

The age of (r)evolution

The metaverse opportunity for
the communications industry



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Welcome to the metaverse continuum



The metaverse is unlocking the next wave of business growth

The internet is being reshaped and it is evolving into a spectrum of digitally enhanced worlds and realities known as the metaverse. The metaverse is unleashing our imagination to transform our lives and business as we know it. Simply put, the metaverse is a game changer—one that's expected to generate an estimated \$13 trillion in global revenue by 2030.¹

Across industries, trailblazers are taking innovative steps to explore this new world. The CEO of Microsoft, Satya Nadella, "can't overstate how much of a breakthrough this is,"² while the Founder and Chairman of the World Economic Forum, Klaus Schwab, believes the metaverse "will influence the way people, governments, companies and society at large think, work, interact and communicate for the purpose of collectively addressing issues on the global agenda."³

Over 2.5 billion messages are exchanged daily on the metaverse platform, Roblox. In 2020, \$54 billion was spent on virtual goods, skins and lives in the metaverse.⁴ And the number of daily users for these virtual platforms continues to grow by the millions.⁵

What will the future hold in the metaverse, and for whom? As the pace of technological change continues to accelerate, the possibilities are boundless. The answer to that question will be determined by those willing to embrace the opportunities. In these early days, timing is everything.

From testing factories with digital twins (BMW reduced production planning by 30% with its 31+ metaverse factories⁶) to virtual employee training programs in dedicated, constructed worlds (Bank of America launched its virtual training in


nearly 4,300 financial centers⁷), today's business leaders are experimenting in the metaverse and already reaping its rewards.

The communications industry holds a unique position regarding the metaverse—namely, that Communication Service Providers (CSPs) build and maintain the advanced networks that are necessary for it to function. Given this positioning, there is an opportunity for CSPs to seize the once-in-a-generation wave of growth the metaverse offers.

The connectivity that CSPs provide is critically important to the success of metaverse businesses to create new experiences. And choices to evolve or revolutionize at this time will be essential to their future success. The time is now to make purposeful moves and capture value in the metaverse.

CSPs have historically enjoyed an enviable position at the center of shifts in the fabric and connectivity of society. But they have been unable to capture their share of value as networks have become more advanced. Over the past 20 years, the market capitalization of the biggest CSPs has only grown by 3%.⁸ Telcos need to provide leadership and become activists for change and innovation to help ensure their success in the digital economy.





The Communications industry imperative



CSPs need to use foundational strengths to expand into new growth areas or risk others taking advantage

Today, CSPs need to focus on a strategy that looks beyond the existing infrastructure space (devices, networks and computing) and expand across metaverse growth areas to create new opportunities before others beat them to it.


CSPs should consider leveraging their foundational strengths: network infrastructure, identity, data, partnerships and trusted customer relationships. Using these strengths for purposeful expansion into the metaverse could create a differentiated position that enables them to develop unique and compelling experiences.

Accenture Research found that many CSPs recognize the metaverse opportunity, but few have turned their attention to positioning themselves as major players.

69% of CSPs see significant opportunity within the metaverse, yet only 38% have a strategy in place⁹

67% of CSPs believe there is metaverse potential for products and services¹⁰

76% said they see significant opportunities for customer experience in the metaverse¹¹



CSPs are already making moves in the metaverse

Virtual spaces, real connections

Fueled by various partners, **SK Telecom** is growing Iland into a global metaverse platform that provides social capabilities, commerce, entertainment and even virtual careers and business opportunities in virtual spaces inhabited by virtual identities.¹²

Network collaboration with crypto rewards

Nova Labs and **T-Mobile** teamed up for **Helium Mobile**, “the world’s first crypto-powered mobile service that will enable subscribers to earn crypto rewards for using the network while saving money.” This collaboration provides Helium Mobile subscribers with access to the Helium 5G crowdsourced network and the T-Mobile 5G network throughout the United States.¹⁵

Finding the way with AR

Telstra’s Marvel Stadium allows fans to access seating directions via digital graphics superimposed on the real-world environment. Accenture partnered with Telstra and Google for this “AR wayfinding experience that uses the latest in Telstra’s 5G developments with machine learning and state-of-the-art computer-vision powered by the ARCore Geospatial API from Google.¹³”

