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Doan Dai Phong, Deputy CEO, Viettel

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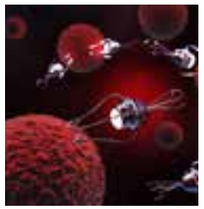

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Mr. Doan Dai Phong, Deputy CEO, Viettel

Viettel's Push Beyond Traditional Telecom Boundaries

Amid the rapid acceleration of digital transformation in the Asia-Pacific region, Viettel seeks to establish Vietnam as a regional digital hub through investments in subsea cable systems, infrastructure designed for artificial intelligence (AI) applications, and international connectivity ecosystems.

In an exclusive interview with Telecom Review Asia, Mr. Doan Dai Phong, Deputy CEO of Viettel, explained how the company's transformation into a broader technology and industrial group guides its investments in international digital infrastructure, addresses evolving enterprise connectivity requirements, and manages the balance between domestic priorities and regional ambitions within an increasingly AI-driven economy.

Viettel has publicly emphasized its ambition to evolve beyond traditional telecom services into a broader technology and industrial group. How is this strategic direction influencing investments in international digital infrastructure?

We believe that in the digital era, connectivity infrastructure and data infrastructure are no longer merely technical foundations for telecommunications; they have become strategic infrastructure for the digital economy.

In Vietnam, the demand for digital transformation is accelerating rapidly across government agencies, enterprises, and citizens alike. At the same time, the rise of AI—particularly Sovereign AI—alongside cloud computing, big data, and the development of international financial centers in Vietnam, will significantly increase the demand for international data transmission and connectivity in the years ahead.

From Viettel's perspective, if Vietnam aims to become a new digital hub in the region, it must first possess digital infrastructure that is scalable, resilient, and strategically independent. This is why Viettel's transformation from a traditional telecom operator into a broader technology and industrial group has had a direct impact on our international infrastructure investment strategy, especially in subsea cable systems.

This strategy can be summarized into three key directions.

First, accelerating and scaling up investment in international subsea cable systems.

We have established a long-term investment roadmap for international submarine fiber-optic cables with a 10–15-year strategic vision, including detailed implementation plans for each five-year phase. The objective is to meet growing business demand while enhancing network resilience and redundancy in international connectivity.

Second, making technological self-reliance a strategic priority in digital infrastructure development.

Viettel has consistently pursued mastery of core technologies. We have gradually achieved greater autonomy in 5G infrastructure deployment technologies and inaugurated Vietnam's first semiconductor manufacturing facility. Today, we are extending this self-reliance strategy into international digital infrastructure. For the 2025–2030 roadmap, Viettel has announced plans to develop at least one subsea cable system with a higher degree of technological and operational autonomy. In parallel, we are also studying investments in technical capabilities supporting cable deployment, operation, and maintenance, including specialized cable vessels. Our objective is to progressively strengthen end-to-end ownership and operational capability across the entire infrastructure value chain—from design and deployment to operation and maintenance.

Third, expanding international partnerships to build a global digital infrastructure ecosystem.

Alongside internal capabilities, Viettel views international collaboration as a critical pillar of future growth. We are actively seeking deeper cooperation with global technology companies, hyperscalers, and Big Tech partners in co-investing, operating, and developing international digital infrastructure.

By combining Viettel's infrastructure capabilities, market presence, and deployment experience with the technology ecosystems and global data demand of international partners, we believe this collaboration will accelerate Vietnam's digital transformation journey and strengthen the country's position on the regional digital connectivity map.

The Vietnam-Singapore Cable System (VTS) has emerged as an important new connectivity initiative. What strategic role does the project play within Viettel's wider international network expansion plans?

The Vietnam–Singapore Cable System (VTS) plays a highly strategic role in Viettel's broader international infrastructure expansion roadmap.

We view VTS not simply as another subsea cable project, but as a strategic digital infrastructure asset that will strengthen Vietnam's international connectivity capacity, enhance infrastructure autonomy, and prepare for the exponential growth in data demand in the years ahead.

Its strategic importance can be viewed from three key dimensions.

First, VTS will become a high-capacity, ultra-low-latency strategic route connecting Vietnam to the Singapore hub.

Singapore is currently one of the largest data and internet exchange hubs in the Asia-Pacific region. As such, connectivity to Singapore is critically important for countries accelerating their digital economies.

Once operational, VTS will become the highest-capacity subsea cable route connecting Vietnam southbound to the Singapore hub, playing a major role in traffic distribution and optimization of Viettel's international connectivity network. At the same time, it will also be the shortest route between Vietnam and Singapore, significantly reducing transmission latency.

This is especially critical as emerging technologies such as AI, cloud computing, real-time data applications, and international financial centers all require massive bandwidth combined with ultra-low latency. Beyond serving Vietnam's domestic demand, VTS also has the potential to become an important regional connectivity infrastructure supporting cross-border data traffic from neighboring countries.

Second, VTS represents an important milestone in Viettel's strategy to enhance autonomy in international infrastructure.

As mentioned earlier, Viettel has been prioritizing the development of greater self-reliance and ownership in critical digital infrastructure. With VTS, Viettel is participating for the first time as a founding member of the project, rather than solely as an operating consortium member as in previous systems.

Currently, in addition to Viettel, the project also involves participation from both international and domestic partners. This reflects Viettel's expanding role within the international digital infrastructure value chain, while also demonstrating its increasingly active involvement in shaping, designing, and developing regional connectivity systems.

Third, VTS will serve as a valuable experience platform for Viettel's future international infrastructure projects.

A subsea cable project is not only about infrastructure investment; it is also about building long-term capabilities in international project governance, technical coordination, network operations, and multinational collaboration.

Through the VTS project, Viettel will continue to strengthen its expertise in the design, deployment, and management of submarine cable systems. This will serve as a critical foundation for Viettel to take a more proactive role in implementing future international infrastructure projects, particularly in markets where Viettel Group already operates and is expanding its digital services ecosystem.

Viettel has expanded beyond traditional telecom services into broader digital infrastructure and enterprise solutions. How are enterprise requirements changing the way submarine cable systems are designed and operated?

The rapid growth of the enterprise segment is fundamentally changing the way submarine cable systems are designed and operated. In the past, international infrastructure was primarily built to support traditional connectivity needs. Today, however, large enterprises—especially hyperscalers, cloud providers, data centers, financial institutions, and AI-driven companies—are demanding a completely different level of performance, reliability, and scalability from international infrastructure.

For these customers, international connectivity is no longer simply a telecom service; it has become strategic infrastructure that directly impacts business continuity. This shift is driving operators like Viettel to move beyond the traditional telecom mindset toward building highly resilient digital infrastructure platforms.

One of the most critical requirements today is system redundancy and resilience. Enterprise customers expect services to operate continuously, 24/7, with extremely high levels of stability. As a result, international networks now need to be designed with multi-layer redundancy, multiple connectivity paths, and diversified cable routes.

Investing in additional submarine cable systems is therefore not only about increasing capacity, but also about creating multiple traffic routes to minimize service disruption risks whenever incidents occur on any individual cable system. In the future, network resilience and recoverability will become key competitive differentiators among international infrastructure providers.

At the same time, low latency is becoming a strategic requirement. In sectors such as AI, cloud computing, financial services, and real-time data processing, even a difference of a few milliseconds can have a significant operational impact.

That is why, when participating in the design and investment of submarine cable projects, Viettel works very closely with partners and contractors to optimize key technical factors such as cable routing, transmission technology, network architecture, and landing station locations in order to meet increasingly stringent latency requirements from enterprise customers.

Another important trend is the unprecedented growth in bandwidth demand driven by AI, cloud services, and big data. Modern submarine cable systems can no longer be designed solely for current demand; they must also provide long-term scalability and flexibility.

For this reason, Viettel is also focusing on building open infrastructure that supports multiple connectivity models and can adapt to future technology trends. Beyond capacity and performance, enterprise customers are increasingly prioritizing direct connectivity to major digital and financial hubs in the region, particularly Singapore. This trend is also directly influencing Viettel's future submarine cable investment strategy and route selection.

In parallel, cybersecurity and network security have become core requirements in the design of international infrastructure. As data increasingly becomes a strategic asset for both enterprises and nations, expectations around security, reliability, and cross-border data protection are becoming significantly higher.

Therefore, throughout the entire planning and development process of its international network infrastructure, Viettel consistently prioritizes safety, reliability, and long-term sustainability to ensure stable and secure services for enterprise customers.

Viettel continues to expand its international presence across multiple markets. How does the company balance domestic connectivity priorities with its broader regional ambitions?

From our perspective, strengthening domestic connectivity infrastructure and expanding international presence are not two separate priorities, but rather two highly complementary strategies. As domestic infrastructure capabilities continue to improve, they also create a stronger foundation for broader regional and international connectivity. At the same time, expanding international presence further enhances Vietnam's role within the region's digital connectivity landscape.

Vietnam holds a particularly strategic geographic position, located between two of Asia's major data and internet transit hubs: Singapore and Hong Kong. This creates favorable conditions for Vietnam to gradually emerge as a new digital hub in the Asia-Pacific region.

As global data demand continues to grow rapidly, we believe that early investment in international connectivity infrastructure will play a critical role in realizing that opportunity. In addition to geographic advantages, Viettel also benefits from the international ecosystem we have built over many years. Today, Viettel has investments and operations across 11 markets, including five markets in Southeast Asia. This creates continuously growing cross-border connectivity demand among the markets within our ecosystem.

Therefore, when developing international infrastructure, Viettel is not only serving domestic demand, but also building connectivity capabilities for the broader regional ecosystem while supporting the connectivity needs of international partners as well. We believe this creates a natural advantage that allows Viettel to gradually build a larger regional connectivity network with stronger operational efficiency and sustainable long-term scalability.

Beyond the region, Viettel continues to study and evaluate appropriate expansion opportunities. However, for international infrastructure, we always place strong emphasis on timing, investment efficiency, and alignment with global data traffic and digital transformation trends at each stage of development. TR

Mr. Hiroki Kuriyama, CEO, NTT DOCOMO GLOBAL

NTT DOCOMO GLOBAL's Blueprint for the AI-Driven Future

As the digital world moves toward an AI-driven future, the industry is shifting from merely increasing connectivity speeds to establishing trust. NTT DOCOMO GLOBAL is contributing to this transition by advancing a vision of a unified global infrastructure that integrates connectivity, trusted identities, artificial intelligence (AI), and digital services.

In this exclusive interview with Telecom Review Asia, Mr. Hiroki Kuriyama, CEO of NTT DOCOMO GLOBAL, outlined the company's strategy for establishing a trusted digital social infrastructure for the AI era, emphasized Asia's distinctive potential to lead forthcoming innovation, and examined how technologies such as AI autonomy, digital twins, and Universal Wallet Infrastructure (UWI) may influence the future of digital life and connectivity.

What are your key priorities for positioning NTT DOCOMO GLOBAL, Inc. on the global stage, particularly in the area of digital trust and governance across markets?

NTT DOCOMO GLOBAL's top priority is to position itself as a trusted digital infrastructure provider that enables digital trust and governance across global markets in the AI era.

The authentication of individuals and AI, open APIs and connectivity, as well as the supporting data platform for these functions and related digital services in daily life, industry, and government, are all crucial components. Analogous to the human body, NTT DOCOMO GLOBAL plays a role akin to that of the nervous system, blood vessels, and brain, facilitating seamless communication and coordination. Meanwhile, sectors such as food, energy, retail, manufacturing, and government retain responsibility for their respective operations. We, however, establish the essential foundation for secure authentication and informed decision-making across each of these areas.

Specifically, the foundation is a platform called Universal Wallet Infrastructure, which ensures authenticity and trust by authenticating individuals, organizations, related credentials, money and assets, physical items, as well as AI (agents). At its core, the most fundamental element is the authentication of individuals' identities. This extends to verifying their qualifications and skills, confirming their status as service providers, and authenticating payments associated with the use of those services.

In the era of AI, AI will not only support and augment humans, but also act as autonomous entities providing services and solutions. The authentication of AI is also crucial, and we will take on this responsibility.

How do you envision digital identity and decentralized trust reshaping digital service providers' roles over the next five years?

In this century, the widespread adoption of broadband internet, smartphones, social networking service, and cloud technologies has exponentially increased the global volume of information. This surge has brought new issues, such as power supply, batteries, and data storage infrastructure, that must now be addressed.

NTT DOCOMO GLOBAL wants to leverage smartphones—which people around the world carry in their hands 24/7 and which now have processing power on par with supercomputers—as trusted edge devices in the AI era. These devices have already been distributed globally by telecom carriers and smartphone manufacturers. People on every continent use them not only for communication but also for sharing information, accessing various life-related services, and running business applications. For individuals, multiple IDs are used depending on the service or application, and it is often difficult to verify the authenticity of service providers. On the provider side, confirming the authenticity of individuals seeking to use their services is a challenge. For example, CAPTCHA authentication is used to confirm that a user is human.

With the spread of digital information and AI, fake information and misinformation are rampant, making it essential for telecom operators and other digital service providers to verify the authenticity of their users. As society, industry, and government services become increasingly digitized—especially with the rise of AI—trust has become fundamental infrastructure common to all aspects. For example, the EU has been enacting legal frameworks to require social infrastructure providers to offer interoperable digital identity wallets. Within the next five years, digital identity and decentralized trust using smartphones will become the global standard. Service providers who do not implement these measures will either be abandoned by their users or suffer significant consequences from fake information.

We will first provide a trusted foundation for personal IDs, link verified credentials such as qualifications and skills, then build payment and asset functions on top of that, and deliver a trusted platform for AI as well.

Many Asian markets are leapfrogging directly into AI-driven connectivity and advanced mobile ecosystems. What advantages does Asia have over other regions in shaping the future of digital innovation, and where does it need to improve?

Asia has two major advantages: The first is its population size and growth rate; the second is its ability to leapfrog to the latest technologies without being constrained by legacy systems. Being involved in global business makes these benefits evident.

For Asia to continue shining in the future, it should not rely too heavily or optimistically on the demographic bonus. Instead, it should advance innovation through industrial digitalization and AI integration. At the same time, it is crucial for Asia to constantly pay attention to and address the risk of falling into the "middle-income trap"—that is, the slowdown and long-term stagnation of growth caused by declining international competitiveness due to rising wages or a slowdown in technological innovation.

Ten years ago, the focus was on digital transformation. Over the past decade, the strategic priorities have shifted to the full implementation of AI and formation of AI partnerships. Of course, the essential prerequisite for these advancements is the development of robust fixed and wireless broadband internet infrastructure.

What values does NTT DOCOMO GLOBAL offer to Asian societies in digital life and digital connectivity (as trusted digital social infrastructure)?

> For NTT DOCOMO GLOBAL, in addition to authenticating trusted entities on both the demand and supply sides, we want to deliver the power of digital and AI to Asian societies

For NTT DOCOMO GLOBAL, in addition to authenticating trusted entities on both the demand and supply sides, we want to deliver the power of digital and AI to Asian societies. By using the aforementioned UWI digital platform service as a hinge, we will provide connectivity solutions as the foundation and offer digital life services on top of it.

In terms of connectivity solutions, we are deploying new and open technologies, such as Open RAN. Our approach is not hardware-driven, but rather orchestrated by combining state-of-the-art, off-the-shelf components, resulting in software-driven solutions. Unlike established global giants who offer full-lineup solutions, our model allows talented and ambitious engineers and startups in Asian countries to actively participate in specific segments, further unlocking innovation potential.

In digital life services, firstly, we are expanding the points-based economic ecosystem, through which we have accumulated more than a decade of business know-how in Japan. This is a rewards program that grants points for acquiring new customers, as well as for repeat usage or cooperation in consumer surveys. At the same time, it serves as a complementary or alternative payment method for low- and middle-income individuals who are unbanked. In Japan, NTT DOCOMO points can be used as a substitute for cash at many retailers, restaurants, and service providers nationwide. Additionally, for example, we offer a system that allows retailers and others to directly promote and communicate with customers—with their consent—when customers accumulate (redeem) or use (deposit) points, rather than doing so indirectly through other platforms. By building this points-based ecosystem that connects consumers with sellers and service providers, we can offer a variety of marketing solutions. All of these are AI-driven CRM systems.

Relying too much on the demographic bonus tends to result in siloed optimization by business line and a supply-side logic. However, NTT DOCOMO GLOBAL aims to embody the "Sanpo Yoshi" principle—good for the seller, good for the buyer, and good for society—which was the management philosophy of Japanese merchants more than 200 years ago during the Edo period.

NTT DOCOMO Group recently demonstrated AI-driven network control for 6G. How important will AI autonomy and digital twins be in the transition from 5G-Advanced to 6G?
When harnessing the power of AI, our first focus is on improving network efficiency and automation—what we call "AI for Network." This approach applies equally to 4G, 5G, and even 6G. The underlying assumption is that networks are designed for human use.

Another concept is "Network for AI." In the AI era, AI will permeate all aspects of life, industry, and government, becoming the foundation for delivering services and solutions. Moreover, I anticipate scenarios where AI itself builds its own world—just as humans do—and autonomously provides services and forms communities. To support these AI-driven situations, networks must offer high-speed, large-capacity, real-time synchronized processing and serve as an API platform and a data distribution channel for a diverse range of services. Networks are still used by humans, and in such cases, they must make it easy for people to utilize AI. But additionally, I also envision networks that AI itself uses. This points toward a world of autonomous AI and digital twins, where networks support both human and AI interaction. TR

Mr. Gaurav Hirani, General Manager, Reliance Jio

How AI-Driven Infrastructure Is Redefining India's Digital Future

From AI-driven network automation and Industry 4.0 deployments to edge computing and connected mobility, the telecom sector is playing a central role in enabling the next phase of digital transformation across India and beyond. In an exclusive interview with Telecom Review Asia, Mr. Gaurav Hirani, General Manager at Reliance Jio, shared his perspectives on AI-native infrastructure, autonomous telecom operations, Industry 4.0 adoption, and the critical infrastructure priorities shaping India's ambition to become a global digital powerhouse.

As demand for AI, cloud, and digital infrastructure accelerates, what future-ready initiatives are being prioritized to capture the next wave of transformation opportunities?
The next wave of digital transformation is no longer a future concept; it is already unfolding. Organizations that continue treating AI and cloud as isolated technology initiatives may find it increasingly difficult to remain competitive. Globally, the industry is transitioning from traditional digital infrastructure toward intelligent infrastructure.

At the infrastructure layer, the focus today is on ensuring that compute, connectivity, cloud, and data platforms do not become operational bottlenecks. AI workloads are fundamentally reshaping infrastructure economics. Traditional environments were designed for transactional computing, whereas AI demands massively parallel processing, GPU acceleration, ultra-low latency networks, real-time data pipelines, and highly scalable storage architectures.

Within large-scale digital ecosystems such as Jio, the emphasis is increasingly on building platforms that are AI-native by design rather than AI-enabled as an afterthought. Three major priorities are driving this transformation.

The first is edge intelligence. AI inferencing is moving closer to endpoints—whether connected vehicles, surveillance systems, smart meters, or industrial sensors. Enterprises now expect real-time intelligence instead of post-event insights.

The second is platform convergence. Historically, cloud, IoT, analytics, video systems, and enterprise applications operated independently. The next generation of digital platforms aims to unify these environments into integrated intelligence layers capable of correlating millions of events simultaneously.

The third is responsible scale. As AI adoption accelerates, governance, cybersecurity, data privacy, FinOps, and sustainability become equally important. The challenge is no longer simply scaling technology, but scaling it intelligently, securely, and cost-effectively across millions of endpoints.

Industry estimates suggest that India's digital infrastructure investments could exceed USD 25 billion annually

in the coming years. Organizations that invest early in AI-ready platforms, cloud-native architectures, automation, and intelligent operations are likely to capture significant value from this transformation cycle.

How is Reliance Jio positioning itself within India's rapidly evolving AI ecosystem, and what impact is AI-driven network optimization having on telecom operations and customer experience?
Reliance Jio occupies a unique position within India's AI ecosystem because of the scale and diversity of the environment it operates in.

Managing over 524 million subscribers across a rapidly expanding 5G network—while simultaneously building digital platforms, cloud ecosystems, connected services, enterprise solutions, and edge infrastructure—effectively creates one of the world's largest real-time AI laboratories.

What makes this particularly powerful is the convergence of connectivity, data, cloud, and intelligence within a single ecosystem. From a telecom operations standpoint, AI is fundamentally transforming the operating model. Traditionally, telecom operations were reactive. Faults would occur, alarms would trigger, and teams would respond manually. Today, AI-driven operations are enabling predictive and autonomous network management.

For instance, AI-based anomaly detection systems within network operations centers are reducing mean-time-to-detect from hours to minutes. Predictive capacity management helps anticipate congestion before customers experience degradation, while intelligent traffic steering dynamically optimizes network utilization in real time based on demand patterns.

The industry is shifting from break-fix operations toward anticipatory operations, and the customer impact is significant:

- Improved network reliability
- Lower latency
- Better voice and video quality
- Faster issue resolution
- AI-driven personalization
- Proactive customer engagement
- Intelligent IVR deflection and automation

At hyperscale, even marginal efficiency gains can create substantial operational and customer experience improvements.

Another major trend is sovereign AI infrastructure. India is entering a phase where AI capability itself becomes strategic national infrastructure. Investments in data centers, 5G backhaul, cloud ecosystems, and AI compute capacity will play a defining role in shaping the country's digital competitiveness over the next decade.

