidly expanding geo-dispersed infrastructure for higher levels of resiliency and agility, and securing their IT operations against the backdrop of growing incidence of ransomware and malware attacks.</p>	<p>Global and regional economic slowdown in 2023-24, growing paucity of human capital – right talent and cost, and the need to continue driving digital innovation will compel CIOs to embrace and adopt AI applications at an even more accelerated pace. Organizations that are slow to adopt AI risk losing their competitive edge in the digital economy.</p>

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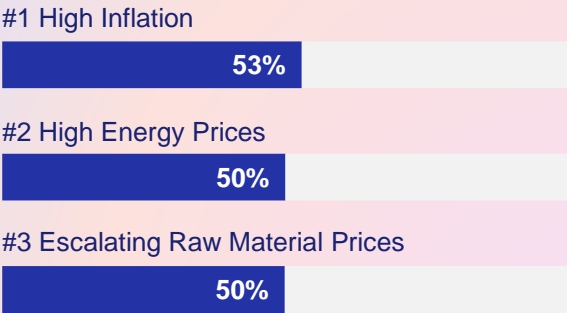
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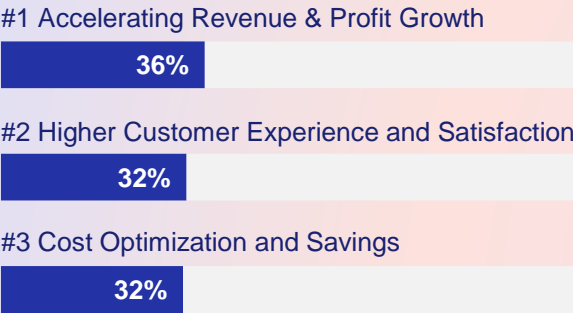
CIO's Concerns

Top 3 Social/Economic Concerns

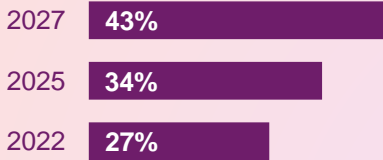


CIO's Priorities

Top 3 Business Priorities



Forecasted Revenue Contribution from Digital Products / Services



The changing business paradigm is driving a significant change in the role of CIO and IT decision makers who are increasingly playing a much more pivotal role in shaping the strategic, tactical and operational decisions of an organizations. With digital technologies increasingly shaping the destiny of organizations, technology is no longer a means to drive operational efficiency and productivity but underpinning an organization's ability to build sustainable competitive advantage in a rapidly changing and constantly evolving market and competitive landscape.

CIOs are increasingly concerned about the stubbornly high inflation, and soaring energy and raw material prices which are likely to dampen the business growth in 2023 and early 2024. Organizations are leveraging technology to optimize their supply-chains, improve asset utilization and improving their agility and resilience which will enable them to respond faster to the changing needs of the business. Driving revenue and profit growth is the top priority while becoming maniacally customer – focused that enables them to deliver a much more personalized and delightful customer experience which is not only important for winning new customers but also growing business with existing customers.

Digital Transformation (DX) is the ability of an organization to deliver digitally connected products, services and customer experiences which is evident from the growing mix of revenue from digital agenda. Businesses which are accelerating their shift to digital are widening the gap between themselves and their competitors who are laggards.

Raw material prices refers to prices of commodities such as steel, grain, lumber, plastic, etc

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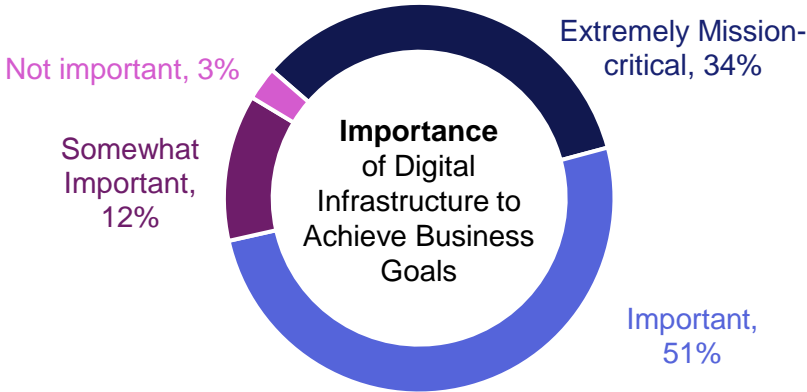
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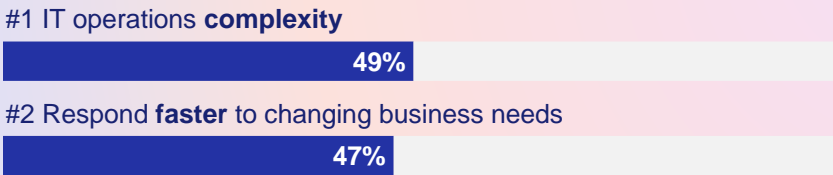
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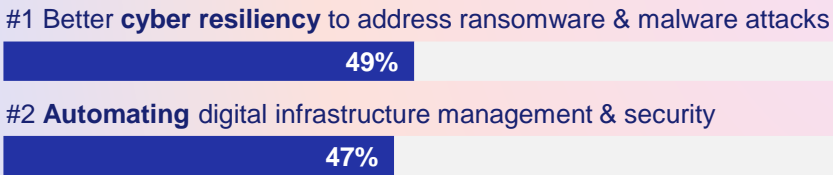
85% of Asia/Pacific organizations consider digital infrastructure mission-critical or important to achieve business goals. IDC believes this is stemming from the rapid digitalization of the economy and how digital technologies are having a profound impact on an organization's various business functions.

Organizations in emerging markets such as India, Indonesia and the Philippines are taking the leap of faith by embracing digital technologies to catalyze business transformation. Over 90% of surveyed organizations in said emerging markets stated that digital infrastructure is mission-critical or important for them to not only meet their business goals but redefine their competitive differentiation.

Top areas that impact business' evolving needs



Top digital infrastructure investment areas



CIOs are extremely concerned about the growing IT operational complexity with the advent of multiple clouds and rapidly expanding edge infrastructure, while at the same time business is demand faster response to their ever changing and evolving needs. In order to accelerate their DX and modernize legacy IT infrastructure, CIOs called out better cyber resiliency and automating digital infrastructure management as the top investment priorities for 2023. IDC strongly believes that automation is one of the key underpinnings for building higher levels of resiliency, agility and flexibility which are key imperatives for a business to succeed in the digital economy.

62% of ANZ organizations consider cyber resiliency a key investment priority. This a reflection of ANZ organizations' maturity to understand the importance of protecting digital assets as well as strong compliance & government requirements. In addition, organizations in ANZ are ahead of their peers across the region in terms of driving data innovation.

Modernizing business-critical applications is a key underpinning to accelerate data-driven innovation because application interdependencies necessitate the ability to share information across applications in almost real-time to support faster decision making.

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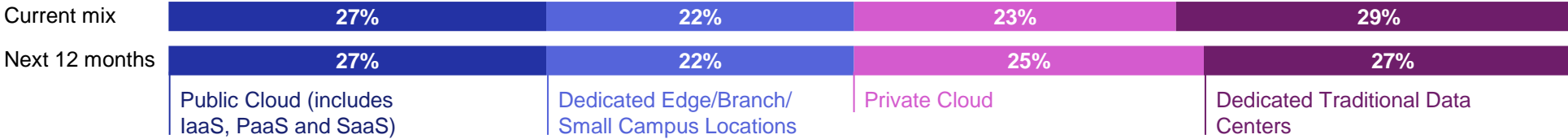
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Enterprises will Continue to Prefer Private Cloud and Traditional DCs over Public Cloud for Majority of Workloads

Deployment Mix



Organizations will continue to move workloads at an accelerated pace to private cloud over the next 2 to years, as a result of which the current share of workloads running in private cloud will increase from 23% to 25% over the next 12 months or so. Private Cloud will be fastest growing deployment location among all the deployment locations in Asia/Pacific.