A digital walk through Shibuya ward

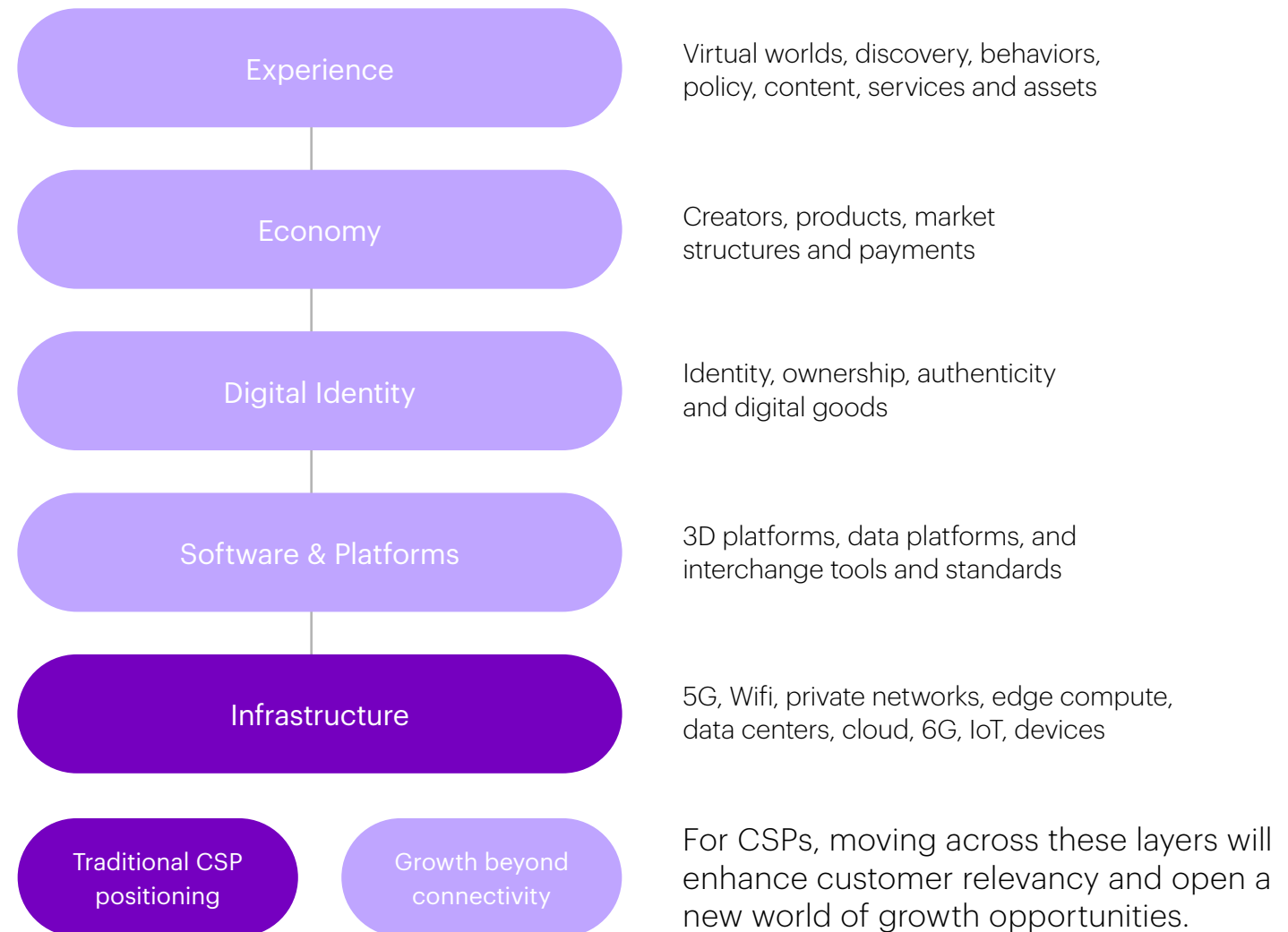
KDDI and **Netflix** partnered to create a virtual city with a digital twin of the **Shibuya** ward in Tokyo to promote the Netflix series *Ghost in the Shell*. This virtual space has seen more than 1 million visitors.¹⁶

Cooking with the pros via 5G

A partnership with **Vodafone**, **Nreal AR Glasses** and TV celebrity **chef Steffen Hensler** launched **Giga AR**, an augmented reality cooking experience where participants cook with a hologram of the chef. As Vodafone explains, “Augmented reality headsets have historically had extremely high latency meaning a significant delay in them responding to users’ actions. However, thanks to Vodafone’s low-latency 5G, this is no longer an obstacle.¹⁴”

What is the unique opportunity for CSPs in the metaverse?