The future telecom network will not simply be connected; it will become intelligent, predictive, autonomous, and deeply experience-centric.

Industry 4.0 adoption is accelerating across the manufacturing, logistics, energy, and infrastructure sectors. What trends are you currently seeing in India's Industry 4.0 transformation journey, and how are AI, automation, analytics, and connectivity converging to reshape enterprise operations?
India's Industry 4.0 journey is particularly distinctive because it is not following the traditional modernization path seen in many Western economies. In mature markets, Industry 4.0 initiatives have often focused on retrofitting decades-old industrial infrastructure. In India, many sectors across manufacturing, logistics, mobility, and energy are leapfrogging directly into connected and intelligent operations. Four major forces are driving this convergence.

The first is next-generation connectivity through private 5G and edge-enabled infrastructure. Low-latency, deterministic connectivity is enabling industrial use cases that legacy wireless systems could not reliably support.

Second is IoT at scale. Industrial environments are now generating unprecedented volumes of operational telemetry from machines, fleets, sensors, utilities, and supply chain systems.

Third, the true value lies not in collecting data, but in converting operational data into actionable intelligence. This includes predictive maintenance, energy optimization, fleet intelligence, machine vision-based quality inspection, demand forecasting, and autonomous workflows.

The fourth is cloud-native scalability. Enterprises can now deploy intelligent industrial platforms without requiring massive upfront infrastructure investments.

There is also growing convergence between IT and operational technology environments. Factories, warehouses, utilities, logistics hubs, and transportation systems are increasingly functioning as integrated digital ecosystems rather than isolated operational units.

Government initiatives such as Make in India, Production Linked Incentive (PLI) schemes, and the National Logistics Policy are creating strong structural momentum for Industry 4.0 adoption. Industry analysts estimate that India's Industry 4.0 market could exceed USD 90 billion by 2030, with connectivity-led intelligence emerging as one of the foundational pillars driving that growth.

What initiatives are shaping the future of connected ecosystems, automation, and AI-led digital transformation in India and beyond?
The most transformative initiatives today are not simply digitizing existing workflows; they are fundamentally redesigning how ecosystems operate.

The industry is moving from device connectivity toward ecosystem intelligence. Connecting a vehicle, surveillance camera, smart meter, or industrial machine to the cloud is no longer the primary differentiator. The real value lies in the intelligence layer above that connectivity—the ability to correlate signals across thousands or even millions of endpoints and transform them into real-time

operational decisions. This is where AI, automation, analytics, and edge computing increasingly converge.

Within Jio's video intelligence ecosystems, platforms are evolving from passive surveillance toward active intelligence. In environments managing tens of thousands of cameras, AI models can now perform object detection, behavioral analytics, anomaly recognition, and predictive alerting in near real time using GPU-accelerated architectures.

Similarly, within connected mobility ecosystems, platforms such as JAP—the JioAuto Platform—are enabling intelligent vehicle services and scalable connected mobility architectures. Initiatives like JioUrja are also supporting the integration of smart metering and energy analytics into unified operational ecosystems.

Enterprise automation is evolving rapidly as well. The first phase of automation largely focused on repetitive back-office tasks through robotic process automation (RPA). The next phase is cognitive automation, where AI systems actively participate in operational decision-making.

The rise of large language models is accelerating this transition significantly. Enterprises can now work with unstructured text, voice, image, and video data at scales that were previously difficult to achieve.

Areas attracting strong enterprise interest include:

- AI copilots for enterprise operations
- Digital twins
- Autonomous infrastructure management
- Smart cities and intelligent utilities
- Connected healthcare ecosystems
- AI-driven cybersecurity
- Real-time observability platforms
- Intelligent transportation and mobility ecosystems

Many of the architectures being developed in India are inherently scalable for other high-growth regions across Southeast Asia, the Middle East, and Africa. Platforms designed for India's scale, diversity, and cost sensitivity are uniquely positioned to become globally exportable digital models.

India aspires to become a global digital powerhouse. What critical infrastructure gaps still need to be addressed to fully support that ambition at scale?
India's digital ambition is absolutely real, and the country is exceptionally well positioned to become one of the world's most significant digital economies over the next decade. However, several foundational infrastructure gaps still require accelerated attention.

The first is AI compute infrastructure. India currently possesses only a fraction of the GPU and high-performance compute capacity available in markets such as the United States or China. As enterprises move from AI experimentation toward production-scale deployment, compute availability will become a strategic differentiator. The IndiaAI Mission and planned deployments of shared GPU infrastructure are important steps, but private-sector investment in hyperscale AI infrastructure will also need to accelerate substantially.

The second is fiber density and broadband quality. While India has made remarkable progress in mobile connectivity and 5G rollout, backhaul fiberization and last-mile broadband consistency—particularly across Tier 2, Tier 3, and rural regions—still require significant expansion. National-scale digital transformation depends on ubiquitous, affordable, and reliable connectivity.

Third is regulatory clarity and data governance maturity. India's Digital Personal Data Protection (DPDP) framework represents an important milestone, but enterprises still require clearer operational guidance around data localization, cross-border data flows, large-scale consent management, and sector-specific governance frameworks. Infrastructure investments operate on multi-year cycles, making regulatory predictability essential for long-term digital planning.

The fourth area is semiconductor and hardware ecosystem resilience. India must continue strengthening domestic capabilities in semiconductor design, electronics manufacturing, AI hardware ecosystems, and supply chain resilience to reduce long-term strategic dependency.

Finally, talent development remains one of the most critical priorities. India possesses tremendous software engineering depth, but the next phase requires professionals capable of combining AI expertise with domain understanding across manufacturing, healthcare, telecom, energy, mobility, and infrastructure systems. Addressing this challenge will require sustained academic-industry collaboration, applied engineering programs, and real-world AI operational experience at scale.

If India addresses these foundational priorities with the same execution intensity that drove digital payments, mobile connectivity, and digital identity adoption, then the vision of becoming a global digital powerhouse becomes not just achievable, but inevitable. TR

> India's digital ambition is absolutely real, and the country is exceptionally well positioned to become one of the world's most significant digital economies over the next decade

Mr. Jia Rong Low, Director General,
Asia Pacific Network Information Centre (APNIC)

How APNIC Is Building a Resilient and Future-Ready Internet Across the Asia Pacific

As the Asia Pacific region undergoes rapid digital transformation, demand for resilient, scalable, and secure internet infrastructure is rising. The growth of AI-driven technologies and increased IoT adoption are driving new connectivity needs, while challenges in internet sustainability and coordination persist.

In this exclusive interview with Telecom Review Asia, Mr. Jia Rong Low, Director General of the Asia Pacific Network Information Centre (APNIC), addresses key connectivity challenges, the significance of IPv6 and routing security, and APNIC's collaboration with governments, operators, and stakeholders to strengthen the region's internet future.

APNIC plays a key role in supporting internet development across the Asia Pacific. From your perspective, what are the most pressing connectivity challenges in the region today?
The Asia Pacific region is the world's largest and fastest growing internet market, home to more than half of all global internet users. User numbers, traffic volumes, and reliance on internet dependent technologies, most notably, AI, have expanded at an unprecedented pace.

Yet growth alone does not ensure resilience. A shared challenge across the region is making that growth sustainable in an increasingly AI driven environment. Networks must be scalable, secure, and built on technologies that will remain reliable over the long term. Across the region's 56 economies, deployment of core internet technologies—particularly IPv6 and routing security—remains highly uneven. Challenges to their deployment are wide-ranging, from lack of awareness, skills, or capacity to differing business interests and environments.

There is also the broader challenge of shared understanding. The internet's resilience depends on coordination among networks, across borders, and between diverse stakeholders. When that shared understanding erodes—through fragmentation or policy misalignment—the internet as a whole becomes weaker.

How is APNIC helping economies at different stages of digital maturity strengthen their internet infrastructure and resilience?
APNIC's fundamental role is that we allocate and manage internet number resources, which may lead people to associate APNIC only with IP addresses, AS numbers, and Whois, but our role is broader than that.

> A significant part of our work focuses on capacity-building and intelligence-sharing. Operators must be able to make informed decisions about their own networks

Organizations that are allocated internet number resources from APNIC are Members of APNIC. They are typically ISPs, but include anyone who runs a network, i.e. network operators such as large enterprises and corporations, academic and research institutions, hosting providers and data centers, as well as government departments. The growth of these organizations in an economy contributes to the growth of the internet infrastructure overall.

A significant part of our work focuses on capacity-building and intelligence-sharing. Operators must be able to make informed decisions about their own networks; APNIC powers this via training, tools, data, best practices, and measurement. Support looks very different depending on context. For some economies, it may be advanced routing security, while, for others, it is basic network operations or IPv6 planning.

Resilience is not only technical. APNIC's governance model is one where our Members and multistakeholder community decide on community policies that govern the fair distribution, registration, and management of internet number resources. Through open policy development processes and multistakeholder engagement, we encourage participation across the community, so decisions about internet resources are made transparently and collectively. That participation is what helps build a stronger internet at a global scale.

With the rapid rise of technologies like AI and IoT, how is APNIC preparing networks in the region to handle increasing demand and complexity?
Technologies like AI and IoT do not change the fundamentals of how the internet works; we define internet technology as using the same set of unique identifiers, i.e. addresses and domain names, and the same protocols, but they do amplify existing pressures, particularly around scale, reliability, and trust. As more services embed AI capabilities, demand patterns become less predictable and the consequences of network failure become more significant.

From APNIC's perspective, preparation starts with ensuring that networks are built on solid foundations. IPv6 is an obvious example. Without abundant addressing and modern network design, scaling AI driven services efficiently becomes increasingly difficult.

We also focus on measurement and insight. Through platforms like APNIC Labs, we share data on internet capability, adoption, and performance so operators and policymakers can better understand how real networks are evolving. This is particularly important in the context of AI, where assumptions about infrastructure readiness do not always match reality.

Complexity does not have to mean fragility. When networks adopt common standards and best practices, complexity can be managed. Our role is to help make those practices accessible through training, shared knowledge, and collaboration within the community.

Can you share how APNIC works with governments, operators, and other stakeholders to drive progress?
The internet was not built by a single group, and it does not evolve that way either.

APNIC works closely with network operators, governments, the technical community, and civil society. Each brings a different perspective, and that diversity is critical. Operators understand operational realities, governments bring public policy considerations, and the technical community focuses on standards and interoperability.

APNIC is a "platform", where we provide spaces for these groups to engage, learn from one another, and shape outcomes, whether through policy development, training programs, or regional forums. Coordination such as this is even more important as discussions around AI and other technologies accelerate, since many policy conversations focus on applications and outcomes without considering the internet infrastructure that makes them possible.

Crucially, APNIC does not replace national decision making or commercial activity. Instead, we help ensure that all stakeholders are working from a shared technical baseline, shaped through community participation.

As digital transformation accelerates, how do you see the role of organizations like APNIC evolving over the next five years?
APNIC's technical coordination role in support of an open, global, stable, and secure internet will always remain.

What will change is the level of expectation. As the internet becomes even more central to economic and social life, the tolerance for failure becomes much lower. There is continuous risk that attention and investment will shift towards hot topics of the day, such as AI right now, while foundational internet infrastructure is taken for granted.

At APNIC, we are continually striving to be a world-class institution, and we are also expected to be more collaborative across institutional boundaries. Issues such as routing security, addressing sustainability, and internet resilience do not sit neatly within one organization's mandate. Coordination with sister organizations such as other Regional Internet Registries, ICANN, and with our broader communities will be increasingly important.

Ultimately, the success of organizations like APNIC is measured not by visibility, but by continuity. If the internet continues to work quietly, reliably, and globally, then we are doing our job. TR

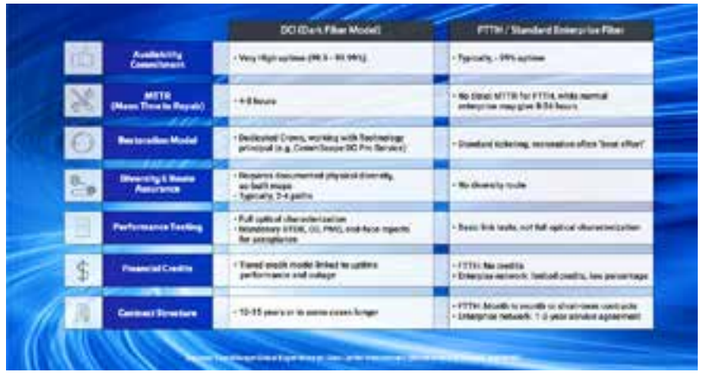
> APNIC works closely with network operators, governments, the technical community, and civil society. Each brings a different perspective, and that diversity is critical

Why the Data Centre Interconnect (DCI) Network Must Be Planned Carefully and Thoughtfully from the Start

By Steven Dick, Director, Technology Strategy & Solutions Broadband, APAC, CommScope

Global demand for data centre capacity is projected to grow at around 19-22% annually through 2030, driven largely by AI and cloud workloads, according to McKinsey analysis. At the same time, traffic patterns are evolving as architectures become more distributed. At the center of this shift is data centre interconnect (DCI)—network infrastructure that connects data centres and enables data, applications, and workloads to move between them quickly and reliably.

Why DCI Planning Should Start Early



DCI networks are typically engineered to higher availability and restoration targets than enterprise fibre deployments, which makes early planning essential. While enterprise connectivity is often delivered under shorter contracts with lower availability targets and longer repair windows, DCI environments commonly support 99.9% to 99.9999%* availability, four-to-eight-hour restoration objectives, and agreements extending 10 to 15 years.

Based on CommScope's global experience across DCI deployments in North America, Europe, and APAC, these long operational lifecycles mean infrastructure decisions made at the planning stage can affect network resilience and scalability for a decade or more.

Two major trends are driving the need for more robust data centre interconnect networks: AI and cloud workloads, which are being driven by extreme east-west traffic between GPU clusters and storage systems across multiple facilities. Fibre counts that appear generous today—432F or 864F—may be constrained within five years as dense wavelength division multiplexing (DWDM) spectral efficiency demands more physical fibre pairs.

Data centre operators are building facilities across regions and availability zones with consideration to suitable access to power, water and also improved resilience and service continuity. This further increases the volume of traffic flowing between sites. Consequently, metro rings require upgrades to support higher-volume DCI traffic, long-haul terrestrial DWDM deployments are expanding to meet inter-regional data movement, and campus interconnect environments are pushing toward ever-higher fibre densities.

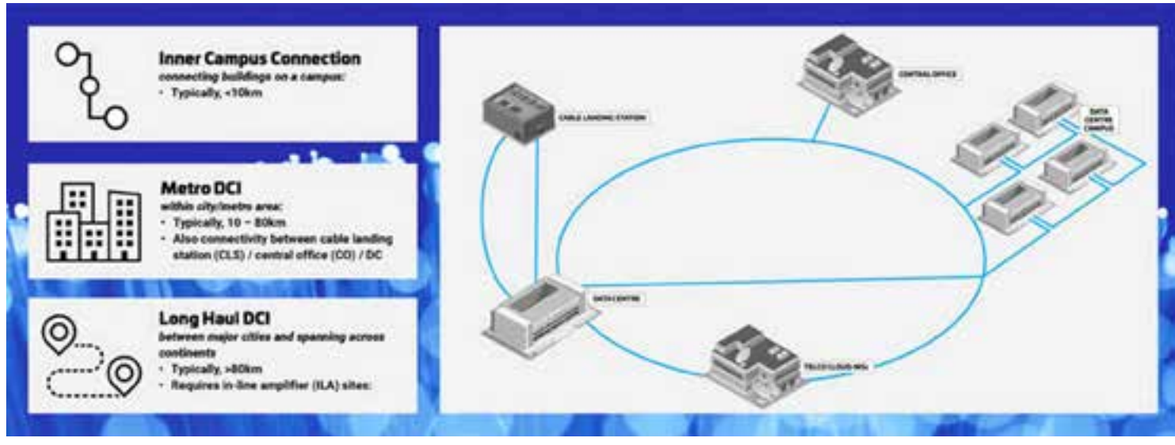
Planning DCI early enables organizations to design networks that can scale effectively as demand grows. It also supports more efficient operations through better route diversity, clearer architecture, and reduced risk of capacity bottlenecks.

Key Infrastructure Components in a DCI Network

Every layer introduces a planning decision that compounds over a 10–15-year network lifetime. DCI networks are built on fibre infrastructure that connects data centres across multiple layers, each introducing new engineering requirements. Campus DCI (under 10 km) prioritizes extreme fibre density—higher than 432F cables—and high-density inside plant (ISP) connectivity; metro DCI (10–80 km) links data centres, cable landing stations, and central offices across city environments; and long-haul DCI (over 80 km) introduces in-line amplifier (ILA) sites, G.654.E ultra-low-loss fibre, and planning considerations spanning right-of-way diversity and repeater hut real estate. Getting these choices wrong at design stage is expensive to fix in the field.

Real-world deployments across hyperscale and wholesale infrastructure environments reflect this shift in fibre architecture. Large metro-scale interconnect builds in Australia have deployed 864F slotted-core ribbon across major east-coast cities, while multi-country backbone operators in EMEA have standardized on 432F and 864F loose-tube designs across networks spanning thousands of kilometers. Similarly, submarine cable operators have implemented high-count G.654-series terrestrial cable landing station to data centre (CLS-to-DC) diverse links across multiple metropolitan landing environments, enabling subsea capacity to be delivered efficiently to inland data centre clusters.

Notably, splice closures are among the most critical elements in outside-plant fibre infrastructure because they protect live splice environments exposed to moisture, temperature variation, and repeated access during maintenance. The CommScope® closure portfolio includes IP68-rated sealing designs suitable for demanding underground, aerial, and



direct-buried deployments. In one high-density metro deployment, operators implemented large-format splice closures supporting both mass fusion and single-fibre splicing within the same tray architecture, enabling scalable expansion while maintaining flexibility for mixed deployment environments.

The inside plant layer—panels, optical distribution frames (ODFs), and Meet-Me-Room (MMR) connectivity—is where DCI fibre terminates and connects to active DWDM or routing equipment.

The MMR serves as a central interconnection point within a data centre. In typical DCI deployments, external fibre routes, whether from other data centres, metro networks, or cable landing stations terminate in the MMR before being connected to customer or network equipment. This

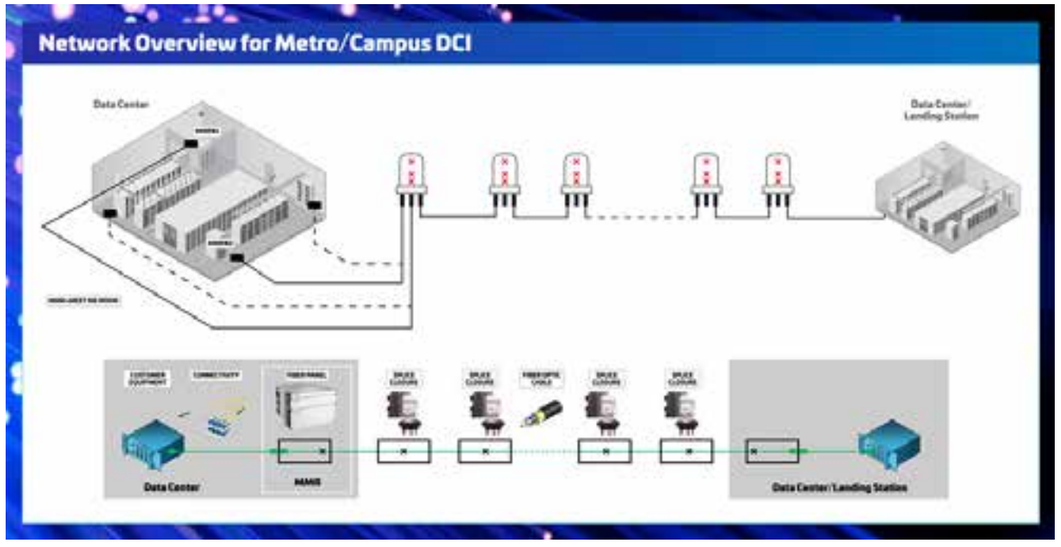
DCI architectures rely on patching within the MMR to enable these interconnections, while emerging hyperscale designs are beginning to reduce or eliminate manual patching to reduce optical loss, improve operational efficiency and simplify network architecture.

As interconnection is concentrated within this physical layer, its design plays a key role in supporting scalable, efficient, and resilient network operations. For example, in one South Asian metro DCI deployment, operators paired CommScope 432-fibre rollable ribbon cable with modular splice closures and compact high-density ODF panels in the Meet-Me-Room environment, illustrating how outside-plant fibre architecture and inside-plant panel density is best engineered together as a unified system.

for wholesale fibre providers, which increasingly offer capacity-based models to hyperscalers and data centre operators.

According to Southeast Asia Data Centre Market Landscape 2025-2030 (Research and Markets, 2025), Southeast Asia's data centre market is projected to grow to approximately USD 30.4 billion by 2030, highlighting the importance of planning network capacity for future demand. Networks deployed today must be able to scale to support increasing traffic volumes driven by AI and cloud workloads.

Achieving this requires selecting the appropriate fibre types, sizing capacity correctly, and ensuring closures support future re-splicing without outages. At the same time, route diversity is essential for resilience and scalability, enabling on-demand capacity, higher SLA tiers, and the elimination of single points of failure



enables structured interconnection between multiple networks within the facility.