A large Majority (63%) of Customers surveyed by IDC have repatriated workloads back from Public Cloud to run in Traditional DC or Private Cloud in the past 12 months. Mature IT markets tend to have higher repatriation rates because customers have had fairly extended experience running workloads in the public cloud and are able to make better informed decisions about workload placement and choice between private and public clouds.

Public cloud

Challenges of running workloads in public cloud

#1 Enhanced data security concerns & measures

38%

#2 Application speed and performance

37%

#3 Costs increasing disproportionately to usage & consumption

36%

Asia/Pacific organizations highlighted security along with speed/performance as the 2 main concerns when running workloads in public cloud. IDC believes that stringent regulatory and compliance requirements across critical industries such as financial services, healthcare and public sector are compelling CIOs to repatriate some of the workloads back to private cloud or traditional DC infrastructure.

Public cloud cost does not increase linearly as workloads' infrastructure requirement grow as a result of which CIOs are concerned about cost of operations for large and predictable workloads in the public cloud.

IDC strongly believes that customers are finding it extremely compelling to run existing as well as modern born in the cloud workloads in a private cloud environment Vs running them in the public cloud because system vendors are delivering unified management platforms for observability, management and provisioning that enables them to get the same public cloud experience in their own dedicated infrastructure.

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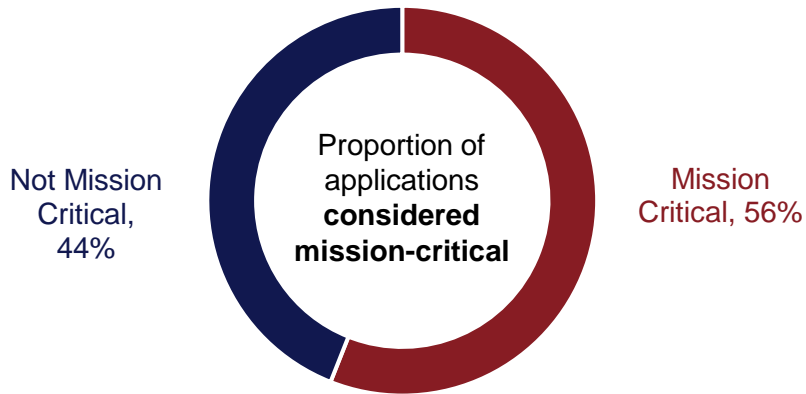
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Organizations will Continue to Run Mission-Critical Workloads in Traditional DCs and Private Cloud



Majority of the mission-critical applications are legacy which is why the proportion running on Traditional DC infrastructure will decline in the future. Organizations will increasingly run modernized versions of mission-critical workloads in a private cloud or in certain instances in the public cloud.

IDC's research shows that the mix of mission-critical workloads running in the public cloud in the future will decline, across all geos except for Japan due to growing concerns about application performance and latency issues, apart from data regulatory and compliance requirements.

Current vs future mission critical deployment mix

Current mix	23%	24%	24%	30%
Next 12 months	21%	26%	26%	28%
	Public Cloud (includes IaaS, PaaS and SaaS)	Dedicated Edge/Branch/ Small Campus Locations	Private Cloud	Dedicated Traditional Data Centers

Traditional DCs will remain the primary location for running mission-critical applications among Asia/Pacific organizations because majority of the mission-critical applications are legacy. Legacy applications were developed to run in a tightly coupled manner on traditional compute systems. IDC believes that upgrades or modernization will likely drive a decline in traditional DCs running mission-critical workloads in the next 12 months.

It is interesting to see the mix of mission-critical applications running in the public cloud will decline in the next 12 months by customers across all Asia/Pacific geos with the exception of Japan where it will increase less than 1 point to 19%.

Organizations in Japan will continue to run a large majority (41%) of mission-critical applications in traditional DC infrastructure given the large installed base of traditional compute systems. IDC feels that this is unlikely to change in the near term because modernizing some of the legacy mission critical application is extremely complex and challenging, requiring significant investment in time and money.

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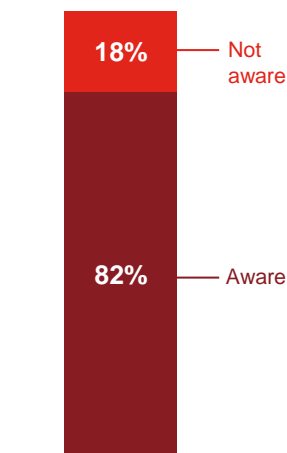
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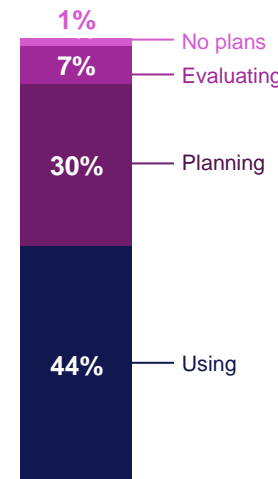
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Awareness
of As-a-Service

System vendors have done an excellent job of building brand visibility and mindshare for as a Service infrastructure consumption models with 82% of the organizations in Asia/Pacific aware of their existence.

Awareness is extremely high in India where **91%** of organizations stated that they are aware of as-a-service infrastructure offerings, compared with North Asia – Korea and Japan where awareness is comparatively much lower despite, they being extremely mature and technology savvy markets.



Adoption
of As-a-Service

44% of the organizations are already using As-a-Service Flexible IT infrastructure models, and almost **75%** will be using them in the next 12 to 18 months time.

Customers in India are not only aware but more than half the surveyed respondents who are aware are using them today.

A third of the organizations in ANZ, India and Korea are planning to adopt Consumption and As-a-Service flexible IT infrastructure models.

Top 3 reasons for adopting as-a-service

#1 Reduce IT operational cost

34%

#2 Greater flexibility and agility to meet business demands

32%

#3 Focus more on technology innovation to drive business outcomes

32%

Asia/Pacific organizations stated that cost rationalization and optimization is the top catalyst for adopting as-a-service infrastructure offerings.

Surveyed organizations are attracted by the flexibility and agility of the consumption / As-a-Service IT models which enable them to tightly align business outcomes and IT investments and spending, changing them dynamically in this highly volatile and constantly changing business and economic environment.

With business innovation becoming a strategic imperative for success in the digital economy, consumption models enable Asia/Pacific CIOs to worry less about financial and human capital resources for procurement, deployment, management and delivery of IT infrastructure services required for ongoing business operations.

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Current vs future deployment mix

34%	44%	14%	8%
Currently use multiple data management platforms for each vendor's storage arrays with limited data mobility between public cloud and on/off-premises private clouds and traditional DC infrastructure	Multiple data management systems to independently manage block, file and object data types with limited data mobility between public and private cloud, and edge locations	Few data managements to manage data mobility across different clouds for near real-time data access mobility and provisioning for most demanding business SLAs	Single data management platform to manage data mobility across different clouds, integrating data in containers, for real-time seamless data mobility and provisioning to meet the most demanding business SLAs

Less than 10% of the organizations in Asia/Pacific are currently using a single data management platform to manage data mobility across multiple clouds as well as integrating data across containers and VMs for seamless mobility to power data-driven AI/ML and Data Sciences workloads. IDC strongly believes that growing application interdependencies are creating the demand for a single data management platform that provides seamless mobility of data in a highly secure manner across the different deployment locations. Data locked in cloud silos will impede every organization's ability to successfully digitally transform themselves and meet the digital business goals.

The study also found that organizations in India appear to be the least mature in terms of successfully managing data across multiple clouds (only 4%) using a single data management platform and using different management platforms for different vendors' storage arrays (38%)



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Top data management objectives

#1 Improving data access, quality, protection, and security

46%

#2 Modern data storage platforms to analyze large volumes of data

46%

Top data management challenges

#1 Data protection for better business continuity and recovery

43%

#2 Data mobility across hybrid / multi-cloud environment

41%

With data volumes growing at an unprecedented pace and the need to deliver actionable insights at an ever-increasing pace for digital business outcomes, Asia/Pacific organizations are increasingly making modern data management platforms their top priority.