To help define new growth areas for CSPs, we examined layers of the metaverse to identify the possibilities. Starting with infrastructure as a base, the CSP willing to adopt an experimental mindset can play within the different layers of the metaverse to capture value.



Develop your (r)evolutionary advantage and be ready to play

The metaverse is relevant across core CSP customer segments. Future leaders will find value across these consumer, SMB and enterprise segments:

From socializing to gaming, from shopping to selling, **consumers** in the metaverse will be exploring and consuming content, also finding health solutions, learning, working, and more.

SMBs can unveil new products and services. There are emerging sales channels, immersive marketing and promotional opportunities as well.

Enterprises can also expect to enhance customer intimacy, ecosystem relationships, platform partnerships and employee engagement, and find new efficiency and innovation with digital twins.

Our research shows three CSP archetypes emerging, with widely different results

We see three potential roles emerging across B2B and B2C for CSPs in this new business context—the Disruptor, the Orchestrator and the Performance Player. At the current pace of change, today’s choices will determine future success in the metaverse.

Faced with critical decisions at this time, CSPs can take a revolutionary approach by aggressively positioning themselves as leaders. Or, they can take an evolutionary approach that sees them maturing existing products and services to extend into the metaverse. CSPs will also face vital decisions around balancing partnership and competition with fast-moving platform companies such as Meta and Microsoft.

The three archetypes define paths to purpose-driven growth and capture both the current and ideal CSP positions for the future. Whichever path a CSP takes, business as usual will not suffice. The future is waiting, but not for long.



The Disruptor

Building new businesses across capability layers

The Disruptor role will be a revolutionary play for CSPs, with strong use cases in both B2B and B2C segments. Disruptors will create a new set of metaverse experiences and platforms while fostering an innovation-driven culture. Their partnerships can transform the business model from value to growth. They will embrace an innovation mindset and unlock massive revenue potential.

Disruptors will build leading multi-sided platforms to create new economic paths and play across as many layers of the metaverse as possible. They will develop and operate platforms to provide virtual entertainment experiences—film and TV, parks, sports, content, live events, gaming and more. They will wield platform strengths to become the metaverse builder for B2B and government customers, offering Metaverse-as-a-Service.

Disruptor platforms will allow third parties to build their own spaces and have them offer additional experiences and products to increase brand reach. They will offer to sell and operate their virtual world building blocks to other brands to facilitate their metaverse journey. They will set up a virtual world where consumers can access products, services, communities and events, and encourage them to interact with and test products and services.

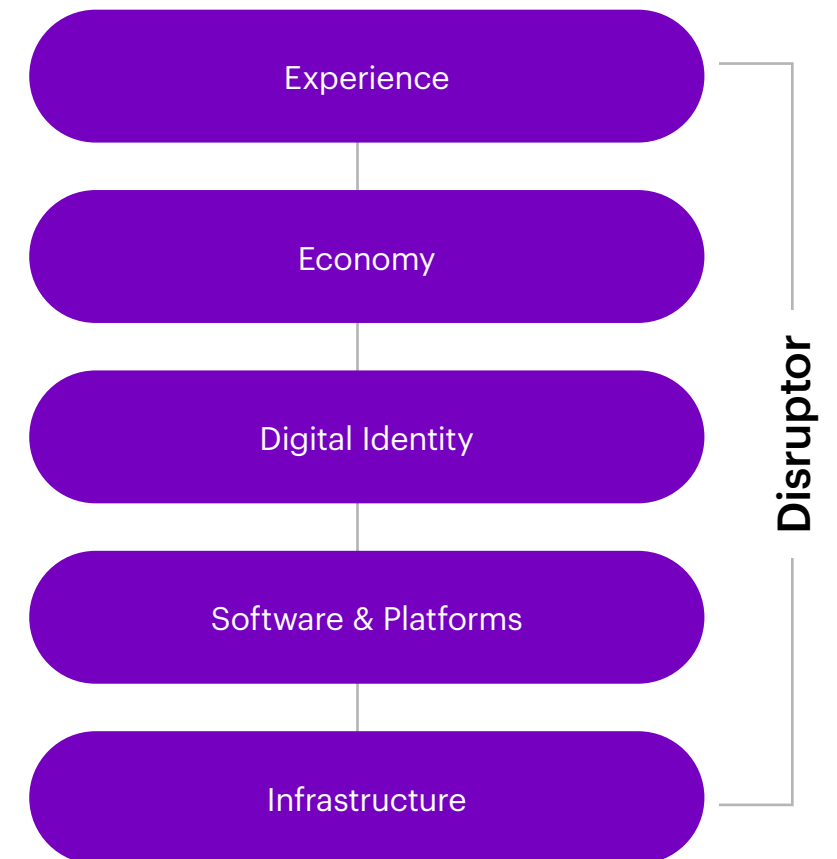
Disruptors will fundamentally reset the legacy CSP business model.