The MMR houses fibre panels, patching infrastructure, and cross-connect systems that allow operators to establish and manage circuit connectivity. Traditional

Designing for Scalability and Future Growth

As demand continues to grow, DCI networks must be designed with long-term scalability in mind. One approach is the deployment of dark fibre, where additional capacity is installed upfront and activated as needed. This is particularly relevant

through careful planning and cross-vendor coordination.

From the initial design review through delivery and ongoing support, CommScope's 3-Stage DCI Delivery Process enables every layer of the network to be built to specification before handoff. For

operators committing to 10-to-15-year agreements, that level of support is foundational to long-term success.

DCI Across the Broader Connectivity Ecosystem

Every DCI route sits within a larger connectivity chain linking campus deployments to metro rings, metro rings to submarine cable landing stations, and data centre/cable landing stations to long-haul terrestrial networks. Active DWDM systems operate on top of the passive fibre layer, and their performance ceiling is constrained by the physical quality of fibre, closures, and connections beneath them.

Where DCI routes include submarine connectivity, the terrestrial CLS-to-DC last-mile fibre provides critical infrastructure within the network particularly considering that modern submarine cable systems can support transmission capacities exceeding 200 Tbps (TeleGeography, 2024). These routes share the same important characteristics as DC-to-DC such as high availability, route diversity, short time to repair and enhanced performance testing. This is why physical infrastructure decisions at the planning stage have direct commercial consequences.

For telecommunications operators and backbone providers, DCI acts as the bridge between local infrastructure and global networks, enabling cross-border data movement. CommScope's delivery capability spans NAR, EMEA, APAC, and CALA regions, supported by deployments across hyperscale, wholesale dark fibre, colocation, and telecommunications operator environments worldwide.

Preparing for the Next Generation of Data Centre Networks

The data centre interconnect market is shifting beyond traditional telco models, driven by AI- and cloud-fueled traffic and long-term infrastructure investments from dark fibre wholesalers, hyperscalers, and data centre operators across government, private, and colocation sectors. As these players build for 10–15 year horizons, success increasingly depends on partners with deep, end-to-end expertise.

For commitments of this scale and duration, the right DCI partner should be selected carefully. CommScope brings 15+ years of mission-critical data centre infrastructure delivery, with 50,000+ racks installed, and 5 million+ km of certified fibre, to every DCI engagement with customers spanning all global hyperscalers as well as leading global telcom and colocation providers.

Organizations that integrate DCI planning into their infrastructure strategy from the earliest stages will be better positioned to support the future digital demands of large-scale AI training environments and globally distributed cloud platforms. TR

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Ethernexion's High-Performance, Full-Stack Network Foundation for the AI Era

The Asia-Pacific region is rapidly emerging as a global leader in digital transformation, driven by investments in hyperscale data centers, smart cities, and AI infrastructure, with high-capacity, low-latency network infrastructure serving as the foundational layer. According to Ethernexion, a global innovation-driven technology enterprise specializing in high-performance networking and communication solutions, three major trends are shaping the region's networking landscape: AIOps and autonomous networks, distributed edge intelligence integrating compute, storage, and networking; and 400G/800G lossless fabric adoption.

The rapid expansion of AI applications demands high-bandwidth fabrics, low-latency communication, and scalable architectures across enterprise and service provider networks. Addressing this demand, Ethernexion's product matrix spans 1G to 800G switching platforms, supporting deployment scenarios from access networks to data center cores with high-density configurations. This full-stack network foundation is bridging the gap between cutting-edge hardware and unified software ecosystems, empowering organizations to build scalable, resilient, and future-proof digital infrastructures.

Architecting the "Neural Hub" of the AI Era

The traditional networking paradigm—built around best-effort delivery and static configurations—is misaligned with AI-driven workloads requiring deterministic performance, ultra-low latency, and dynamic adaptability. Ethernexion is redefining the network as an active participant in compute workflows, positioning its architecture as a "Neural Hub for the AI Era."

This approach rests on three foundational pillars:

1. **Hyper-Scale Computing Fabric:** By integrating technologies such as RoCE v2, PFC, and ECN, Ethernexion enables lossless ethernet environments capable of supporting GPU clusters. Its 100G to 800G switching platforms achieve microsecond-level latency, allowing data synchronization between GPUs at near memory speed.

2. **AI-Native Autonomy:** Through its unified cloud-managed platform, the network uses an "interference fingerprint" model to dynamically analyze signal conditions and automatically adjust parameters such as channel allocation and transmission power, enabling self-healing networks.

3. **Computing-Network Integration:** The infrastructure is application-aware, intelligently routing high-priority workloads—such as AI training or real-time collaboration—to computing nodes with optimal availability, reducing congestion and maximizing efficiency.

This shift signals a broader industry transition: networks are no longer pipelines but becoming intelligent orchestration layers for compute resources.

Rethinking Performance and Cost in the AI Infrastructure Era

As enterprises scale AI deployments, balancing performance and total cost of ownership (TCO) is increasingly critical. Ethernexion's strategy centers on software-hardware synergy and supply chain optimization.

With East-West traffic surge driven by AI inference and NVMe-over-Fabrics storage, Layer 3 capabilities are moving closer to the network edge and high-density L3 switching will extend beyond the core into the aggregation and access layers.

In light of this, Ethernexion's single unified operating system (ENOS), spanning 1G to 800G platforms, reduces operational complexity. This modular, hardware-decoupled architecture lowers training requirements and significantly cuts maintenance overhead.

In addition, Ethernexion leverages its in-house chip platform, Zegma, to reduce reliance on traditional off-the-shelf networking silicon and enable deeper system-level optimization. Zegma integrates high-performance ethernet transceivers and MAC SoC architectures designed for low power consumption, high integration, and deterministic forwarding across gigabit to 400G-class networks. This silicon-level control facilitates tighter hardware-software co-design, improving performance efficiency while significantly lowering BOM cost. This power optimization reduces energy consumption by over 30%, and the integrated approach enables programmable data planes, intelligent caching, and multi-level traffic scheduling for high-concurrency processing with deterministic performance.

Beyond this, the integration of Wi-Fi 7 with the BLE and Zigbee modules enables unified infrastructure, supporting both high-speed wireless connectivity and large-scale IoT deployments.

The Strategic Importance of Network Simplification

As networks become more complex, simplification is emerging as a critical enabler of scalability in AI and multi-cloud environments, especially given that complex topologies introduce latency variability and jitter. Simplified architectures ensure predictable performance, preventing GPU clusters from idling due to inconsistent data delivery.

Zero-touch provisioning (ZTP) is increasingly important as edge deployments expand into remote and distributed locations. Ethernexion's cloud platform enables automated deployment and centralized policy management, significantly reducing operational expenditure and eliminating manual configuration bottlenecks. By enabling the entire network to be managed as a unified system, organizations gain end-to-end visibility and control, transforming fragmented infrastructures into cohesive, intelligent environments.

For service providers, simplified architectures enable a transition from traditional bandwidth provisioning to delivering integrated compute-network services through technologies such as SRv6. Interestingly, in the AI era, Ethernexion has found that the most sophisticated networks are often the simplest to operate.

A Unified Software and Cloud Management Layer

Beyond hardware, Ethernexion's platform is anchored by its unified operating system, providing full Layer 3 functionality and broad protocol stack support. Technologies such as MPLS, BGP, and OSPF, alongside VXLAN and EVPN, enable construction of scalable and programmable network fabrics. Cloud-based management capabilities provide centralized monitoring, device configuration, and policy management across distributed environments, reflecting a broader industry movement toward intelligent operations and simplified network management.

In line with this, Ethernexion has opted for multiple network layers: core and data center switching with 800G, 400G, and 200G interfaces; aggregation and distribution layers with 25G, 100G, and routing protocols such as MPLS; access switching, including multi-rate 1G to 10G configurations with PoE capabilities; and wireless access featuring Wi-Fi 6 and Wi-Fi 7 access points.

This full-stack coverage enables consistent architecture across different environments, from hyperscale data centers to campus and SMB deployments. Taking the region's market dynamics into account, the inclusion of wireless access points alongside switching platforms reflects the growing convergence between wired and wireless networking in the Asia Pacific.

The Future of Intelligent Networking in the Asia Pacific

As network infrastructure continues to evolve in response to AI, cloud, and edge computing demands, the importance of integrated, high-performance solutions is becoming more pronounced. Hence, Ethernexion's products are engineered for 99.999% availability, ensuring mission-critical services stay online under the most rigorous conditions.

Notably, in the Asia Pacific, Ethernexion's commitment to regional growth is reflected in its "Made in India" initiative, which actively expands its manufacturing and partnership footprint to better serve the local market with agility.

Guided by its philosophy, "Open Collaboration, Innovation-Driven," Ethernexion is reducing total cost of ownership while maximizing operational efficiency for government, education, and large-scale enterprise campus environments, demonstrating that, in the AI era, network performance and economics can advance together. TR

Owning the Autonomous Era: How AI Is Rewiring Networks and OSS/BSS

The telecommunications industry stands at a critical juncture. Networks have become too complex, too dynamic, and too essential for manual management. In line with this, Telecom Review Group, in partnership with TM Forum, hosted a webinar titled 'Autonomy Everywhere: How AI Is Rewiring Networks and OSS/BSS,' bringing together industry leaders to explore how AI, automation, and data are reshaping the full value chain—from networks to OSS/BSS transformation.

Moderated by Issam Eid, Chief Marketing Officer at Telecom Review Group, the panel featured George Glass, CTO at TM Forum; Seda Dolen, Vice President and Head of OSS/BSS at Ericsson Europe, Middle East, and Africa (EMEA); Alexis Koalla, Director of Operations Strategy and AN Transformation at Orange; and Li Sha, Senior Expert & AI Engineer, China Mobile.

How Operators Are Using AI to Change the Way We Work

The shift from treating autonomous networks as a theoretical future state to embracing them as immediate operational priorities represents a pivotal moment for the industry.

Glass explained that the "change came about two years ago" and they noticed that TM Forum members "were starting to make public statements about how they were going to achieve AN Level 4." What transformed autonomous networks from ambition into actionable strategy was tangible evidence of success. Glass noted that through the TM Forum Catalyst program, members had "collaborated and built out working demonstrations of some of those capabilities," giving operators confidence that viable solutions actually existed. When early implementations showed phenomenal results, the industry's perspective shifted fundamentally.

On the vendor and partnership side, Dolen noted that boundaries among vendors, hyperscalers, AI providers, and operators are becoming less relevant, emphasizing outcome accountability over component building. She stressed the relevance of boundaries in data governance and ownership and affirmed that success depends on the seamless integration of closed-loop and data-driven autonomous systems.

When asked about the internal changes made to implement autonomous operations, Koalla explained how Orange is fundamentally rethinking its operations, particularly in OSS, to enable the foundation for autonomous networks. This includes technical consistency across affiliates and redefining business metrics for real impact. "We need to have consistency and convergence to leverage replicability and mutualization," he said.

Complementing this, Sha underscored how China Mobile is redefining productivity measurement with its AI+NETWORK strategy through a framework supported by three key business indicators: Key Business Indicators, Key Experience Indicators, and Key Capability Indicators.

From Fault Management to Predictive Closed-Loop Assurance

As networks grow more complex, traditional fault management is no longer sufficient. Glass outlined the most critical architectural changes for operators while transitioning to predictive closed-loop assurance. These include embedding AI and adopting technical architecture for autonomous networks, such as intent-based operations, self-healing domains, and intelligent orchestration. "The network is becoming software. So, you have to apply software engineering principles to manage it effectively, including decoupling within the architecture to isolate and automate domains," Glass said. This architectural foundation enables standardized management across diverse network elements. Glass outlined the outcome:

"I can actually manage the network services, the network resources, and the network domains in a standard way, from a management and operational perspective, through industry-agreed open interfaces, whether they are REST-based, event-based, or agentic interfaces." This vendor-agnostic approach represents "a fundamental switch in how we manage networks from a service provider's perspective.

Data quality emerged as perhaps the most fundamental challenge in scaling AI-driven automation. Dolen underscored:

In telecommunications, we all know that we do not have the problem of the lack of data; it is more the fragmented or inconsistent data across the domains.

To address data disintegration and inconsistency, she outlined that there must be standardization through a common data layer, data must be treated as a product with clear ownership, and an architectural shift must occur whereby AI is designed as part of closed-loop systems.

Koalla stated that the company is prioritizing the top three to five high-value scenarios to drive financial impact, consolidation, distribution, and visualization across all affiliates.

China Mobile is advancing its autonomous network operations at scale through its JIUTIAN-powered closed-loop assurance, serving 110 million Guangdong users. Sha emphasized that the implementation of a full-process, automated closed loop reduced mean time to repair (MTTR) by 25% and saved years of labor per province. Importantly, Sha emphasized that the optimal approach is not full automation but rather collaboration:

The better model is human-AI symbiosis. We have found that human-AI collaboration delivers the best balance of reliability and efficiency.

From Static Products to Real-Time Experiences

The transformation of OSS/BSS systems is becoming central to CSPs' efforts to deliver real-time, adaptive, and outcome-driven experiences. However, Dolen highlighted that, "We will not get the real-time experience by just cloudifying the legacy OSS/BSS systems. If we keep the architecture as is and don't do the architectural transformation, we will keep the same delays." The industry must, therefore, move away from static and predefined processes toward systems capable of responding dynamically in real time. She identified four critical domains supporting this shift.

The first is the transition from batch-based operations to event-driven processes. "Everything from network to customer interactions needs to be processed as events in real time," Dolen explained, stressing the importance of natural workflows. The second is the adoption of composable, AI-first capabilities, where OSS/BSS systems are broken into microservices that can be dynamically combined to provide greater flexibility. The third focuses on the use of real-time contextual data through streaming and in-memory technologies instead of traditional ETLs.

Koalla shared Orange's progress in this space through the creation of its LiveNet business unit two years ago. The initiative focuses on exposing network APIs to developers, partners, and B2B customers while simplifying network complexity through network-as-code and automated provisioning. During the Paris 2024 Olympic Games, Orange tested live-event provisioning with on-demand capabilities, edge computing, standards access, and real-time analytics.

He explained that Orange has developed capabilities to continuously monitor network behavior and respond according to user requirements. Personalization, he noted, is another key advantage of real-time operations, enabling operators to adapt services depending on how customers consume the network, whether while traveling or attending events. However, he acknowledged that ecosystem collaboration remains one of the biggest challenges, particularly in building standardized interfaces. This is why Orange continues working closely with TM Forum and other industry stakeholders. Koalla also underlined the growing importance of

real-time security, where operators can immediately detect and react to attacks before problems escalate.

Meanwhile, Sha highlighted practical use cases demonstrating the financial impact of intent-driven AI agents. Their government-enterprise intelligent agent reduced pre-sale solution design processes from several days to under 30 minutes, generating a 300% ROI and over 10 million yuan in labor savings. Another use case, China Mobile's wireless operations and maintenance agent, automates more than 6,000 work orders monthly, saving approximately 4 million yuan annually per province. Sha explained, "Both cases prove that intent-driven agents deliver measurable and financial impact, at scale."

Glass concluded by explaining that TM Forum plays a crucial role in supporting autonomous networks through frameworks, evaluation tools, and vendor-agnostic design patterns that help operators measure outcomes and accelerate network transformation.

From Siloed OSS/BSS to API-First Platforms

The telecom industry's shift from siloed OSS/BSS environments toward API-first platforms is becoming critical to enabling autonomous and intelligent operations. Sha stressed that while API-first transformation is essential, it can also increase complexity if not properly managed. To address this, she outlined three key principles: composable architecture as the method, standardized APIs as the language, and commercial use cases as the driver.

Following TM Forum's Open Digital Architecture (ODA), operators can break systems into modular, loosely coupled, API-first components that evolve gradually according to business priorities. This reduces the risk of disrupting the entire platform while enabling flexibility and scalability. Sha also emphasized that standardized interfaces simplify the integration of different foundational AI models across various scenarios without creating fragmented custom integrations. At the same time, she warned against over-engineering, noting that "each API should have a clear business goal behind it."

Glass supported this vision, describing composable architecture, decoupling, and abstraction as essential foundations for autonomous networks. However, he pointed out that operators may need to reinvent their IT environments to fully support autonomous operations.

Orange is working closely with TM Forum to align ODA with autonomous networking, relying on standardized APIs to connect OSS/BSS capabilities with network operations. Koalla explained that regulatory compliance must be addressed from both cultural and technical perspectives. Orange collaborates closely with France's national cybersecurity agency, ANSSI, on API exposure, data usage, and platform access guidelines, while also training developers and operational teams on compliance, security, and ethical considerations.

Technically, Orange has implemented strong governance frameworks, continuous monitoring, and validation processes to maintain compliance and prepare for audits. Dolen concluded that API-first, intent-driven platforms transform OSS/BSS from passive systems of record into "systems of actions," where real-time, context-aware services can trigger automated behaviors across domains instead of relying on fragmented integrations.

Biggest Challenges in Achieving a Fully Autonomous Network

Closing the panel discussion, Eid asked the speakers to identify the biggest challenge in moving toward fully autonomous networks: technology, people, or processes.

Koalla pointed to culture and people as the main obstacle. "Because if you don't work on the culture—the way people are behaving, working, and collaborating—your strategy, methodology, or technology can be the best one in the world, but they will not be implemented in the right way." He stressed that mindset transformation remains difficult as employees adapt to working alongside machines.

Dolen agreed, saying the challenge combines both people and technology since "whatever we are implementing with technology is going to be adopted by the organization's people." She added that identifying the right use cases and demonstrating benefits will help drive adoption at scale.

Glass said choosing among the three factors was "an impossible decision to make," emphasizing that all are evolving simultaneously. Reflecting on China Mobile's progress, he highlighted a gradual and structured approach to autonomous network adoption: "isolate the area, transform it to a standard, future-proof pattern, use a technical solution package, implement it, test it, prove it, and then scale it."

Sha also highlighted organizational alignment as the biggest challenge, noting that "moving from siloed KPIs to an integrated framework requires different teams to speak the same value language." She concluded that operators should focus AI deployment on scenarios that deliver measurable business value before scaling further. TR

> Rather than attempting to transform entire network estates at once, operators identified high-value scenarios with the greatest return on investment or most pressing operational pain points

Supply Chain Vulnerabilities in Asia-Pacific Data Centers

The Asia-Pacific is a key region for global data center expansion, with developments from hyperscale campuses in Singapore and Johor to new cloud regions in Indonesia and India. However, this growth is constrained by a fragile, complex supply chain relying on semiconductor fabrication in Taiwan, electronics manufacturing in China and Malaysia, and critical infrastructure imports from Japan and South Korea.

Hardware Dependency

Asia-Pacific data centers depend on a globally distributed hardware ecosystem. Key components, including GPUs, CPUs, DRAM, storage systems, power distribution units, and cooling infrastructure, are produced in a few specialized hubs.

For example, the concentration of advanced chip manufacturing in Taiwan creates a structural dependency for cloud providers in Singapore, Japan, and Australia. Despite ongoing global investments in semiconductor fabrication, advanced production remains heavily centered in East Asia, particularly Taiwan and South Korea.

High-performance computing infrastructure, particularly for AI training clusters, relies on advanced chips with long lead times and allocation constraints. As a result, operators in the region face delays in deploying GPU-intensive data center capacity.

The Asia-Pacific's data center capacity is expected to grow from 32 GW to 57 GW by 2030, driven by a 12% CAGR in hyperscale cloud and AI demand.

However, this rapid expansion faces execution bottlenecks, especially equipment procurement delays, as global supply chains struggle to meet the scale and complexity of new builds for power systems, cooling infrastructure, and specialized AI components.

Rising construction costs, increasing project complexity, and long lead times for grid connections compound these challenges.

Global Disruptions

The Asia-Pacific supply chain is highly sensitive to geopolitical tensions and trade disruptions. U.S.–China technology restrictions, especially on semiconductor exports and advanced manufacturing equipment, have had ripple effects across the region. These restrictions have tightened access to advanced chips and extended procurement cycles for hyperscalers in China and Southeast Asia.

According to CBRE, the Asia-Pacific data center market continues to attract strong investor interest despite economic challenges, with demand fueled by hyperscalers, increased colocation, and rising AI requirements since late 2023. However, development faces structural bottlenecks, including limited land, higher construction and power costs, and, in some markets, electricity shortages and regulatory delays.

High-bandwidth memory (HBM) and advanced DRAM for AI servers are in high global demand as AI infrastructure expands, particularly in technology hubs such as South Korea, Taiwan, Singapore, and Japan. Hyperscalers and AI-focused data centers in these markets are rapidly increasing deployments, further driving demand for high-performance memory.

Rising AI demand has led to multi-year commitments for memory supply. Leading manufacturers such as Samsung, SK hynix, and Micron report that most advanced HBM production through 2025 and 2026 is already allocated through long-term agreements. This reflects a structural tightening of the global memory ecosystem, rather than a short-term shortage.

Asia is central to these constraints. South Korea leads HBM production, while Taiwan is critical for advanced packaging and semiconductor manufacturing. Capacity bottlenecks in these regions are causing global supply delays, with limited wafer starts and constrained advanced packaging lines, resulting in delivery lead times of over a year in some cases.

When memory limits are in short supply, server manufacturers cannot scale output, even if chips are available. Large hyperscalers secure priority allocation through multi-year contracts, while smaller buyers in Asia and other regions face delays and increased procurement uncertainty. This is especially evident in fast-growing AI hubs like Singapore and Tokyo, where demand exceeds supply flexibility.