CIOs who are investing in the right platforms and technologies to manage the data explosion at the edge which is the next frontier for digital innovation will be in strong stead to build market leadership position in their vertical industry.

Business continuity against the backdrop of growing ransomware and malware attacks is the top data management challenge which Asia/Pacific organizations are grappling with. IDC strongly believes that CIOs who do not take a strategic view of cyber resiliency in the next 12 months will be facing a ticking time bomb because the implications of a cyber attack are extremely profound with far reaching ramifications.

Rapid proliferation of digital infrastructure across multiple clouds and edge will drive CIOs to increasingly use AI/ML powered threat detection, rapid response and remediation SW tools to ensure higher uptime for business. IN addition, 42% of the survey respondents indicated that they are air-gapping the production and backup copies of their data, as well as separating the control path from the data path to ensure higher levels of cyber resiliency. An another 41% of the organizations are planning to use synchronous replication across multiple geo sites to ensure minimal business disruption, either due to loss of data or transactions



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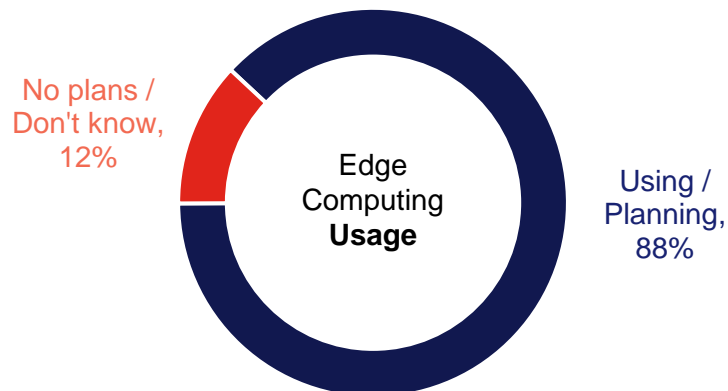
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A staggering 88% of the Asia/Pacific Organizations are either using or are planning to use edge computing in the near future. Organizations in India appear to be at the forefront of leveraging edge innovation with more than 97% of the organizations surveyed indicating that they intend to use edge computing for their business operations.

While many other IDC research have shown that organizations in Japan are amongst the most digitally matured in Asia/Pacific, IDC observed that organizations in Japan often take a more conservative approach to adopting new technology/solutions. Often waiting for a solution to mature before adopting at mass. This also appears to be the case for Edge, where approximately two-thirds of organizations in Japan stated that they are using/planning to use Edge in the next 12 months, below the regional average.

Top edge computing use cases

#1 Real-time customer analytics for omni experience

37%

#2 Automated quality control and remediation

35%

#3 Asset tracking, geo fencing and management

33%

Businesses are increasingly focused on delivering a superior customer experience (CX) to drive success in the digital economy. Real-time customer analytics for omni experience enables organizations to build a deeper understanding of changing customer preferences, buying intentions and behavioral patterns that are enabling them to deliver hyper-personalized digitally enabled products and services.

Manufacturing, retail, logistics, transportation and energy to name a few are some of the vertical industries across which organizations are leveraging edge innovation to power automated quality control and remediation. IDC believes that this is helping businesses improve the optimal utilization of their assets, improve employee productivity, enhance customer experience, and ensure higher uptime or improved reliability of their products.

Edge computing is increasingly used for asset tracking, geo fencing and management across manufacturing, retail, energy and utilities verticals. IDC believes that organizations who are early adopters of edge computing for asset tracking are starting to reap the benefits especially in this challenging business environment marked by tight financial liquidity.

The research also indicated that energy management and smart grid optimization were among the top 3 use cases in ANZ and South Korea. IDC believes driven by appreciation for sustainability and highly technologically savvy utilities companies.

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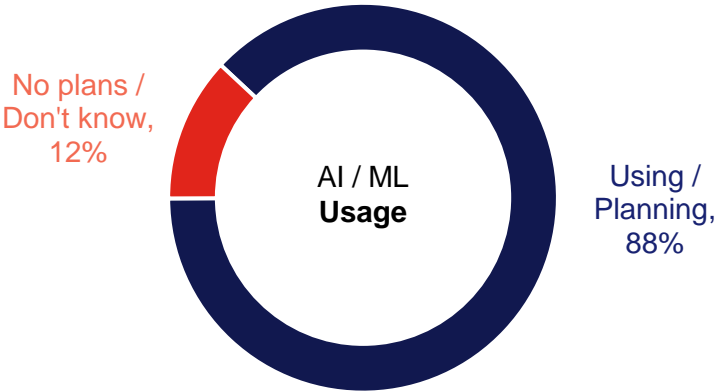
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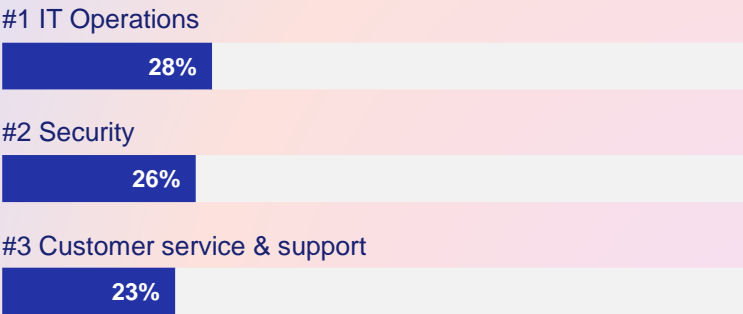
AI Applications will Become Mainstream in 2023



AI Applications will reach broad deployment across Asia/Pacific geos with more than 80% of the respondents using or planning to use AI Applications in the next 12 months. While many organizations in Japan are digitally mature, fewer surveyed organizations in Japan stated that they are using or planning to use AI applications compared to the Asia/Pacific average. Likely waiting for the solution to mature before adopting at mass.

IDC feels that organizations who intend to truly leverage AI applications will need to undergo culture and people transformation. AI applications will have far reaching implications because organizations are expected to use AI-powered applications for a broad array of business use cases and functions across vertical industries.

Top business processes with AI incorporated



Automation is one of the three key imperatives of IDC's framework of Future-ready Digital Infrastructure. With growing expanse of every organization's IT infrastructure spanning across multiple clouds, edge and core DC, it is no surprise that CIOs indicated IT operations as one of the top 3 business processes to be AI powered.

Security is emerging as one of the primary business processes to use AI-powered applications by Asia/Pacific organizations. AI applications uses machine and deep learning algorithms to detect millions of patterns, incidents and events on the network to determine if there is a cyberattack. AI enables security applications to constantly learn from past patterns to quickly identify an imminent attack. With organizations seeing a massive explosion in the number of external touch points, IDC strongly believes that only AI based security applications can help address the growing cyber resilience challenges.

With customer centricity and customer experience at the heart of every organization's digital transformation journey, IDC feels that organizations using AI-based Customer Service & Support applications is a strong move in the right direction.

