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Implications of IP interconnection regulation on South Korea's digital ambition

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1 Executive summary

This report has been independently prepared by Analysys Mason and performs a review of the internet protocol (IP) interconnection regulations in South Korea; it assesses the impact that the regulations have had on the connectivity ecosystem; and it provides regulatory recommendations to help South Korea achieve its digital strategy and enhance alignment with international best practice. The research, including interviews, that underpins this report was conducted between 23 June 2025 to 11 August 2025.

In 2016, South Korea became a global outlier by introducing regulation of IP interconnection between domestic ISPs, disrupting a previously stable model that was based on commercial agreements

The internet has always flourished as a network of networks, with IP interconnection enabling the exchange of traffic between them to meet the needs of consumers and enterprises. The vast majority of IP interconnection agreements globally have been, and continue to be, negotiated commercially, and rely on settlement-free (i.e. priced at zero) traffic exchange.

All networks, including those of domestic internet service providers (ISPs), international carriers, cloud service providers (CSPs), standalone content delivery networks (CDNs) and other content and application service providers (CAPs), benefit from the exchange of traffic. Each of them invests in their respective network to minimise costs while ensuring optimum outcomes for end users. Domestic ISPs invest heavily in fibre and wireless access networks in their respective countries while CSPs, standalone CDNs and CAPs deploy caches and points of presence (PoPs) in many locations around the world. Larger ISPs, CSPs and CAPs also invest in data centres and submarine cables. All of these stakeholders are incentivised to continue to make investments in digital infrastructure to enable a well-functioning internet.

However, in South Korea in 2014, the Ministry of Science, ICT and Future Planning revised the Interconnection Standards for Telecommunication Facilities and announced the regulation of IP interconnection fees between domestic ISPs in South Korea through a 'Sender Party Network Pays' (SPNP) regime where the ISP of the end user could levy a regulated payment from parties wishing to deliver traffic to it. The enactment of this controversial regulation in 2016 resulted in frictions within the sector, including disputes and lawsuits between stakeholders.[1]

The IP interconnection regulation provided regulatory cover for large domestic ISPs in South Korea, allowing them to exercise pricing power in the local transit and peering market

Local ISPs in South Korea now require settlement of paid peering fees for exchanging traffic with each other. This is founded on the regulation of IP interconnection between ISPs (under the SPNP

1 National Statute Information Center, 2020. "Interconnection Standards for Telecommunication Facilities".

regime), but in practice it has legitimised a broader approach where larger ISPs can impose domestic transit and peering fees that are much higher than in other, comparable countries. Indeed, these fees are much higher than the incremental cost of the interconnection infrastructure required to exchange IP traffic. This has led to several developments, including shifts in investment incentives, changes in competitive dynamics between ISPs and impacts on adjacent sectors such as digital infrastructure and services.

Firstly, there has been a noticeable drop in level of competition between the large local ISPs for local transit business with content providers, start-ups and other network operators as the large ISPs are able to receive peering fees from each other by default based on the regulation.

Secondly, large local ISPs have been able to cross-subsidise their offerings in adjacent markets such as co-location, cloud services and CDN services using the high margins obtained from the local transit and peering charges, competing unfairly against standalone providers of such services.

Lastly, smaller local ISPs cannot effectively compete for domestic consumer business, and some have been acquired by the larger ISPs or have focused their business model on enterprise and wholesale services which rely less on interconnection with the large ISPs.

Overall, these dynamics reflect the existence of a 'termination monopoly' that large ISPs are able to exploit to control and monetise access to their end users. By doing so at prices that significantly exceed the incremental cost of providing interconnection, they are able to engage in behaviours that make it harder for other market participants to compete effectively.

The high cost of delivering traffic locally deters investments in digital infrastructure, leading to missed opportunities for South Korea especially for large-scale AI data centres and submarine cables

As large ISPs seek to impose high local interconnection fees onto CSPs and CAPs, these networks have less incentive to deploy internet infrastructure within South Korea. Indeed, the density of caches and PoPs deployed by major CSPs and CAPs is lower in South Korea compared to other developed Asia–Pacific (APAC) countries. In relation to this, South Korea also has a much less vibrant internet exchange point (IXP) landscape than comparable countries, with fewer IXPs, lower average capacity per IXP and fewer interconnecting parties in each IXP.[2] The reduced level of interconnection activity in South Korea means that a larger proportion of traffic is being exchanged offshore at regional hubs including Hong Kong, Singapore and Tokyo. This increases costs for ISPs and the latency of internet traffic for end-users.

There is also a corresponding reduction in attractiveness for further investments into more capital-intensive digital infrastructure projects such as submarine cables and large AI data centres. South Korea only launched two new international submarine cables between 2016 and 2024 which

2 Internet Society Pulse, 2025. "Internet Society Pulse".

is the lowest among benchmarked countries in the region.[3] On the data centres front, South Korea's main hub is in Seoul, but the current facilities are smaller in IT load and are less dense compared to other hubs such as Bangkok, Jakarta, Singapore and Tokyo. The lack of infrastructure compromises South Korea's ability to become a connectivity hub.

Large CSPs and CAPs have been making significant investments in submarine and data-centre infrastructure assets in other countries in the APAC region. However, the investment conditions are clearly not favourable in South Korea, leading to less investments from CAPs which appears to stem primarily from the cost and uncertainty associated with the interconnection regime. As a result, South Korea risks falling behind regional peers in developing foundational digital infrastructure that are essential to capitalise on future developments including in AI.

While the impact on consumers has generally been mitigated through investments in international capacity by South Korean ISPs, local start-ups and CAPs are particularly constrained by the high-cost environment, affecting service availability, innovation and the plurality of providers in the country

South Korea is a digitally mature country and ranks at the top of the Organisation for Economic Co-operation and Development (OECD) countries for household broadband penetration rate.[4] However, despite the widespread coverage of high-speed broadband networks, it ranks only 11th in internet download speeds globally.[5] Latency measurements to popular websites also shows South Korea having noticeably higher latency compared to other APAC countries,[6] a result of having a lower level of exchange of traffic between networks within the country due to its less-developed interconnection ecosystem.

We understand that the level of service degradation was more pronounced in the immediate years after 2016 and large South Korean ISPs have since made investments in expanding international capacity to improve the network quality. However, it is practically more difficult and expensive to scale up international capacity and there is evidence of congestion during peak hours in the evening for access to international content.

The impact on service availability, innovation and plurality of providers is a more critical issue at hand. Global CSPs have been continuously developing cloud services and rolling them out across their availability zones worldwide. However, there is a distinctly higher number of services that are not available in the South Korea availability zone compared to other developed APAC countries – especially those that are associated with media streaming or AI. Local CSPs and CAPs have also been constrained by the high network fees, limiting their ability to innovate and provide higher

3 Benchmarks include Australia, Japan, the Philippines and Singapore. TeleGeography, 2025. "Submarine Cable Map".

4 OECD, 2025. "Broadband Statistics".

5 Best Broadband Deals, 2025. "Worldwide broadband speed league 2024".

6 Analysys Mason analysis of RIPE Labs data extracted 2 July 2025. "RIPE Atlas on BigQuery".

quality services to South Koreans. Local CSPs, especially smaller start-ups, have reduced ability to host their services overseas and thus face financial barriers to scale and innovate.

In fact, there have been instances of local CAPs, particularly those in the over-the-top (OTT) streaming space, exiting the market due to financial struggles. There are also examples of global CAPs that have either exited the South Korean market or have not launched locally despite operating in other APAC markets. It is clear that South Korea's current IP interconnection regulations have diminished the plurality of service providers, squeezing out smaller service providers, reducing innovation and ultimately limiting consumer choice.

Decisive changes to the IP interconnection regulation are required to reset the distorted interconnection ecosystem and unlock the significant infrastructure investments needed to position South Korea as an international hub for AI

In sharp contrast with the rest of the world, regulatory intervention in South Korea has led to a series of protracted legal and regulatory disputes and has deterred ongoing investment in the country's digital infrastructure. As a result, the industry has been deprived of the benefits from investments that were already underway, and would have likely continued, had South Korean ISPs not imposed higher interconnection costs on international carriers, CSPs, standalone CDNs and other CAPs for delivering traffic.

South Korea continues to benefit from a dynamic economy, a strong focus on technology and proactive government policies that have enabled early and widespread network deployment domestically. However, it has become a global outlier in terms of its international connectivity and the levels of investment in digital infrastructure from stakeholders other than its domestic ISPs.

This situation has led to a relatively limited supply of international connectivity, with some prices appearing higher than in nearby countries, and with a reliance on the three largest ISPs rather than a diverse, decentralised infrastructure landscape. Consequently, South Korean users have experienced limitations in accessing specific online and cloud services, and have access to fewer service providers.

In the future, the rise of cloud-intensive applications, including those powered by AI, will generate significant needs for connectivity to and between AI data centres. For South Korea to be successful as a regional or global leader in AI, investment in further submarine and data-centre infrastructure is not optional. The costs and uncertainty associated with the SPNP interconnection regime deterred such investment in the last decade, and could continue to hamper South Korea's ambitions if it is not materially overhauled. If interconnection regulations remain in place in their current form, they may evolve to become a systemic weakness for the South Korean economy, in a world where access to state-of-the-art digital infrastructure and services, including AI data centres, becomes ever more important.

2 Introduction

As South Korea embarks on a new chapter under its recently elected government, there is an opportunity to revitalise the digital economy and remove barriers to innovation and investment. A key issue that needs to be debated is the country's approach to internet protocol (IP) interconnection regulation – a policy domain that has drawn international attention for its distinctive structure and far-reaching implications. Unlike in most advanced economies, where interconnection arrangements between networks are commercially negotiated, South Korea imposed regulated interconnection fees between internet service providers (ISPs). While intended to ensure fair cost recovery and maintain network quality, these rules have introduced significant friction into the digital ecosystem, deterring digital infrastructure investment and innovation, distorting competition in the telecoms market, and negatively affecting users.

This independent report explores the complex effects that South Korea's interconnection regime has had on the interactions between local ISPs and various stakeholders, including content and application providers (CAPs), cloud service providers (CSPs) and international telecoms carriers. It examines how the change in behaviour of ISPs arising from the policy influenced investments in local digital infrastructure and explores the downstream effects on competition, innovation and economic growth. Drawing on comparative international experiences, the report aims to inform a more balanced and forward-looking regulatory framework – one that supports both network sustainability and the country's ambition to lead in the global digital economy.

The remainder of this document is laid out as follows:

- Section 3 summarises the international evolution of IP interconnection by looking at peering, transit and the role of internet exchange points (IXPs) and describes the evolution of the regulations in South Korea and the initial disputes between CAPs and ISPs that led to further amendments
- Section 4 explores the outcomes of the South Korean IP interconnection regime and explores the impact it has had on the digital landscape of the country
- Section 5 discusses IP interconnection policy considerations for South Korea.

The report includes a number of annexes containing supplementary material:

- Annex A: Overview of regulatory studies into IP interconnection
- Annex B: Public interconnection locations for major ISPs

3 International evolution of IP interconnection and deviation in South Korea

This section introduces IP interconnection arrangements, examining how they have evolved around the world and how traditional, commercially negotiated agreements have incentivised investments in the ecosystem to the benefit of end users. The approaches to regulation of IP interconnection worldwide are discussed and compared to the approach taken in South Korea from 2016.

3.1 The nature of the internet as a network of networks means that IP interconnection is required in order for traffic to be delivered from, and to, any point on the internet

The internet is a global network of networks which requires interconnection between networks to deliver traffic from, and to, any point on the internet.