The capital-intensive nature of the supply chain reinforces these constraints. Expanding HBM production requires investment in advanced semiconductor nodes, 3D stacking, and specialized packaging infrastructure, all with long lead times and concentrated in Asia.

Regional Imbalance

Data center growth in the Asia-Pacific is uneven. Mature hubs such as Singapore face strict land, energy, and cooling constraints, while emerging markets such as Indonesia, Vietnam, and India are rapidly expanding their infrastructure. Supply chain vulnerabilities affect mature and emerging markets differently.

Singapore remains a leading digital hub but faces limited space and strict power allocation policies. Operators must import specialized, high-density equipment under tight regulatory and timing constraints. Hardware procurement delays can cause missed deployment windows due to limited expansion capacity.

India and Indonesia are rapidly expanding hyperscale capacity, especially in cities like Mumbai, Chennai, Jakarta, and Batam. However, these markets face infrastructure bottlenecks, including inconsistent access to advanced electrical and cooling systems. Persistent equipment supply chain challenges, along with regulatory, efficiency, and staffing pressures, hinder progress. According to the Uptime Institute Global Data Center Survey 2023, these issues, combined with operational constraints and a lack of standardization, slow infrastructure deployment and efficiency improvements, especially for power and cooling. Over half of operators have experienced site outages in recent years, highlighting the impact of operational and supply chain fragility on reliability and project timelines.

Cascading Risks

When critical components such as backup generators, UPS systems, or networking switches are delayed, operators may resort to using aging infrastructure for longer than intended, increasing the likelihood of system failures and outages during peak loads.

In high-density environments, such as AI training clusters in Tokyo or Singapore, minor hardware inefficiencies can cause thermal instability or performance throttling. Cooling systems are especially sensitive in tropical climates like Southeast Asia, where higher ambient temperatures increase reliance on precision-engineered cooling infrastructure.

Delays in replacement parts in Asia-Pacific markets like the Philippines result from rapid ecosystem growth outpacing infrastructure maturity, leading to potential equipment failures, extended outages, and higher maintenance costs for operators.

For example, the Philippine data center market is projected to grow from about USD 633 million in 2024 to USD 1.97 billion by 2030 (20.9% CAGR), with capacity expanding from 560 MW to 1.3 GW in the same period.

This growth is driven by increased internet usage, enterprise cloud adoption, and the rise of secondary hubs like Cebu, Davao, and Batangas. While expansion improves regional resilience and diversifies infrastructure beyond Metro Manila, many facilities are still under development or scaling up, which exposes them to delays, reliability issues, and unexpected costs due to immature supply chains for specialized components, maintenance parts, and vendor ecosystems.

Building Resilience Across the Asia-Pacific Supply Chains

Regional manufacturing expansion is another strategy. Malaysia and Vietnam have become key electronics manufacturing hubs, decentralizing production of servers, networking equipment, and power components. Johor, in Malaysia, for example, is emerging as a strategic extension of Singapore's data center ecosystem, enabling faster access to the hardware supply chain.

Operators are investing in strategic inventory buffering, especially for long-lead-time components such as transformers and GPU servers. While this increases upfront capital costs, it reduces exposure to global shortages and geopolitical risks.

Hyperscalers are shaping the data center equipment supply chain by engaging earlier in design cycles and selecting suppliers aligned with semiconductor-driven reference architectures, rather than relying on off-the-shelf components. This shift highlights a broader constraint: industrial equipment manufacturers, including those that produce transformers, switchgear, and cooling systems, are struggling to keep up with accelerated demand and the rapid technical evolution driven by AI infrastructure build-outs. Lead times for critical equipment have increased, and suppliers are now required to co-design solutions with chipmakers to meet higher power densities and faster refresh cycles.

Projected Future Demand

McKinsey noted that global data center demand could grow by 19–22% annually through 2030, reaching 171–219 GW, with AI workloads accounting for around 70% of total demand in the midpoint scenario, placing significant pressure on infrastructure build-outs across all regions, including the Asia-Pacific.

In this environment, operators in the region are not primarily constrained by hyperscaler-led exclusivity, but by structural supply gaps in power, construction capacity, and critical equipment, which are already causing delays even when investment commitments are in place.

Furthermore, hyperscaler-led prioritization and early contracting concentrate access among large buyers and expose the system to structural bottlenecks in equipment availability, testing, and manufacturing scalability.

The challenge for Asia-Pacific data centers is not simply meeting surging AI-driven demand, but overcoming deepening supply chain vulnerabilities and underlying infrastructure constraints that will ultimately determine how quickly, and equitably, that demand can be realized. TR

Strengthening APAC Internet by Diversifying Subsea Cable Routes

Amid demand for digital connectivity, the physical infrastructure supporting global data transmission has become increasingly critical. Beneath oceans and seas, tens of thousands of kilometers of fiber-optic cables enable connections for social media consumption, video streaming, cloud computing, 5G connectivity, global transactions, and real-time collaboration. However, these cables are highly susceptible to disruption, prompting industry stakeholders and governments to reconsider cable deployment strategies to enhance resilience and ensure future reliability.

The Resiliency Problem in Asia

On average, there are around 150–200 reported faults annually, driven largely by human activity such as fishing and anchor drag, along with natural phenomena like underwater currents or seismic activity, according to the International Cable Protection Committee (ICPC). These incidents, while often localized, highlight the intrinsic risk of relying on singular routes or chokepoints for critical international data traffic.

This problem is particularly pronounced across Asia. When the SEA-ME-WE 5 cable was damaged in April 2024 in Indonesian waters, administrative delays extended repairs from approximately three days to several weeks, disrupting connectivity in Bangladesh and forcing the country to rely on its only remaining subsea link. Vietnam's situation reinforced how acute the risk can be. In 2024, three out of five cables connecting the country went down again, following a period in 2023 when all five experienced partial or total damage, causing a 75% loss of the country's data flow. Repairs in the Asia Pacific take up to 30 days on average from notification of an incident, compared to fifteen in North America, due to more stringent permitting requirements.

Redundancy as a Pillar of Digital Resilience

Just as power grids and transportation networks are designed with multiple pathways to absorb disruptions, the global internet must embrace a similar principle for its undersea infrastructure. Establishing multiple subsea cable routes, particularly across different ocean basins and landing regions, reduces dependency on singular corridors and disperses risk. If one cable is cut or compromised, traffic can be diverted via alternative pathways, preserving connectivity and minimizing service interruption. This approach transforms the network from a fragile linear chain into a mesh of interlinked paths, much like the redundancy that underpins modern computing systems.

Importantly, cables must be strategically routed to avoid congestion at major nodes and choke points. In the Asia Pacific, major hubs like Singapore, Hong Kong, and Japan host many cable landings, making them critical nodes, however, many existing systems converge at the same few landing stations, creating vulnerabilities at the coastal intersections where cables meet terrestrial networks. Diversifying landing points and routing cables through different subsea basins spreads the load and increases resilience against localized outages.

The rapid rise of data-intensive technologies, particularly artificial intelligence, cloud computing, and 5G networking, is pushing global bandwidth demand to new heights. Markets such as hyperscale cloud services, which underpin digital infrastructure worldwide, require ever-higher throughput and lower latency. Subsea cable systems with greater fiber-pair capacity and advanced technologies such as wavelength-division multiplexing address this need, while strategic deployment ensures that future growth is supported by networks that are both robust and scalable.

Economic Stakes and the Cost of Failure

The economic implications of subsea cable outages are significant. Trillions of dollars in global financial transactions rely on uninterrupted connectivity through these networks every day. Even brief service interruptions can ripple across markets, disrupt supply chains, and impair corporate operations.

In February 2024, four cables were severed in the Red Sea in a single event that disrupted internet services for over 100 million people and affected 70% of data traffic between Europe and Asia. When cables were cut in the Red Sea again in September 2025, internet services were disrupted across India, Pakistan, and the UAE, and Microsoft Azure users experienced elevated latency until rerouting was stabilized. For APAC economies with few alternative routes, events like these affect the digital services economy.

Cloud platforms manage massive volumes of data, video streaming services serve millions of users simultaneously, and remote work technologies facilitate global collaboration. These services assume instant, reliable connectivity across continents. A single cable failure may force traffic onto secondary routes with higher latency or lower capacity, degrading quality of service and harming user experience. In more severe cases, localized internet blackouts can occur, disproportionately affecting smaller countries with less diversified infrastructure.

Emerging Strategies for Network Resilience

The push for diversified subsea routing is already underway. Investment in new subsea cable systems is expected to reach approximately USD 13 billion between 2025 and 2027, nearly double the amount committed between 2022 and 2024. Major tech companies such as Google and others are expanding their subsea footprint with new initiatives that introduce alternative pathways between continents.

Projects like America-India Connect, which aims to link the United States and India through multiple southern hemisphere routes, illustrate how multi-route strategies can reduce dependence on traditional corridors and expand network capacity for future demands. Google Cloud has also announced plans for TalayLink, a new subsea cable connecting Australia and Thailand via the Indian Ocean, west of the Sunda Strait, creating a diverse route to Thailand that avoids existing congested corridors. These buildouts not only increase redundancy but also support broader economic goals such as regional digital inclusion and AI infrastructure deployment.

In Asia, cable geography is being reworked, with plans to lay four cables to Japan and seven to Singapore and nine to Guam, positioned midway between the U.S. mainland and Southeast Asia.

Governments and international coalitions are also prioritizing protection and investment in subsea infrastructure. In late 2024, the United Nations launched its first-ever advisory body on subsea cable networks—the International Advisory Body for Submarine Cable Resilience—overseen by the ITU, with the goal of developing shared best practices on cable protection and repair. At the regional level, ASEAN Digital Ministers reiterated commitments in early 2025 to build a secure, diverse, and resilient submarine cable network and to facilitate regional cooperation in deploying, repairing, and protecting cables.

Enhanced monitoring systems, stronger regulatory frameworks, and coordinated disaster response plans help mitigate risks, while public-private partnerships are fostering shared responsibility for securing and expanding cable networks. International cooperation is key, since subsea cables traverse multiple jurisdictions and geopolitical contexts, making coordinated planning and resource sharing essential for rapid repair and resilience.

In addition, investments in new fiber technologies and routing approaches are reshaping how subsea systems are designed. High-capacity fiber with increased redundancy and innovative routing options such as Arctic passages or alternative cross-ocean paths are on the horizon.

Hyperscalers are increasingly designing cables to connect data centers rather than population centers, a shift that introduces greater resilience and more route standardization across the global network.

These expansions not only accommodate growing data demand but also reflect an industry shift toward resilience as a core principle, rather than an afterthought.

Regional Routes for Regional Resiliency

The stakes for getting subsea infrastructure right have never been higher. As AI workloads multiply, cloud dependency deepens, and geopolitical competition increasingly plays out beneath the ocean's surface, regionally diverse cables carrying APAC's data are becoming ever more critical.

The work of diversifying subsea cable networks is, at its core, the work of making the modern world more resilient. TR

How Satellite Infrastructure Is Expanding Connectivity Across Developing Economies

In many developing economies, connectivity still fades as users move away from major cities. Fiber routes end, mobile signals weaken, and entire communities, sometimes only a few hours from urban centers, remain outside reliable digital access. For years, closing that gap meant waiting for terrestrial infrastructure to catch up; increasingly, it no longer does.

Satellite and space-based connectivity are stepping in as practical tools for reaching places networks struggle to reach, and for strengthening communications when disasters strike or geography gets in the way. Across Asia, what used to be seen as a specialist technology is becoming part of everyday telecom planning.

According to the International Telecommunication Union (ITU), about 2.6 billion people remained offline globally in 2024, with internet penetration in least developed countries still below 40%. Closing that divide will require layered infrastructure, and satellite is increasingly part of that mix. Favorably, Asia is one of the fastest-moving markets for satellite investment, with the market accounting for 23.9% of global market share in 2025, which is projected to grow 9.45% through 2031.

Connecting Where Infrastructure Takes Longest to Arrive

Fiber remains the backbone of modern connectivity. But in many developing economies, geography makes relying on fiber alone unrealistic in the short term. Archipelagic countries such as Indonesia and the Philippines face obvious logistical barriers. Mountainous terrain across South and Southeast Asia presents similar constraints. In sparsely populated regions everywhere, the cost per user of terrestrial rollout rises quickly. Satellite changes that timeline.

Indonesia's SATRIA-1 high-throughput satellite, launched in 2023 with roughly 150 Gbps capacity, was designed to support connectivity for public services across underserved regions. By late 2025, Indonesia's BAKTI agency reported that more than 30,000 schools, health facilities, and government sites had been connected through the system.

The Philippines has taken similar steps at pilot scale. Through the Philippine Space Agency's INCENTIVISE program, satellite broadband kits were deployed in geographically isolated areas such as Jomalig, Quezon, and Dingalan, Aurora, supporting connectivity for schools and local government operations. These deployments highlight how satellite infrastructure is often first used not for consumer broadband, but for public services.

In late 2024, BSNL launched India's first satellite-to-device service in partnership with Viasat, announced by the Department of Telecommunications. The service enables emergency calls, SOS messaging, and UPI payments in situations where cellular and Wi-Fi networks are unavailable, meaning satellite capability arrives not through dedicated hardware, but through the phones people already carry.

China, meanwhile, is mounting the most ambitious satellite infrastructure build in Asia's history, with the government allocating around USD 100 billion under its 14th Five-Year Plan to strengthen telecommunications networks, broadband access, and digital infrastructure. Two major LEO constellation programs are under active deployment: the government-backed Guowang network, targeting as many as 13,000 satellites, and the municipally supported Qianfan ("Thousand Sails"), which aims for around 15,000 satellites. China Telecom made history in September 2023 by launching one of the world's first satellite-direct smartphone services, and by May 2024 had expanded it to Laos, marking its first entry into the international market.

What Connectivity Actually Changes on the Ground

The impact of connectivity becomes visible in what people can do once access exists. The World Bank estimates that a 10% increase in broadband penetration can raise GDP by roughly 0.25% to 1.4%, depending on market conditions. For underserved communities, that translates into better access to digital payments, education platforms, telehealth services, and government systems.

School connectivity illustrates the shift. The ITU-UNICEF Giga initiative reported that by the end of 2023 it had helped connect 5,800 schools and 2.4 million students worldwide while mapping connectivity gaps across education systems.

Healthcare access is another area where connectivity matters. A recent global review of telemedicine in rural communities across developing countries found that 56% lacked access to essential healthcare services, underscoring the role reliable connectivity can play in enabling remote consultations and referrals.

Agriculture is also changing. Satellite-supported advisory tools now deliver weather forecasting, crop monitoring insights, and land-use information to farmers in areas beyond terrestrial broadband reach.

These impacts are already visible across Asia. BSNL's satellite service empowers people in rural and underserved regions to make digital transactions, while across the broader Asia Pacific, there were approximately 2.1 million satellite broadband subscribers as of 2025, with Indonesia leading the market and India positioned to emerge as the primary growth market in 2026.

A Resilience Layer When Terrestrial Networks Fail

Across the Asia Pacific, resilience has become just as important as coverage. Storms, earthquakes, floods, and submarine cable disruptions regularly interrupt communications across the region. When terrestrial infrastructure goes down, satellite systems often provide the fastest way to restore links.

The 2022 volcanic eruption in Tonga demonstrated how fragile international connectivity can be when submarine cables fail. Satellite capacity helped restore essential communications while repairs to the cable system were underway. Countries exposed to frequent disasters, including the Philippines, have increasingly integrated deployable satellite communications into emergency telecommunications planning for precisely this reason.

Quietly Supporting Mobile Expansion Beyond Cities

Satellite's role is not always visible to users, but it is increasingly important behind the scenes.

Extending 4G and 5G coverage into low-density areas often depends less on radio access technology than on transport infrastructure. Where fiber rollout is delayed or uneconomical, satellite backhaul allows operators to activate remote base stations earlier.

Industry standards are moving in the same direction. 3GPP Release 17, finalized in 2022, introduced support for non-terrestrial networks (NTN) in the 5G ecosystem, enabling closer integration between satellite and mobile architectures.

This integration is already underway at a commercial level. CelcomDigi in Malaysia signed an MoU with SES in April 2023 to explore satellite connectivity using MEO and GEO satellites for businesses and communities across the country. In Japan, NTT DOCOMO is advancing NTN-enabled coverage using high-altitude platform stations (HAPS) that fly in the stratosphere, using relays to provide mobile connectivity in mountainous and remote terrain. Critically, the direct-to-cellular market is set to surge, with ABI Research projecting D2C connections across the Asia Pacific to grow from 0.49 million in 2024 to 36.16 million by 2032.

It's clear that satellite infrastructure does not intend to replace terrestrial rollout; it makes nationwide coverage more achievable.

Through satellite connectivity, financing models are also evolving. Development institutions increasingly view space-based connectivity as part of digital inclusion strategies. The Asian Development Bank, for example, has supported satellite broadband expansion projects such as its financing of the Kacific-1 satellite, designed to extend affordable connectivity across remote areas of Asia and the Pacific.

Governments are also aggregating connectivity demand from schools, clinics, and local agencies to make deployments more viable. This approach helps ensure infrastructure reaches communities commercial rollout alone might miss.

A More Practical Path Toward Universal Connectivity

Satellite infrastructure is sometimes described as the next frontier of telecom. In developing economies, it is already part of the present. It is helping governments connect remote public facilities, helping operators extend coverage more efficiently, and helping countries strengthen communications resilience in increasingly climate-exposed environments. TR

National Fiber Expansion Strategies and Their Impact on Digital Competitiveness

Across Asia, fiber infrastructure is rapidly moving from being a telecommunications upgrade to becoming a strategic national asset. Governments are increasingly aligning broadband expansion programs with industrial policy, digital trade ambitions, and next-generation technology deployment, recognizing that high-capacity fixed networks now underpin everything from cloud ecosystems to 5G performance and AI readiness.

According to the World Bank, a 10-percentage-point increase in broadband penetration is associated with GDP growth gains ranging between 0.24% and 1.5%, depending on national conditions and market maturity. Similarly, the International Telecommunication Union (ITU) estimates that a 10% increase in fixed-broadband penetration can raise GDP per capita by approximately 0.77% globally, reinforcing the role of fiber rollout as a driver of economic expansion.

This structural transition is visible globally. OECD statistics show that fiber subscriptions increased by 56% between June 2020 and June 2023, while DSL subscriptions declined by 24% over the same period, reflecting a shift toward next-generation fixed networks.

Localized Fiber Expansion Strategies Become Key

China Mobile alone has deployed an estimated 19.4 million kilometers of fiber cables, with mainland China leading all developing markets at 59.6 million kilometers of total fiber-optic cable installed. China had approximately 98% of its broadband subscriptions on fiber-optic lines as of 2023.

The Infrastructure Development Plan for a Digital Garden City Nation, revised in 2023, targets 99.90% fiber-optic coverage by 2027, with a specific focus on bridging regional disparities in broadband access. This sits within the broader Society 5.0 framework, which positions fiber as the connective tissue for AI, IoT, and smart city integration.

From mid-2024 to 2026, Singapore will upgrade the NBN to a 10G next-generation broadband network, providing symmetric end-to-end 10 Gbps connectivity alongside 5G mobile services. Between 2019 and 2024, the digital economy grew at a CAGR of 12%, significantly outpacing the nominal GDP growth rate of 7.3%. The fiber network is a foundational input to that performance, enabling the cloud computing, AI workloads, and financial services digitalization that underpin those figures.

Australia's fiber story has been more turbulent. The National Broadband Network (NBN), first proposed in 2009, went through costly design changes that slowed its competitive trajectory. The Albanese Government moved to correct this with a combined AUD 3.8 billion investment through NBN Co's Fibre Connect program. NBN Co will complete the initial five-year Fibre Connect program with almost 9.8 million premises—approximately 90% of its fixed-line network.

In Southeast Asia, Thailand's Net Pracharat has provided free broadband to approximately 74,987 villages, reaching over 10.48 million rural residents as of January 2024, with a stated goal of increasing the digital economy's share of GDP from 12% to 30% by 2027. The Philippines' National Fiber Backbone (NFB) project, set for completion in 2026, aims to increase national internet penetration from 33% to 65%. PLDT, the country's largest operator, committed a capital expenditure of PHP 80–85 billion (approximately USD 1.5–1.6 billion) in 2023 alone to expand its FTTH network.

Together, these models underline how deployment strategy and not just investment scale shapes connectivity outcomes and digital competitiveness.

Fiber Density Supporting Enterprise National Digitalization and Data-Center Growth

Across APAC, fiber rollout is closely tied to ambitions to strengthen regional digital economies. The ASEAN Digital Masterplan 2025 identifies digital connectivity and infrastructure as a foundational pillar supporting integration with cloud services, digital platforms, and cross-border digital trade.

Connectivity gaps remain a significant constraint. Estimates cited by the World Economic Forum indicate that expanding internet adoption in developing economies could add up to USD 2 trillion to global GDP and create roughly 140 million jobs, underscoring the scale of opportunity associated with infrastructure expansion. These projections highlight the importance of accelerating fiber deployment across emerging markets seeking to strengthen participation in digital value chains.