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CIO Strategic Imperatives

The Market

- Asia Pacific (overall)
- Japan
- Korea
- India
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Overall Asia Pacific Overview (1/2)

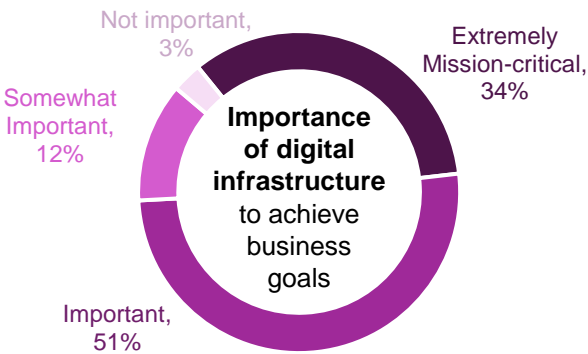
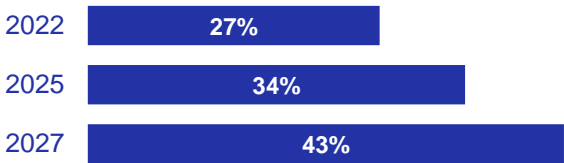
Top CIO's priorities

- 1 Accelerating revenue & profit growth
- 2 Higher customer experience & satisfaction
- 3 Cost optimization & savings

Top CIO's concerns

- 1 High inflation
- 2 High energy prices
- 3 Escalating raw material prices

Forecasted revenue contribution from digital products / services



Top digital infrastructure investment areas

- 1 Better cyber resiliency to address ransomware & malware attacks
- 2 Automating digital infrastructure management & security
- 3 High-performance compute platforms for AI/ML workloads

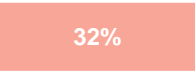
Areas that impact businesses' evolving needs

- 1 IT operations complexity
- 2 Respond faster to changing business needs
- 3 Standardize infrastructure provisioning & management

Repatriated workloads from Public Cloud to Private Cloud / DC in past 12 months



Did not repatriate workloads from Public Cloud to Private Cloud / DC in past 12 months



Not applicable



Executive Summary

CIO Strategic Imperatives

The Market

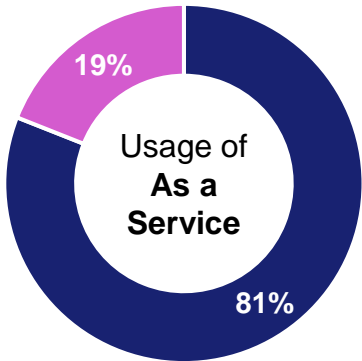
- Asia Pacific (overall)
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Why Lenovo & AMD

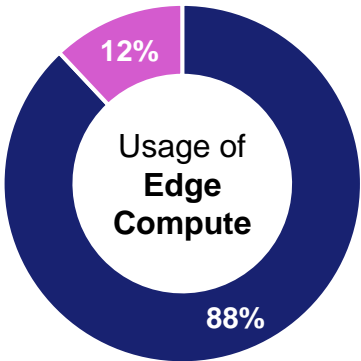
Overall Asia Pacific Overview (2/2)

■ Using / Planning to use in the next 12 months ■ No Plans / Not Aware



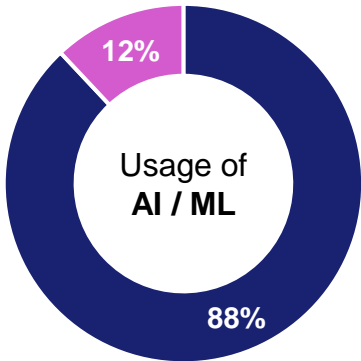
Top reasons for using as a service

- 1 Reduce IT operational cost
- 2 Greater flexibility & agility to meet business demands
- 3 Focus more on technology innovation to drive business outcomes



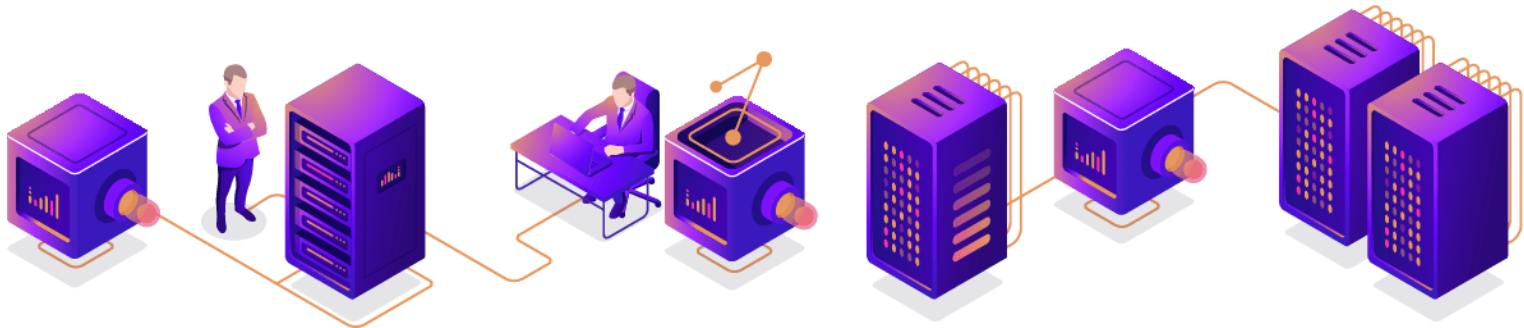
Top use cases supported by edge compute

- 1 Real-time customer analytics for omni experience
- 2 Automated quality control & remediation
- 3 Asset tracking, geo fencing & management



Top business processes with AI/ML incorporated

- 1 IT operations
- 2 Security
- 3 Customer service & support



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- Asia Pacific (overall)
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Japan Overview (1/2)

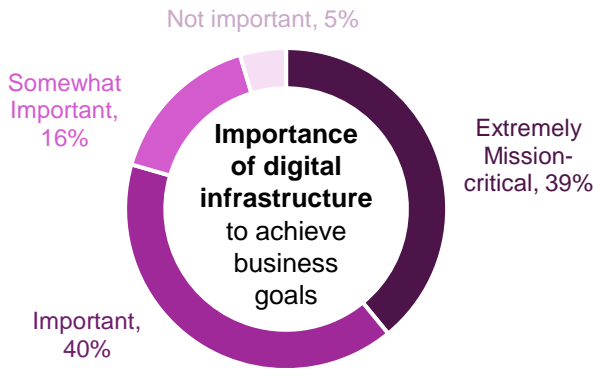
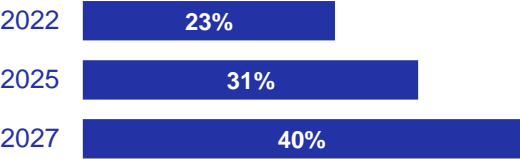
Top CIO's priorities

- 1 Accelerating revenue & profit growth
- 2 Cost optimization & savings
- 3 Employee productivity improvement

Top CIO's concerns

- 1 Human capital shortage
- 2 Escalating raw material prices
- 3 High energy prices

Forecasted revenue contribution from digital products / services



Top digital infrastructure investment areas

- 1 Automating digital infrastructure management & security
- 2 Better cyber resiliency to address ransomware & malware attacks
- 3 Common data management platform

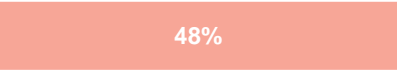
Areas that impact businesses' evolving needs

- 1 Respond faster to changing business needs
- 2 IT operations complexity
- 3 Standardize infrastructure provisioning & management

Repatriated workloads from Public Cloud to Private Cloud / DC in past 12 months



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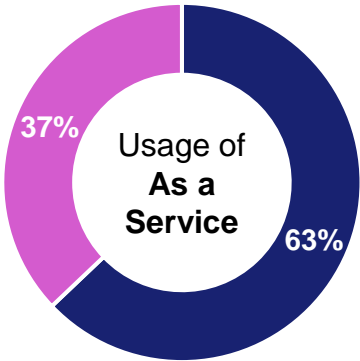
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Why Lenovo & AMD



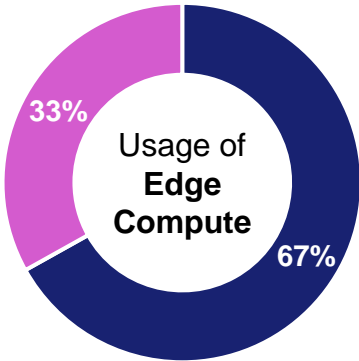
Japan Overview (2/2)

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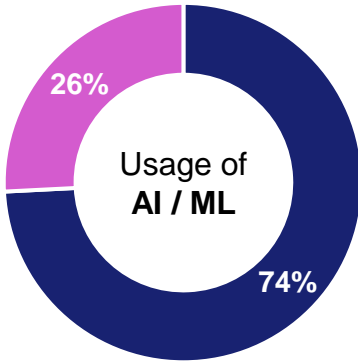
Top Reasons for Using as a Service

