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ANALYST BRIEF

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Network transformation, enhanced connectivity, and robust security in the form of SASE and SD-WAN solutions are primed to empower healthcare organizations in their quest for better patient-centric outcomes.

Accelerating Network Transformation for Digital-First Healthcare in Asia/Pacific

May 2022

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Introduction

The COVID-19 pandemic threw unprecedented challenges at the healthcare sector, forcing it to adopt a digital-first mentality amid strict safe distancing and work-from-home mandates. But even before the pandemic, the healthcare industry was on a multiyear digital transformation journey toward patient-centric care. IDC's research points to the rise of several trends as the catalyst for this continuing digital transformation of the Asia/Pacific healthcare sector in 2022 and beyond:

Shift toward a patient-centered approach

IDC predicts that by 2026, one in three hospitals in the Asia/Pacific will be 5G-enabled to accelerate innovation in medical imaging, remote care, internet of medical things, and immersive services.

Digitally empowered patients, and their families, continue to seek personalized healthcare and demand timely access to information as well as medical diagnosis and decision making. There will be greater use of emerging technologies to help better connect patients and their families, doctors, physicians, and other stakeholders involved in delivering quality patient care. This is accomplished by an efficient ecosystem that is enabled by cloud, mobile apps, artificial intelligence (AI), and machine learning (ML). High-speed 5G connectivity will play a key role, enabling healthcare organizations to leverage cloud to store and

AT A GLANCE

KEY STATS[1]

- Only 20% of healthcare organizations across Asia/Pacific feel their network is modern enough for a future enterprise
- 44% of healthcare organizations surveyed identify incorporating new technologies as one of the biggest IT/network challenges, while 35% of organizations list network transformation as another IT challenge
- 48% of healthcare organizations in Asia/Pacific plan to adopt SD-WAN by 2022

IDC OPINION

SD-WAN adoption across the healthcare sector is necessary for accelerated network transformation in a secure, reliable, efficient, and resilient manner.

[1] Source: IDC's Asia/Pacific Enterprise Communications Survey 2021

access patient data by both doctors and patients in a secure manner. AI and 5G, together, will help remove barriers to enable faster decision making and deliver effective care outcomes.

Telehealth and remote patient monitoring

IDC predicts that by 2024, 50% of healthcare organizations' attempts to scale value-based care models will fail unless they invest in data-driven governance, operations, and organizational infrastructure in Asia/Pacific.

Telehealth services is here to stay. Besides meeting consumers' demand for safe access to nonemergency healthcare services in a post-pandemic world, telehealth also helps extend care to remote areas, those with disabilities, and others who might otherwise be denied the care. Remote patient monitoring (RPM), through home measurement devices such as wearables, blood pressure monitors, glucose meters, and patient portals, enable doctors to better keep track of patient's conditions. These devices transmit data directly to cloud portals, enabling the physicians to remotely monitor a patient's health at regular intervals. The pandemic may have accelerated the take-up of telehealth and patient monitoring, but healthcare providers still need to continuously invest in these areas beyond the pandemic.

Hybrid healthcare workforce

IDC predicts that by 2026, 50% of healthcare organizations in Asia/Pacific will rely on hybrid workplaces and models to battle digital burnout, reframe workforce roles, and create seamless employee experiences.

As normalcy returns across the world, many changes will remain in place. Healthcare organizations and patients both stand to benefit from a hybrid mode of working. Physicians will have freedom to work on their schedule and strive for better work-life balance, while patients will benefit from reduced waiting time and access to better healthcare facilities. To successfully implement and manage the hybrid working model, organizations need to provide the right set of tools to employees and foster a culture of communication and collaboration among team members and departments.

Crucial to these efforts will be next-generation software-defined networks that provide the foundation on which data will flow securely and smoothly across the entire healthcare value chain. Without the network performance and security that form the base of their transformation efforts, healthcare providers will struggle to achieve their goals.

Investment priorities and challenges

Amid accelerated digital transformation of the industry, healthcare organizations need to continue to prioritize a digital-first approach and understand that digital transformation is an ongoing process.