For Southeast Asian economies in particular, where SMEs account for the majority of employment, improving fixed broadband availability can significantly accelerate cloud adoption and participation in digital marketplaces. At the same time, hyperscale data-center investments across the region are reinforcing demand for dense metro and intercity fiber infrastructure. As regional digital traffic volumes increase, backbone expansion is becoming central to positioning emerging markets as attractive destinations for cloud infrastructure deployment.

Capacity for the Future

As artificial intelligence adoption accelerates and cross-border data flows expand, fiber infrastructure is increasingly recognized as a strategic component of national digital capacity.

Singapore's digital economy is the clearest example of fiber-enabled competitiveness—a city with no natural resources leveraging connectivity as industrial policy. China's gigabit city program has created a manufacturing and digital services substrate that competitors will find difficult to replicate without equivalent physical infrastructure investment. Australia, despite its slower start, is now tracking toward a position where 90% of its fixed-line premises can access near-gigabit speeds, closing a gap that had measurably damaged its digital competitiveness rankings during the FTTN years.

Notably, APAC fixed broadband service revenue is expected to grow at a CAGR of more than 4% through to 2029, driven by government-backed national broadband plans expanding fiber coverage and lifting internet speeds.

For Asia's rapidly digitizing economies, national fiber expansion strategies are therefore becoming central elements of long-term competitiveness planning rather than standalone telecommunications initiatives. TR

> According to the World Bank, a 10-percentage-point increase in broadband penetration is associated with GDP growth gains ranging between 0.24% and 1.5%, depending on national conditions and market maturity

The Infrastructure Behind AI Civilization

Artificial intelligence (AI) is rewiring civilization. Every AI-generated response, recommendation engine, or autonomous system relies on a growing physical backbone comprising computing power, data centers, and global networks. These layered parts create what many call the "digital skeleton" of modern society. This essential structure supports economies, governments, communication, and daily lives.

The New Electricity

These facilities house servers equipped with advanced processors such as CPUs and GPUs, which handle the bulk of AI workloads.

As AI adoption accelerates, so does the demand for high-performance computing. This has led to a rapid increase in the deployment of specialized, accelerated servers, significantly raising the power density of modern data centers. Eight of the world's largest hyperscalers collectively anticipate a 44% year-over-year increase in spending on AI data centers and computing resources, reaching USD 371 billion in 2025 alone.

Data Centers Evolve into AI Factories

The massive demand for compute is rapidly accelerating data center growth, transforming them from traditional server facilities into what are increasingly described as "AI factories." As highlighted in recent infrastructure developments, these sites are no longer built like conventional IT spaces but more like industrial-scale power systems designed to convert electricity directly into AI output.

In Singapore, Singtel has launched its RE:AI initiative and established its data center arm, Nxera, to support the country's National AI Strategy 2.0. By combining fiber networks, submarine cables, and 5G infrastructure with AI capabilities, Singtel is effectively transforming its facilities into AI factories that can deliver both compute power and connectivity at scale.

Similarly, in Indonesia, Indosat Ooredoo Hutchison has introduced the country's first sovereign AI factory, signaling a shift toward localized AI development. This initiative is designed to reduce dependence on external AI providers while enabling domestic industries and government agencies to harness advanced AI tools within national borders.

These strategies are becoming increasingly common. Notably, Malaysia's Johor corridor, positioned as a spillover hub for land- and energy-constrained Singapore, reached over 900 megawatts of data center capacity in just three years, a milestone that took Singapore itself 12 to 14 years to achieve.

The AI Infrastructure Footprint

Data centers' energy consumption is enormous. The International Energy Agency noted that data centers used about 415 TWh of electricity in 2024, which is about 1.5% of global electricity consumption. By 2030, this could reach 945 TWh, almost double in just six years. Gartner also predicts that global data center electricity use will go from 448 TWh in 2025 to 980 TWh by 2030. Most of this increase comes from AI-optimized servers, which are expected to consume nearly five times as much energy in the same period.

These figures show that AI is now an energy-hungry industrial system. Servers use about 60% of a data center's electricity, while the rest goes to cooling, networking, and other support systems. As AI models become bigger and more complex, data centers are packing in more computing equipment, which pushes power needs even higher. Some new racks may use tens or even hundreds of kilowatts each, compared to just a few kilowatts not long ago.

As a result, data centers are often built in places with steady power, good cooling, and strong internet connections. This means AI infrastructure is not evenly distributed. Instead, it is mostly found in North America, Europe, and parts of the Asia Pacific, which together hold most of the world's computing power. This uneven spread raises important questions: Who controls digital technology? Who can access AI? How is global tech power shared?

But compute and data centers are only part of the digital skeleton; networks are just as important. Without fast, reliable connections, even the best data centers would be cut off from each other. Fiber-optic cables, undersea networks, and advanced wireless tech keep data moving between users, devices, and AI systems. These networks ensure AI services can operate in real time, whether through the cloud, mobile apps, or edge computing.

This setup lowers delays, makes systems more reliable, and lets AI become part of daily life, from smart cities to self-driving cars. Still, the rapid growth of this digital skeleton poses significant challenges. AI infrastructure's energy demand is putting more pressure on power systems worldwide. Deloitte estimated that data centers could consume over 1,000 TWh of electricity each year by 2030, largely due to generative AI. In some places, this increase is already pushing power grids to the limit, raising concerns about reliability and energy security.

Powering the Future Digital Framework

The growth of AI infrastructure brings opportunity. For example, new power systems, such as high-voltage direct current (HVDC), are being tested to make data centers more energy-efficient and cheaper to run. Big tech companies are also focusing more on green energy and carbon-neutral operations, signaling a broader shift toward sustainable digital growth.

In the end, AI infrastructure is changing the way society is built and works. These systems are the foundation for everything from business and science to how we connect and share culture.

What makes this change so striking is that it is mostly invisible. Unlike roads or power lines, the digital skeleton of AI is hidden inside server racks, fiber cables, and cloud systems, shaping how information is made, shared, and used around the world. TR

> "Compute power sits at the very core of today's AI-driven world. Often described as the "new electricity," it refers to the immense computational power required to train and deploy AI systems, most of which operate in data centers"

Dialog Expands 5G Footprint to 800 Sites Across Sri Lanka

The fastest 5G network rollout in Sri Lanka and reinforcing its commitment to advancing the country's digital transformation through next-generation connectivity.

The operator's rapid deployment builds on the commercial launch of Dialog 5G Ultra, which initially covered over 220 sites and served more than 1.5 million subscribers. The latest expansion extends coverage to several new districts, including Ratnapura, Monaragala, Badulla, Vavuniya, Polonnaruwa, Hambantota, Mullaitivu, and Kegalle, significantly strengthening nationwide access to high-speed mobile broadband.

As part of its broader 5G engagement strategy, Dialog has also introduced dedicated Experience Zones that allow customers to explore next-generation use cases firsthand. These are located at the Dialog Iconic Head Office, the World Trade Centre (WTC), and the Kandy Dialog Experience Centre. The Iconic Centre features immersive demonstrations such as 5G-powered VR Cycling, a 5G Smart City showcase, and a 5G-powered AI Portrait experience. The WTC outlet hosts the AI Portrait experience, while the Kandy center highlights VR Cycling powered by 5G connectivity.

Lasantha Theverapperuma, Group Chief Marketing Officer of Dialog Axiata PLC, said: "Expanding our 5G network to over 800 sites within three months of launch reflects Dialog's unwavering commitment to driving Sri Lanka's digital future. As the pioneer of 2G, 3G, 4G, and now 5G in the country, we continue to invest in transformative technologies that empower consumers, enterprises, and industries, ensuring inclusive, future-ready connectivity for all Sri Lankans."

Pixxel, Sarvam Launch India's First Orbital AI Satellite

Pixxel has announced a strategic partnership with Sarvam to create India's first orbital data center satellite. Under this partnership, Pixxel will be responsible for designing, building, launching, and operating the Pathfinder satellite. Sarvam will provide the AI infrastructure, managing both training and inference directly in orbit with comprehensive language models running on the satellite.

The Pathfinder satellite, weighing around 200 kg, is expected to be launched into orbit by the fourth quarter of 2026. This timeline underscores Pixxel's urgency in this market and its growing ability to rapidly transition from concept to orbit. Unlike traditional satellite computing, which uses low-power edge processors optimized for durability over performance, the Pathfinder satellite will be equipped with data center-class GPUs. These are the same generation of hardware used in ground-based data centers for advanced AI training and inference.

The satellite will also feature Pixxel's leading hyperspectral imaging camera, making it one of the first satellites capable of capturing high-quality hyperspectral data and analyzing it directly in orbit using foundational models. Instead of transmitting large amounts of raw imagery back to Earth for processing, the system can identify patterns, detect changes, and generate insights in real time. This approach significantly reduces the time between data capture and decision-making, allowing for quicker responses in areas such as environmental monitoring, resource management, and critical infrastructure tracking. It represents a new era in Earth observation, where satellites not only collect data but also analyze it and provide conclusions independently.

As the demand for AI, data, and computing power continues to rise, processing data closer to its source becomes increasingly crucial. This shift positions orbital computing as a new layer of high-performance infrastructure. The mission will test real-time AI inference and data processing in the challenging space environment, evaluating performance, power management, thermal constraints, and real-time data workflows under operational conditions. This will lay the technical and commercial foundation for future orbital data center systems.

The satellite will be developed at Gigapixxel, Pixxel's upcoming facility designed to scale satellite production to up to 100 units, enhancing the company's capability to build and deploy next-generation space infrastructure from India. By combining Pixxel's satellite engineering expertise with Sarvam AI's comprehensive AI capabilities, the partnership aims to establish a model for creating dedicated orbital data center satellites in India for organizations with strategic, commercial, and compute-intensive requirements.

U Mobile Partners with VIBE Mobile to Expand 5G MVNO Ecosystem

U Mobile has announced a partnership with VIBE Mobile, a company under Elite Links (M) Sdn Bhd, as one of its strategic mobile virtual network operator (MVNO) partners. Through this collaboration, U Mobile will grant VIBE Mobile, a new mobile service brand in Malaysia, access to its advanced 4G and 5G networks for data, domestic and international services, and roaming capabilities.

This partnership allows VIBE Mobile to concentrate on service design, branding, and customer engagement, while U Mobile provides the essential mobile connectivity. By allowing partners to leverage its established network capabilities, U Mobile is expanding choices for consumers and businesses, supporting those aiming to develop and scale new digital services in Malaysia.

Navin Manian, Chief Consumer Business Officer of U Mobile, said: "At U Mobile, we believe the industry is healthiest when there is competition as that will keep everyone sharp and ultimately deliver better outcomes for customers. This latest MVNO partnership demonstrates how U Mobile is extending our next-gen 5G network advantage to enable a more dynamic MVNO ecosystem. We continuously invest in our network for scale, flexibility, and future needs. This gives partners like VIBE Mobile the ability to develop differentiated offerings for specific customer segments, helping to drive greater innovation and competition across the mobile sector. As more partners come on board, Malaysians stand to benefit from greater choice, sharper value, and services designed for different needs."

This collaboration is part of U Mobile's broader initiative to develop a dynamic partner ecosystem, centered on its next-generation 5G network. Designed for scalability and flexibility, U Mobile enables partners to utilize its superior and seamless connectivity to bring new mobile and digital services to market more quickly, with the ability to tailor offerings for specific customer segments.

As the MVNO landscape continues to evolve, U Mobile aims to provide its network capabilities to support partner-led innovation, fostering a more diverse, competitive, and future-ready mobile sector in Malaysia.

Viasat Expands APAC Coverage with Successful ViaSat-3 F3 Deployment

Viasat has successfully launched and achieved initial signal acquisition of its ViaSat-3 Flight 3 (F3) satellite, marking a major step in expanding high-capacity satellite connectivity across the Asia-Pacific (APAC) region.

The satellite lifted off aboard a SpaceX Falcon Heavy rocket from Launch Complex 39A at NASA's Kennedy Space Center in Florida. It separated from the rocket's upper stage in under five hours, with initial signals acquired minutes later, confirming the spacecraft is healthy and operating as expected in orbit.

ViaSat-3 F3 is designed to deliver more than 1 terabit per second (Tbps) of throughput, using advanced payload architecture and beamforming technology to dynamically allocate bandwidth where demand is highest. The satellite's flexible capacity management is expected to support growing requirements for high-performance satellite communications (SATCOM), particularly in commercial mobility and defense sectors.

The satellite completes Viasat's planned ViaSat-3 constellation, alongside ViaSat-3 F1, launched in 2023, and ViaSat-3 F2, as the company continues to scale its global, multi-orbit network strategy. Viasat aims to enhance overall network capacity and performance through the combined capabilities of its next-generation satellites.

Following the launch, ViaSat-3 F3 will deploy its solar arrays and begin maneuvering to its final geostationary orbital position. It will then carry out additional deployments, including reflector expansion, before entering in-orbit testing and network integration. These steps are critical to validating performance ahead of commercial operations.

Viasat currently expects ViaSat-3 F3 to enter service in late summer, subject to the successful completion of in-orbit testing.

With its focus on the Asia-Pacific region, the satellite is set to strengthen Viasat's ability to deliver high-capacity, flexible connectivity across aviation, maritime, enterprise, and government sectors, supporting rising demand for reliable broadband services.

Google Starts Construction on USD 15 Billion AI Hub in Visakhapatnam, India

Google has started construction on a major AI and data center hub in Visakhapatnam, marking the launch of a USD 15 billion investment program that could reshape India's digital infrastructure landscape over the next five years.

The project, developed with AdaniConneX and Nxtra by Airtel, will anchor what Google calls India's first gigawatt-scale AI ecosystem. The development includes three hyperscale data center campuses, expanded fiber connectivity, subsea cable infrastructure, and long-term renewable energy integration.

Google first announced the investment in October 2025 as part of a broader push to expand AI-ready infrastructure in India. The company plans to invest USD 15 billion between 2026 and 2030 to support services, cloud expansion, and digital connectivity.

The Visakhapatnam hub will support high-performance AI workloads and low-latency cloud services for enterprises, developers, and research organizations. AdaniConneX and Nxtra by Airtel will build the facilities and supporting infrastructure, while Google deploys the computing systems and AI platforms.

The project also includes the America-India Connect initiative, which aims to expand fiber-optic connectivity and strengthen international data routes linking India with global digital networks.

Google said the facilities will rely on a long-term clean energy strategy aligned with India's target of reaching 500 GW of non-fossil fuel energy capacity by 2030.

Beyond the infrastructure buildout, Google announced several workforce and community programs tied to the project. The company plans to train local workers in construction, facility operations, cloud computing, and generative AI through partnerships with ICT Academy and other organizations.

Indosat Reports Strong Double-Digit Growth in Q1 2026

Indosat Ooredoo Hutchison (Indosat) began 2026 with strong double-digit growth across key financial indicators in the first quarter. This performance highlights the company's customer-focused strategy, driven by AI hyper-personalization, disciplined operations, and ongoing investment in network and digital capabilities.

In the first quarter of 2026, Indosat achieved total revenue of IDR 15.2 trillion, its highest quarterly result, a 12% year-on-year increase. EBITDA rose 13% year-on-year to IDR 7.2 trillion, maintaining strong margins. Net profit attributable to owners of the parent reached IDR 1.5 trillion, up 26% year-on-year. These results demonstrate the strength of Indosat's scalable business model and its ability to deliver consistent financial performance.

Continued momentum in Indosat's core mobile business supported this performance. Blended ARPU rose 15% year-on-year to IDR 45,000, reflecting improved monetization and greater customer value. Data traffic increased 25.1% year-on-year, underscoring the growing importance of digital services and demand for reliable, high-quality connectivity.

This growth is closely tied to Indosat's AI hyper-personalization strategy, which delivers more relevant and tailored experiences to customers. As digital behavior fragments, Indosat has adopted a data-driven approach to better understand customer needs and deliver more relevant services.

Indosat is expanding its home connectivity offerings through HiFi Air to meet growing demand for flexible and accessible internet solutions beyond mobile. The company continues to strengthen customer trust and safety with AI-powered features such as anti-spam and anti-scam solutions, reinforcing its commitment to providing fast, reliable, and secure digital experiences.

Beyond its core connectivity business, Indosat is accelerating its role in Indonesia's digital and AI ecosystem. This quarter, the company launched the Sahabat-AI application, a locally developed large language model designed to better understand Indonesian languages and context. The application is available on both the App Store and Play Store, increasing accessibility for a wider range of users. Built on a multi-model and multi-modal AI approach, the platform aims to lower barriers to AI adoption in Indonesia and expand practical access for individuals and organizations.

Indosat is also strengthening its AI infrastructure through the NeoCloud platform, providing scalable, high-performance computing to meet growing AI workload demands. This effort is complemented by the establishment of FiberCo, a strategic partnership to expand and enhance Indonesia's fiber infrastructure, which is essential for delivering high-quality, reliable connectivity at scale. Together, these initiatives demonstrate Indosat's commitment to building a comprehensive digital ecosystem in Indonesia that supports the country's innovation.

TelkomGroup Unveils Pukpuk Cable Linking Indonesia and Papua New Guinea

PT Telkom Indonesia, through its international arm, PT Telekomunikasi Indonesia International (Telin), has officially launched the Pukpuk Submarine Cable System (Puk-Puk 1), marking the first direct cross-border submarine cable connection between Indonesia and Papua New Guinea.

The cable system was inaugurated in Jayapura, Papua, as TelkomGroup positioned the project as a major step toward strengthening digital connectivity across Eastern Indonesia and the wider Asia-Pacific region.

The project creates a new digital corridor linking Indonesia and Papua New Guinea while supporting broader regional connectivity initiatives. TelkomGroup said the infrastructure will help improve network resilience in Papua, expand digital access in underserved areas, and accelerate digital economic growth across border regions.

The Pukpuk cable directly connects Jayapura to Kumul Telkom Holdings' network in Papua New Guinea, extending connectivity to Vanimo and other PNG locations through PNG DataCo's infrastructure.

TelkomGroup said the new route significantly strengthens Papua's network resilience by adding route diversity to existing infrastructure. Jayapura now operates with two independent international connectivity routes. The original path links Sulawesi, Maluku, and Papua, while the new route connects Papua New Guinea cities including Vanimo, Madang, and Port Moresby to Jayapura before extending to Manado and onward to the United States via the SEA-US cable system.

The operator expects the additional route to improve service reliability and reduce the risk of network disruption in Eastern Indonesia, an area that has historically faced connectivity challenges due to geographic complexity and limited infrastructure redundancy.

The launch also coincided with the signing of a commercial agreement between Telin and PNG DataCo, further deepening cooperation between the two companies in regional telecommunications infrastructure development.

The project comes as operators across the Asia Pacific continue investing heavily in subsea cable infrastructure to support rising data traffic, cloud adoption, AI workloads, and digital services demand. Industry players increasingly view route diversity and cross-border interconnection as critical to improving network resilience and reducing latency across emerging digital markets.

VNPT and KDDI Corporation to Launch Digital-First Mobile Sub-Brand in Vietnam

Vietnam Posts and Telecommunications Group (VNPT) and KDDI Corporation have entered into a strategic partnership to jointly develop and launch a new mobile telecommunications sub-brand in Vietnam, with commercial rollout targeted this 2026.

The Business Cooperation Contract (BCC) was signed on March 10, 2026. The new sub-brand will deliver a fully online mobile experience, targeting young, digital-native consumers.

The partnership combines VNPT's extensive domestic infrastructure and strong market presence with KDDI's expertise in digital-first telecom services, particularly through its online-only brand, povo. Launched in Japan in 2021, povo has gained traction by offering flexible pricing, app-based service management, and a streamlined user experience tailored to digitally savvy users.

Vietnam, with a population exceeding 100 million, is experiencing rapid growth in smartphone adoption and mobile usage. This shift is driving demand for more personalized, flexible, and entirely digital telecom services, especially among younger demographics who expect seamless online interactions across the entire customer journey.

KDDI developed povo in collaboration with Circles, leveraging its expertise in digital telecom platforms. The service is operated by KDDI Digital Life Corporation and has established a model centered on agility, digital engagement, and customer-centric innovation.

VNPT and KDDI aim to capture the growing demand for online-centric telecom services while introducing new levels of flexibility and convenience. The companies expect the collaboration to unlock new value in the market and redefine how mobile services are delivered in the country.

What Happens After Nationwide 5G Coverage?

Over the past decade, the global telecommunications industry has focused on deploying fifth-generation (5G) mobile networks. Governments and operators have invested billions to achieve nationwide coverage, viewing 5G as the foundation of the digital economy. Many advanced markets are now nearing, or have already reached, nationwide 5G coverage.

Nationwide coverage marks the start of a new phase. With infrastructure in place, the industry must now focus on maximizing network utilization, delivering new services, promoting digital inclusion, and driving economic transformation.

The Shift from Coverage to Utilization

The initial phase of 5G deployment centered on building infrastructure, acquiring spectrum, and expanding coverage. As coverage becomes widespread, the industry now faces the challenge of fully utilizing the network's capacity.

To achieve this, Prathet Tankuranun, Chief Technology Officer of True Corporation, explained that the company "invested in securing new spectrum, including 70 MHz of 2.3 GHz and 20 MHz in the 1,500 MHz band. These new bands, together with our existing spectrum spanning low-, mid-, and high-bands, allow us to strike the right balance between coverage and capacity. Low bands extend reach and reliability, while mid- and high-bands provide the speed and bandwidth required for heavy data usage and advanced 5G services."