- 1 Reduce IT operational cost
- 2 Infrastructure resource optimization & utilization
- 3 Focus more on technology innovation to drive business outcomes



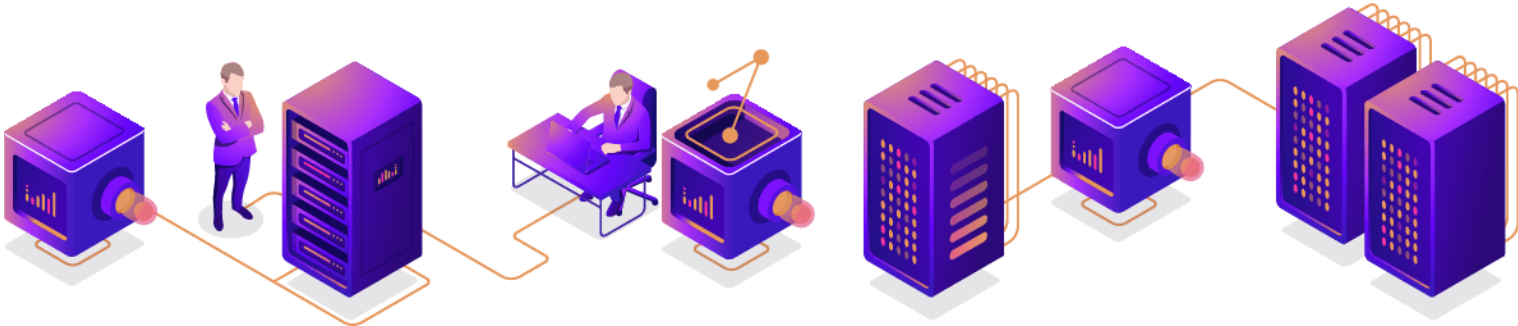
Top Use Cases Supported by Edge Compute

- 1 Automated quality control & remediation
- 2 Image & video analytics for security services
- 3 Asset tracking, geo fencing & management



Top Business Processes with AI/ML Incorporated

- 1 Security
- 2 IT operations
- 3 Fraud/risk management



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Korea Overview (1/2)

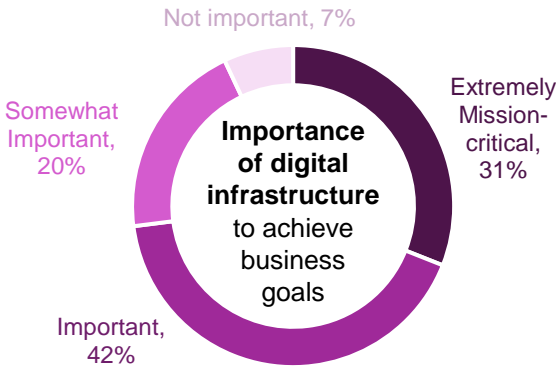
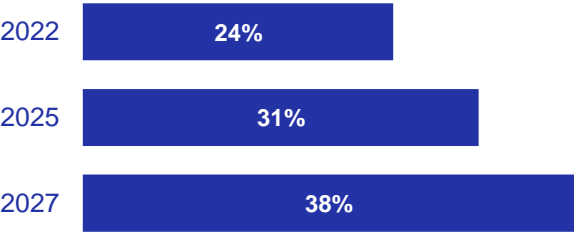
Top CIO's priorities

- 1 Accelerating revenue & profit growth
- 2 Higher customer experience & satisfaction
- 3 Better data-driven decision making

Top CIO's concerns

- 1 Escalating raw material prices
- 2 High inflation
- 3 High energy prices

Forecasted revenue contribution from digital products / services



Top digital infrastructure investment areas

- 1 Unified management control plane for all digital infrastructure resources
- 2 Automating digital infrastructure management & security
- 3 Application aware network transformation

Areas that impact businesses' evolving needs

- 1 Standardize infrastructure provisioning & management
- 2 Human capital silos across compute, storage & network infrastructure
- 3 Respond faster to changing business needs

Repatriated workloads from Public Cloud to Private Cloud / DC in past 12 months



Did not repatriate workloads from Public Cloud to Private Cloud / DC in past 12 months



Not applicable



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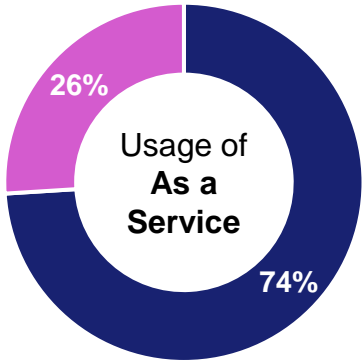
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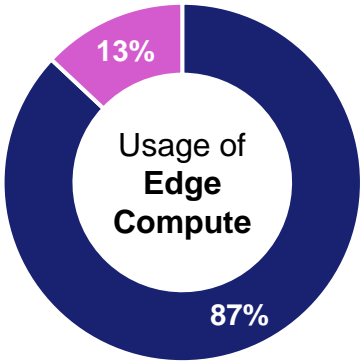
Korea Overview (2/2)

■ Using / Planning to use in the next 12 months ■ No Plans / Not Aware



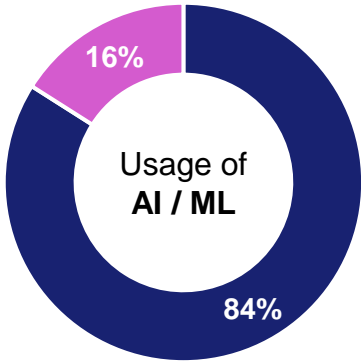
Top Reasons for Using as a Service

- 1 Focus more on technology innovation to drive business outcomes
- 2 Reduce IT operational cost
- 3 Manage IT human capital resource crunch



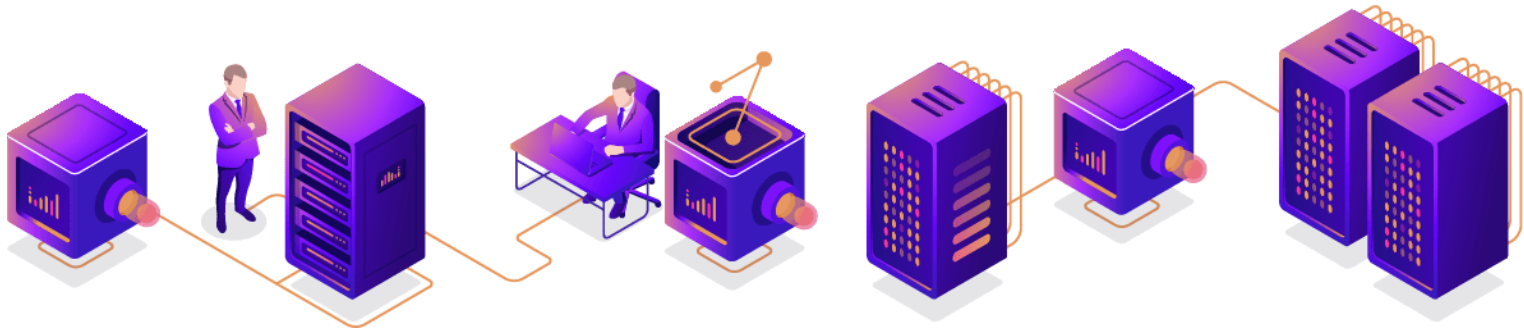
Top Use Cases Supported by Edge Compute

- 1 Image & video analytics for security services
- 2 Automated quality control & remediation
- 3 Energy management & smart grid optimization



Top Business Processes with AI/ML Incorporated

- 1 IT operations
- 2 Supply chain
- 3 R&D/engineering



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India Overview (1/2)