These networks include:

- **Domestic ISPs** – these provide internet access directly to end users, and in South Korea are categorised into tiers based on their network infrastructure and connectivity. Examples of 'Tier 1'[7] ISPs include KT Corporation (KT), SK Broadband (SKB) and LG Uplus (LG U+), while examples of Tier 2 ISPs include companies such as Dreamline and Sejong.
- **International carriers** – these operate global backbone infrastructure enabling businesses and consumers to connect worldwide. Examples include AT&T, BT, Orange, Telstra and TATA.
- **CSPs** – these offer on-demand access to computing resources and accompanying services. Examples include Naver, Samsung SDS, Amazon Web Services (AWS), Google Cloud Platform, Microsoft Azure, Tencent Cloud and Ali Cloud.
- **Standalone content delivery networks (CDNs)** – these networks, such as Akamai and Cloudflare, deploy infrastructure to distribute content closer to end users on behalf of OTTs, enterprise customers and governments.
- **Other CAPs** – these include content providers and over-the-top services (OTTs) such as Kakao, WATCHA, Netflix, YouTube, Meta. For the avoidance of doubt, the use of CAPs in the report will also include CSPs and CDNs in the definition.

As the internet transitioned from its academic origins to commercial use in the 1990s, two forms of interconnection emerged – peering and transit.

7 The largest ISPs in Korea are known as Tier 1 providers. The largest global internet backbone providers are also known as Tier 1 providers. The Korean ISPs are not global Tier 1 providers, and in the interest of clarity we will only use the term to designate the large Korean providers.

Peering

Peering agreements allow two networks to exchange traffic directly with each other. These arrangements are usually commercially negotiated, with the majority of them on a settlement-free basis. This model is especially important in the digital age where a vibrant ecosystem of networks exchange traffic and both parties involved benefit equally from the arrangement.

Figure 1 illustrates how Network A and Network B can enter into a peering arrangement and freely exchange their customers' traffic, as can Network B and Network C. However, peering arrangements only enable traffic exchange between two networks; if Network A wants to send traffic to Network C, Network B will not deliver traffic between two peers. Instead Network A has to set up its own direct peering arrangement with Network C or enter into a transit arrangement with Network B to carry the traffic to Network C.

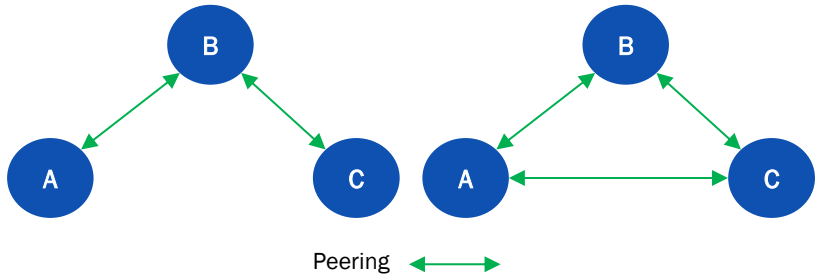


Figure 1: Peering arrangements [Source: Analysys Mason, 2025]

Transit

Transit agreements are essential for ensuring global connectivity, especially for networks that lack the scale or reach to establish direct peering relationships with larger networks or networks in other countries. In this arrangement, one network, typically a smaller network pays another, larger network for access to the broader internet. Once Network D has purchased transit from Network A, for instance, it is a customer of Network A which can deliver the traffic to networks B and C with which Network A peers (see Figure 2).

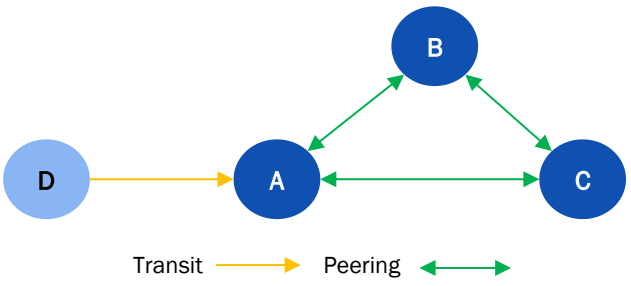


Figure 2: Transit arrangements [Source: Analysys Mason, 2025] [8]

8 This is a simplified hierarchy; as these smaller networks grow, they too can become transit providers, connecting even smaller networks with larger ones.

Transit emerged as an alternative to peering as the number of networks grew and the variety of networks exchanging traffic increased, such that peering was no longer always feasible or convenient.

Internet exchange points

Many large networks today prefer the use of private interconnection as they offer greater control, higher bandwidth and improved security, making them ideal for high-volume or latency-sensitive applications such as video streaming and cloud services.

However, public internet exchange points (IXPs) where multiple networks can interconnect, provide an effective alternative to establishing separate private connections for each individual arrangement. IXPs facilitate traffic exchange within the country and reduce the need for data to travel long distances through upstream transit providers, thereby improving latency, reducing costs and enhancing network resilience.

3.2 Commercially negotiated interconnection agreements have historically worked well to incentivise investment into infrastructure and improve quality of service for end users

The basis of a commercially negotiated interconnection agreement is mutual value. Each party benefits from the exchange; for instance, CAPs gain efficient, tailored, low-latency access to end users, and ISPs benefit from reduced upstream transit costs and predictable traffic flows, and ultimately providing better quality of service to their customers. As a result, the vast majority of peering agreements are concluded on a settlement-free basis (99.998% according to one large study).[9]

The voluntary nature of the agreements and the presence of a competitive market incentivise both CAPs and ISPs to invest in their respective networks to minimise costs and ensure optimum outcomes for end users (see Figure 3).

9 Packet Clearing House, 2021. "2021 Survey of Internet Carrier Interconnection Agreements".

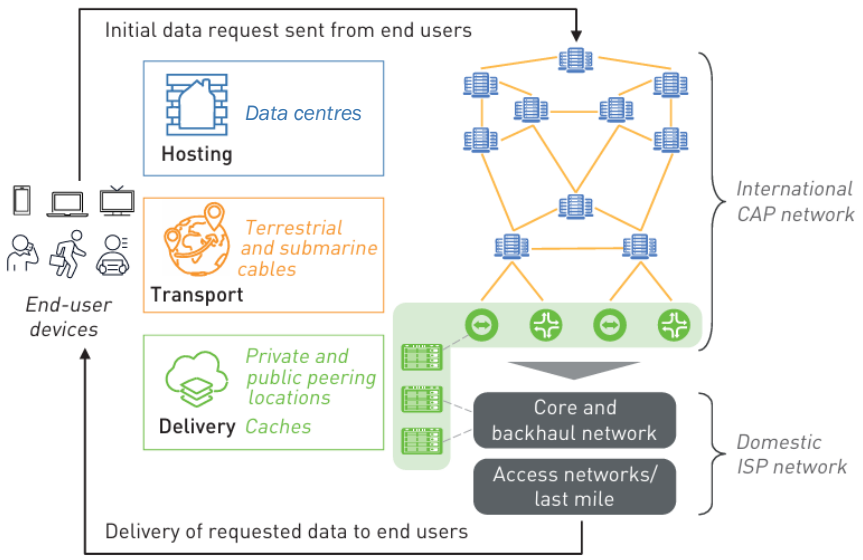


Figure 3: Simplified digital infrastructure value chain [Source: Analysys Mason, 2025]

ISPs in individual countries invest heavily in domestic infrastructure, in particular the fibre and wireless access networks required for end users to connect to the internet. Large ISPs traditionally invested in submarine cables to connect their own national networks to international points.

CAPs on the other hand, invest significantly in CDNs, deploying data centres and the associated network infrastructure connecting these data centres to one another and to peering locations where they interconnect with other networks.

Caches have also been deployed by CAPs to store popular content, either within ISPs' networks or at IXPs where they can be accessed by ISPs. In recent years, CAPs have also made investments in submarine cables to enable the exchange of traffic between their data centres and bring content nearer to ISPs and their end users. CAPs, including CSPs, are incentivised to invest in CDNs in order to reduce the pressure on peering points, decreasing costs and improving the quality of service for end users, both in terms of latency and resilience. ISPs also benefit directly from these investments as they reduce the need to acquire more expensive international transit to access overseas content. Furthermore, the cost of international transit decreases due to reduced demand (because of the benefits of local caching) and increased supply (enabled by CAPs deploying submarine cables). Together, these factors lower the cost for ISPs and CAPs to deliver content and services that cannot be cached locally, including email, video calling and interactive gaming for example.

As a result, most ISPs welcome investment from CAPs, including CSPs, in the form of CDNs as this introduces significant savings in the most cost-sensitive part of the network,[10] and therefore

10 International bandwidth is significantly more expensive for ISPs than the incremental costs associated with scaling their existing transmission networks to cope with increasing content and usage. Scaling existing transmission networks is more cost efficient as the cost of incremental equipment does not rise proportionally. For instance, a tenfold increase in capacity usually leads to just a two- to threefold increase in cost.

enter into settlement-free peering. In fact, most players acknowledge the scalable nature of settlement-free peering and the resiliency it creates.

Japan Internet Providers Association (JAIPA)

JAIPA is a non-profit association in Japan with members including major ISPs, local CAPs and related IT service companies. JAIPA's purpose is to represent their members and advocate for policy changes.

One survey, the "Content/CDN Index" that was conducted sought to understand what ISPs wanted from OTT and CDN providers. Points raised included wanting more local IXPs to avoid expensive transit fees and wanting more open peering policies to allow for greater and more free cooperation between networks. The ISPs also advocated for most of the traffic to travel over peering arrangements rather than paid transit routes. Another element consisted in wanting to control and plan traffic more fully to manage the inflow from CDNs especially when major events occurred so that ISPs could plan capacity accordingly.[11]

3.3 IP interconnection regulations have been reviewed by leading regulators worldwide with very few instances of regulatory intervention

After the commercialisation of the internet in the 1990s, IP interconnection arrangements were agreed commercially between parties. While commercial negotiations have worked well to enable the IP interconnection ecosystem to adapt and thrive, as traffic patterns evolved, particularly with the rise of data-intensive services affecting the volume and ratio of traffic exchanged, peering relationships have become more complex, and occasionally contentious.

As a result, regulators around the world have conducted studies to monitor developments and ensure that the ecosystem is functioning properly, particularly in response to calls from selected groups of ISPs for compensation for network investment. These regulators have concluded that stakeholders were co-operating well and making their respective investments in infrastructure to support the growing internet traffic. A summary of the conclusions from key studies is provided in Annex A.

However, these studies have also highlighted that there may be dominant ISPs that could abuse their market power to the detriment of smaller stakeholders in the market. Indeed, in Switzerland, the regulator found that Swisscom was abusing its market power via interconnection arrangements, and regulatory intervention was required in this case. It is worth noting that the decision was for interconnection to be provided at cost-oriented fees. The regulator subsequently determined that a settlement-free model was appropriate, as the costs incurred by either party effectively balanced out.

11 JAIPA, 2023. "Content/CDN Index"

ComCom's investigation on Init7 vs. Swisscom

In 2013, Init7, a small domestic ISP, filed a complaint against Swisscom, a much larger ISP, alleging it was refusing to enter into peering negotiations and was charging smaller ISPs for paid interconnection.

The Federal Communications Commission (ComCom) conducted two market investigations, and reviewed several expert opinions before issuing a landmark ruling in December 2024 that identified Swisscom as having abused its market dominance to the detriment of smaller CAPs and ISPs, including Init7. ComCom ruled that Swisscom was henceforth obliged to operate settlement-free peering with Init7. The decision was based on the following findings:[12]

- Swisscom is obliged to provide cost-oriented interconnection due to its market dominance. The chargeable costs only include those of the router ports and the cable for interconnection. Both partners incur the same costs, so the cost-oriented price is CHF0.00.
- The traffic ratio, i.e. the ratio between incoming and outgoing traffic, which Swisscom used as a criterion for payment, is considered irrelevant by ComCom, as the direction of data flow does not influence the costs.
- Traffic from content providers is almost always requested by Swisscom's end customers, and ComCom operates under the principle that the end user pays and thus the costs incurred are already covered by the end customer's broadband subscription.