Only a select few, fast-moving platform companies occupy this role right now, but these companies are moving quickly to establish dominance and exploit their brand strength and business agility.

The hesitation to move into the Disruptor role stems from the risk factors that have left this a potential greenfield opportunity. For CSPs, major investments and distinct cultural shifts are required. CSPs may find themselves reliant on other ecosystems or standards that may not fit their operating models. They may encounter regulatory and brand perception challenges related to their legacy business. Additionally, in this role, CSPs must accept the significant investment that comes with the focus on building network effects.

Success, however, will represent a transformational shift for CSPs. They could provide virtual town halls to build community and allow users to interact and test products and services in the metaverse. Disruptors will build a reality where CSPs can create the virtual world: a brand representation for consumers to learn, buy and connect, building on their already strong brand trust.

Relevant metaverse capability layers for Disruptor



The Orchestrator

Building standards and services to enable the next internet

The Orchestrator role will represent a balance between evolution and revolution, where CSPs can invest in developing new network products and services that enhance B2B and B2C value. They can grow revenue opportunities and establish new industry standards. By exploring adjacent domains and connecting products and services across industry partners, they'll offer the best possible metaverse experience.

The Orchestrator will enable safety, privacy and economy in the metaverse. They will power consistent, relevant and seamless experiences by building core systems for identity and persona management. As a trusted third party, already in a position of authority that CSPs claim,¹⁷ Orchestrators go everywhere with consumers in the metaverse. Beyond this, they provide these services around identity, payments, location-based experiences and security.

Orchestrator systems will provide the frameworks to drive the metaverse economy, enabling users to use CSP billing and payment services to participate in the digital wallet ecosystem of tomorrow. These systems will also provide the interoperability to transfer digital assets across different metaverse experiences. By leveraging device and geo-location capabilities, they automatically apply the right profile for the context to enable location-based experiences.

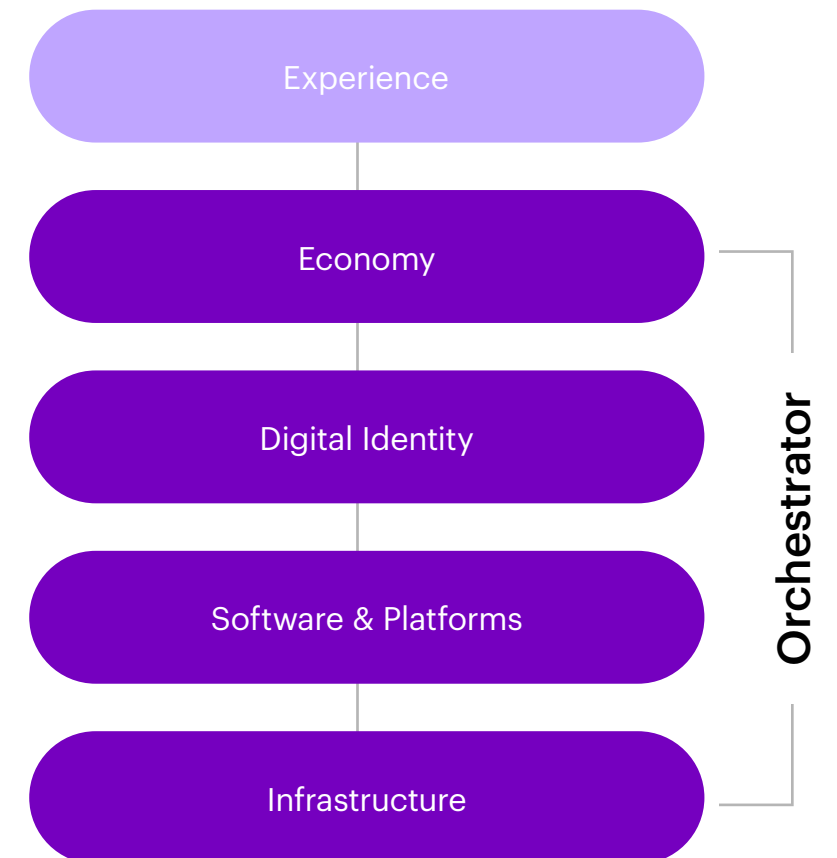
Orchestrators will unlock data services and ecosystem partnerships.