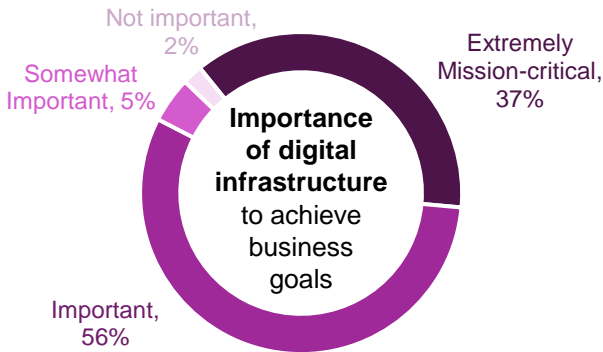
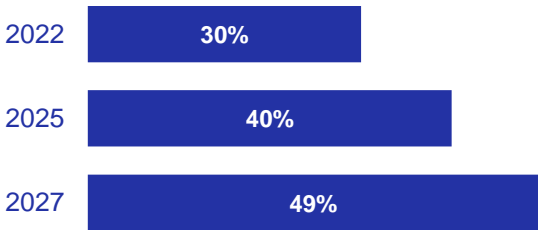
Top CIO's priorities

- 1 Higher customer experience & satisfaction
- 2 Employee productivity improvement
- 3 Increased business agility & responsiveness

Top CIO's concerns

- 1 High energy prices
- 2 High inflation
- 3 Growing geopolitical tensions

Forecasted revenue contribution from digital products / services



Top digital infrastructure investment areas

- 1 High-performance compute platforms for AI/ML workloads
- 2 Better cyber resiliency to address ransomware & malware attacks
- 3 Unified management control plane for all digital infrastructure resources

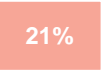
Areas that impact businesses' evolving needs

- 1 IT operations complexity
- 2 Driving greater collaboration between lobs & it teams
- 3 Cost optimization by eliminating manual it operational processes

Repatriated workloads from Public Cloud to Private Cloud / DC in past 12 months



Did not repatriate workloads from Public Cloud to Private Cloud / DC in past 12 months



Not applicable



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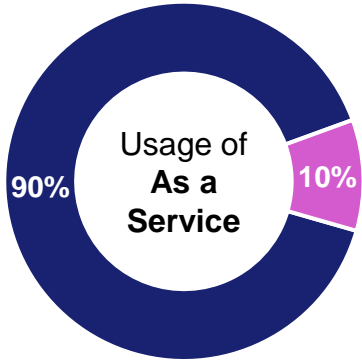
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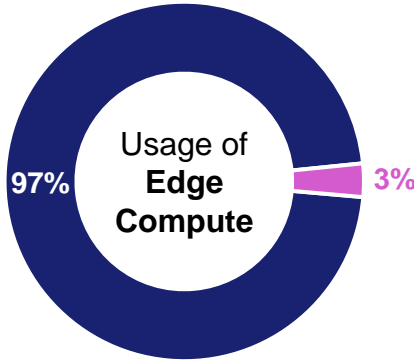
India Overview (2/2)

■ Using / Planning to use in the next 12 months ■ No Plans / Not Aware



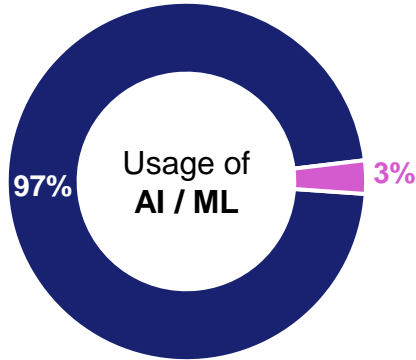
Top Reasons for Using as a Service

- 1 Reduce IT operational cost
- 2 Infrastructure resource optimization & utilization
- 3 Greater flexibility & agility to meet business demands



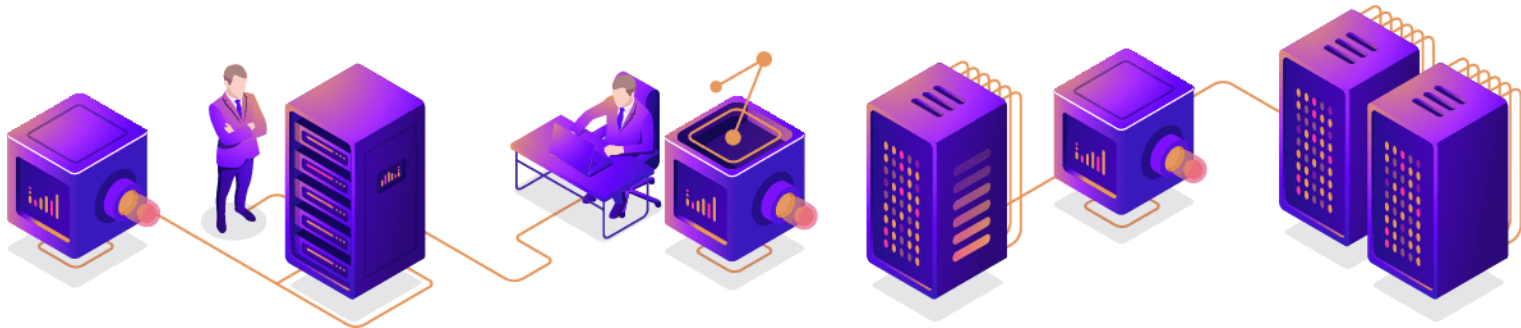
Top Use Cases Supported by Edge Compute

- 1 Real-time customer analytics for omni experience
- 2 Asset tracking, geo fencing & management
- 3 Remote diagnostics & predictive analytics of equipment



Top Business Processes with AI/ML Incorporated

- 1 IT operations
- 2 Security
- 3 R&D/engineering



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ASEAN+ Overview (1/2)

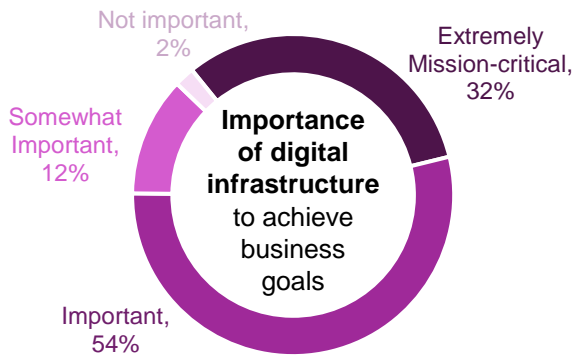
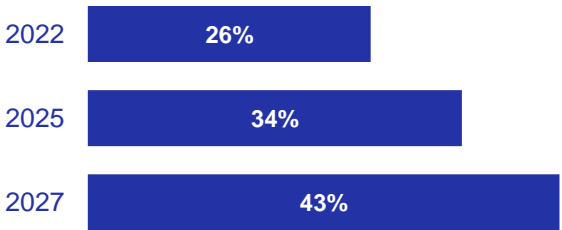
Top CIO's priorities

- 1 Cost optimization & savings
- 2 Higher customer experience & satisfaction
- 3 Accelerating revenue & profit growth

Top CIO's concerns

- 1 High inflation
- 2 Escalating raw material prices
- 3 High energy prices

Forecasted revenue contribution from digital products / services



Top digital infrastructure investment areas

- 1 Automating digital infrastructure management & security
- 2 Better cyber resiliency to address ransomware & malware attacks
- 3 Unified management control plane for all digital infrastructure resources

Areas that impact businesses' evolving needs

- 1 Respond faster to changing business needs
- 2 Cost optimization by eliminating manual it operational processes
- 3 Agile IT operations to support modern DevOps

Repatriated workloads from Public Cloud to Private Cloud / DC in past 12 months



Did not repatriate workloads from Public Cloud to Private Cloud / DC in past 12 months



Not applicable



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- ANZ

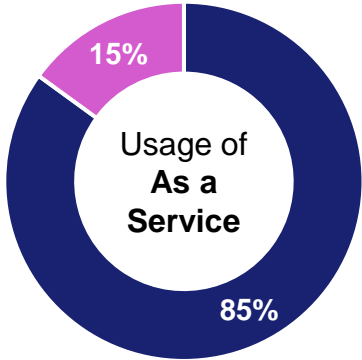
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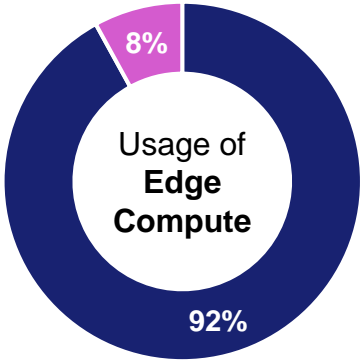
ASEAN+ Overview (2/2)