We note that the European Union is currently reviewing the Digital Networks Act which looks at potential government intervention in peering negotiations however, early indications suggest that network usage fees for interconnection between ISPs and CAPs may be out of scope.[13]

3.4 The approach in South Korea deviated noticeably following the introduction of IP interconnection regulations in 2016

In contrast, South Korean policy makers intervened in a different way in 2016, introducing a rule under which ISPs sending traffic within the same tier, must pay the receiving ISP for traffic sent to its customers. Subsequent disputes between CAPs and ISPs shaped the current 'sending party network pays' (SPNP) policy.

12 This ruling is not yet legally binding as Swisscom still has the option of lodging an appeal with the Federal Administrative Court; Init7, 2024. "ComCom orders: Swisscom must operate zero-settlement peering with Init7".

13 Business Korea, 2025. "U.S. Push Leads EU to Drop Network Usage Fee Plan"

3.4.1 The Ministry of Science, ICT and Future Planning introduced a controversial SPNP model on IP interconnection in 2016

Frictions between stakeholders in South Korea on bandwidth usage started in 2012, when KT Corporation restricted internet access from Samsung smart TVs due to concerns over intensive bandwidth usage and wanted to charge Samsung for the data traffic. The South Korea Communications Commission (KCC) intervened and found that KT was blocking video competing with its own service,[14] and violated KCC's 2011 "Guidelines for Reasonable Management and Usage of Network". [15]

This incident was just the beginning of the controversy as in 2014, the Ministry of Science, ICT and Future Planning (now Ministry of Science and ICT, MSIT), published Notice No. 2014-73, which amended the Interconnection Standards for Telecommunication Facilities (ISTF). These amendments, effective from 1 January 2016, included:[16]

- updating Article 44 (Principles of Calculation of Access Fees, etc.) to state that "The connection communication fee shall be calculated by multiplying the access communication rate, which is the accumulated amount of data traffic, by the connection communication rate"
- replacing "no settlement" between businesses of the same tier with "mutual settlement" in Article 46.

In conjunction with the existing terms of the ISTF, this amendment introduced mandatory IP interconnection fees on a traffic volume basis, replacing the previous settlement-free peering arrangements between Tier 1 ISPs.

3.4.2 As ISPs attempted to impose fees onto CAPs, disrupting previously established models, disputes and litigations regularly occurred

While the changed regulations only directly affected interconnection between local ISPs, those ISPs decided to pass on traffic-related interconnection charges to CAPs through high transit and peering costs. The local ISPs also urged CAPs to change existing local transit contracts to paid peering contracts. These disrupted existing arrangements between various networks and set off a chain reaction between ISPs, CAPs, the government of South Korea, KCC and the courts, and has continued impacts on investments and end users through today.

In 2016, a local, KT-hosted Facebook cache was disabled, and traffic rerouted through Hong Kong after KT incurred costs for exchanging traffic with peers. A fine imposed on Facebook for service disruption was overturned, legitimising Facebook's actions to reroute traffic in order to save costs.

14 The South Korea Herald, 2012. "KT restores Internet access for Samsung's smart TVs".

15 OPEN NET, 2011. "KCC's Guidelines on Net Neutrality and Internet Traffic Management".

16 National Statute Information Center, 2020. "Interconnection Standards for Telecommunication Facilities".

KT / Facebook dispute

Before 2016, KT hosted a Facebook cache and, through peering arrangements, SKB and LG U+ subscribers could access Facebook content locally. Following the SPNP amendment, KT received bills from SKB and LG U+ for the Facebook traffic originating from the cache. KT attempted to charge Facebook for interconnection. Facebook refused to pay and disabled access for SKB and LG U+ subscribers. Instead, Facebook had to reroute SKB and LG U+'s traffic through Hong Kong servers, increasing latency by up to 4.5 times for subscribers.[17]

In 2017, KCC imposed a fine on Facebook for deliberately disrupting its service and inconveniencing end users, which Facebook disputed. In August 2019, the Seoul Administrative Court ruled in favour of Facebook and overturned the previous KCC fine, a decision which was upheld by the high court in 2020.[18]

In 2019, SKB attempted to impose an interconnection fee on Netflix, which Netflix refused to pay. The dispute only ended in 2024 through a partnership agreement between the two companies.

SK Broadband / Netflix dispute

In November 2019, SK Broadband filed a claim with KCC to force Netflix to pay an IP interconnection fee to cover the cost of network upgrades. The stated reason was because Netflix's traffic had surged, increasing ~24 times, from 50Gbit/s in May 2018 to 1200Gbit/s in September 2021 due to the popularity of hit series including *Squid Games*.[19] Netflix rejected the claim and the litigation laboured on through ten court hearings. In 2023, SK Broadband and Netflix put an end to the legal feud by signing a partnership. As part of this agreement, SK Broadband would offer its products bundled with Netflix.[20]

3.4.3 Additional policies were implemented in an attempt to curb the impact of the initial regulation

At the end of 2019, following complaints from domestic CAPs and smaller ISPs, MSIT announced the preparation of a plan to improve the internet network interconnection system in which traffic exchanged up to a ratio of 1:1.8 would be settlement-free. This value was chosen at the time because traffic exchange between major telecoms companies was below 1:1.5 and thus no connection fees would be incurred. The plan also reduced rates asymmetrically – with greater reductions for smaller companies.[21] MSIT subsequently published the exchange ratio between major ISPs, but no disclosures have been made since 3Q 2020, at which point the greatest ratio between two of the

17 The South Korea Herald, 2019. "Will Facebook win court battle over network usage fee?".

18 The South Korea Herald, 2019. "Facebook wins court battle over network cutoff".

19 The South Korean Herald, 2023. "SK, Netflix settle yearslong legal battle over net usage fees, vow to work together".

20 Branding in Asia, 2023. "Netflix and South Korea's SK Broadband End Legal Dispute, Form New Partnership".

21 MSIT, 2019. "인터넷망 상호접속제도 개선방안 마련".

major ISPs was 1:1.41.[22] It should be noted that the traffic ratios were already suppressed at that time and thus the implementation of this policy adjustment did not resolve the structural issues that the IP interconnection regulation created.

Additionally, following the adverse impact on service quality arising from Facebook's reaction to charges resulting from the SPNP regime, the Telecommunications Business Act (TBA) was amended in June 2020 to include Article 22-7.

Article 22-7 (Securing Service Stability of Additional Telecommunications Providers, etc.)

Value-added telecommunications service providers that meet the criteria set by the Presidential Decree in terms of the number of users and the amount of traffic shall take necessary measures prescribed by the Presidential Decree, such as securing service stability means and processing user requests, in order to provide convenient and stable telecommunication services to users.[23]

In December 2020, the Enforcement Decree of the TBA was amended, to define the value-added telecoms service providers of Article 22-7 of the TBA as those meeting the following standards:[24]

- at least one million average daily domestic users in the three-month period immediately before the end of the preceding year
- average daily domestic traffic volume generated in the three-month period immediately before the end of the preceding year of at least 1% of the total domestic traffic volume.

The amendment also set out the measures to be taken by these value-added service providers to prevent issues caused by excess traffic and provide an uninterrupted internet connection, including:

- preventing technical errors
- diversifying servers
- increasing server capacity
- optimising traffic routes and volumes.

Additionally, where any act is expected to significantly affect the stable provision of telecoms services, advanced notice should be provided.

22 MSIT, 2020. "통신사 인터넷망 간 상호접속 트래픽 교환비율 현황(~20년 3분기)".

23 National Statute Information Center, 2020. "Telecommunications Business Act".

24 Statutes of the Republic of South Korea, 2024. "Enforcement Decree of the TBA".

4 Outcomes of the South Korean IP interconnection regime

This section discusses how the introduction of regulated IP interconnection fees in place of commercially negotiated interconnection in South Korea has disincentivised investment in infrastructure, affecting network costs and quality, particularly when compared with benchmark countries.

4.1 Tier 1 ISPs in South Korea have been able to exercise pricing power in the local transit and peering market, supported by the IP interconnection regulation

The three Tier 1 ISPs in South Korea have a termination monopoly over access to subscribers on their respective networks. They jointly cover 91% of fixed broadband subscribers in South Korea and no other network can deliver traffic to their customers without interconnection or transit.[25] With the regulation of IP interconnection fees arising from the 2016 amendment, the behaviour of these ISPs changed as they no longer want to negotiate for settlement-free peering and are not aggressively competing for the local transit business.

Based on interviews with global and domestic stakeholders in South Korea, several effects have been witnessed in the market, which suggest that the three large Tier 1 ISPs are not competing actively with one another and are able to leverage their 'termination monopoly' in the local interconnection market to compete in other adjacent businesses. These effects are elaborated below.

Reduced competition between local Tier 1 ISPs

Tier 1 ISPs sell domestic transit separately from international transit, and are not competing actively with one another for domestic transit, especially for CAPs whose traffic tends to be more outbound than inbound. This is because they would benefit from receiving more transit traffic sent from other Tier 1 ISPs based on the SPNP rules.

> "Before 2016, all three Tier 1 ISPs were trying to get transit business from us. However, after 2016, the other two Tier 1 ISPs stopped chasing for business"
> *–Local CAP*

> "The 'Sender Pays' model broke the competitiveness of transit. ISPs can now charge high interconnection fees."
> *–CAP*

Excessive prices

As a result of the reduced competition and regulated interconnection fees between the large ISPs, the ISPs no longer offer settlement-free peering in the market and impose interconnection charges at costs that are much higher compared to other countries, and at levels that significantly exceed the direct cost of providing interconnection. This high cost is further heightened because providers need to buy two ports in South Korea; one to service domestic traffic and the other for international traffic.

25 MSIT, 2025. "Document Viewer".

This differs from other markets in the region, like Japan or Singapore, where one port can serve both domestic and international transit.

CAPs have calculated that they are required to pay a local access fee ranging between USD1.5 per Mbit/s and USD2.0 per Mbit/s to peer with local Tier 1 ISPs, resulting in overall costs for domestic interconnection that are many times higher than the equivalent rate in other countries.

> "It has been known that ISPs make arrangements amongst them to keep to price close to the caps. It is a business wise decision."
> – *International CSP*

As further evidence, an international data-centre provider negotiating on behalf of an Asia-based CAP noted that in Singapore the blended cost of domestic transit typically ranges from USD0.10 to USD0.50 per Mbit/s. In contrast, despite aggressive negotiation, routeing through a domestic Tier 2 ISP and operating with minimal margins, the same provider reported a cost of more than USD1 per Mbit/s in South Korea. This was too expensive for the target CAP client in this instance, and they decided not to deploy a PoP in South Korea.

> "Bandwidth costs in South Korea that are 30 times the cost of internet transit in the United States and in Europe"
> –*Cloudflare*

> "Domestic transit rate in South Korea is more expensive than international transit"
> –*CDN*

> "Japan's overall transit fees are a third or a quarter of South Korea's. Hong Kong is about a third of South Korea. South Korean fees are quite high"
> –*Local Tier 2 ISP*

> "South Korean prices are 4–5× that of the wider Asia Pacific Region or South America, and nearly 14× that of North America or EMEA (Europe, Middle East, Africa)"
> –*CAP*

Barriers to competition with other telecoms networks

Smaller local Tier 2 ISPs cannot effectively compete for the domestic consumer business as they would have to bear high interconnection fees in the quest to acquire consumer eyeballs. We note that some of them have been acquired by the larger ISPs (e.g. KT's acquisition of HCN, LG U+'s acquisition of CJ HelloVision, SK Broadband's acquisition of Tbroad) while others (e.g. Sejong, Dreamline) have focused their business model towards enterprise and wholesale services which rely less on interconnection with the large ISPs. We do see that Tier 2 ISPs are taking the opportunity to work with other networks and provide a local connectivity hub for traffic transiting through South Korea but this does not solve the challenges in serving domestic demand.

> "It is much cheaper to connect directly to overseas operators than via the three major telcos… Expanding capacity with Tier 1 ISPs take many months… we want a decrease in interconnection rates"
> –*Local Tier 2 ISP*

Besides local Tier 2 ISPs, international telecommunication carriers are also struggling to offer their services in South Korea. It is common practice for these international carriers to peer on a settlement-free basis with other large ISPs however, this is not practiced in South Korea by the local Tier 1 ISPs as they fall-back on the regulation to enforce peering charges.