With user permission, the combination of identity, authentication, payment, interoperability and location solutions serves to connect and personalize experiences, content and targeted advertising. Orchestrators will build a world where CSPs are key brokers of consistent and authenticated experiences.

This path is also not without challenges, as Orchestrators will see competition from above with big tech players and from below with start-ups, as well as complex regulatory environments and evolving technical standards.

Nevertheless, Orchestrators promise to be the connective thread for seamless and relevant metaverse experiences despite the challenges. It is a role with significant potential upside.

Relevant metaverse capability layers for Orchestrator



The Performance Player

Providing metaverse-ready networks to enable scale and adoption

While some metaverse use cases can ride on current networks, the expansive metaverse experiences of tomorrow—fully immersive, real time, photo-realistic, multi-use and globally distributed—cannot be delivered at scale on today’s infrastructure. This creates an opportunity for CSPs to differentiate their networks with a focus on metaverse-specific performance needs.

The Performance Player role will be an evolutionary move with use case opportunities in both B2B and B2C. Performance Players will compress their network transformation with a focus on core competencies to relentlessly deploy, re-architect and optimize networks for high-bandwidth and low-latency performance, ceding non-core capabilities to other metaverse players.

CSPs can leverage their core strengths to build out and monetize specialized network services that meet performance requirements. They will provide premium metaverse service tiers, create metaverse connectivity “zones,” offer dedicated network slices or private networks to enterprises, enable network sharing, expand edge services and offer value-add services, all in pursuit of high-performance connectivity.

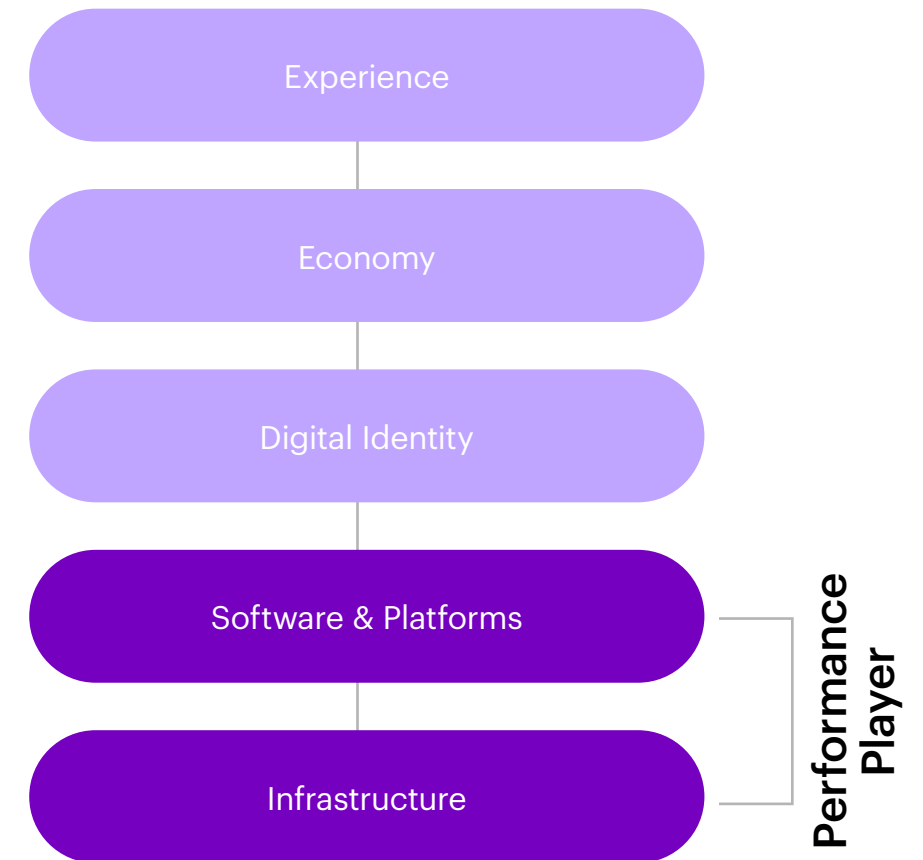
Performance Players will reset the network commoditization trajectory.