■ Using / Planning to use in the next 12 months ■ No Plans / Not Aware



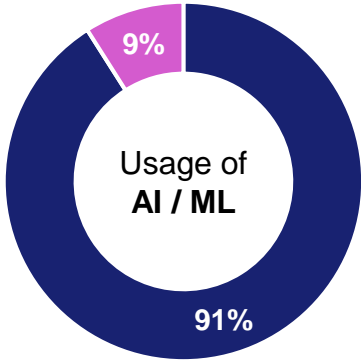
Top Reasons for Using as a Service

- 1 Reduce IT operational cost
- 2 Greater flexibility & agility to meet business demands
- 3 Focus more on technology innovation to drive business outcomes



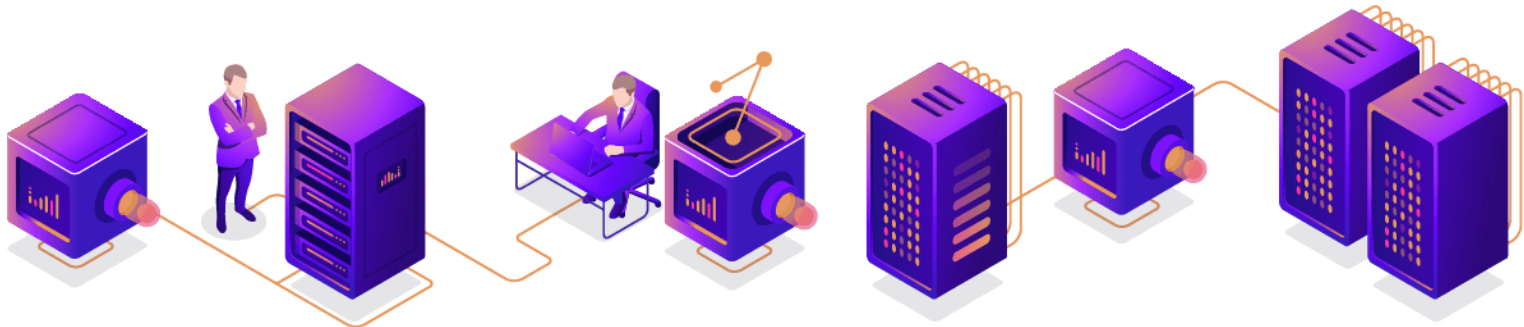
Top Use Cases Supported by Edge Compute

- 1 Real-time customer analytics for omni experience
- 2 Automated quality control & remediation
- 3 Customer insights for real-time campaigns & design



Top Business Processes with AI/ML Incorporated

- 1 IT operations
- 2 Sales & distributions
- 3 Finance/accounting



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ANZ Overview (1/2)

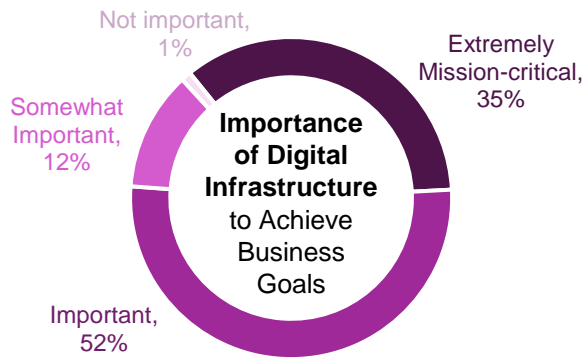
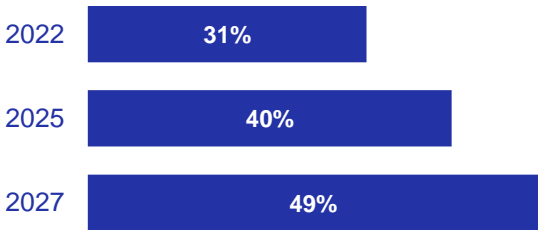
Top CIO's priorities

- 1 Better data-driven decision making
- 2 Reducing business risk & cyber threats
- 3 Cost optimization & savings

Top CIO's concerns

- 1 High inflation
- 2 Human capital shortage
- 3 High energy prices

Forecasted revenue contribution from digital products / services



Top digital infrastructure investment areas

- 1 Better cyber resiliency to address ransomware & malware attacks
- 2 Modernizing infrastructure for micro-services-oriented architecture
- 3 Automating digital infrastructure management & security

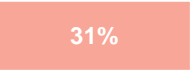
Areas that impact businesses' evolving needs

- 1 IT operations complexity
- 2 Respond faster to changing business needs
- 3 Driving greater collaboration between lobs & it teams

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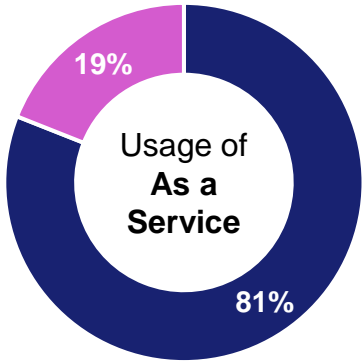
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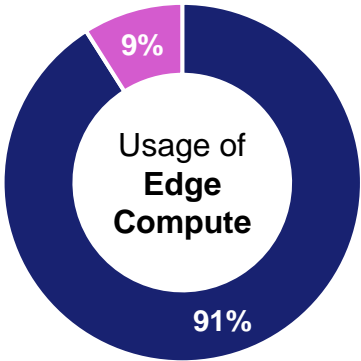
ANZ Overview (2/2)

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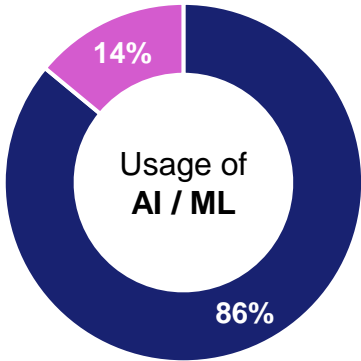
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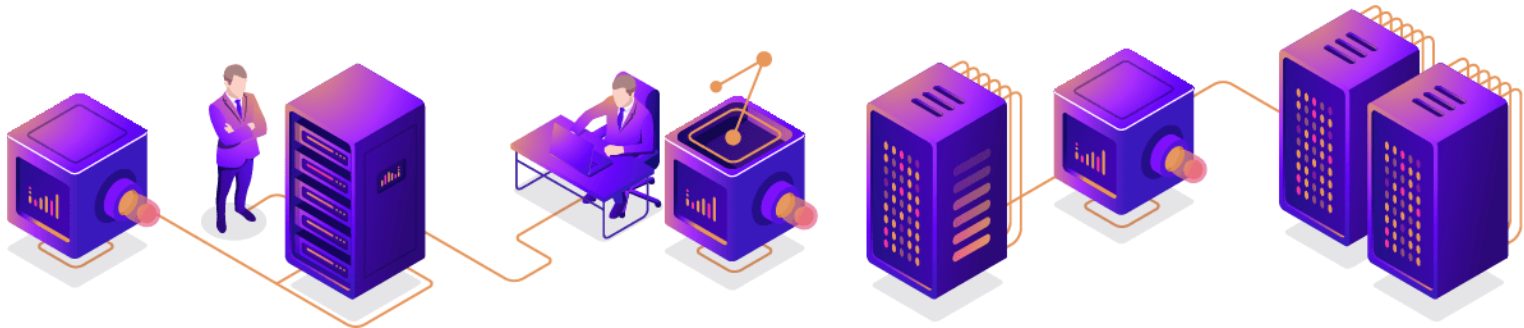
Top Use Cases Supported by Edge Compute

- 1 Real-time customer analytics for omni experience
- 2 Fraud detection & risk management
- 3 Energy management & smart grid optimization