Lumen Technologies in South Korea

In early 2024, Lumen exited the South Korean due to the high costs of peering – the South Korean Tier 1 ISPs were charging ~USD2 per Mbit/s which made it impossible for them to offer internet transit products to their customers as they follow a regional pricing model for their services. Even with its status as a large international carrier, Lumen found it difficult to negotiate with the ISPs

Lumen subsequently relaunched with a new operating model in 2025. Now Lumen peers with Tier 2 ISPs and smaller networks in South Korea through PoPs at Equinix and KINX, while peering with the Tier 1 ISPs takes place overseas in Hong Kong and Japan.

Cloudflare has also been vocal with regard to its concerns about interconnection regulation, citing the effect on costs and quality, as well as the potential for discrimination against smaller networks and organisations.[26]

Cross-subsidisation

Given the high margins Tier 1 ISPs are earning from local transit and peering, they have the ability to bundle this with other services and compete in other markets such as co-location, cloud services and CDN services. An international data centre operator has confirmed that large domestic ISPs offer discounted bundles which combine colocation services and domestic transit and other standalone providers struggle to compete on costs.

> "Tier 1s bundle their services so they have a competitive advantage. KT still do co-location, sometimes reducing their network price to ridiculously low and sometimes offering DC interconnection for free."
> *–Data centre operator*

Standalone CDN providers have also identified challenges competing with ISP-owned and operated CDNs who bundle transit in their offering and therefore can be offered at a significant discount relative to other CDNs. This distorts the competitive landscape, and risks impairing the quality of services available as standalone players cannot compete on costs, and ISPs are not incentivised to invest in optimising their CDNs. It is worth nothing that historically, ISP CDNs did not do well but their ability to continue to do well in South Korea indicates the presence of market distortion possibly supported by the interconnection regulation.

> "KT, LG, SK all have their own CDN services so we cannot compete with them on cost when bidding for the same customer, but their services are not very sophisticated as they don't put much investment into them."
> *–CDN*

[26] Cloudflare, 2023. "The European network usage fees proposal is about much more than a fight between big tech and big European telcos".

4.2 High transit and peering fees have affected investment in local peering infrastructure, leading to a change in architecture compared with other markets

As ISPs seek to impose high transit and interconnection fees onto CDNs, CAPs and CSPs operating in South Korea, these networks are deterred from investing in local infrastructure. Investments in PoPs and caches for local content storage and distribution, through to domestic internet exchanges and international connectivity infrastructure are impacted. This affects the quality of services for consumers and poses a risk to South Korea's future digital innovation and competitiveness.

4.2.1 CSPs and CAPs are deterred from investing in local PoPs and caches

Although ISP charges for interconnection remain opaque, especially given it is often bundled with other services, estimates suggest that Naver and Kakao, two domestic CAPs end up paying between USD50 million and USD72 million (KRW70–100 billion) to ISPs each year.[27]

Furthermore, interviews with CSPs and other CAPs highlighted that in the event that they have peering arrangements with each ISP, which is often the case for larger ones, the ISP still charges them a high access fee, even though the ISP would not incur interconnection with other ISPs as it would only be delivering traffic to its own customers. This bears similarities to the Init7/Swisscom case where ComCom identified that the underlying incremental cost of interconnection was effectively null and therefore the fee Swisscom was charging was an arbitrary termination fee rather than passing on interconnection costs.

As discussed in Section 3.2, CDNs are deployed by both CSPs and other CAPs to route traffic efficiently over the internet, storing popular content in caches distributed close to, or within, ISPs' networks to the benefit of end users. In South Korea, however, deploying a cache or point of presence in a country could result in IP interconnection charges from the ISPs, as illustrated by the Facebook case. Given the magnitude of these charges, there is less incentive to invest in caches, which in South Korea has resulted in fewer CAP-, independent CDN- and CSP-owned caches and PoPs than in other markets.

> "Investment in cache servers and points of presence (PoPs) is a technical measure to improve user experience and increase network efficiency, but in the current structure, it instead acts as a cost burden for companies. This weakens the incentive for investment and ultimately can have negative effects on domestic users, such as reduced internet quality and speed. [...] the attractiveness of investment in domestic infrastructure has decreased, and instead, attempts to provide content to domestic users through overseas PoPs or CDN infrastructure have increased."
> *–Local industry representative*

> "We see CDNs serve premium customers locally but standard customers are served from abroad."
> *– Local IXP*

For example, Meta's CDN currently has no caches in any of the major ISP networks in South Korea, while it has caches within every major ISP network in Australia, Japan, Singapore and the Philippines.[28]

27 Asiae, 2021. "[2021 National Superintendent] Naver Hae-jin "Network usage fee, you have to pay as much as you use".

28 Netify, 2025. "Meta CDN".

It is worth nothing that some CDNs do not have any PoPs in South Korea at all; Google Cloud's Media CDN (which handles video streaming for Google Cloud customers, leveraging Google's own streaming infrastructure) has no PoPs in South Korea, compared with a significant presence in nearby Japan and across the world (see Figure 4).

Figure 4: Google Cloud Media CDN PoPs [Source: Google Cloud, 2025]

Having fewer caches and PoPs means that some traffic is often routed out of country. Cloudflare pointed to the high fees charged by South Korean ISPs as a predominant factor that hinders their ability to deliver traffic efficiently, resulting in their non-paying customers being served through Japan, Hong Kong, or even as far as Los Angeles.[29] The high fees can be particularly challenging for smaller businesses to bear.

"As small and medium-sized platforms and startups find it difficult to secure dedicated lines or direct access routes due to the burden of connection fees, there is an increasing incentive to avoid domestic networks by detouring to overseas CDNs or cloud infrastructures rather than expanding business domestically. In addition, due to changes in the network usage fee system, the attractiveness of investment in domestic infrastructure has decreased, and instead, attempts to provide content to domestic users through overseas PoPs or CDN infrastructure have increased

–Local industry representative

4.2.2 The South Korean IXP landscape and usage differs significantly to benchmark countries

As described in Section 3.1, IXPs facilitate local traffic exchange, reducing the need for data to travel long distances through upstream transit providers, and facilitate interconnection between multiple networks, improving latency, reducing costs and enhancing network resilience.

29 Cloudflare, 2025. "Cloudflare's Experience in South Korea: Regulatory intervention has increased bandwidth costs and latency for users".

South Korea only has six public IXPs, with a combined capacity equivalent to 0.11Mbit/s/inhabitant, the majority of which comes from the single IXP with terabit capacity, KINX. This capacity is much lower, and less diverse, than in other developed Asia–Pacific countries (see Figure 5). This suggests that a greater proportion of traffic in South Korea may be exchanged abroad compared to other markets. This is likely as a result of the IP interconnection charges that would be incurred from domestic traffic exchange. Additionally, a markedly lower proportion of networks peering at South Korean domestic IXPs are local – suggesting that local networks are relying on international transit or international leased lines to peer at an international location.

Figure 5: Comparison of public IXPs in South Korea and benchmark countries [Source: Internet Society Pulse IXP Tracker, 2025]

Country	Active IXPs	IXP members	IXP capacity (Mbit/s/inhabitant)	% of IXPs with terabit capacity	% of local networks peering at domestic IXPs
South Korea	5[30]	108	0.11	17%	2.99%
Japan	22	589	0.97	36%	24.61%
Philippines	13	148	0.09	23%	16.75%
Australia	40	535	2.18	38%	11.30%
Singapore	11	669	12.89	55%	10.95%

The lack of investment by CAPs in domestic PoPs extends to their investment in connecting to IXPs; Netflix is not present at any interconnection facilities within South Korea, whereas it is present at public and private interconnection facilities in Japan, Australia and Singapore.[31] This disadvantages small ISPs who may not have sufficient scale to operate dedicated caches and will need to connect to an IXP overseas and use more costly international transit.

> "In order for us to expand our IX business we need more newcomers from overseas which the sender pays rule is kind of blocking."
>
> – *Local IXP*

The Tier 1 ISPs have a very minimal presence in domestic exchange points: LG U+ connects at Equinix Seoul, and only with a 10G connection, and SK Broadband has a PoP at Digital Realty Seoul, an interconnection facility, although it is unclear if this is used for any meaningful peering. We understand that there is paid peering, domestic transit and strategic partnerships enabling exchange of traffic with large CAPs. However, for smaller CAPs and CDNs, the ISPs tend to interconnect abroad, and each is present in at least a dozen IXPs around the world, and likewise all have presences at multiple foreign interconnection points.[32] As a result, a larger proportion of the ISPs' traffic is either received directly from CAPs/CDNs, or accessed internationally using the ISPs'

30 Excludes 6NGIX which has only one network connected

31 PeeringDB, 2025. "AS2906 - Netflix".

32 PeeringDB, 2025. "AS3786 – LG Uplus Corp."; "AS9318 – SK Broadband"; "AS4766 – KT Corporation".

own transit capacity. This network architecture is very unusual (see Annex B); in Japan all the major ISPs have a presence at multiple domestic exchange points and interconnection facilities.[33]

Given the much lower level of maturity of the peering environment in South Korea, there is observed inertia in terms of adoption of new peering technology and best practices which could have cyber-security implications in the future. One example is in adoption of Resource Public Key Infrastructure (RPKI) which is a security framework to ensure the authenticity and validity of internet routing information. We can see that South Korea has a very low RPKI Route Origin Authorisation (ROA) prefix coverage at around 11% of IP addresses which is the second lowest in APAC after China at 3%.[34] This compares to Japan at 68% and Taiwan at 87%. The low adoption rate could make South Korea more susceptible to routing attacks and we understand that there was already a reported incident in 2023 where a South Korea cryptocurrency platform was compromised through a classic routing attack.[35]

4.2.3 Submarine cable investments in South Korea, particularly by large CSPs and CAPs, have stalled, resulting in lower submarine cable diversity and capacity than neighbouring connectivity hubs

South Korea is wholly reliant on submarine cables for international connectivity, given the lack of any terrestrial cross-border connections with friendly countries. The deployment of submarine cables has slowed since South Korea's SPNP policy was introduced in 2016; only two new cables have become ready for service (RFS) in the period 2016–2024 inclusive, both of which had been announced prior to the change in regulation (see Figure 6).

> "When we considered landing a subsea cable in Korea, internet interconnection policy was regarded as one of the regulatory barriers. Think about the SPNP rule, if there is a landing station and we collaborate with a local ISP, then they need to pay to send traffic to the other two ISPs and that price is way higher than fair market price. So, landing subsea cables would be problematic in South Korea."
>
> *–CAP*

Additionally, South Korean operators primarily rely on their own investment in submarine cables; 64% of South Korean international submarine cables are owned by consortiums which include a domestic ISP, compared to 57% in Japan and 26% in Australia.[36] There is a significant lack of investment from CSPs and other CAPs in submarine cables in South Korea, with no cables that have been wholly funded by CAPs, compared to 11% of cables in Japan and 17% in Australia (excluding domestic cables).[37] This remains true when looking at cables that will be RFS in the period 2024–2028 (see Figure 6).