Unlike previous generations, 5G networks were designed to support a diverse range of use cases beyond mobile broadband. They enable ultra-low latency communications, massive machine-type connectivity, and high-capacity data transmission. These capabilities support applications such as smart cities, autonomous vehicles, industrial automation, and immersive digital services.

Despite rapid 5G expansion, many operators struggle to monetize its capabilities. Early deployments mainly improved smartphone speeds rather than enabling new services.

This transition is essential due to the scale and long-term nature of telecommunications investments. Operators worldwide invest hundreds of billions annually to expand and upgrade networks, including radio access, fiber backhaul, core systems, and data transport. The GSMA estimated that telecom operators will invest about USD 1.2 trillion in capital expenditures between 2025 and 2030 to support next-generation infrastructure such as 5G, fiber networks, and cloud-native architectures. These investments are needed to meet rising data demand, support advanced services, and maintain network reliability.

Unlocking Next-Generation Digital Services

Once nationwide coverage is achieved, the next step is the development of next-generation digital services powered by 5G. These services include:

- **Industry 4.0 and Smart Manufacturing**

Private 5G networks are being deployed in factories, ports, and logistics hubs to enable real-time data exchange, robotics, and automation. These environments require highly reliable, low-latency connectivity that traditional networks cannot easily provide.

Countries across Asia, including Indonesia, China, South Korea, and Japan, are accelerating Industry 4.0 adoption to modernize manufacturing and strengthen their positions in global supply chains. Indonesia's Making Indonesia 4.0 roadmap aims to boost competitiveness and increase exports through advanced digital technologies, especially in automotive, electronics, and chemicals. China, South Korea, and Japan are deploying smart factories and connected industrial ecosystems to enhance productivity and automation.

5G connectivity allows factories to deploy wireless robotics, predictive maintenance, and digital twins, improving efficiency and reducing downtime and costs. Manufacturers can monitor production in real time, optimize supply chains, and support advanced manufacturing ecosystems across Asia.

- **Immersive Digital Experiences**

The entertainment and media industries are adopting immersive technologies powered by 5G, including augmented reality, virtual reality, and cloud gaming. High bandwidth and low latency enable these services to run smoothly on smartphones or lightweight headsets, without the need for powerful local devices.

According to the International Monetary Fund, China, South Korea, Japan, Indonesia, Thailand, and the Philippines are becoming key markets for immersive digital services. China leads in large-scale adoption, accounting for about 16% of the Asia-Pacific AR/VR market and supporting applications in education, training, and entertainment. South Korea and Japan, with advanced 5G and high-speed broadband, have become major hubs for cloud gaming and AR/VR entertainment.

In Southeast Asia, Indonesia leads in mobile game downloads with about 41% of the market, while Thailand leads in gaming revenue. The Philippines is beginning to explore immersive entertainment, especially through location-based VR venues like arcades, gaming centers, and tourism attractions. Adoption remains limited due to high hardware costs, limited local content, and infrastructure constraints.

Gaming remains the main driver of immersive technologies across Asia. Over 72% of VR headset usage is for gaming, with tens of millions of active users in mobile AR games. As VR hardware becomes more affordable and 5G expands, immersive entertainment is expected to grow in emerging markets like the Philippines and remain strong in advanced economies such as South Korea, Japan, and China.

- **AI-Enabled Networks and Applications**

Countries including South Korea, Malaysia, the Philippines, Indonesia, and Australia are advancing AI-enabled telecom ecosystems. SK Telecom and Telekom Malaysia are deploying GPU-as-a-Service platforms for high-performance artificial intelligence (AI) workloads and edge applications, while Telstra is converting telephone exchanges into edge data centers to support AI inference, video processing, and low-latency applications.

The Philippines has become a hub for AI-enabled business process outsourcing, using technologies like automatic speech recognition and real-time analytics to improve customer service and personalize interactions. Indonesia is developing regional large language models, such as the Garuda LLM initiative, to process local dialects and support multilingual communication.

These developments reflect a regional shift toward autonomous or zero-touch networks, where AI automatically detects faults, predicts traffic demand, and optimizes performance without human intervention. AI-native networking, supported by 5G, is expected to help operators automate operations, reduce costs, and deliver customized digital services for industries such as logistics, agriculture, and smart cities.

Economic Impact of Nationwide 5G

According to the GSMA, mobile technologies and services are a major driver of global economic activity. The latest Mobile Economy report estimates that the mobile ecosystem contributed USD 7.6 trillion to the global economy in 2025, or 6.4% of global GDP. This impact is expected to grow as networks evolve beyond basic connectivity to advanced digital platforms powered by AI, cloud computing, and standalone 5G architectures. TR

Cybersecurity Challenges Beneath the Waves

While the global internet is often seen as a borderless digital cloud, its essential infrastructure is hidden beneath the ocean floor. Subsea fiber-optic cables support nearly 99% of intercontinental internet traffic, enabling financial transactions, cloud computing, and military communications.

This infrastructure is especially critical in the Asia-Pacific region, where rapid digital growth and cloud adoption have created unprecedented bandwidth demand. However, the undersea network faces growing cyber threats, espionage, and geopolitical competition.

The Digital Lifelines of the Asia Pacific

As of 2024, more than 500 active and planned telecommunications submarine cable systems span the globe, linking continents, markets, and communities. This vast infrastructure enables high-capacity data transmission across long distances and plays a central role in sustaining the modern digital economy.

The Asia Pacific is a major hub in this network. Systems like the Southeast Asia–Japan Cable (SJC2), which extends over 10,500 kilometers, connect countries such as Japan, Singapore, South Korea, Taiwan, Vietnam, and Thailand to support expanding cloud and AI workloads.

Southeast Asian countries depend on these cables for economic stability and digital transformation. For example, Singapore routes over 99% of its international telecommunications traffic through subsea cables, underscoring their central role in national connectivity.

This dependence makes the Asia Pacific both a digital leader and a potential vulnerability point. As data demand grows, driven by streaming, enterprise cloud platforms, and generative AI, the importance of protecting subsea networks increases.

Emerging Cybersecurity Risks

Subsea cables face both physical and cyber threats. While risks like earthquakes and ship anchors persist, cybersecurity experts are increasingly concerned about deliberate attacks, espionage, and surveillance.

Some states may use these periods to conduct limited sabotage operations that disrupt communications while avoiding direct attribution or retaliation. In these scenarios, cable landing stations are vulnerable points, especially when tensions rise, because they are accessible on land.

Subsea cables transmit large volumes of sensitive data, including financial transactions, government communications, and corporate information. Intelligence agencies have long targeted these networks to monitor data flows.

Landing stations, where cables converge, are significant vulnerabilities. A cyber breach at one could expose large portions of regional internet traffic. Recent incidents have heightened concerns about physical attacks on cables. Security analysts warn that state-backed attacks on undersea infrastructure are likely to increase, especially in regions with geopolitical tensions.

Even a single disruption can impact millions of users and disrupt financial markets or government operations. In early 2024, failures in systems such as the South East Asia–Middle East–Western Europe 4 (SEA-ME-WE 4) and the India-Middle East-Western Europe (I-ME-WE) cables reduced internet connectivity in several countries, including India and Pakistan. Although providers often reroute traffic, these incidents can still cause slower speeds and higher latency. The event demonstrated how damage to a few cables can affect connectivity across large regions of Asia and the Middle East.

Some global routes carry large volumes of internet traffic through strategic chokepoints. Disruption in these areas can ripple across networks, causing delays, outages, and rerouting of data. In the Asia Pacific, major hubs like Singapore, Hong Kong, and Japan host many cable landings, making them critical nodes and potential targets.

The Data Sovereignty Dimension

Beyond technical vulnerabilities, subsea cables are becoming tools of geopolitical influence. Control over data routes and cable infrastructure significantly affects data sovereignty, or the ability of nations to control their digital data and communications.

Countries are increasingly concerned that foreign-owned cables or equipment could expose national data to surveillance or manipulation. As a result, governments are scrutinizing cable investments and limiting participation by companies linked to rival states.

In recent years, regulators in several countries have blocked or delayed cable projects due to security concerns about foreign technology providers. For instance, the U.S. government has blocked at least three cable projects that would have connected Hong Kong to the United States, citing concerns that China could spy on or sabotage communications, while Indonesia has mandated that cable installation and repairs in its waters be carried out only by ships with Indonesian crews, creating operational delays in the name of sovereignty and security. These decisions reflect a growing recognition that subsea infrastructure is not only telecommunications hardware but also a strategic asset.

For Asia-Pacific economies seeking digital independence, diversifying cable networks and strengthening cybersecurity oversight are key policy priorities.

Toward International Frameworks for Subsea Cybersecurity

As subsea cables become essential to the digital economy, Asian governments increasingly recognize the need for stronger international and regional frameworks to protect this infrastructure. Although, governance mechanisms remain fragmented, with countries applying different regulatory regimes for cable installation, repair, and cybersecurity oversight. This diversity complicates cross-border cable management and underscores the need for harmonized policies addressing both physical protection and cyber resilience.

Regional cooperation is emerging to address these gaps. In Southeast Asia, policymakers are strengthening coordination through initiatives like the ASEAN Guidelines for Strengthening Resilience and Repair of Submarine Cables, which aim to improve incident response, reduce repair times, and enhance coordination among governments and telecom operators. Updated guidance will be discussed at regional digital ministerial meetings, reflecting a shift toward treating subsea cables as strategic infrastructure. This change shows growing acknowledgement that cable disruptions can affect national security, financial markets, and cross-border data flows.

Several countries are advancing national initiatives that support a broader regional framework. For example, regulatory reforms in the Philippines aim to improve legal protections for subsea cables and streamline permitting for installation and maintenance, supported by international cooperation and infrastructure partnerships. Regional policy discussions increasingly emphasize public-private partnerships, better maritime monitoring of cable routes, and integrating cybersecurity standards into cable planning. Experts noted that, given Asia-Pacific's busy shipping lanes and fast-growing digital markets, protecting subsea cables will require coordinated governance across national jurisdictions and collaboration among telecom operators, governments, and international organizations.

In conclusion, the cybersecurity challenges facing subsea cables across the Asia Pacific are an immediate and escalating threat to the region's digital backbone. From the repeated severing of cables supplying Taiwan and Vietnam's crippling multi-cable outages, to suspected Chinese surveillance activities near Japan's cable routes, the pattern of disruption is evident.

As great power competition intensifies in the South China Sea and Taiwan Strait, these cables increasingly sit at the intersection of commerce, governance, and conflict. TR

Connecting the Southeast Asian Archipelago: The Philippines' "Copycat" Approach

As Southeast Asia accelerates its next cycle of digital infrastructure investment, the Philippines is emerging as one of the region's most strategically important connectivity markets. Through the Free Public Internet Access Program, the National Broadband Program, and the National Digital Connectivity Plan (NDCP), the country is advancing toward universal digital access across its 7,641-island archipelago while simultaneously restructuring the institutional foundations of its telecommunications sector.

What distinguishes the Philippine approach is not simply the scale of its rollout ambition, but the architecture of its strategy.

This layered model resembles rollout architectures implemented in Indonesia through the Palapa Ring national backbone, in India through the BharatNet rural fiber program, and in Australia through the government-backed NBN Co wholesale network, each designed to extend connectivity beyond commercially viable metropolitan corridors.

Anchor-Institution Connectivity as a Market Catalyst

Unlike compact urban broadband markets that scale primarily through consumer demand, the Philippines is prioritizing connectivity across public schools, barangay halls, transport corridors, and health facilities as anchor institutions capable of extending network reach into underserved communities.

Under the NDCP, the government is targeting connectivity for all public schools and geographically isolated and disadvantaged barangays (GIDAs) by 2028, alongside the deployment of approximately 130,000 free public Wi-Fi access sites nationwide. The Free Public Internet Access Program has already deployed more than 15,700 operational Wi-Fi access points across all regions, provinces, and localities, creating a baseline layer of connectivity in communities where purely commercial rollout would otherwise remain economically uncertain.

Comparable anchor-institution rollout strategies have supported early broadband adoption in India through public-service connectivity linked to BharatNet fiber backhaul and in Indonesia through universal service obligation-funded connectivity programs implemented by BAKTI Kominfo to connect schools, clinics, and village administrations across remote islands.

Wholesale Backbone Expansion and the Emergence of Open Access

One of the most consequential developments in the Philippine connectivity landscape is the expansion of middle-mile infrastructure through the National Fiber Backbone initiative. Historically, transport-layer constraints limited competition outside major metropolitan corridors, reinforcing reliance on vertically integrated operator networks.

Phase 1 of the National Fiber Backbone spans approximately 1,245 kilometers from Laoag to Quezon City and activates 28 backbone nodes, while subsequent rollout phases extend

connectivity into additional regions across Luzon, Visayas, and Mindanao. As these segments expand, the backbone is expected to function as a carrier-neutral transport platform supporting regional ISPs, enterprise connectivity providers, and data-center interconnection operators.

Comparable backbone transitions have taken place in Singapore's Next Generation Nationwide Broadband Network, where passive infrastructure operated by NetLink Trust and active wholesale services delivered by Nucleus Connect enable open access for retail operators including Singtel, StarHub, and M1. Indonesia's Palapa Ring similarly deployed more than 36,000 kilometers of fiber linking western, central, and eastern regions of the archipelago.

For regional investors, backbone liberalization typically signals the transition from infrastructure scarcity toward service-layer competition.

Connectivity as Production Infrastructure Rather Than Social Utility

International experience suggests broadband deployment delivers its strongest economic returns when framed as production infrastructure rather than solely as a universal service obligation. South Korea demonstrated this approach through coordinated universal service funding, infrastructure subsidies, and early next-generation mobile rollout led by operators including KT Corporation, SK Telecom, and LG Uplus. These policies supported nationwide digital manufacturing ecosystems and high-value services exports.

Strengthening network capacity in secondary growth corridors such as Iloilo, Davao, Clark, and Cagayan de Oro could therefore reshape the geography of the country's digital services economy.

Digital Government Platforms as a Demand-Side Multiplier

Infrastructure availability alone rarely guarantees widespread adoption. Estonia's digital transformation demonstrated how interoperable government platforms and nationwide digital identity systems could make broadband access essential for everyday transactions, including taxation, prescriptions, licensing, and voting.

India achieved similar demand-side acceleration through Aadhaar-enabled service delivery platforms that supported authentication across welfare programs, financial services, and telecommunications enrollment.

Demand driven by digital public services typically produces more stable traffic growth patterns than consumer-only broadband adoption, strengthening the long-term investment case for rural and regional network expansion.

Distributed Public Wi-Fi Ecosystems and the Expansion of Last-Mile Reach

Public hotspot ecosystems are becoming an increasingly important complement to traditional operator rollout strategies in emerging connectivity markets.

India's PM-WANI framework illustrates how decentralized participation from small-scale providers enabled the creation of Public Data Offices capable of delivering Wi-Fi access using shared authentication infrastructure supported by national telecom operators. Indonesia has implemented similar universal service obligation programs through BAKTI Kominfo, connecting thousands of remote villages and public facilities beyond fiber coverage areas.

The Philippines' Free Public Internet Access Program reflects comparable deployment characteristics. As access points expand toward national targets, opportunities are expected to emerge for municipal connectivity providers, neutral-host integrators, and regional service operators to participate more actively in last-mile delivery ecosystems.

Infrastructure Sharing and the Rise of Neutral-Host Tower Networks

Another structural shift underway in the Philippine telecommunications landscape is the expansion of shared tower infrastructure through the Common Tower Policy framework.

Historically, mobile operators relied primarily on vertically integrated tower ownership models, limiting opportunities for neutral-host participation and slowing rural rollout timelines.

Comparable transitions occurred earlier in India through independent tower companies such as Indus Towers and American Tower India, and in Indonesia through tower providers including Mitratel, Tower Bersama Infrastructure, and Protelindo, which now support tens of thousands of shared sites serving operators such as Telkomsel, XL Axiata, and Indosat Ooredoo Hutchison.

A Strategic Inflection Point for Inclusive Broadband Expansion

Global experience shows that universal connectivity accelerates most rapidly when backbone infrastructure deployment, competition-enabling regulatory reform, and digital service adoption expand simultaneously. The Philippines is now advancing across all three layers through the National Digital Connectivity Plan and related infrastructure initiatives.

For regional telecom operators, tower companies, wholesale fiber providers, satellite connectivity firms, and enterprise network integrators, the country is becoming one of Southeast Asia's most structurally open connectivity expansion environments. The convergence of anchor-institution demand, backbone liberalization, infrastructure-sharing frameworks, and digital government adoption is creating conditions similar to earlier infrastructure transitions observed in Indonesia and India, where neutral-host providers and regional ISPs expanded rapidly once transport-layer bottlenecks began to ease.

In Southeast Asia's next connectivity cycle, the Philippines is no longer simply closing infrastructure gaps; it is emerging as a large-scale test case for how public-access policy, shared infrastructure investment, and open-access regulation can work together to deliver nationwide digital inclusion across one of the world's most geographically complex telecom markets. TR

Vietnam's Accelerated 5G Rollout and Its Implications for Regional Telecom Competition

Vietnam's rapid transition from 5G pilot deployments to nationwide rollout is emerging as one of Southeast Asia's most strategically significant telecom developments. In less than two years, the country has moved from spectrum allocation to population-scale infrastructure expansion, positioning itself as a rising connectivity player within ASEAN's evolving digital economy landscape.

Driven by regulatory adjustments, coordinated operator investment, and industrial modernization priorities, Vietnam's rollout reflects a shift toward treating 5G as national infrastructure rather than a purely commercial mobile upgrade.

This strategy is increasingly attracting attention across emerging telecom markets seeking faster deployment pathways.

From Spectrum Allocation to Commercial Scale

Vietnam's acceleration began after the government completed major spectrum licensing in 2024. Viettel secured the 2.5-2.6 GHz band in March 2024, followed by VNPT (VinaPhone) with 3.7-3.8 GHz later the same month, while MobiFone obtained the 3.8-3.9 GHz band in July 2024.

Commercial rollout followed quickly. Viettel launched nationwide 5G services in October 2024, VNPT's VinaPhone followed in December 2024, and MobiFone launched services in major cities in March 2025 before expanding coverage further across provinces.

By late 2025, Viettel reported deploying approximately 30,000 5G base stations, supporting outdoor coverage across roughly 90% of the population and indoor coverage approaching 70%. Vietnam's national digital infrastructure strategy now targets 99% population coverage by 2030.

Industry projections referenced by GSMA Intelligence indicate Vietnam could exceed 90 million 5G connections by the end of the decade, suggesting 5G will become the country's dominant mobile access technology within a few years.

Spectrum Policy as a Deployment Catalyst

One of the defining features of Vietnam's rollout strategy has been its spectrum pricing approach. After an earlier auction round failed to attract bidders, regulators reduced reserve prices ahead of the successful 2024 licensing phase, allowing operators to allocate more capital toward infrastructure deployment rather than spectrum acquisition.

This reflects a broader policy shift toward prioritizing rollout speed over short-term auction revenue. Across developing telecom markets, high spectrum licensing costs are widely recognized as a major barrier to rapid 5G expansion, making Vietnam's approach notable from a regulatory perspective.

As a result, the country moved from licensing to large-scale base station deployment within an unusually compressed timeframe.

Positioning 5G as Industrial Infrastructure

Vietnam's 5G roadmap differs from earlier regional rollout models by emphasizing industrial transformation rather than consumer-only connectivity upgrades.

Government agencies and operators are prioritizing enterprise use cases across manufacturing zones, logistics corridors, smart city monitoring platforms, intelligent transport systems, and AI-enabled tourism services.

Notably, 5G-enabled services could contribute around 7.34% to Vietnam's GDP growth by 2025, underscoring expectations that next-generation connectivity will support industrial upgrades rather than simply increase broadband speeds. This industrial orientation aligns with Vietnam's ambition to move up the global manufacturing value chain while expanding its digital services ecosystem. It also strengthens the strategic rationale behind rapid infrastructure deployment timelines.

Regional Adoption Trends Reinforce Strategic Timing

Vietnam's rollout is unfolding during a broader regional transition toward mid-band 5G deployment.

According to Ericsson's Mobility Report for Southeast Asia and Oceania, the region is expected to reach approximately 560 million 5G subscriptions by the end of the forecast period (around 2029). Markets that deploy mid-band spectrum early are generally better positioned to support enterprise applications, fixed wireless access expansion, and industrial connectivity use cases.

Vietnam's allocation timeline places it within this early-deployment group, strengthening its readiness for enterprise-driven adoption phases.

Vendor Competition and Strategic Balancing

Vietnam's rollout is taking place amid intensifying global competition among telecom equipment suppliers.

For instance, in 2026, MobiFone is reportedly exploring additional cooperation with Chinese vendors Huawei and ZTE. At the same time, European suppliers Ericsson and Nokia remain major infrastructure partners across Vietnam's operator ecosystem.

Rather than aligning exclusively with a single vendor bloc, Vietnam appears to be maintaining a diversified sourcing strategy consistent with broader connectivity approaches observed across ASEAN markets.

Implications for Southeast Asia's Telecom Landscape

Vietnam's accelerated rollout is beginning to influence regional telecom competition in several ways. First, its spectrum-pricing adjustments highlight an alternative regulatory pathway for emerging markets seeking to accelerate deployment without constraining operator investment capacity. Second, Viettel's strengthening domestic expertise enhances its potential role as a regional infrastructure partner across developing markets in Asia and Africa. Third, Vietnam's emphasis on enterprise and industrial applications reinforces the growing importance of private networks, automation platforms, and edge-enabled connectivity as the next frontier of telecom competition in ASEAN. Together, these shifts suggest rollout speed itself is becoming an increasingly important strategic differentiator in the region's connectivity landscape.