According to IDC's Worldwide Digital Transformation Spending Guide, healthcare providers in Asia/Pacific are expected to increase their spending on cloud-related deployments from $4.7 billion in 2022 to $9.9 billion in 2025, registering a compound annual growth rate (CAGR) of 28.4%.

Organizations are also looking to prioritize investments in new technologies such as the Internet of things (IoT). Healthcare providers across Asia/Pacific are expected to increase their IoT spending from $14 billion in 2022 to $20.7 billion in 2025, according to IDC's spending guide.

Investments in new technologies and IT system migration to cloud, while offering flexibility and convenience, come with challenges. According to IDC's Asia/Pacific Enterprise Communications Survey 2021, 44% of healthcare

organizations identify incorporating new technologies as one of the biggest IT or network challenges while 35% of organizations list network transformation as another IT challenge.

Healthcare providers in IDC's Asia/Pacific Enterprise Communications Survey 2021 noted the following challenges:

Security

Healthcare data is highly sensitive and confidential in nature. The risk of malicious actors exploiting patient's privacy through unauthorized access and data leaks is one that is inescapable. About 41% of healthcare organizations identify security threats as one of the biggest IT and network challenges.

Budgetary constraints

Before the pandemic, the healthcare industry lagged other industries in digital transformation efforts. The prime reason was, and still is, cost. Implementing digital transformation requires significant investments in new tools, technologies, and solutions. However, in efforts such as the migration of IT functions to the cloud, the benefits are clear too – organizations can significantly cut expenses for managing their in-house IT infrastructure and networks. About 37% of healthcare organizations in Asia/Pacific face budget constraints and skill issues to address IT and network challenges.

Performance of cloud-based solutions

Despite its benefits, the cloud also faces its own set of challenges. Cloud systems have security provisions built in, but they are not fool proof or perfect. The performance of cloud-based solutions can also sometimes be a hindrance as it is highly dependent on a network's performance. Even a small latency in user experience can cause customers to head to a rival. Cloud systems also likely suffer downtime from time to time which can impact the functioning of the organization. About 31% of healthcare organizations list seamless connectivity between in-office and at-home workers as a key IT or network challenge.

About 37% of healthcare organizations in Asia/Pacific face budget constraints and skill issues to address IT and network challenges.

Lack of uniform standards and protocols in Integrating multiple IoT devices

IoT adoption in the healthcare industry has grown over the last few years, transforming remote healthcare. About 35% of healthcare organizations surveyed have adopted IoT and another 23% plan to do so in 2022. The lack of standards or data protocols for manufacturers of IoT devices is a concern as that means networks are vulnerable to cyberattacks. Besides, manufacturers mostly work in silos and have their own set of standards and defined procedures. When devices from multiple manufacturers are connected to a single IoT network, there may not be uniform communication among devices, which leads to scalability and data aggregation issues.

Similarly, IoT generates huge amounts of data, which can sometimes overwhelm the network. Latency caused by this can sometimes impact the analysis and decision making of doctors. For example, surgeons have started using augmented reality (AR) assisted surgery, which enables them to carry out operative procedures remotely through

amalgamation of robotic arms and sensors. Any latency in data transmission as instruction for robots can result in inaccuracy in carrying out the procedure and impact the surgical procedure outcome negatively.