33 PeeringDB, 2025. "Japan – exchanges".

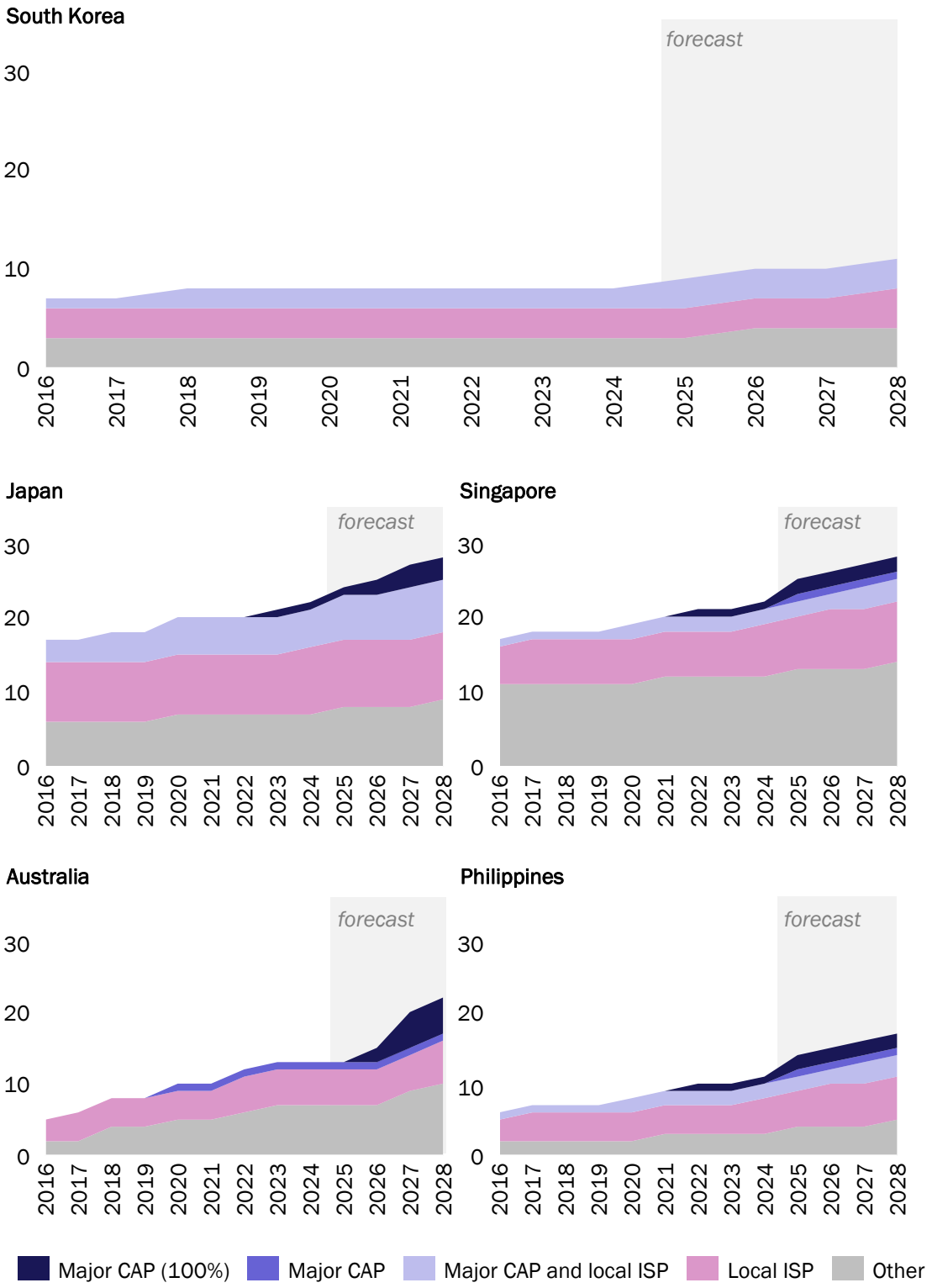
34 APNIC, 2025. "APNIC Labs Measurements".

35 The Record, 2022."KlaySwap crypto users lose funds after BGP hijack".

36 TeleGeography, 2025. "Submarine Cable Map".

37 TeleGeography, 2025. "Submarine Cable Map".

Figure 6: Number of international submarine cables categorised by investment from major CAPs and local ISPs,[38] including future announced cables [Source: TeleGeography Submarine Cable Map, 2025]



[38] Investment is categorised according to presence of CAPs and ISPs on cable consortia; 'Major CAP (100%)': cable investment is only from CAPs; 'Major CAP': cable investment includes investment from major CAP but not local ISPs; 'Major CAP and local ISP': cable investment includes investment from major. CAP and local

As discussed in Section 3.2, investment from CSPs and other CAPs in submarine cables reduces costs for domestic ISPs that no longer need to pay to access internet content and services in large overseas international hubs. This lack of investment in South Korea means that South Korean ISPs cannot benefit from reduced costs, and indeed need to use capacity to access content abroad. One major reason for this lack of investment is that the regulated internet interconnection regime discourages other parties from investing in connectivity infrastructure in South Korea, compared with other similar countries where there has been, and continues to be, significant investment from CAPs. It is understood that high costs for peering and transit is one of the barriers deterring landing of submarine cables in South Korea.

Google is a particularly good example to illustrate this issue as it has funded three cables in Japan (Topaz, Taihei, Proa), five in Australia including domestic cables (Australia Connect Interlink, Bosun, Honomoana, Tabua, Umoja), and one in the Philippines (TPU), but none in South Korea.

Missing out on investments from CAPs on submarine cables will add additional pressure on domestic ISPs to maintain and replace submarine cables to keep up with demand and facilitate international interconnection.

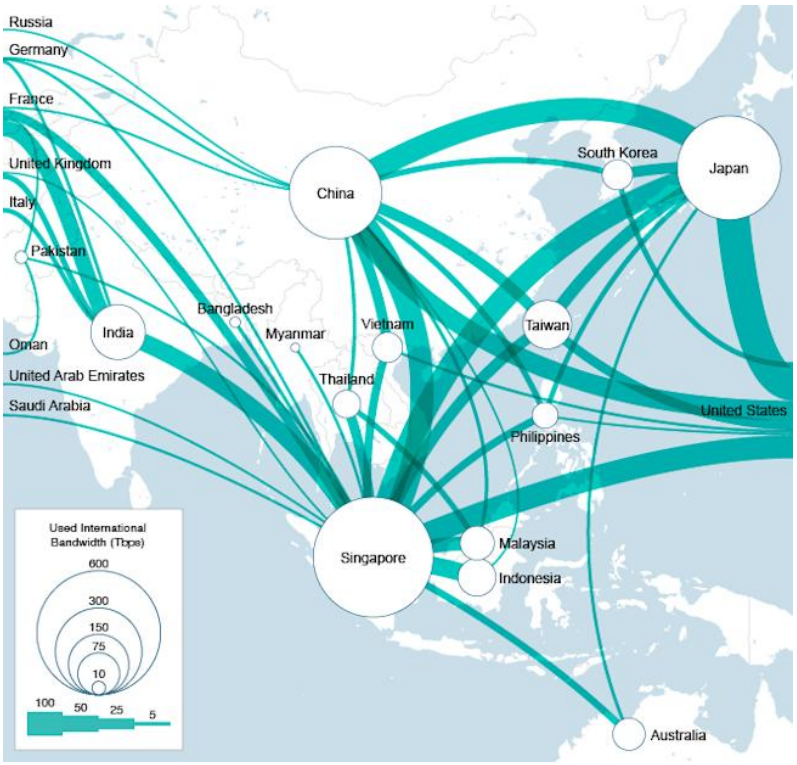
Connectivity hubs

The lack of investment from large network operators (including CSPs and other CAPs) in South Korean submarine cables also affects the potential for South Korea to become an international connectivity hub. In Asia–Pacific, traditional connectivity hubs include Japan, Hong Kong and Singapore. The growth in demand in other populous countries, and the desire of large network operators (including CAPs) to diversify their international routes, have benefited countries such as Malaysia, Taiwan and the Philippines with new, high-capacity submarine cable connectivity. These connectivity hubs benefit from economies of scale, as their fixed costs – such as those for data centres and landing stations – are spread across a larger volume of traffic, resulting in lower average costs per unit of data . These hubs also benefit from increased operational efficiency and network effects – the more cables and connections, the more attractive it is to CAPs, cloud providers, ISPs, leading to higher traffic volumes.

The map below illustrates the submarine connectivity to various places in the region, and shows the relative paucity of international infrastructure connected to South Korea: this is typical of a country that is not used as hub, and where international connectivity primarily serves domestic users (see Figure 7).

ISPs; ‘Local ISP’: cable investment includes investment from local ISP but not major CAPs; ‘Other’: cable investment from non-CAP, non-local ISP sources.

Figure 7: Map of international bandwidth of major international routes[39] in Asia [Source: TeleGeography Transport Networks, 2024]

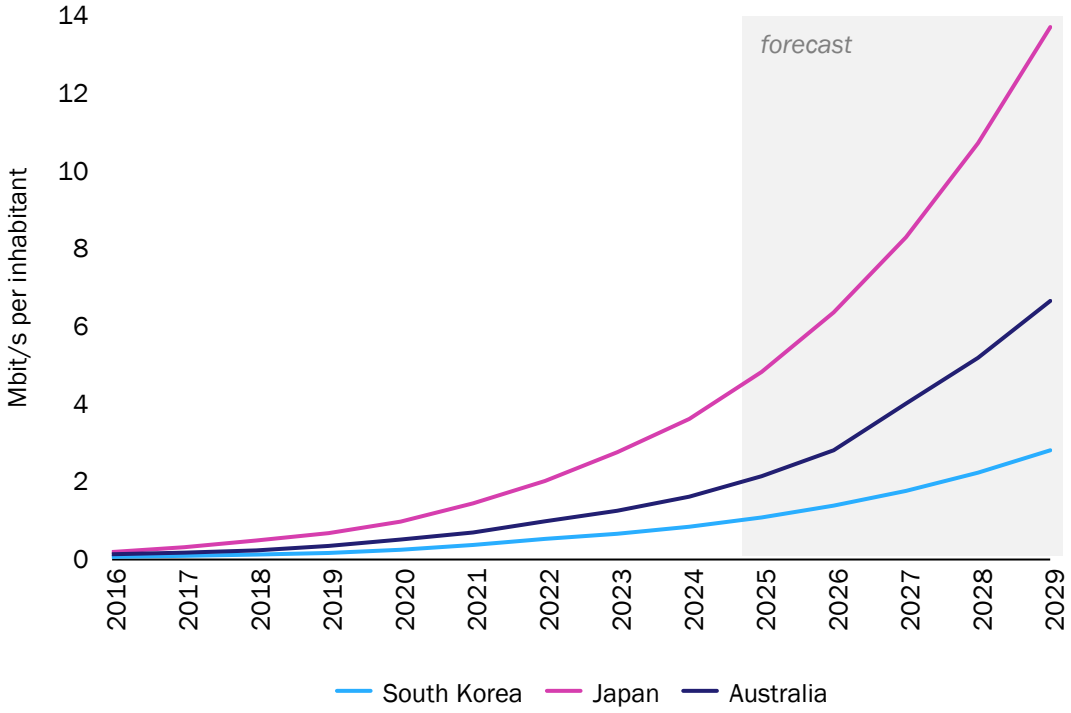


The difference between hub markets and those where submarine capacity is principally used by inhabitants is apparent when comparing normalised levels of used international capacity; South Korea has 0.84Mbit/s per inhabitant compared with 1.62Mbit/s per inhabitant in Australia, and 3.62Mbit/s per inhabitant in Japan.[40] In the latter two, the international capacity is not just used to serve domestic users, but also to serve international users from large data storage facilities and IXPs, including facilitating traffic exchange between other countries. This trend is forecast to continue, with growth in international capacity in these countries significantly exceeding that forecast for South Korea (see Figure 8). This compromises the ability of South Korea to become an international connectivity hub in future and benefit from the associated economies of scale. In particular, as other countries in the region become international hubs, South Korea appears to be a spoke served only with domestic traffic.

39 Map includes international routes with at least 2Tbit/s of aggregate capacity. Figures represent used bandwidth connected across international borders. Domestic routes excluded. Data as of year-end 2024.

40 TeleGeography, 2025. “Transport Networks” .

Figure 8: International bandwidth capacity [Source: TeleGeography Transport Networks, 2025][41]



4.2.4 South Korean ISPs have had to increase their international capacity to collect traffic overseas that they could have collected onshore, resulting in increased costs

We have discussed the economic implications of investments that CAPs have made in digital infrastructure in other papers,[42] but in a nutshell not only do they increase the overall international bandwidth available in a country, they do so in a way that significantly reduces the cost of international bandwidth, by increasing supply and shifting some of their own demand to the new cables. In South Korea, however, those benefits are not present for ISPs because large CAPs have not invested in significant submarine capacity into South Korea.

