

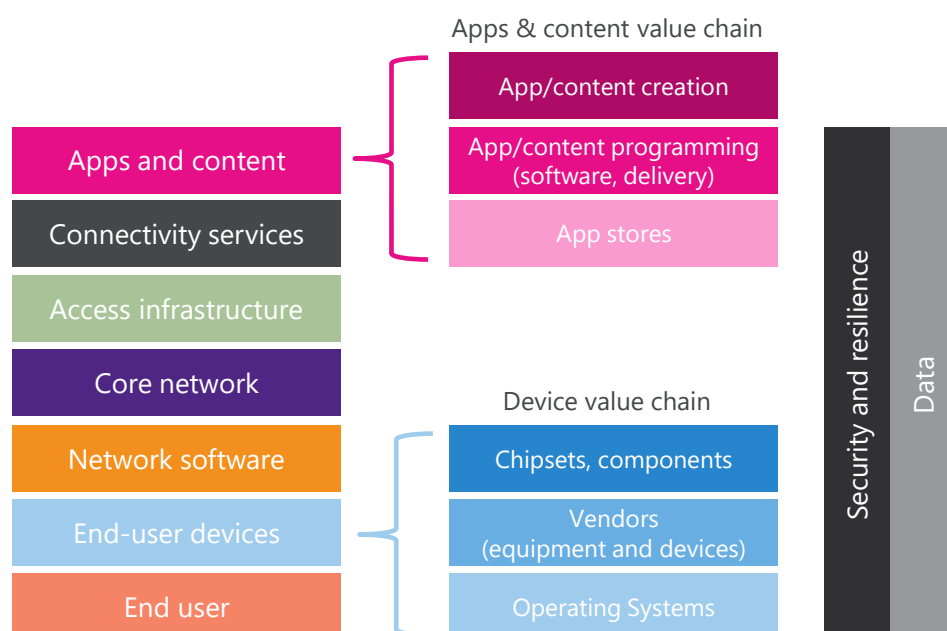
Mutually beneficial relationships in the telecoms sector

Short Summary | September 2022

Overview

Today, many consumers and businesses across the world can use their connected devices to access a vast array of digital content and services at the touch of a button. The delivery of these services is enabled by a complex ecosystem with global scale, much of which is not always visible to everyday users. This is illustrated in Figure 1.

Figure 1: Illustration of the wider telecoms sector






While individual sector players tend to focus on different layers within the sector, the boundaries between these different layers are becoming more blurred. Partnerships between players across different layers of the sector are becoming increasingly common, and are helping to drive value and improve efficiency across the wider sector. Partnerships are also playing a key role in the delivery of the next wave of consumer and industrial applications, where successful service delivery often relies on combinations of connectivity, computing power, software and hardware.

Symbiotic relationships across the telecoms sector

Various mutually beneficial relationships exist between telecoms sector players. These are relationships that exist between two or more sector players and help to deliver benefits for all players involved. In some cases, the relationships will also deliver benefits to the telecoms sector as a whole and/or to the wider economy.

We have grouped the identified relationships into three broad categories (Figure 2). Note that these include both *indirect* symbiosis (for example, complementarities that exist between connectivity services, devices and online services) and *direct* symbiosis (for example, when sector players enter a partnership to deliver a particular service).

Figure 2: Symbiotic relationships between telecoms sector players

Category	Area for symbiosis	Description
 Driving demand for connectivity and services	Complementary devices and services (the virtuous circle)	Online services, devices and connectivity services are complementary goods and exist in a virtuous circle, encouraging demand for each other. Consumers upgrade to higher speed connections and larger data bundles because they are making heavier use of online services.
	Commercial partnerships for next generation bundles	Partnerships across the sector are delivering compelling service bundles to consumers and enterprises, fuelling demand for connectivity.
	Enabling new products and revenue streams	Partnerships across the sector are enabling new communications use cases and revenue streams across a variety of consumer and industrial applications.
 Enabling efficiencies for market players	Enabling efficient network deployment	Symbiosis between network operators and OSPs in planning network deployments can lead to significant cost efficiencies in capital expenditure as well as enhanced consumer quality of experience.
	Enabling efficient network operations	Symbiotic partnerships between telecoms sector players can help to manage and operate networks more efficiently, reducing operating costs and network downtime, as well as generating environmental benefits.
	Enabling efficient business processes	Symbiotic partnerships between telecoms sector players can generate business efficiencies, helping to lower operating costs and increase customer satisfaction.
 Investment in networks	Avoided costs	Investments in network infrastructure by players across the sector are bringing content and services closer to end-users, reducing costs that would otherwise be incurred.
	Enhanced user quality of experience	Investments in infrastructure and technology across the telecoms sector is helping to reduce online services' bandwidth requirements and improve users' quality of experience, enhancing demand for connectivity and digital content.