However, despite strong infrastructure momentum, network scale alone will not determine long-term competitiveness. Enterprise adoption remains the next critical phase of Vietnam's 5G transition. Supporting layers such as edge-cloud infrastructure, industrial IoT integration, and private network deployment frameworks will need to expand alongside radio access coverage in order to unlock full economic value from next-generation connectivity. Similar rollout patterns in other Southeast Asian markets suggest that translating infrastructure leadership into enterprise monetization typically requires sustained ecosystem development over several years.

Rather than maximizing early auction revenue, Vietnam's regulators have prioritized deployment speed, industrial readiness, and long-term digital competitiveness.

If rollout trajectories continue at their current pace, Vietnam is likely to emerge as one of Southeast Asia's most influential mid-tier digital infrastructure markets, reshaping how operators and regulators approach next-generation network strategy across the region. TR

DITO AI Platform Is Cutting Costs and Enhancing Customer Support

DITO Telecommunity has implemented an internal artificial intelligence (AI) platform that is significantly reducing customer service costs and allowing the company to expand its support operations. This system now manages almost all routine inquiries without needing human assistance. Its AI system now resolves nearly all customer service inquiries.

The platform, named KAi, instantly addresses up to 98% of customer inquiries across DITO's app, eShop, and social media channels. By automating routine issues, it allows human agents to concentrate on more complex cases.

DITO's Chief Commercial Officer, Atty. Adel Tamano, said: "KAi represents how we are reimagining what service can be for Filipinos. When technology works seamlessly in the background, it unlocks more time, more opportunity, and a better everyday experience. That is the kind of innovation we are building—not just for efficiency, but to truly serve and empower our customers."

DITO reported that this transition has reduced frontline support costs and transformed customer interactions, with agents now dealing with fewer but more meaningful engagements. For users, the system offers 24/7 assistance, quicker issue resolution, and the ability to conduct transactions within chats.

DITO developed KAi internally to incorporate AI into its operations and enhance the customer experience. The platform is designed to continuously learn from interactions and improve its performance over time.

TRAI Explores Satellite-to-Mobile Connectivity for Rural Coverage

India's telecom sector regulator, TRAI, is investigating ways to enable direct transmission of communication services from satellites to mobile phones to ensure widespread connectivity across the country, especially in rural and remote areas.

In a consultation paper, the framework for satellite communication network authorization, TRAI is seeking feedback from stakeholders on whether direct-to-device (D2D) services should use the spectrum designated for mobile satellite services or the frequencies used for regular mobile services like 4G and 5G.

The introduction of D2D is anticipated to elevate satellite communication services to the level of mobile service providers. TRAI noted that some rural and remote areas remain unserved or underserved. In this context, the two types of D2D services, via satellite using MSS spectrum and via satellite using IMT spectrum, could potentially facilitate widespread connectivity in these areas. MSS refers to mobile satellite services provided on specialized satellite phones, while D2D service via satellite using MSS spectrum would mean offering MSS on standard cellular mobile devices.

Generally, if the user terminal is fixed, like VSAT, the service is categorized as FSS (fixed satellite service), and if the user terminal is mobile, it falls under the MSS category. The technical feasibility of providing direct satellite services using mobile service spectrum is pending a decision at the World Radiocommunication Conference 2027 of the International Telecommunication Union (ITU). This conference is scheduled for October-November next year in China.

An alternative perspective is that, given global practices (many countries have already allowed D2D service via satellite using IMT spectrum) and the service's potential to provide widespread connectivity, it should be implemented in India without delay, according to TRAI.

The spectrum for IMT or mobile services is allocated through auctions, while the Telecommunications Act 2023 permits the government to allocate satellite service spectrum for various uses through an administrative process without auctions. In the consultation paper, TRAI has asked whether D2D service via satellite using IMT spectrum should be allowed now or if the decision should wait until after the WRC-2027 outcomes are considered.

TRAI has also adopted a cautious approach, stating that before assigning FSS or MSS spectrum to Satellite Communication Network (SCN) authorized entities, it is necessary to determine the intended usage. The regulator has set May 6 as the deadline for comments on the consultation paper and May 20 for counter-comments.

Singtel, Cohesity Launch AI-Powered Sovereign Data Service

Singtel Digital InfraCo's sovereign AI cloud, RE:AI, has partnered with Cohesity to offer an intelligent, sovereign AI data security and management service. This service addresses a major challenge enterprises face with their backup data, allowing them to convert their archives into a searchable knowledge base for better insights and value.

Many enterprises have accumulated years of important information, such as old documents, emails, reports, and system records, stored in backup systems. These backups are often treated like a "digital storage room." While essential for recovery, they are difficult for today's large language models and AI applications to search or learn from, as these tools are designed to work only with current active data. The new service from RE:AI and Cohesity enables enterprises and government agencies to catalogue and organize vast amounts of historical data, making it searchable and queryable in real time. This will help generate more accurate, data-driven responses from richer, longer-range context.

Through this partnership, Cohesity will also contribute R&D resources to Singtel Digital InfraCo's Centre of Excellence (CoE) for Applied AI with NVIDIA, announced in February 2026. This will strengthen the CoE's AI ecosystem for fault-tolerant, highly-secure AI adoption across enterprises and government agencies.

Beyond searches, the service allows enterprises to easily retrieve valuable information to reconstruct what was known at any point in time, which is critical for audits, investigations, and regulatory reporting. It also enhances cyber resilience. During incidents like ransomware attacks, AI agents can quickly identify impacted systems and isolate affected data across backup history, speeding up response and recovery. The service is available in single- and multi-tenant configurations to meet the security and compliance needs of regulated sectors, including financial services, healthcare, and government.

PLDT Inc. Launches KAI AI Assistant for Enterprise Teams

PLDT Inc. is enhancing its use of AI by introducing a new AI-powered conversational assistant to aid its PLDT Enterprise teams with timely network intelligence and product insights. Named KAI, which stands for "Knowledge, Automation, Intelligence," this tool is the first conversational agent from UiPath, a leader in business orchestration, to be implemented in a live production setting by a Southeast Asian telecom provider, marking a significant industry achievement.

Designed to support Enterprise teams, KAI improves customer engagement by providing quicker access to network, product, and solution information during interactions. Developed on the UiPath platform, KAI represents PLDT and Smart's move towards "tech-enabled selling," enhanced by data-driven insights. This AI assistant complements human interaction by streamlining processes, reducing response times, and enhancing the quality of customer conversations.

For enterprise customers, this means more efficient interactions, from faster network availability validation to clearer discussions on solutions tailored to specific business needs.

As KAI evolves, PLDT aims for a more seamless experience for both teams and customers, making essential information like network capacity features and real-time insights more accessible to speed up decision-making.

The launch of KAI is part of PLDT's ongoing investment in innovations to improve its network. These efforts align with the Group's broader goal to provide enhanced services nationwide, reinforcing PLDT's position as the preferred partner for Philippine enterprises in an increasingly digital and connected economy.

This initiative also supports the PLDT Group's commitment to helping the country achieve the United Nations Sustainable Development Goals, particularly SDG 9 – Industry, Innovation, and Infrastructure.

AWS, SHI India Scale AI Model Development Under India AI Mission

Amazon Web Services (AWS) has announced a collaboration with SHI India to support indigenous artificial intelligence (AI) model development under the IndiaAI Mission, expanding access to advanced AI infrastructure for public- and private-sector organizations across India.

Through the collaboration, SHI India, empaneled under the IndiaAI Mission, will provision AWS AI services, including Amazon SageMaker, enabling government departments, startups, enterprises, academic institutions, and research organizations to train and customize large language models (LLMs) without requiring deep expertise in managing complex AI infrastructure.

AWS said its generative AI stack, combining SageMaker and Amazon Bedrock with SHI India's local implementation capabilities, will help accelerate India's push toward technological self-reliance and global AI leadership. The platform addresses key operational challenges associated with GPU-based model training at scale through automated cluster provisioning, checkpoint-less training, and self-healing node recovery, reducing downtime and improving efficiency during foundation model development.

AWS noted that the automation capabilities built into SageMaker simplify cluster management and ensure continuous model training operations even during node failures, helping organizations shorten development cycles while lowering operational overhead.

According to AWS, the initiative aligns with the IndiaAI Mission's objective of empowering domestic innovators to build solutions tailored to India's unique socio-economic and sectoral requirements while strengthening the country's digital sovereignty.

With the integration of scalable cloud-based AI services and localized delivery expertise, AWS and SHI India aim to lower barriers to foundation model development and help position India as a leading hub for applied AI innovation across Asia.

SoftBank Trials Spectrum-Sharing Technology for NTN and Terrestrial Networks

SoftBank has tested a dynamic nullforming technology designed to suppress interference from aerial base stations and enable spectrum sharing between NTN platforms such as high-altitude platform stations (HAPS) and terrestrial mobile infrastructure.

The operator said the technology dynamically reduces radio wave emissions in specific directions while adapting in real time to changes in aircraft position and attitude, allowing aerial platforms to operate in the same frequency band as ground base stations without significantly degrading terrestrial network performance.

SoftBank validated the approach in a field trial conducted in December 2025 over Hachijo Island using a light aircraft equipped with an aerial base station incorporating the dynamic nullforming capability. The aircraft flew at an altitude of approximately 3,000 meters and reached ground speeds exceeding 200 km/h while transmitting in the 1.7 GHz band, the same spectrum used by a terrestrial base station.

During the trial, the aerial platform projected a directional null toward the terrestrial base station while flying along a circular flight path, demonstrating that wide-area communications services can be delivered from an aerial base station without significantly degrading the communication quality of the terrestrial network.

SoftBank said applying the technology improved the average throughput of the terrestrial-network device by approximately 80% compared to operation without interference suppression.

The company also used a proprietary 5G cylindrical antenna and a high-capacity communications payload to simulate aerial base station conditions during the test.

SoftBank said it will use insights from the trial to improve spectrum utilization efficiency and advance the implementation of technologies that enable spectrum sharing between NTN platforms such as HAPS and terrestrial mobile networks.

One NZ, Vodafone Strike Deal to Expand Network API Ecosystem in New Zealand

One NZ has entered a commercial agreement with Vodafone to accelerate the adoption of network Application Programming Interfaces (APIs) in New Zealand, advancing efforts to unlock new enterprise use cases and digital innovation.

The partnership will extend globally standardized network API capabilities to the local market, aligned with the GSMA Open Gateway initiative and CAMARA frameworks. These APIs enable developers and enterprises to access and integrate advanced mobile network functions, supporting use cases such as real-time fraud prevention, device status insights, secure authentication, and digital identity verification.

By simplifying access to network intelligence, the collaboration is set to expand application development opportunities across sectors including financial services, e-commerce, media, and digital platforms.

Developers will be able to leverage capabilities such as number verification, SIM swap detection, and network-based authentication to enhance security, reduce fraud risks, and improve customer experience.

The move reflects a broader industry shift toward network API monetization, as telecom operators worldwide look to create new revenue streams beyond connectivity. The GSMA Open Gateway initiative, backed by more than 40 operator groups globally, aims to standardize and scale API access across networks, enabling a more interoperable and secure digital ecosystem.

True Corporation Partners with OYMotion to Develop Neuro AI Rehabilitation in Thailand

True Corporation has partnered with neurotechnology firm OYMotion to develop Neuro AI solutions to transform physical therapy and rehabilitation in Thailand, marking a significant step in the region's emerging neurotech landscape.

The collaboration integrates brain-computer interface (BCI) technology with artificial intelligence and True's digital infrastructure to enable patients to control devices or prosthetics using neural signals. By converting brain activity into actionable commands, the system stimulates neural pathways and supports cognitive retraining, offering a faster and potentially more effective alternative to conventional rehabilitation methods.

The initiative targets critical healthcare challenges, including the shortage of specialized physical therapists and rising treatment costs. It focuses particularly on stroke survivors and patients with paralysis or mobility impairments, aiming to improve recovery outcomes while enhancing patient independence and quality of life.

True and OYMotion have begun piloting the Neuro AI technology in leading Thai hospitals to validate clinical performance. Positive trial results could accelerate nationwide adoption across public health networks and position Thailand as a regional hub for NeuroTech innovation.

The partnership combines OYMotion's expertise in neural sensing and AI-based signal decoding with True Corporation's network capabilities and data platforms. This integration enables real-time transmission and interpretation of brain signals, allowing robotic systems or prosthetics to replicate precise, human-like movements.

According to True Corporation, the technology delivers benefits across multiple levels of the healthcare ecosystem. Patients gain access to faster and more personalized rehabilitation, while clinicians can leverage brain data to tailor treatment plans. Hospitals can scale services more efficiently without compromising care quality, and the broader healthcare system benefits from a new benchmark in rehabilitation standards.

As telecom operators across Asia expand into digital health and AI-driven services, True Corporation's Neuro AI initiative reflects a broader industry shift toward leveraging connectivity and data platforms to enable next-generation healthcare solutions.

An Industry in Flux: Data Security and Sovereignty in Undersea Networks

As digital economies grow and cross-border data flows rise, attention has shifted beyond capacity and speed; governments and operators now face the challenge of balancing global connectivity with concerns about data security, privacy, and sovereignty.

Where Data Security Is Lost

Here, backdoors could be installed during the cable manufacturing or repair process, cable landing stations could become targets for cyberattacks, and rapid advances in subsea technology might even allow adversaries to tap cables at sea. For instance, NSA interception centers at facilities like AT&T's Room 641A in San Francisco processed vast data streams from subsea cable traffic, while programs like XKeyscore and PRISM were used to analyze intercepted data, extracting user information from tech giants including Google, Meta, and Microsoft, many of which also own significant portions of the subsea cable infrastructure.

The ownership structure of global subsea cables compounds these vulnerabilities significantly. Google, Microsoft, Facebook, and Amazon now own or lease nearly half the world's undersea bandwidth, meaning that the vast majority of sovereign national data flows is ultimately controlled by a small number of private corporations. This is a regulatory blind spot as there are currently no substantial parameters to stop them from accessing information moving through their own cables. In addition, submarine cable operators have increasingly used internet-connected remote management systems to control and monitor the cables Center for Strategic and International Studies, introducing new attack surfaces that did not exist in earlier generations of the network.

The Rising Importance of Data Sovereignty

The 2013 Snowden disclosures revealed that the NSA and Britain's GCHQ were covertly intercepting data directly from subsea cable infrastructure. Through programs like MUSCULAR and TEMPORA, the agencies tapped into Google, Yahoo, BT, and Vodafone cable links, processing over 181 million records in a single month. GCHQ alone tapped more than 18 submarine cables landing in the UK. These revelations demolished the assumption that commercially owned submarine cables were beyond state interception, prompting the UN Special Rapporteur to warn that fiber-optic cable tapping enables near-complete, indiscriminate surveillance of global communications, fundamentally reshaping how governments and industry approach data security on subsea networks.

This is where data sovereignty comes into play. Data sovereignty refers to data that is generated within a country and subject to that nation's laws and governance. While undersea cables enable seamless data transfer between regions, their routes may expose data to different regulatory regimes and security risks.

On the ground, policymakers worldwide have reinforced regulations on data movement and storage. Initiatives like the European Union's General Data Protection Regulation (GDPR) highlight the growing emphasis on safeguarding sensitive information. These regulations often require organizations to keep personal or strategic data within approved jurisdictions or manage it under strict compliance standards. For subsea cable operators, this adds another layer of operational responsibility.

The international scope of submarine infrastructure brings significant challenges. A single cable may cross several countries' territorial waters and connect landing stations in multiple regions. Each landing point requires careful, specific attention to data governance.

Building Secure Subsea Infrastructure

Following the Snowden revelations, Google and other tech giants accelerated end-to-end encryption of all international data center links.

On the regulatory front, the U.S. now incorporates security best practices into subsea cable licensing reviews, while the EU's NIS2 Directive extends cybersecurity obligations to cable landing stations, collectively positioning subsea cables as national sovereign infrastructure.

Another emerging solution is the development of regional data hubs and controlled landing stations to improve monitoring and compliance. Using advanced encryption, secure routing protocols, and localized data processing, operators can help protect sensitive information while maintaining international connectivity. More edge data centers near cable landing points allow data processing closer to its source, reducing latency and supporting regulatory oversight.

Collaboration between governments, telecom operators, and technology companies is becoming more important. Building secure and resilient submarine cable networks requires advanced engineering and clear frameworks for information sharing, risk management, and cross-border cooperation. International standards and industry partnerships can help harmonize security practices while supporting the free flow of data that underpins global digital services.

Trust in a Data-Driven Economy

The debate around data sovereignty and undersea infrastructure will likely intensify as geopolitical dynamics and digital policy priorities change. Governments will keep seeking more control over national data assets, while businesses and technology providers advocate for open, high-capacity networks that enable global innovation.

Undersea cable networks represent both the interconnectedness of the digital world and the growing need for responsible data stewardship. As the foundation of international communications, these systems must adapt to meet the dual imperatives of connectivity and security. Achieving this balance will require forward-looking policy, technological innovation, and sustained international cooperation.

In an era defined by data-driven economies, ensuring that undersea networks remain both open and secure will be central to sustaining trust in the global digital ecosystem. TR

> “Google, Microsoft, Facebook, and Amazon now own or lease nearly half the world's undersea bandwidth, meaning that the vast majority of sovereign national data flows is ultimately controlled by a small number of private corporations”

Next-Generation Data Center Energy Solutions

The rapid growth of artificial intelligence (AI) is driving a significant increase in demand for data center capacity, particularly for edge data centers located closer to end users in the Asia-Pacific region. However, one of the primary constraints to this expansion is not land or bandwidth, but power availability.

Many traditional electrical grids in Asian cities were originally designed for distributed residential and industrial consumption, rather than the continuous, high-capacity loads exceeding 100 megawatts required by modern AI clusters and edge facilities. In response, hybrid and multi-fuel energy solutions are becoming essential to address grid capacity limitations while promoting sustainability and operational resilience.

AI Loads and Grid Limits

AI workloads require substantial power. Industry forecasts indicate that next-generation GPUs for AI inference and training are expected to increase average rack density from approximately 36 kW per rack in 2023 to 50 kW or higher by 2027. This escalation in power demand complicates both the operation of existing facilities and the planning of future data centers.

Data center capacity in the Asia-Pacific region is expanding rapidly as hyperscalers and telecom operators support AI, cloud computing, and digital services. Industry estimates indicate that APAC added nearly 2,300 MW to its development pipeline in the first half of 2025, increasing operational capacity to about 12.7 GW, with many more facilities under construction or in planning. This growth highlights APAC's status as one of the world's fastest-growing digital infrastructure markets, driven by higher internet penetration, greater cloud adoption, and rapid AI workload scaling.

Despite strong demand, power availability remains a major constraint on data center growth. Nearly half of developers cite access to reliable energy as the main barrier to new projects. This challenge is global, as electricity infrastructure struggles to keep pace with the digital economy's rapid expansion.

In established digital infrastructure hubs like Singapore and Hong Kong, operators face significant constraints on land and power capacity. Singapore, for example, imposed a temporary moratorium on new data center developments from 2019 to 2022 as authorities reassessed how to manage rising energy demands and limited land. Data centers already represent a substantial portion of Singapore's electricity use, prompting regulators and operators to seek more efficient and sustainable expansion strategies.

Hong Kong faces similar pressures as a mature data center hub with high demand but limited space for large-scale growth. Consequently, developers and hyperscalers are increasingly considering alternative locations in Southeast Asia where expansion is more feasible.

Cities such as Bangkok, Jakarta, and Kuala Lumpur are emerging as attractive destinations for new digital infrastructure investments. These markets often offer more available land, expanding power infrastructure, and greater opportunities to integrate renewable energy sources.

A Practical Path Forward

While traditional diesel generators remain common for backup power, operators are increasingly adopting low-carbon alternatives like HVO fuel, which can significantly reduce lifecycle emissions compared to fossil diesel.

A notable example of this shift is ST Telemedia Global Data Centres (STT GDC) in Singapore, which became one of the first data center operators in the country to deploy HVO for backup generators across its facilities. The initiative began with the rollout of an initial 50,000 liters of HVO to support contingency power systems. The renewable fuel is supplied by Neste, which has verified that the HVO used can reduce greenhouse-gas emissions by up to 90% across its lifecycle compared to traditional fossil diesel.

In the Philippines, hybrid power models that combine solar generation and battery storage are increasingly recognized as practical solutions for energy-intensive infrastructure, including edge data centers. These configurations enable a substantial portion of electricity to be generated locally via rooftop or nearby solar installations and stored in battery systems for subsequent use, with the remaining demand met by the national grid. In certain hybrid scenarios, renewable generation and storage can supply approximately 40% of a facility's total power requirements, supporting operators in achieving both sustainability objectives and operational reliability.

The Philippines has recently accelerated this hybrid energy strategy through large-scale renewable and storage projects. A prominent example is the Citicore Solar Batangas 1 Power Plants in Batangas, ceremonially commissioned by Ferdinand R. Marcos Jr., the President of the Philippines. Developed by Citicore Renewable Energy Corporation, the project integrates solar generation with battery storage to provide cleaner and more stable electricity supply. The facility combines the Lumbangan and Luntal solar installations, capable of producing up to 197 MW of renewable energy, supported by a 320 MWh battery energy storage system (BESS).