Larger ISPs invest in their own international capacity and points of presence outside South Korea, bearing the costs themselves. Small ISPs do not typically have the option to invest directly in submarine cables (with lower unit cost of traffic) and would have to rely on transit service providers (with a higher unit cost of traffic). In South Korea, KINX extends its PoP to Japan and acts as a bundled international capacity buyer for small local networks to help alleviate the situation but this is still nowhere close to savings if the small local networks could peer directly in the country without the price distortion arising from the SPNP regulation.

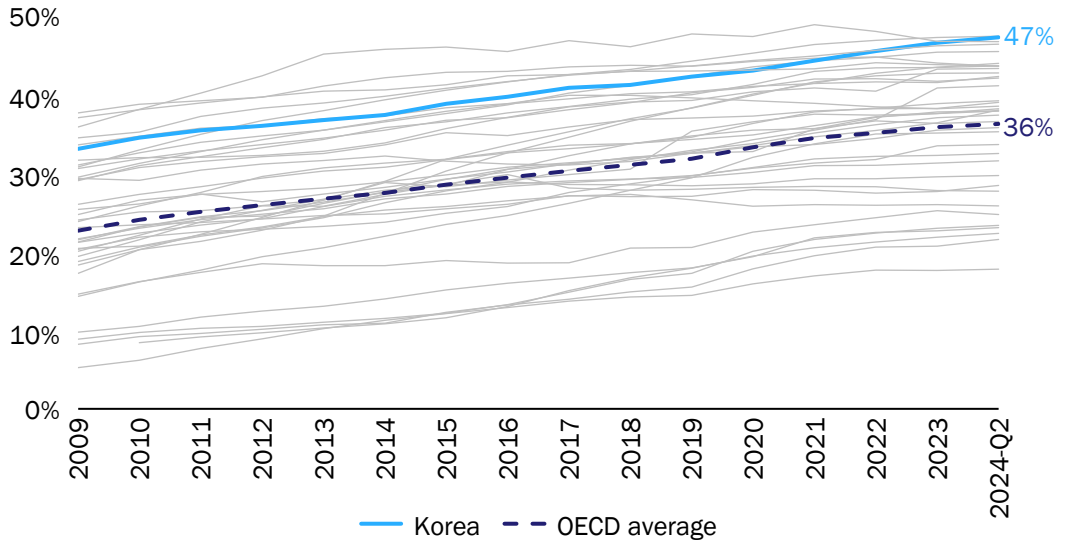
41 Singapore excluded from the chart as it is such a large hub, with such a small population, that the normalised value distorts the comparison.

42 Analysys Mason, 2022, "The impact of tech companies' network investment on the economics of broadband ISPs and Economic impact of Google's APAC network infrastructure – 2022 update".

4.3 While the quality of service to end users in South Korea remains relatively high, service availability and plurality of service providers has been negatively affected

South Korea is a digitally mature country. According to OECD data, South Korea is at the top or near the top of a range of broadband rankings. Broadband internet access, for example, is well above the OECD average, with 47 subscriptions per 100 inhabitants (see Figure 9). This places South Korea at the top of OECD markets, maintaining a top-10 position that predates the implementation of the SPNP regime.

Figure 9: Fixed broadband penetration (subscriptions per 100 inhabitants) for OECD countries [Source: OECD broadband statistics, 2025]



These rankings reflect the significant investment that South Korean operators have made in access networks, which are a part of but not the entire digital infrastructure ecosystem described earlier under Figure 3. Other aspects of user experience are negatively affected by the limited infrastructure investments from CAPs in South Korea. Subscription prices are not especially cheap for high data users in South Korea, with the price of fixed broadband ranking 9th cheapest in OECD.[43] Likewise, average broadband speeds are high, but not at the top of the table, with average internet download speeds in South Korea in the 12-month period to 30 June 2024 ranking 11th out of 229 countries.[44] The latency and the availability of services have also been negatively affected; these are discussed in turn below.

43 Very high mobile voice and data user defined as 900 calls+10 GB, data for August 2023. High fixed broadband user defined as 900 GB per month / 1000 Mbps and above, data for September 2023.

44 Best broadband deals, 2025. “Worldwide broadband speed league 2024”.

Latency

Latency measurements calculate the time it takes for data to travel from one point to another in a network. A high latency can result in slow response times, buffering and deteriorated quality.

Figure 10 shows the latency for Facebook.com over the course of twenty-four hours. South Korean users not only experience a fairly high latency of ~20ms during the day, latency doubles in the evenings during prime time. This is further exacerbated by congestion during peak times.

> "If I cannot put in a local cache and buy local transit, end users will get content from overseas – the performance will be lower and ISP international transit will near capacity (the South Korea-Japan transit is full nearly every night) and impact response time."
>
> *–Standalone CDN*

Figure 11 shows the equivalent data for Google.com. Latency to Google.com is also significantly greater from South Korea than from other countries; however, as it is a webpage that is used more consistently throughout a day, there are no significant peaks or troughs in latency over the course of the day.

Figure 10: Latency measurements to Facebook.com for South Korea (KR), Japan (JP), Singapore (SG), Philippines (PH) and Australia (AU) [Source: RIPE, retrieved 2 July 2025]

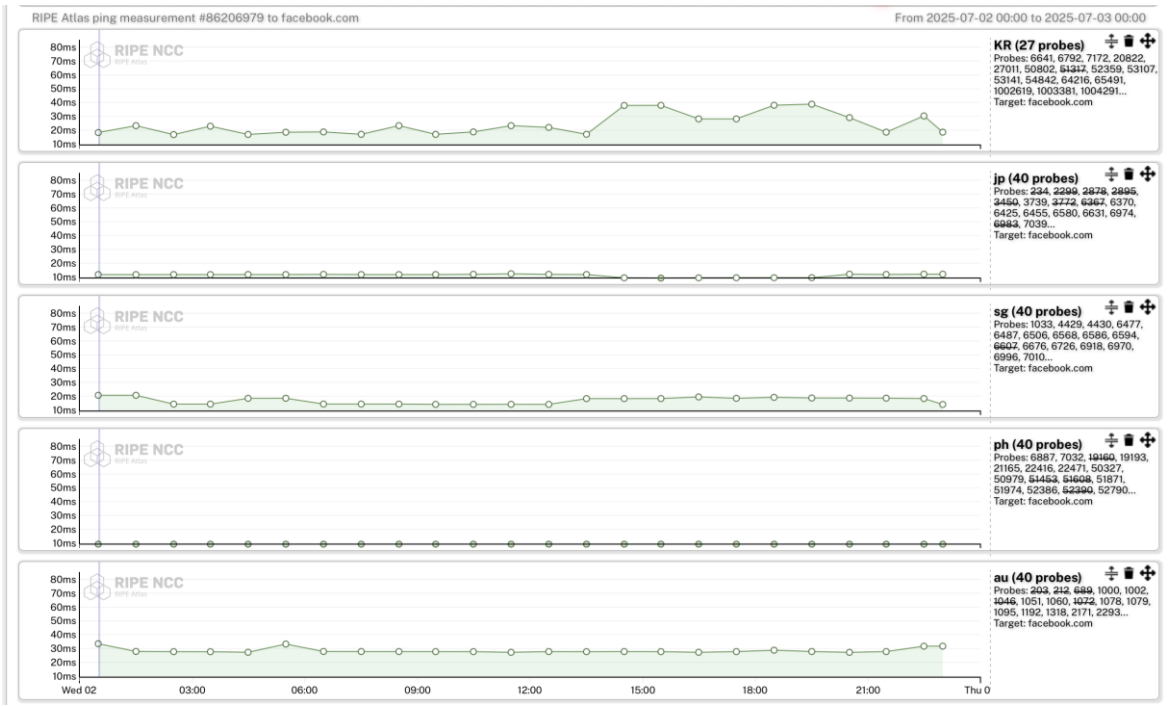
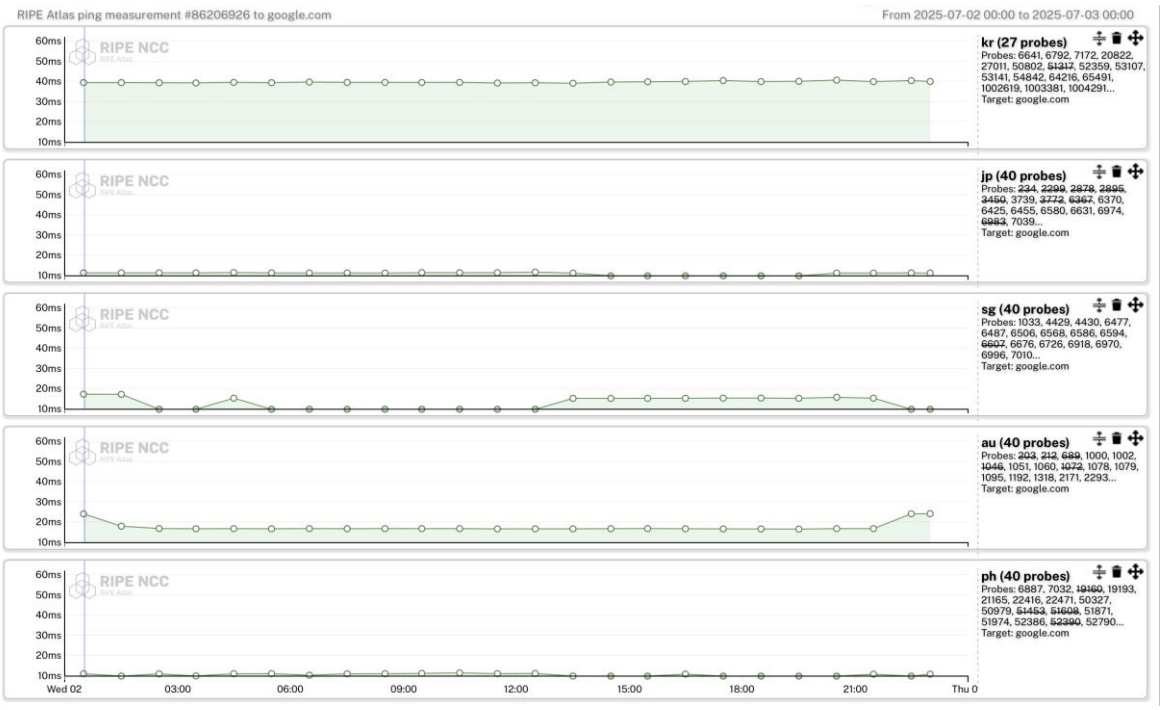


Figure 11: Latency measurements to Google.com for South Korea (KR), Japan (JP), Singapore (SG), Philippines (PH) and Australia (AU) [Source: RIPE, retrieved 2 July 2025]



Cloudflare also found that South Korean customers experienced latency increases of up to 187% as a result of content being delivered over longer distances, from offshore network interconnection points. These results suggest that the higher latency experienced by South Korean users of these websites stems from greater use of international transit by their ISPs to exchange traffic overseas due to the lack of peering in South Korea.

Service availability

In addition to, or as an alternative to, reducing investment in infrastructure, CAPs, CDNs and CSPs can alter their service offerings to compensate for the increased costs associated with IP interconnection fees.