Note: relationships in **bold** are those where we have attempted to quantify the benefit.

The value of symbiotic relationships

We attempt to estimate the future benefits that could accrue from the types of symbiosis highlighted above, with a focus on the Asia-Pacific region. The benefits are computed for CSPs as they are central to the telecom value chain. Our estimates take the form of incremental annual free cashflow from the year 2026. We describe below the possible market scenarios that form the basis for our estimation of potential benefits from deeper symbiosis. The two scenarios are:

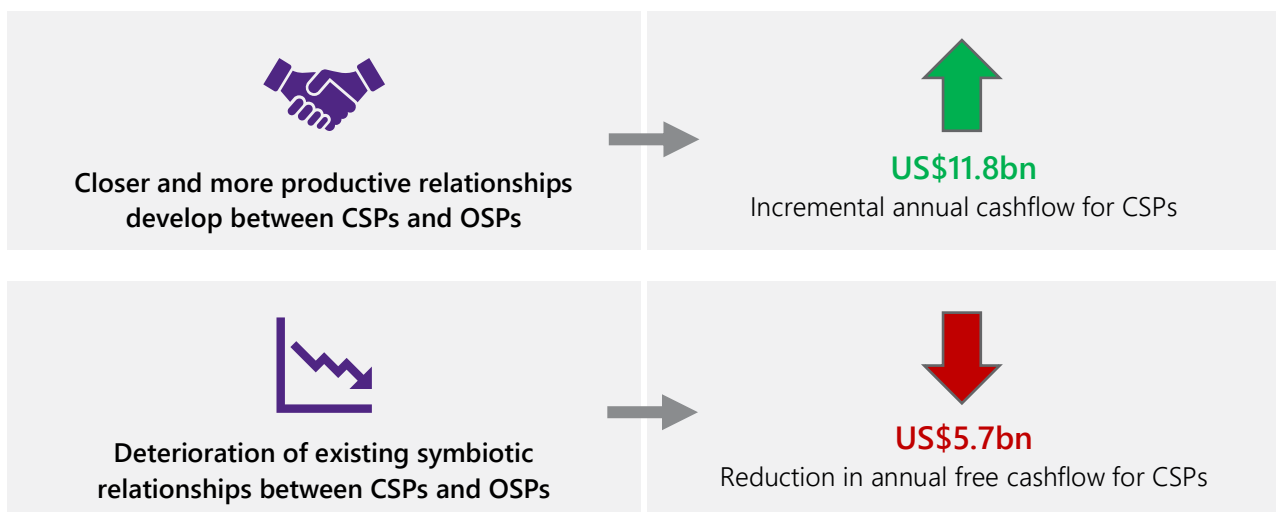
1. The base case, in which existing symbiotic relationships are not deepened any further. There is no major improvement in content and services for local use, reducing incentives for end-users to switch to higher-end connectivity packages. There is also a gradual decline in OSPs' annual investment in network infrastructure as the regulatory environment becomes more challenging for such investment.
2. A scenario where a closer and more productive relationship is forged between CSPs and OSPs. OSPs continue to invest in network infrastructure. Operators and OSPs continue to partner to offer new service bundles (which may include new connectivity use cases which rely on operator and OSP collaboration) and to enhance operational efficiency.

It should be noted that even in the base case, many of the benefits of symbiosis will already be enjoyed. For example, OSPs' existing portfolios of apps and content will already be driving usage and consumption of high-end plans, while extant infrastructure (including caches and points of presence) in the region is already helping to reduce costs that would otherwise be incurred by network operators. The benefits computed for the second scenario therefore represent potential incremental benefits of additional and deeper partnerships.

Plum estimates that, in the scenario where CSPs develop closer and more productive relationships with OSPs, there could be **US\$11.8bn** incremental cashflow per annum in the APAC region from 2026 onward. This comprises benefits from partnering to offer compelling content and service bundles, from enabling additional network and operational efficiencies, and from new infrastructure investment.

The analysis presented thus far has assumed that all of the existing benefits of symbiosis remain in place. However, there is the possibility that the existing symbiotic relationships deteriorate. One example of how this could happen could be the introduction of network traffic charges, which would deter infrastructure investment and hinder the virtuous circle of demand. Plum estimates that a deterioration of the existing symbiotic relationship could result in a potential *reduction* in free cashflow of up to **US\$5.7bn** per annum from 2026.

Figure 3: Total incremental cashflow by area for symbiosis



Figures reflect estimated changes to CSP cashflow in the APAC region to 2026.

Wider economic impact

Our quantitative analysis focuses on the benefits that can accrue to telecoms sector actors. However, it is worth noting that the symbiotic ecosystem is also delivering wider benefits to national economies, societies and the environment.