Strategy: Building robust network infrastructure for tomorrow

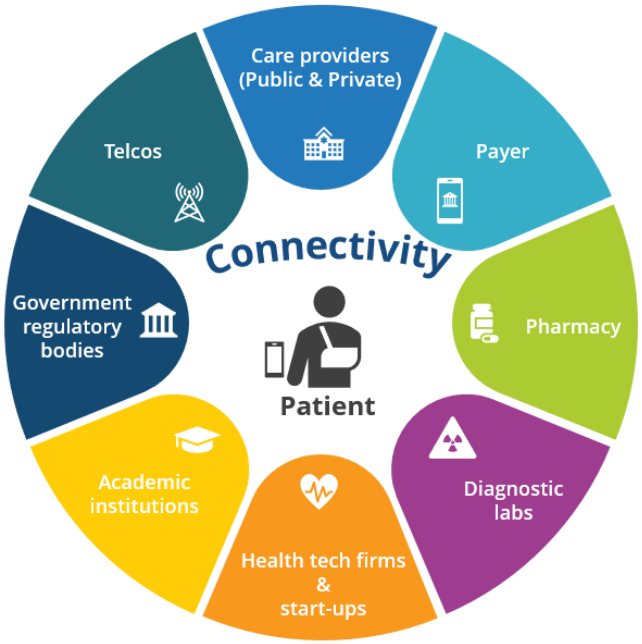
Connectivity is a requirement and concern as healthcare organizations in Asia/Pacific navigate transformative change in the shift from hospital-centric care to patent-centric care.

Only 20% of healthcare organizations surveyed feel their network is modern and equipped to handle the demands of future enterprise.

The move toward building distributed healthcare ecosystems that focus on a "care anywhere" approach will also push organizations to be increasingly data-driven, making the care system more accessible, affordable, and scalable.

Underpinning the future enterprise are connectivity capabilities and critical communications infrastructure to deliver innovative digital health services and solutions, as shown in Figure 1.

Figure 1: ***Illustration of a Connected Digital Healthcare Ecosystem***



Source: IDC, 2022

A multicloud software-defined wide area network (SD-WAN) that is highly available, supports high-speed connectivity, and is centrally controlled and easy to manage will change the game for healthcare providers. It can help increase patient satisfaction while improving the quality of experience for all the stakeholders involved. For building a robust network infrastructure, organizations need to focus on:

Security and compliance

Healthcare organizations need to ensure that software they are deploying is compliant with the Health Insurance Portability and Accountability Act of 1996 (HIPAA), General Data Protection and Regulation (GDPR), and any other

data privacy rules specific to the country or region. Security needs to be of paramount importance, just like the need to ensure resiliency of the infrastructure with regular updates and security patches. The deployment of a secure access service edge (SASE) framework with steps like multifactor authentication (MPA), data encryption, and firewalls will reduce the risk of cyberattacks and unauthorized access to data.

Scalability and flexibility

Multicloud SD-WAN offers scalability and flexibility that enables not just today's apps and users but tomorrow's as well. With the cloud, healthcare providers get the flexibility to scale up or down storage applications at will without the need to purchase any new IT hardware. A multicloud SD-WAN can enable the remote workforce, branch offices, patients, and other ecosystem stakeholders to access cloud-hosted applications, software-as-a-service (SaaS) solutions such as Office 365 and Salesforce CRM in a secure and reliable manner.

Network provisioning and redundancy

During the pandemic, many hospitals had to set up mobile clinics and vaccination centers in remote areas. All these require uninterrupted and seamless connectivity to the hospital network. With SD-WAN's zero-touch provisioning, healthcare providers can connect new locations securely and effectively. Besides, a multicloud SD-WAN also provisions for network redundancy, in case of heavy traffic loads or planned/unplanned downtime, so a healthcare organization does not need to always worry about the resiliency of its network.

With the cloud, healthcare providers get the flexibility to scale up or down the storage applications at will without the need to purchase any new IT hardware.

Cost benefits

Lower network/WAN costs are among the top 3 benefits, besides on-demand or flexible connectivity, and intelligent traffic routing, which is a key factor for adopting multicloud SD-WAN, according to IDC's research. SD-WAN offers lower connectivity costs, high reliability, and improved performance, leading to long-term savings and high return on investment (ROI).

Investments in digital transformation and a robust IT infrastructure with a focus on cloud migration are now a must-have for healthcare organizations. Moving to the cloud reduces IT hardware expense — essentially a capital expenditure — and converts it into an operating expense, as cloud is available at a subscription payment model. This helps organization free up cash and staff for investments in innovation and other strategic priorities. Besides, with the cloud, organizations also do not have to worry about technology going obsolete as timely updates can ensure the technology remains relevant.