Beyond Batangas, the Philippines is rapidly expanding battery storage to strengthen grid resilience and support renewable growth. Citicore has partnered with Sungrow to deploy 1.5 GWh of battery storage for its solar projects, while Terra Solar Philippines, a subsidiary of SP New Energy Corp., has agreed with Huawei to install 4.5 GWh of battery storage alongside a 3.5 GW solar plant, creating one of the largest planned integrated solar-plus-storage facilities globally.

New Energy Systems in Asia's Data Centers

Asian telecommunications and infrastructure providers are actively piloting and deploying next-generation energy systems to support growth.

Huawei Digital Power has introduced a portfolio of high-reliability power supply innovations to support next-generation digital infrastructure. Key offerings include the PowerPOD series and FusionPower solutions, which are designed to modernize traditional data center power architectures through intelligent integration and modular design. The company also introduced its reliable, agile, sustainable (RAS) guideline for AI data center construction, emphasizing reliability through comprehensive safety design, agile deployment with modular infrastructure, and improved sustainability with power usage effectiveness (PUE) as low as 1.1.

AIS is advancing next-generation data center energy efficiency by deploying a chilled-water air-conditioning system designed to significantly reduce energy consumption while maintaining stable cooling performance. This is complemented by a building automation system (BAS) that continuously monitors and controls core facility systems—including cooling and lighting—automatically switching them off when not in use to minimize wasted power. To further reduce thermal load, high-density foam insulation has been injected between structural walls to block external heat and stabilize internal temperatures, lowering cooling demand. Together, these measures enable the data center to achieve a PUE of approximately 1.4–1.6, placing it within the range of highly efficient power consumption management for modern data center operations.

SK Telecom is investing heavily in AI-enabled, energy-efficient, and sustainable data centers to support the rapid growth of AI, often in collaboration with major cloud providers and technology partners. The company is evolving into a comprehensive AI data center (AIDC) developer, establishing key hubs across South Korea, including the Seoul metropolitan area (Gasan), Ulsan, and the southwestern region, with plans to expand into Southeast Asia. SK Telecom's Ulsan AIDC is set to reach 1 GW-scale capacity, leveraging energy-specialized solutions such as LNG-powered plants and cold-energy cooling systems through collaborations with SK Innovation.

In partnership with Sharp Corporation, SoftBank constructed a large-scale AI data center on the site of Sharp's Sakai LCD panel plant in Osaka Prefecture. The facility spans approximately 750,000 square meters of floor space on a 440,000-square-meter site, representing about 60% of the plant's total land area, and features an initial power capacity exceeding 150 megawatts, with plans to expand to over 400 megawatts in the future. By leveraging existing land, buildings, power, and cooling systems from the Sharp Sakai Plant, SoftBank accelerated construction and integrated sustainable energy practices to reduce environmental impact.

Integrated Power and Digital Infrastructure

The advancement of AI edge computing in Asia depends on addressing energy bottlenecks through technological innovation. As data centers evolve into digital energy systems that combine grid power, renewable sources, storage, intelligent control, and hybrid fuel solutions, operators can access new markets and achieve power capacities that were previously unattainable with conventional energy models.

In a region experiencing rapid electrification, digital transformation, and widespread AI adoption, data centers are evolving beyond traditional server rooms to function as power hubs. Hybrid, multi-fuel energy platforms represent the next stage in supporting this trans. TR

Cambodia Passes First Dedicated Law Targeting Telecom Scam Operations

Cambodia's National Assembly has unanimously approved a draft law targeting telecom and online fraud, marking a major step in the country's efforts to curb cross-border scam operations and strengthen enforcement frameworks.

Lawmakers passed the legislation during a plenary session on March 30, chaired by National Assembly President Khuon Sudary, with all 112 members voting in favor. The cabinet endorsed the draft on March 13. Once enacted, the measure will become Cambodia's first dedicated criminal statute addressing telecom fraud and one of the earliest comprehensive legal frameworks of its kind in the region. Authorities said the law aims to prevent the resurgence of scam operations and reinforce long-term enforcement capacity.

Deputy Prime Minister and Minister of Justice Koeut Rith previously stated that the legislation introduces strict penalties, including life imprisonment for the most serious offenses.

Under the new framework, organizing or operating telecom fraud centers qualifies as a major crime punishable by five to 10 years in prison. Courts may impose sentences of up to 30 years, or life imprisonment in cases involving aggravating circumstances such as illegal detention, extortion, or murder.

The law also extends liability to individuals who recruit or train personnel for scam operations, as well as property owners who lease premises used for fraudulent activities. Authorities clarified that landlords cannot avoid responsibility by claiming lack of knowledge about illegal use of their properties.

Chhay Sinarith, Senior Minister in Charge of Special Missions, and Head of the Secretariat for the Commission for Combating Online Scams (CCOS), said the legislation establishes a critical legal foundation for Cambodia's nationwide crackdown on telecom fraud. He described the measure as the country's strictest criminal framework targeting scam networks to date.

Officials added that the law institutionalizes anti-fraud enforcement mechanisms and strengthens Cambodia's response to increasingly sophisticated and cross-border telecom scam activities across the region.

Uzbekistan, Kazakhstan Pursue Deeper Policy-Driven Tech Cooperation

Uzbekistan's President, Shavkat Mirziyoyev, and Kazakhstan's President, Kassym-Jomart Tokayev, visited the nationwide National AI Hackathon in Bukhara, underscoring a policy-driven push to scale artificial intelligence (AI) and digital infrastructure across Central Asia.

The event aligns with Uzbekistan's Digital Uzbekistan 2030 program, which prioritizes AI development, e-government expansion, and nationwide connectivity improvements as key pillars of economic modernization.

Held at Bukhara's universal sports complex, the hackathon brought together developers, startups, and technology stakeholders to showcase AI applications across sectors. During the visit, both leaders reviewed progress in Uzbekistan's Digital Government platform, with demonstrations covering transport, customs, taxation, healthcare, energy, and agriculture. Officials presented progress on Uzbekistan's Digital Government platform, with deployments spanning transport, customs, taxation, healthcare, energy, and agriculture.

The Presidents also engaged with startup representatives, including KPI-COM, OSON, and DATOX, reflecting the government's push to cultivate a domestic innovation ecosystem. Discussions highlighted the role of accelerators and financial institutions in scaling digital services.

Key ecosystem players such as UZUM, TBC Bank Uzbekistan, Aloqa Bank, HUMO, and UZCARD presented their contributions to digital finance. These platforms continue to expand mobile payments and digital banking services, aligning with findings from the Asian Development Bank (ADB) and the European Bank for Reconstruction and Development (EBRD), which identify Central Asia as a fast-evolving fintech market.

Digital-first banking models such as TBC Uzbekistan, continue to expand cashless transactions and financial inclusion. These services depend on reliable telecom networks, reinforcing the link between connectivity infrastructure and fintech growth.

The event also underscored the importance of human capital in digital transformation. Uzbekistan's young population and state-backed IT education initiatives continue to support participation in innovation programs, including hackathons and startup accelerators.

The visit signaled shared momentum between Uzbekistan and Kazakhstan in advancing AI and digital innovation. As both countries continue investing in connectivity, platforms, and talent, initiatives such as the National AI Hackathon highlight the region's ambition to strengthen its position in the evolving digital economy.

NTT DATA, AWS Expand Multi-Year Alliance to Scale Enterprise AI

NTT DATA announced a multi-year Strategic Collaboration Agreement (SCA) with Amazon Web Services (AWS) to help enterprises modernize legacy systems, adopt agentic AI responsibly, and scale innovation across industries.

Combining NTT DATA's expertise in cloud transformation, cloud-native modernization, and agentic AI with the scale and innovation velocity of AWS services, the collaboration will deliver tailored enterprise solutions that modernize mission-critical workloads, build secure cloud foundations, and drive measurable business outcomes across regulated and high-growth industries.

Under the agreement, NTT DATA and AWS will accelerate enterprise transformation in four priority areas:

AI-Driven, Large-Scale Cloud Transformation: Accelerating the migration and modernization of on-premises workloads on AWS, leveraging generative and agentic AI, automation, and data platforms to unlock new business models and drive intelligent operations.

Industry Cloud Solutions on AWS: Delivering modern industry-specific, repeatable offerings across financial services, healthcare, life sciences, public sector, manufacturing, retail, and energy, leveraging NTT DATA's Industry Cloud with 500+ extensible business components and AI agents.

AI and Data Innovation for Modern Managed Services and Client Experiences: Operating secure, compliant cloud environments at scale, including a recent collaboration agreement to modernize contact center solutions on Amazon Connect to accelerate the adoption of AI-driven customer experience (CX) solutions worldwide.

Digital Sovereignty and Regulated Cloud Solutions on AWS European Sovereign Cloud: "Enabling European governments and enterprises to meet stringent data residency and operational autonomy requirements. As a launch partner for the AWS European Sovereign Cloud, NTT DATA will deliver sovereign-by-design cloud solutions that combine regulatory compliance with the same security, availability, and performance clients expect from AWS."

AWS will support NTT DATA in running co-innovation programs, certifications, and client events, to help enterprises adopt AI driven cloud solutions faster and with greater confidence.

To advance delivery, NTT DATA has formed a dedicated AWS Business Group, aligned with the AWS sales and delivery structure. This group includes close to 11,000 AWS-certified experts, with the objective of certifying nearly 10,000 more experts over the next three years.

"This collaboration will help more enterprise organizations unlock the potential of the cloud and AI to modernize their operations and accelerate innovation," said Greg Pearson, VP, AWS Global Sales. "Through industry-aligned architecture platforms, AI-driven customer experiences, and support in meeting evolving regulatory requirements through the AWS European Sovereign Cloud, we're enhancing the ability to transform legacy workloads and build modern digital experiences on AWS."

Honda Trading Asia successfully migrated to the AWS Cloud with the expert support of NTT DATA.

China Urges Global Alliance to Combat Telecom Fraud

China's Ministry of Public Security has urged all parties to collaborate in forming an international alliance to combat telecom and online fraud, aiming to establish a more practical and effective framework for addressing transnational crime.

This appeal was made during the 2026 Global Fraud Summit, which took place in Vienna, Austria, from March 16 to 17.

A Chinese delegation participated in the summit, including representatives from the Ministry of Public Security, police authorities from Hong Kong and Macau special administrative regions, and China's permanent mission in Vienna, according to a statement from the ministry.

The representative from the Ministry of Public Security highlighted China's recent advancements in international law enforcement cooperation and its achievements in tackling telecom and online fraud. The representative also reiterated China's willingness to collaborate with all parties to combat these crimes.

Delegates exchanged views on the impact of fraud, successful international law enforcement cooperation cases, methods for collecting fraud-related evidence, electronic evidence extraction, and the development of an international law enforcement cooperation platform.

On the sidelines, the ministry organized an event to build an international anti-fraud alliance and an exhibition showcasing China's experience in combating telecom and online fraud.

Telcos as Cloud "Intermediaries" in Asia

As global hyperscale cloud providers continue expanding into Asia, they face a complex web of regulatory, cultural, and operational challenges that cannot be solved by technology alone. In this evolving landscape, Asian telecom operators are emerging as indispensable cloud "intermediaries."

Telco companies in Asia are no longer just connectivity providers; they are becoming strategic enablers of cloud adoption and digital transformation, acting as bridges between hyperscalers' global capabilities and local market requirements.

The Cloud Opportunity and the Local Puzzle

Southeast Asia's cloud sector is expanding quickly, with Indonesia emerging as one of the region's strongest growth markets. Indonesia's cloud industry is projected to reach about USD 2.46 billion in 2025 and is expected to grow at an annual rate of over 14% through 2030, potentially more than doubling in value by the start of the next decade.

In a broader sense, hybrid cloud adoption is surging as enterprises balance performance and regulatory compliance, particularly in countries with strict data residency laws. Hybrid models combine on-premises systems with public and private cloud, allowing flexibility and compliance with local regulations, a requirement that often complicates direct hyperscaler entry.

Meanwhile, individual markets present starkly different regulatory and cultural landscapes. For example, Singapore's regulatory approach demonstrates how seriously governments treat telecom infrastructure, and why telcos operating there must assume full accountability, even when disruptions involve shared systems or third-party components.

Demonstrating this, Singapore's Infocomm Media Development Authority (IMDA) imposed a SGD 1 million financial penalty on Singtel following a major fixed voice service disruption on 8 October 2024, which resulted in no access to customer service hotlines for certain government agencies, healthcare institutions, banks, companies, and emergency call services. Singapore's regulatory regime compels telcos to act as risk managers and compliance guardians when integrating hyperscaler technologies into their networks.

Telcos as Sovereign and Operational Interpreters

Asia's regulatory landscape increasingly demands that cloud computing respect local sovereignty. A survey cited by Telecom Review Asia shows that 82% of Asia-Pacific telcos now consider data localization a top barrier to adopting hyperscaler AI services, up from 58% a few years ago.

For instance, Singtel's Nxera division in Singapore has developed DC Tuas, a carrier-neutral, multi-tenant center. DC Tuas's integrated cable landing station provides direct access to domestic and international networks, ensuring compliance with Singapore's strict data regulations while supporting hyperscalers and enterprise cloud clients.

Thailand's Advanced Info Service (AIS) has launched AIS Cloud, the country's first world-class hyperscale cloud service operated entirely by a Thai company. By housing Oracle Alloy infrastructure within its own local data centers, AIS ensures that sensitive customer and organizational data is stored and processed under Thai jurisdiction, fully complying with the Personal Data Protection Act (PDPA) and national cybersecurity standards.

Telecom Networks Support Cloud Delivery Platforms

Traditionally, hyperscalers operate large, centralized cloud regions. These regions cannot deliver competitive performance in smaller markets without significant investment. Telcos can leverage regional data centers and fiber networks to provide local presence that significantly reduces latency and improves user experience.

For example, China Telecom, in partnership with Huawei, is advancing AI-integrated 5G-Advanced (5G-A) networks to enable smarter, high-performance applications such as smart production, smart transportation, live streaming, and AI-powered device interactions. The companies unveiled the Intelligent Ultra Pooling Uplink technology, which uses AI to dynamically orchestrate uplink resources, time, frequency, radio access technology, spatial channels, and power across multiple antennas. By predicting signal quality and optimizing network scheduling, this innovation enhances uplink speeds by over 15%, reduces latency by more than 30%, and improves cell-edge performance, all while maintaining energy efficiency.

Unlike traditional approaches where telecom networks primarily serve as a conduit to hyperscale cloud services, China Telecom and Huawei are embedding AI directly into the network, creating localized, deterministic, low-latency connectivity that supports complex mobile AI workloads. Features such as Super Uplink and intelligent multi-band scheduling allow enterprises to run real-time multi-modal AI applications, including embodied AI robot control, V2X communications, and interactive AI assistants, without relying solely on cloud processing.

Globe Business has invested heavily in its digital backbone, including domestic fiber networks, international subsea cables, cable landing stations (CLS), and modern data centers through its subsidiary STT GDC Philippines. These assets allow the telco to store and process data closer to end users, rather than relying on distant cloud regions.

This localized infrastructure not only accelerates digital transformation but also supports the Philippines' positioning as a strategic digital hub in Southeast Asia. In effect, control over infrastructure translates to control over data flow and service quality, ensuring enterprises and consumers enjoy faster, more secure, and scalable digital experiences.

The Path Forward

As we move deeper into 2026, the winners will be those who can seamlessly manage multi-cloud workloads across their distributed infrastructure. This allows them to capture high-margin revenue from government and financial sectors that are often restricted from using purely offshore, global cloud environments.

As AI workloads surge, this distributed model is becoming the backbone of regional digital economies. By positioning themselves as the intermediary between cloud innovation and local necessity, Asian telcos are defining regional boundaries. TR

> "In many Asian markets, cloud adoption depends on performance as much as compliance. Cloud applications running AI, edge devices, or real-time services require low latency and robust network coverage, conditions where telcos excel"

The Race to Build Gigawatt-Class AI Data Centers in Asia

Digital infrastructure in the Asia-Pacific region is changing quickly. Data center planning is moving from tens or hundreds of megawatts to gigawatt-scale facilities, pushed by artificial intelligence (AI), cloud giants, and national digital strategies. This shift is not just a slow evolution but a complete redesign of how data centers are powered, funded, and connected to national energy systems.

Asia Pacific: The Epicenter of AI Infrastructure Growth

Gigawatt-scale infrastructure has become necessary because single megawatt-scale facilities cannot support modern AI training and inference at competitive costs or latency.

The Asia-Pacific data center market is projected to reach USD 174.81 billion by 2030, growing at a 9.3% CAGR, while also indicating a rapid shift toward AI-optimized computing rather than simply building more traditional data centers.

More investment is being made in AI-specific infrastructure, led by major cloud companies, chip makers, and platforms such as AWS, Microsoft, Google, NVIDIA, and Intel. Hardware is expected to remain the largest revenue source in 2025, while services should grow the fastest as demand for managed, scalable environments rises. South Korea is expected to have the highest growth rate from 2026 to 2033, highlighting its role as a key AI infrastructure hub in the region.

Although, a large part of this investment is going to gigawatt-scale AI campuses in India and China, where projects are often built in phases across several sites. Japan and South Korea are accelerating their own cloud and AI infrastructure projects to boost local computing power and rely less on external providers. Southeast Asia and Australia are also growing as expansion areas, with energy availability now the main factor in choosing sites and designing campuses.

Deloitte reports that data centers are now central to the Asia-Pacific digital economy, but they also put significant pressure on energy systems. Problems like grid bottlenecks, connection delays, and rising electricity demand could slow growth. A power-first approach is, therefore, crucial. While clean energy is becoming the fastest and often cheapest new source, real growth depends on combining renewables, storage, and flexible load management. These factors will determine which markets can expand their data center capacity and which will face limits due to energy and infrastructure constraints.

From Megawatts to Gigawatts

In the past, data centers ran at megawatt-scale, which was enough for traditional cloud and hosting needs. The rise of AI workloads, especially large language model training, has greatly increased computing power and energy use. Industry analysts note that AI is driving data center planning toward gigawatt-scale campuses, with some sites expected to exceed 1 GW as these workloads grow. Key drivers include digital transformation, more cloud adoption, and better internet connectivity, especially in China, India, and Singapore, where governments are investing in smart cities and digital projects.

The main reason for this change is the growing amount of digital data. As more organizations use cloud computing, IoT, mobile apps, and e-commerce, the need for real-time processing, storage, and analytics increases. This shift requires moving from traditional megawatt-class data centers to denser, AI-ready facilities with GPU servers and special hardware.

Who's Behind the Build?

This shift is also changing how AI infrastructure projects are funded. Gigawatt-scale projects are now too big for just the large cloud companies to handle on their own. Instead, they need technology firms, sovereign wealth funds, infrastructure investors, telecom operators, and energy companies to work together, each handling different parts of the process.

A good example is Google's USD 15 billion AI data center campus in Visakhapatnam, India. Instead of a regular data center, this project is a full AI hub that combines gigawatt-scale computing with advanced energy systems and global connections, making it one of the most complete AI infrastructure projects in the region.

Similar funding models are emerging across the Asia Pacific, including Malaysia's Johor AI corridor, Australia's renewable-powered hyperscale zones, and Japan's sovereign cloud projects. Sovereign funds, infrastructure REITs, and private credit investors are working together to finance large-scale computing infrastructure. Companies such as NTT, NEXTDC, AirTrunk, Princeton Digital Group, and ST Telemedia Global Data Centers are teaming up with government or utility-linked groups to secure land, energy, and approvals on a large scale. This marks a shift from viewing gigawatt projects as just real estate to seeing them as long-term infrastructure systems that align with national energy and digital plans. TR

— 2026 —

MWC SHANGHAI

MWC26 Shanghai, marking its 13th edition and a new era of innovation, showcases emerging technologies, including mobile AI, humanoid robotics, 6G, satellite connectivity, and digital transformation across key industries. With dedicated zones for startups, global partnerships, and smart city solutions, MWC26 Shanghai offers a platform for collaboration, investment, and business growth between China, APAC, and the international tech ecosystem.

Place: SNIEC, Shanghai

MWC GSMA

24 - 26 JUNE

Submarine Networks World

Submarine Networks World 2026 is bringing together over 1,000 industry professionals to explore the future of submarine cable systems and international connectivity. The event serves as a key platform for the subsea telecoms ecosystem, featuring 150+ expert speakers, 80+ sponsors and exhibitors, and a dynamic program of panels, keynote presentations, and discussions. Attendees can expect in-depth insights into subsea developments, emerging technologies, network resilience, and evolving security challenges shaping the future of global connectivity.

Place: Sands Expo and Convention Centre, Singapore

SUBMARINE NETWORKS WORLD

23 - 24 SEPTEMBER

TRS 2026: Where Tech Intelligence Beyond Mobility Unfolds

The 20th Telecom Review Leaders' Summit will bring together key industry stakeholders to discuss advancements in AI-driven infrastructure, 5G-Advanced, 6G development, cloud, and the evolving digital ecosystem. Serving as a high-level platform for strategic dialogue and collaboration, the Summit continues to drive forward-looking conversations that influence the direction of the global telecommunications industry.

Place: Dubai, UAE

20 - 21 OCTOBER

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