- **Macroeconomic benefits.** Greater adoption and use of connectivity services, driven by the desire to access and use online content and applications, has been identified as an important driver of economic growth. The adoption of online communications and digital services by businesses is also helping to drive productivity. We also expect that novel industrial applications of edge computing in key industry verticals (such as manufacturing, logistics and healthcare) will further enhance productivity gains. In most cases, edge computing solutions are delivered using the cloud services of OSPs, and unlocking their full potential will require an investment-friendly regulatory environment.
- **Societal benefits.** Digital inclusion remains a key policy goal in many jurisdictions – even those with comparatively high levels of Internet use. Compelling applications and content can offer strong incentives for non-users to get online and develop digital skills. In turn this can help local communications ecosystems attain ‘critical mass’ of consumers and local content producers. Increasing connectivity and digital skills will also enhance social inclusion and increase the reach and effectiveness of e-government initiatives.
- **Environmental benefits.** The use of digital services can play a vital role in climate change mitigation. For example, services are being used for remote working, smart buildings, and to enhance industrial efficiency. According to the GSMA, the ratio of energy saved through use of digital services to the energy consumed in using digital services is 10:1.¹ In addition, the telecoms and digital sectors have themselves become more energy efficient over time through leveraging of AI and data analytics. This has resulted in a reduction of these sectors’ global carbon footprint over the past decade, even as data traffic and service usage has increased.

The future of the symbiotic ecosystem

To date, the symbiotic ecosystem has delivered a range of benefits for consumers, businesses and the wider economy. The ecosystem has supported and facilitated significant growth in the number of connected users worldwide. At the same time, the capability, quality, variety of online services available to consumers and businesses has dramatically increased. These developments have been supported by an ecosystem that facilitates growth and innovation.

New and emerging applications suggest that symbiotic relationships across the telecoms sector are likely to become more important than ever. For example, edge computing solutions, typically delivered by partnerships between telecoms sector players with distinct specialisms, have the potential to transform key industry verticals. Delivering the next wave of consumer applications is also likely to be reliant on combining connectivity, computing power and AI.

There is also the challenge of connecting the billions of people that remain without Internet access – a challenge that is not just about deployment of infrastructure, but about affordable devices and compelling online applications and content. According to the GSMA, around 85% of Internet non-users live within the footprint of a broadband network. Symbiosis between telecoms sector players here will be key in offering compelling reasons to get online, in providing affordable devices, and in serving rural populations with novel technologies.

¹ GSMA (2019). The enablement effect. https://www.gsma.com/betterfuture/wp-content/uploads/2019/12/GSMA_Enablement_Effect.pdf

Enabling the potential of the symbiotic ecosystem

In summary:

- Online services are delivered by a complex ecosystem which operates at a global scale. Numerous players are active in this ecosystem, typically focusing on certain segments of the telecoms value chain. These players work together to ensure consumers and businesses can get the most out of online services.
- Indirect and direct symbiosis between players operating in different layers of the telecoms sector is helping to increase service demand, to drive value and to improve efficiency. Direct partnerships between telecoms sector players are also becoming increasingly common, and are helping to grow the entire sector.
- The symbiotic ecosystem has substantial potential for growth. Plum estimates that there could be US\$11.8bn incremental cashflow in APAC region by 2026 if CSPs and OSPs develop closer and more productive relationships. Such partnerships can also help generate wider macroeconomic, societal and environmental benefits.
- Partnerships will be instrumental in delivering the next wave of connected applications, including virtual and augmented reality, connected device management and analytics, and novel cloud-based services ("anything as a service"). These emerging applications will help drive future economic growth, but in many cases a partnerships between sector players will be needed to realise their full potential, which will rely on low latency connectivity, high service reliability and computing power.

Below we outline ways in which telecoms sector stakeholders might encourage the further development of the symbiotic ecosystem.

- **Businesses** operating in the sector should take a holistic view of the ecosystem's development and be open to the opportunities presented by partnerships. Businesses that are not open to this prospect risk being left behind in the delivery of the next wave of connected services. They may also miss out on opportunities to drive operational efficiencies and reduce costs.
- **Policymakers** should recognise the importance of partnerships in delivering the next wave of connected services for consumers and enterprises. These services will drive growth of the digital economy, which will enhance productivity and economic growth. Policymakers can encourage the symbiotic ecosystem by facilitating infrastructure deployment, Internet take-up and digital skills.
- **Regulators** should aim to facilitate complementary relationships between telecoms sector players. This could be achieved by streamlining regulation of infrastructure deployment, enabling market entry and allowing partnerships between telecoms sector players operating in different segments of the sector. New regulatory interventions should be subject to regulatory impact assessments, which should take into account the impact on the wider ecosystem.

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