Industry case studies

Healthcare organizations globally are making the leap to multicloud SD-WAN. In Asia/Pacific, IDC's research shows that 33% of healthcare organizations surveyed have already adopted SD-WAN, while 48% plan to do so in 2022. Multicloud networking revenue for Asia/Pacific is also forecasted to jump from $15.9 million in 2021 to $534.3 million in 2026, resulting in a 5-year compound annual growth rate (CAGR) of 102%. Below are examples of healthcare

organizations that have benefitted and reached milestones in network transformation with the help of multicloud SD-WAN:

SD-WAN deployment facilitates secure data sharing and collaboration

A healthcare organization in the United States, operating 25 medical imaging centers and providing teleradiology services to hundreds of physicians and medical centers, wanted a secure, flexible network to send and receive patient data. After implementing SD-WAN, client branches were able to share confidential patient data between them and with hundreds of medical centers across the country through an encrypted network. SD-WAN also provided the necessary bandwidth as patient data increased. This became a platform on which multiple health professionals could collaborate on behalf of a common patient.

Achieving scalability and efficiency with multi-cloud strategy

An international hospital chain, with over 45 hospitals, 10,000 beds, and 314 diagnostic centers, was facing scalability and cost issues after using a single cloud provider for its hospital information system. In a move to de-risk its cloud strategy, the hospital decided to adopt a multicloud approach. The decision paid dividends. The hospital chain not only managed to reduce its dependency on a single cloud provider, but also achieved scale and the benefits of a diversified cloud portfolio.

Moving forward in the new normal

Healthcare organizations are highly reliant on their network. Here, multicloud SD-WAN is uniquely positioned to provide future-proof infrastructure that is built to not only support new features and capabilities but also meet increasingly stringent regulatory, security and reliability requirements. IDC also expects enterprises undergoing network transformation to take the approach of integrated management of campus and branch technologies such as SD-WAN, WLAN, and LAN, or what IDC refers to as a software-defined branch (SD-branch). IDC recommends the following to organizations that are embarking on a multcloud SD-WAN journey:

- **Choose the right partner** – Look for a partner with technology capabilities and solutions that align with the organization's objectives. Work with the partner to assess resources and tap the provider's industry experience to identify gaps in existing networks. Some large-scale public cloud providers may offer limited support and resources while smaller third-party providers may offer better resources and industry expertise.
- **Choose the right telecom carrier** – Without proper network connectivity or reach, healthcare providers will be challenged to digitally transform. A carrier that can provide seamless connectivity, internally within a single site as well as externally across multiple sites including remote areas, is vital not only for better patient-centric care and outcomes but also reduced complexities. A telecom carrier that keeps current with evolving technology trends can be a big help in the transformation journey to achieve operational efficiencies and increase business resilience.
- **No compromise on security –** Assess the security controls and processes provided by the cloud provider and ensure that its security system aligns with compliance laws and the healthcare organizations' internal security protocols. Mitigating security risks with a multi-cloud approach is equally important as it reduces the risk of a devastating attack on the network by malicious actors.

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Why VMware SD-WAN with Telstra Managed Services

VMware SD-WAN, provided by Telstra, is a pioneer in branch networking with a solution that combines the economics and flexibility of multiple WAN transports with the deployment agility of a cloud-based service. VMware SD-WAN provides a Cloud-ready solution delivered over Telstra's global network as a comprehensive managed WAN service.

About Telstra

Telstra is a leading telecommunication and technology company with a proudly Australian heritage and a longstanding, growing international business. Today, we operate in over 20 countries outside of Australia, providing data and IP networks and network application services to thousands of business, government, carrier and OTT customers.

For more information: https://www.telstra.com.sg/en

About VMware

VMware SD-WAN simplifies branch WAN networking by automating deployment and improving performance over private, broadband Internet and LTE links for today's increasingly distributed enterprises, as well as service providers.

For more information: https://sase.vmware.com/

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