Top Business Processes with AI/ML Incorporated

- 1 Security
- 2 Fraud/risk management
- 3 IT operations



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CIO's **Business and Technology Agenda** in 2023

Digital Infrastructure: Keystone for Business Transformation

Enterprises will Continue to **Prefer Private Cloud and Traditional DCs** over Public Cloud for Majority of Workloads

Organizations will Continue to Run **Mission-Critical Workloads** in Traditional DCs and Private Cloud

Strong Awareness and Rapidly Growing Adoption for **Consumption / As-a-Service** Flexible IT Infrastructure Models

Modern **Data Management** Cornerstone for Digital Transformation Success

Edge Innovation will be the Next Frontier in the Digital Transformation Journey

AI Applications will Become Mainstream in 2023

The **Markets**

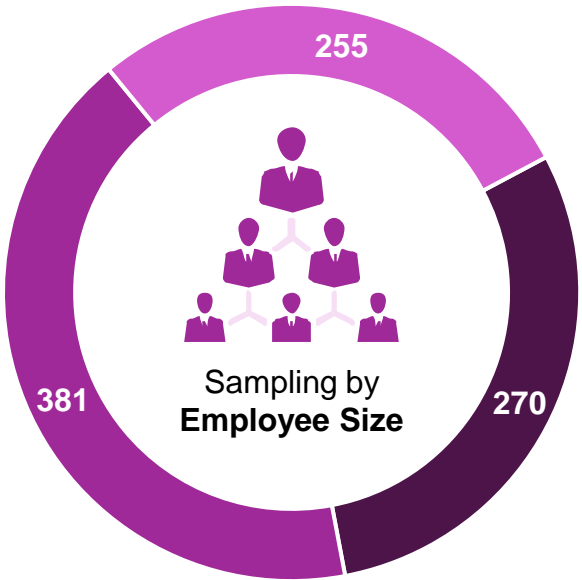
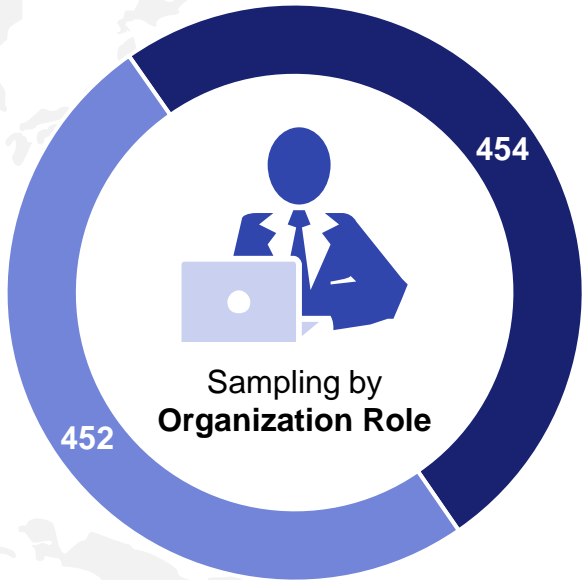
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Why Lenovo & AMD

CIO Technology Playbook 2023 Research Methodology

The playbook was developed based on **906** surveys, with the following sampling breakdown:

MARKETS COVERED	SAMPLE SIZE
Australia	81
Hong Kong	50
India	153
Indonesia	60
Japan	151
Malaysia	51
New Zealand	50
Philippines	50
Singapore	60
South Korea	100
Taiwan	50
Thailand	50



■ C-Suite
■ C-1

■ 500 to 999 employees
■ 1000 to 4999 employees
■ 5000 or more employees

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CIO Strategic Imperatives

CIO's **Business and Technology Agenda** in 2023

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Our Partnership

Lenovo

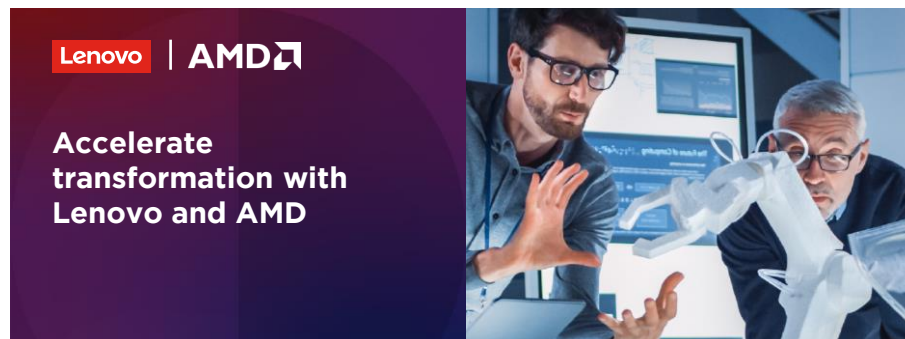
AMD

As the world is moving towards digital transformation, Lenovo and AMD are working together creating new innovations to solve customers' problems and new opportunities that can help accelerate & transform the way we all live, learn, and work.

Focused on a bold vision to deliver smart technology for all, Lenovo and AMD are developing world-changing technologies that create a more inclusive, trustworthy and sustainable digital society. Our partnership focuses on delivering open, reliable, and secure infrastructure solutions comprising of industry-leading solutions such as Hybrid Cloud, HPC & AI, Data Management, As-a-service and more.

This trusted partnership offers:

- End-to-end solutions and services at any scale
- Reliable technology to deliver real insights
- A trusted partner every step of the way



Our Portfolio

As businesses are accelerating towards DX, data creation is expected to double up by 2025 and this new era of IT reflects the demand for computing everywhere. Customers will need a new IT architecture that spans client-edge-network-cloud-intelligence to help them harness data and create insights that can transform their businesses. To help meet this demand, Lenovo Infrastructure Solutions has recently launched V3 portfolio that encompasses the next generation of ThinkSystem, ThinkAgile, and ThinkEdge servers and storage systems, recognized as the industry's most reliable and secure systems supported by next-generation AMD EPYC™ processors, which will help our customers to execute high-performance computing, AI and mission-critical business workloads across hybrid multi-cloud compute environments.

Lenovo's next-generation of ThinkAgile V3 hyperconverged infrastructure solutions powered by the brand-new 4th Gen AMD EPYC™ processors range are pre-integrated with an open ecosystem of partners, including Microsoft, Nutanix and VMware software capabilities, and available via TruScale Infrastructure as a Service for ultimate flexibility. Customers now can combine the convenience of a cloud-like experience with the security and control of traditional on-premises solutions.

LEARN MORE

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CIO's **Business and Technology Agenda** in 2023

Digital Infrastructure: Keystone for Business Transformation

Enterprises will Continue to **Prefer Private Cloud and Traditional DCs** over Public Cloud for Majority of Workloads

Organizations will Continue to Run **Mission-Critical Workloads** in Traditional DCs and Private Cloud

Strong Awareness and Rapidly Growing Adoption for **Consumption / As-a-Service** Flexible IT Infrastructure Models

Modern **Data Management** Cornerstone for Digital Transformation Success

Edge Innovation will be the Next Frontier in the Digital Transformation Journey

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Message from Sponsors (2/2)



Sustainability Goal



As a global technology leader, Lenovo is committed to lessen our impact on the environment and lower carbon footprints by aligning our practices to a sustainable and inclusive future. Our advancements in packaging, manufacturing, asset recovery services, and water-cooling technology is assisting in reaching Lenovo's goal of net-zero carbon consumption by 2050.

Advancements such as:

- Server bags are 30% recycled ocean-bound plastic
- Shipped nearly 400K servers in racks reducing cardboard by 1,750 tons saving the equivalent of 24K trees in the last 2 years.
- Neptune™ liquid cooling saves customers up to 40% on energy and can solve water usage issues for the data center.
- Carbon efficient servers and storage available today.

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Customers Case Study



IIT Jodhpur, a premier institute migrated to Lenovo ThinkSystem servers powered by AMD EPYC™ processors to transform & be future ready

[READ CASE STUDY](#)