Successful Performance Players will build a reality where CSPs can unlock network-driven growth. A critical requirement will be to provide services and features that de-commoditize the network and unlock new revenue streams. CSPs will partner with fast-moving platform companies and other metaverse builders to define, standardize and co-invest in the networks that bring the metaverse to life.

CSPs can expect that the deepest value pools will be network co-investment, premium connectivity and network as a platform business models. CSPs are primed to occupy the position of the Performance Player and early leaders are accelerating investment in compressed network transformation and ongoing optimization across the business.

While today’s focus is on continued evolution of the network, in the future, Performance Players will create decentralized networks that enable connectivity agnostic of physical infrastructure and allow consumers or enterprises to set up tokenized peer-to-peer networks for greater coverage and speed.

Relevant metaverse capability layers for Performance Player





Connect the future with metaverse- ready networks



CSPs have a once-in-a-generation opportunity for network-driven growth

As the internet evolves, new doors continue to open for incredible opportunities. The metaverse represents a significant step in the role of connectivity, so attention is turning to the foundational role of networks in the metaverse. CSPs cannot afford to look away.

Meta predicts that “the next great connectivity challenge is emerging: reimagining network infrastructure to support the computing platforms of the future.” Simply put, the metaverse will depend on CSPs for metaverse-ready networks. Today, CSPs can prepare themselves for this once-in-a-generation shift through a strategic, long-term approach.

Acting as champions for change and leading with purpose, CSPs will direct their focus to the four key areas we define as “The 4 Ps of metaverse-ready networks”: performance, platform, partnerships and products.

End-to-end connectivity performance

Future immersive experiences will require high-quality connectivity as a fundamental feature. Today's network standards will not be enough to support the predicted global demand. CSPs will need enhanced capabilities and coordination to have exceptional technical capability in bandwidth, low latency, symmetry and stability. These will be the standards of the future.

Today, CSPs can start building, scaling, optimizing and monitoring networks that provide this connectivity fabric from end to end. This goes beyond a CSP's owned network, extending from the device, all the way to a data center and across the world to bring users together in real time. In addition, these networks will support increased access to economic opportunity for everyone.

Tomorrow's network performance will:

01

Power advanced (real-time, fully immersive, photo-realistic) augmented and virtual reality at scale

02

Provide tools that proactively improve customer network performance

03

Establish metaverse "zones" and service tiers with guaranteed service levels





Network as a **platform**

Creating a strong connectivity foundation for the metaverse will require CSPs to expand and enhance their network platforms, including core operational and business support systems (OSS/BSS), orchestration, security, marketplaces, edge and intelligence. Along with increased speed and simplicity of operations, these modern platforms will improve experiences, control costs, and drive new revenue for CSPs. The platforms will also create the basis for companies to create, collaborate, and empower economic and societal change.

CSPs must accelerate the shift toward cloud-native, programmable, massively scalable, widely distributed and standardized platforms across their network. They will also need to create interoperable platforms that enable partners to dynamically orchestrate the network to suit different use cases.