> "We cannot deploy some services in Korea as the revenue we can get from the service – cannot justify the cost needed to pay for domestic transit."
>
> *–Standalone CDN*

For example, in 2024, 69.5% of businesses in South Korea purchased cloud services,[45] which would suggest strong demand for cloud services; however, CSPs are not offering the full portfolio of their services within South Korea (see Figure 12). The cloud services that are not yet available in South Korea include bandwidth-intensive services such as live streaming or AI, which would incur significant costs for the CSPs under the SPNP regime. Indeed, Google Cloud's API Gateway (Integration services) and Live Stream API (Media and Gaming) are not available in South Korea, nor are Microsoft Azure's Remote Rendering and AI services such as AI Content Safety and AI

45 OECD, 2025. "Share of businesses purchasing cloud services".

Custom Vision services. AWS's Amazon Kendra and associated Kendra Intelligent ranking API, a managed enterprise search service, are not available in South Korea either but are available in Japan or Singapore.

Figure 12: CSPs service portfolios and availability by country [Source: Company websites, 2025]

CSP		No. of services available	% of services not made available[46]
Microsoft Azure[47]	South Korea	303	21.1%
	Japan	365	8.1%
	Australia	394	0.8%
AWS[48]	South Korea	294	12.5%
	Japan	331	1.5%
	Australia	336	-
	Singapore	318	5.3%
Google Cloud[49]	South Korea	73	19.8%
	Japan	79	13.2%
	Australia	81	11%
	Singapore	79	13.2%

The impact on end users is difficult to fully quantify, as is proving that the services are not offered because of the IP interconnection regime and not lack of demand, but it is possible to consider that consumers and enterprises may be disadvantaged relative to other markets by not having access to certain cloud services.

Service provider plurality

If curtailing services is insufficient, networks may exit the market altogether. For example, in 2022, global live streaming platform Twitch took a different approach to Meta and Netflix and instead of routeing its traffic through another country, it simply reduced the video quality being offered in order to reduce its traffic. In December 2023 Twitch announced that it would cease operations in South Korea as of February 2024, citing "prohibitively expensive" operational costs. The company had been operating at a significant loss in the country and, despite cost-cutting measures, the South Korean network fees were "10 times more expensive than in most other countries".[50] In the same month it exited, Twitch was fined USD327 000 by KCC under 'service stability' regulations,

46 For Microsoft Azure and AWS, the percentage not available is normalised to the benchmark country with the most available services, here Australia; Google Cloud offers 90 services worldwide.

47 Microsoft Azure, 2025. "Product Availability by Region", accessed 11 August 2025. Microsoft Azure product availability by region does not include Singapore.

48 AWS, 2025. "AWS Services and Regions", see Unique Services (count). Normalised to the benchmark country with the most available services, here Australia. Data from "2025-08-10 23:02:58 UTC" update.

49 Google Cloud, 2025. "Products available by location", accessed 11 August 2025.

50 Twitch, 2023. "An update on Twitch in Korea".

for deliberately degrading the quality of service experienced by end users. Twitch used to get 300 000 daily views from South Korea, with the top South Korean streamers having followings in the millions.[51]

Certain CAPs have refrained entirely from launching their services in South Korea, with NBCUniversal's Peacock and HBO MAX two notable examples. Peacock has a partnership with a local mass media company, CJ ENM, and licenses its content in that way. HBO offers some of its MAX originals in the same way, through a partnership with SK Telekom's Wavve.

Domestic CAPs arguably face even bigger challenges due to their limited ability to defray the high domestic interconnection fees or recover margins from other markets. WATCHA, a domestic OTT provider, complained of not being able to provide WATCHA streaming services in 4K, and has since struggled financially.[52]

> "South Korea's network cost is too high, which undermines the competitiveness of the entire industry"
>
> *–WATCHA's CEO Park Tae-hoon's 2022 Speech at South Korea National Assembly*

WATCHA is also not the only domestic OTT service to have suffered, with reports of smaller players, such as Pandora TV, Mgun and MnCast, having exited the market because of the high IP interconnection fees.[53]

Impact on start-ups

The interconnection regime may have a particularly strong impact on domestic start-up CAPs, which must purchase transit from at least one of the large ISPs in the market.

In addition, given that the large ISPs effectively do not participate in the domestic IXPs, including notably KINX, CAPs face relatively high costs to access domestic transit. This poses a challenge for start-ups that transmit large volumes of data, potentially exceeding the traffic ratios that trigger interconnection fees between ISPs. This could include streaming, gaming and content delivery start-ups, as well as start-ups offering AI services with high volumes of data.

> "From the startup ecosystem's perspective, this [the cost of interconnection] raises entry barriers for innovative firms and undermines global competitiveness. Higher initial infrastructure investments, operational complexity, and regulatory compliance burdens all obstruct market entry.[...] Such costs have become a critical factor in discouraging global startups from entering the South Korean market and driving domestic startups to consider hosting services abroad."
>
> *–Local start-up representative*

51 Rest of the World, 2024. "South Korean streamers struggle with Twitch's sudden exit".

52 Byline Network, 2020. "Watcha's anger... "4K in South Korea is only available on YouTube, Netflix, and Wave"".

53 OpenNet, 2023. "Twitch's Exit calls for repeal of sender-pay interconnection rules as it undermines content diversity, fragments the internet".

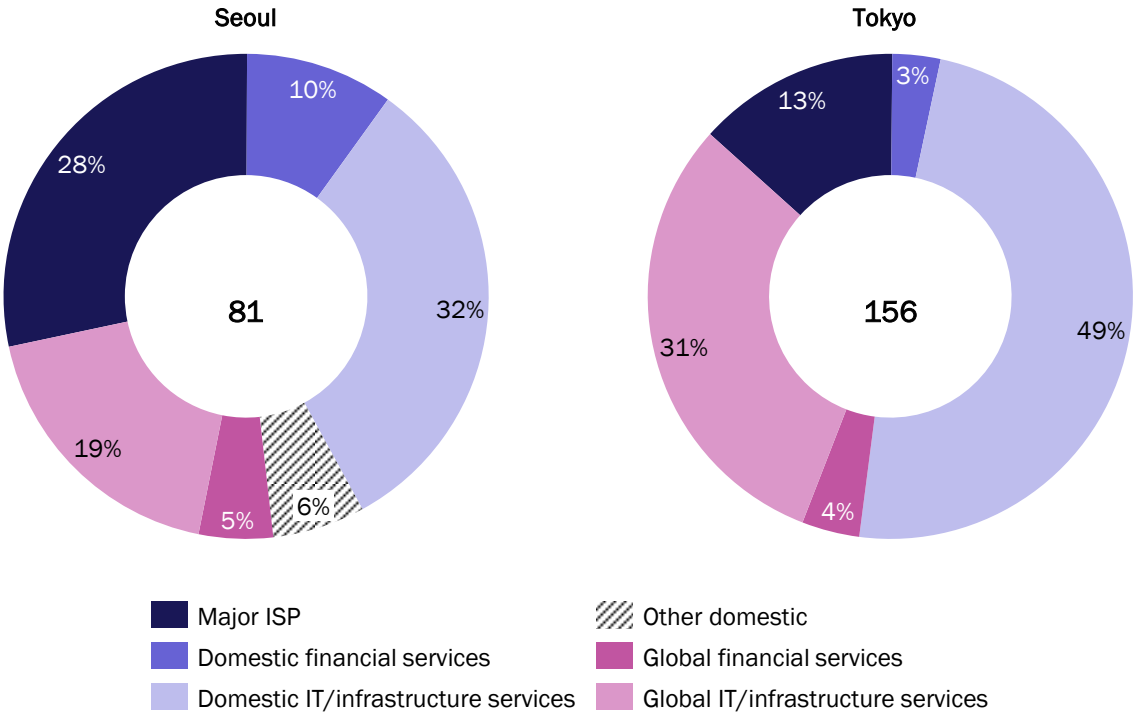
Finally, the international transit fees tend to be high as well, leaving some domestic start-ups to consider hosting services abroad, similar to how the global CAPs provide at least some of their services. These costs may be passed on to end users, challenging the business model of the start-ups.

> "AI startups face significant network costs due to large data volumes generated during model training and inference. [...]While some cloud startups shift to platform-based models to distribute costs, rapid scaling still creates steep financial barriers to innovation."
> *–Local start-up representative*

4.4 Data-centre investments are also increasingly driven by CSPs, but there are challenges to South Korea attracting major investments due to limitations from the regime

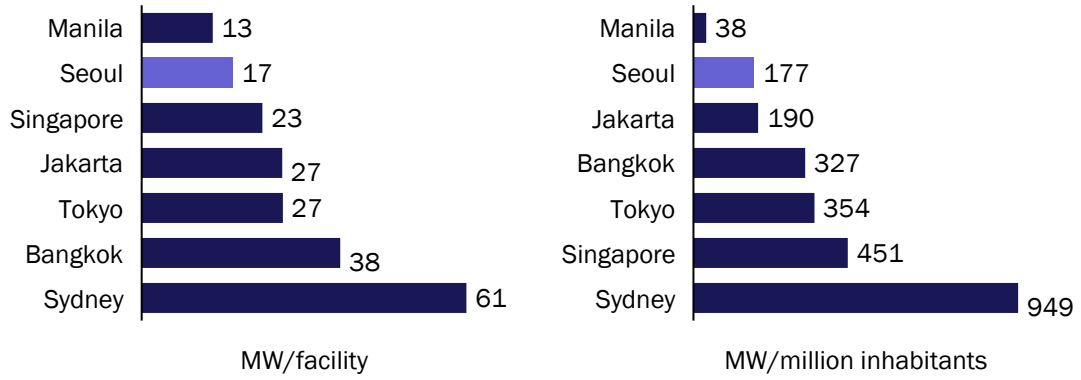
The reduced number of cloud services has meant that users access them from availability zones outside South Korea, which has a knock-on effect on data-centre investment. Almost a third of data centres present in Seoul are operated and funded by major ISPs: LG U+, KT and SK broadband (see Figure 13). This is in contrast to Japan where just over 13% of its Tokyo data centres are funded by large ISPs. In Seoul, 71% of data centres are also funded by domestic entities, compared with 54% in Tokyo. This shows the scarcity of foreign investment present in South Korea.

Figure 13: Number of data centres in Seoul and Tokyo, split by funding source [Source: DC Byte, 2025]



Compared to other APAC cities, Seoul has the second-lowest average capacity per facility, at 17MW, and the second-lowest supply per million inhabitants, at 177MW (see Figure 14).

Figure 14: Total data-centre supply normalised by facility and city inhabitants for a selection of APAC cities[54] [Source: DC Byte, World Population Review, 2025]



Data centres play a crucial role in hosting content and services and act as a hub for domestic and foreign ISPs. Further, countries with established and reliable digital infrastructure are more likely to attract investment for innovative services such as AI inference and training. Without such infrastructure, South Korea could fall behind in the global race for digital innovation. Stakeholders we have interviewed have expressed scepticism about the prospects for AI development in South Korea under the current regulatory environment.

> "If the debate over network usage fees continues, PoP construction and edge infrastructure installation may be discouraged, which may lead to network bottlenecks for initial AI workloads. There is a possibility that the actual perceived delay (lag), response speed (latency), and reliability of AI services may lag behind overseas competitors."
>
> *– Local industry representative*

Several large infrastructure providers and CSPs noted that, even if data centres are built in South Korea, users will still need to purchase connectivity from one of the major ISPs – a key deterrent to broader adoption and innovation.

54 Total supply is the sum of live, under construction, committed and early stage.

5 IP interconnection policy considerations for South Korea

This final section discusses changes to the IP interconnection regulations that the South Korean government should consider to breakdown artificial barriers that exists only in South Korea which would enable the generation of a vibrant interconnection ecosystem, attract more investments in connectivity and AI infrastructure and ultimately achieve its broader digital economy objectives.