Tomorrow's network as a platform will:

01

Focus on end-to-end global network capabilities

02

Create a fully open-source, future-proof network stack

03

Enable autonomous network sharing and real-time orchestration to deliver service needs on demand

Ecosystem partnerships

CSPs cannot deliver connectivity for the metaverse independently; it will take collaboration across multiple industries to realize its full potential. Only by envisioning and launching new types of partnerships—including network co-investment with fast-moving platform companies, across a collection of organizations—can CSPs unlock the value of globally scalable, flexible metaverse networks.

Today, CSPs must start to build an ecosystem of companies that will create these new experiences and solutions. They will achieve this by sharing learnings, addressing challenges, co-developing and sharing value to create success and unlock new business models. These partnerships fall into four types:

- Industry partnerships to drive standardization and integration across the communications sector
- Platform partnerships to co-invest in developing and deploying the infrastructure and systems needed
- Content partnerships to create and tailor experiences to user interests
- Device partnerships to help ensure full support and reliability of network capabilities.

Tomorrow's industry partnerships will:

01

Share value with many industry partnership models

02

Launch new business models and collaborations

03

Share infrastructure and success





Network products

As a CSP combines this unique mix of performance, platform and partnership, they will create value with a new generation of network products for customers and businesses connecting to the metaverse.

CSPs can start exploring future network products including quality of service (QoS), enhanced service tiers or bundles, usage-based pricing, network slicing and edge services. This foundation and Web3 technologies like blockchain will position CSPs to build new use cases, solutions and products that allow anyone to access the metaverse and get the most out of their experience while opening the door to new revenue streams.

Tomorrow's network products will:

01

Enable immersive content, personalized social experiences and Metaverse-as-a-Service for B2B and government on dynamic, programmable networks

02

Deliver massive, distributed edge computing and remote rendering

03

Provide use case-specific orchestration and disaggregated networks

Realizing metaverse-ready networks in three moves

To lay the foundations for a strategic, long-term approach and ensure a leadership position based on the strength of CSP core networks, there are three 'no-regret' moves CSPs can start making now. These steps minimize risk, maximize strategic positioning, and support the transformation initiatives already underway in most telcos.

01

Create a metaverse architecture strategy

This strategy needs to explore the role of cloud-native, edge and open-source technologies while addressing the network performance implications.

Today, many CSPs are addressing these moves but they must also incorporate emerging metaverse opportunities into the planning matrix. The metaverse opportunity requires strategic shifts and innovation with emerging technologies. Following the steps above will help to ensure CSPs don't regret taking action too late and are positioned as key players in the metaverse.

02

Explore partnerships to collaborate


Partnering with standards bodies to co-invest and expand engagement can drive an industry-wide innovation that accelerates metaverse network readiness.

03

Establish a rapid test-and-learn foundation

A firm yet flexible base for the business can better drive development and launch next-gen connectivity technologies.



A hand is shown reaching out from the left side of the frame towards a digital grid of light points. The grid is composed of many small, glowing dots in shades of blue, purple, and pink, arranged in a perspective that creates a sense of depth. The background is dark, with some blurred light streaks and patterns, suggesting a futuristic or virtual environment. The overall lighting is vibrant and colorful, with a strong emphasis on blue and purple tones.

**Start shaping
the metaverse
today**

As CSPs move to capture value in the metaverse, there will be tension points to tackle in this new world. CSPs should decide where to invest early by exploring new technologies and operating models in the metaverse while developing and testing commercial models and monetization strategies across new services.

In these early days, CSPs working to establish responsible metaverse practices will secure new dimensions of trust, such as privacy and security, as well as human factors, such as sustainability and inclusion. The culture and talent gap will be a challenge when shaping the metaverse, and CSPs will need to jump the learning curve to compete in this new world. By creating a test-and-learn foundation now, CSPs can work quickly to address these tension points to identify and scale key plays.

To start exploring the metaverse, CSPs should establish a plan that includes vision, investment hypotheses, strategy, ecosystem partnerships and talent needed to lead through the change ahead.

Future success in the metaverse will be determined today by the CSPs willing to seize the once-in-a-generation opportunity presented by this emerging world. CSPs have a critical role in the metaverse with foundational connectivity, and they have the power to define a unique role beyond the network with purposeful moves into new growth areas.

In the age of (r)evolution, it's time to start shaping the metaverse.



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