5.1 The South Korean government has laid out its plans for the country to become a digital hub in Asia but the current barriers deterring investments, suppressing competition and slowing down innovation in the internet ecosystem would shackle this ambition

South Korea has long been a global leader boasting world-leading internet speeds, a digitally literate population and leading technology companies. The government has also consistently made it a priority to centre policy around digital leadership and innovation. Recent policies include:

Digital Strategy of South Korea (2022)	This strategy comprised key elements, including becoming a digital leader, developing AI capabilities, attracting global digital talent and enhancing cyber-security measures to protect the lives and businesses of South Koreans. This announcement prompted 26 government agencies to introduce over 200 policy tasks for the coming years.
AI-semiconductor Initiative (2024)	The newly founded National Artificial Intelligence Committee launched this initiative with a KRW9.4 trillion pledge for AI and related semi-conductor funding until 2027. The initiative aims for South Korea to become a top-three global leader in AI technology and semiconductors.[55]
Cloud Strategy for the AI Era (2024)	The 17th ICT Strategy Committee Meeting announced its three-year plan to double the local cloud market to KRW10 trillion by 2027. The strategy is built around three main pillars. First, to implement AI-focused globally competitive strategies. Second, to enhance competition amongst technology and infrastructure by harnessing the current growth potential. Finally, to support domestic cloud systems while aligning their capabilities with international standards.

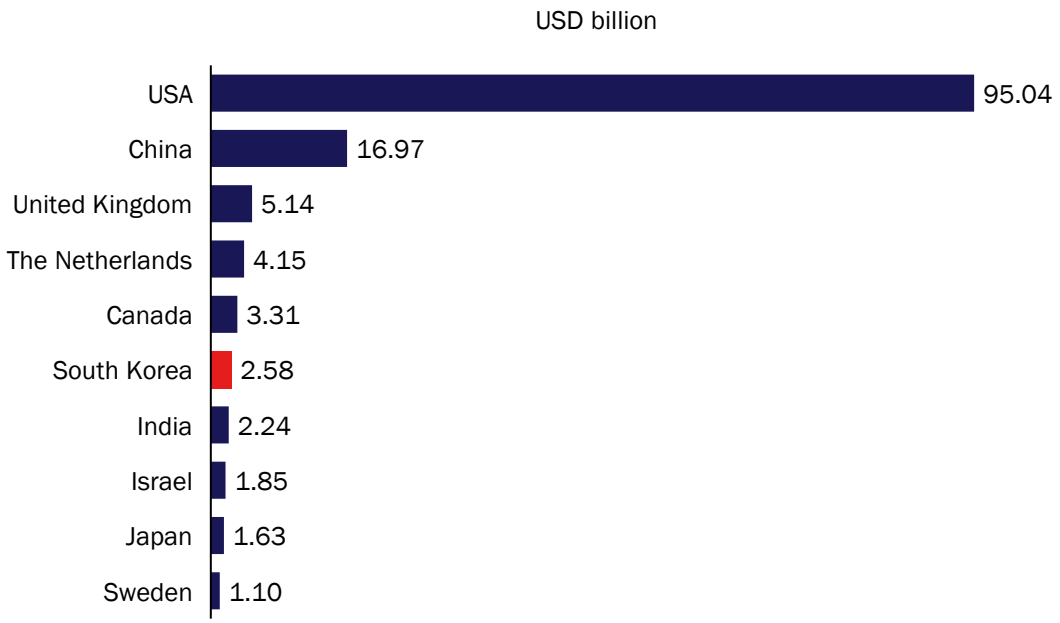
However, although South Korean users have access to high-quality connectivity overall, this masks the challenges in the underlying internet infrastructure ecosystem where the country's Tier 1 ISPs are able to exercise pricing power in the local transit and peering market, supported by the IP interconnection regulation. This distortion also extends to adjacent sectors including data centre colocation, CDN and cloud services which the Tier 1 ISPs participate in. Overtime, this distortion in competition has led to under investment and slowdown of innovation in these sectors, leaving

55 Korean Government, 2024. "(참고자료)국가과학기술자문회의 전원회의 「AI-반도체 이니셔티브」 의결".

South Korea potentially with less access to state-of-the-art infrastructure and services. For instance, the South Korean government stated that the country is underdeveloped in cloud capabilities – estimated more than a year behind global cloud leaders as a result of insufficient infrastructure development.[56] As discussed previously in Section 4, South Korea is falling behind in both submarine cable and data centre investments, both of which requires significant capital expenditure.

In essence, South Korea has already missed out on becoming a regional connectivity hub and this has in turn harmed its prospect of becoming an AI powerhouse. Also, if we look at Figure 15, South Korea trails behind the leading countries in terms of venture capital (VC) investment in AI although we note that VC funding may not focus on infrastructure.

Figure 15: VC investments in AI by country [Source: OECD AI, 2024]



5.2 Removing barriers to rejuvenate digital infrastructure investments will benefit local consumers and enterprises, and positively affect the broader economy

More investments into digital infrastructure in the form of submarine cables, local points of presence and data centres, would not only improve the connectivity ecosystem in terms of higher bandwidth, lower latency and prices for end users, greater usage of the internet and subsequent innovation would also enable the wider economy to benefit greatly.

An econometric study we conducted in 2022 found that investments in network infrastructure, particularly submarine cables, helps to increase international bandwidth, reduce latency and lower IP transit prices and improve network reliability and resilience:

56 CDO Magazine, 2024. "South Korea to Expand Private-led Cloud Industry to Strengthen Competitiveness in AI Era".

- shorter and more direct routes between locations that host content and consumers leads to a reduction in the latency experienced by end users
- increased diversity of infrastructure enables network optimisation and offers increased resilience
- new submarine cables increase the supply of international bandwidth, which reduces international bandwidth prices and lowers the risk of congestion
- increased local caching reduces international bandwidth traffic loads, which lowers the risk of congestion and can reduce the costs for ISPs collecting the traffic.

These effects in turn translates into increased internet usage, and positive spillover effects on the economy through GDP growth.[57]

A better user experience supports accelerated growth in the number of internet users and internet usage. End users (both consumers and businesses) derive greater value from their internet usage when international connectivity is less constrained, more cost effective and of better quality. These positive impacts stimulate the adoption of digital services, drive an increase in internet users and ultimately an increase in internet traffic. Improvements in network quality can also stimulate the adoption of new services, e.g. latency reduction is especially important for the growth of use cases such as video conferencing, gaming, advanced enterprise technologies and transactional services, and reliability is important for cloud services and critical business operations.

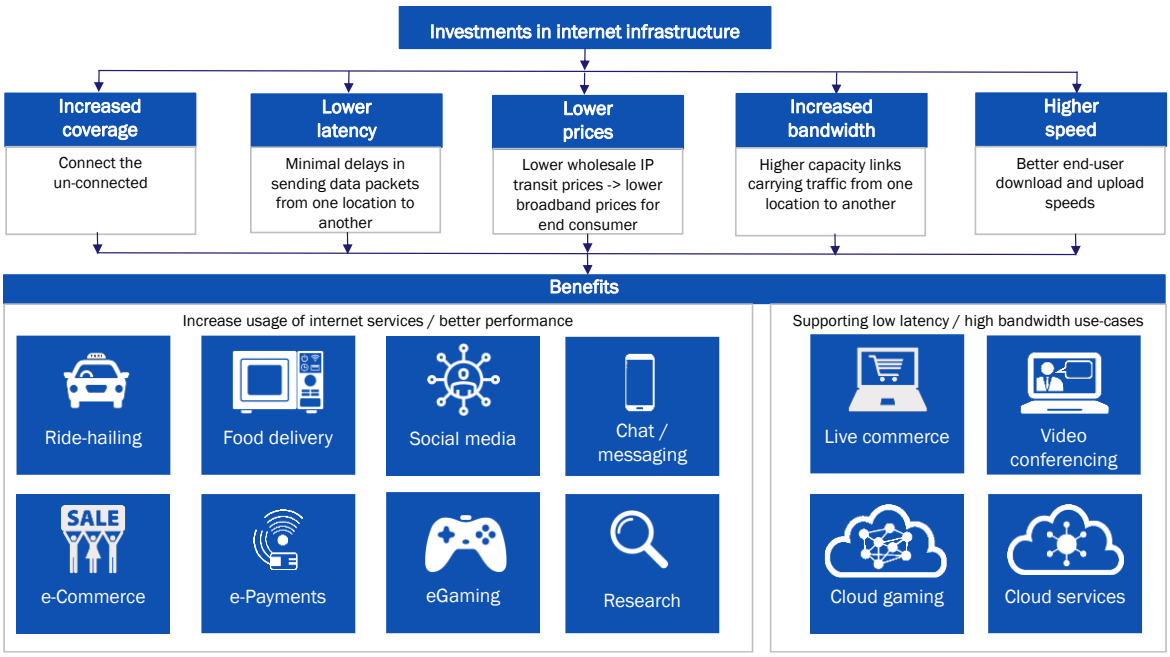
Infrastructure investment not only directly creates jobs, but increased internet traffic has a remarkable impact on the wider economy:

- Telecoms, construction and manufacturing jobs are created directly from network infrastructure investments. While these direct benefits are expected to be relatively small, they generate greater indirect and induced benefits.
- Governments, enterprises and individual consumers of the internet experience the benefits of improved internet quality across a range of economically beneficial areas, such as education and healthcare.
- Increased take-up and usage of the internet leads to job creation largely in service-focused industries such as IT and finance, as well as internet-based industries such as e-commerce and social media.
- There are established econometric models that calculate the impact of increased internet traffic on GDP, and in previous studies we have estimated the impact on jobs supported by this increase in GDP.

Figure 16 illustrates how investments in digital infrastructure improve the connectivity ecosystem and in turn benefit the digital economy.

57 Analysys Mason, 2022. "Economic impact of Google's APAC network infrastructure – 2022 Update".

Figure 16: Illustration of the benefits of digital infrastructure investments [Source: Analysys Mason, 2025]



5.3 A change in the IP interconnection regulation is required to unlock South Korea's true potential in the digital age

As discussed under 4.1, the introduction of regulated IP interconnection fees has enabled Tier 1 ISPs to take advantage of their termination monopoly and impose collective pricing power in the local transit and peering market. This has led to muted deployments of PoPs and caches by networks in South Korea, resulting in an underdeveloped peering landscape with small-scale IXPs and limited number of private PoPs. The lack of a vibrant and dense peering ecosystem deters stakeholders from investing in submarine cables to bring their traffic into South Korea as they are currently not able to exchange traffic with ISPs under fair and mutually beneficial terms aligned to international norms. These effects have been showcased under Section 4.2. As a result, the quality of services and plurality of service providers avail to consumers and enterprises in South Korea has been affected – elaborated under Section 4.3. This has curtailed data centre investments as shown under Section 4.4, which is critical infrastructure required for the development of AI.

South Korea's ability to unlock significant benefits for both consumers and the economy, and achieve government ambitions of digital leadership on the global stage, will be heavily influenced by the government's moves to change the IP interconnection regulation.

5.3.1 Removing the interconnection regulation based on the SPNP ideology will enable all stakeholders in the industry to work out mutually beneficial commercial arrangements with ISPs and reset the distorted transit and peering landscape which is required to enable significant digital infrastructure investments in South Korea

The government should repeal the 2014 amendment to the Interconnection Standards for Telecommunication Facilities TBA as this regulation has created a distorted domestic transit and peering landscape that is unique to South Korea. The direct beneficiaries of the SPNP regulation are the ***Tier 1 ISPs*** and this is at the expense of all other stakeholders. ***Tier 2 ISPs*** in South Korea have been categorised by the Tier system under the regulation, which has led to an artificial ceiling imposed on them, limiting the type and size of customers they can serve and constraining their growth. ***International ISPs*** are unable to bring their connectivity products into the market due to the exorbitant domestic transit and peering charges that has been levied on them by the Tier 1 ISPs. Both ***local and foreign CSPs*** are facing high interconnection costs on top of the already high domestic access charges, negatively impacting the business case for them to launch more traffic-intensive cloud features including those relating to AI. ***Foreign CAPs*** have been forced to restructure their content delivery approach and rely more on overseas PoPs to deliver traffic meant for South Korean end-users in order to optimise costs. ***Local CAPs*** are prevented from innovating due to high domestic interconnection charges and some have struggled financially due to high costs and were forced to shutdown or pivot their business model. Unlike foreign CAPs, local CAPs have smaller scale and would not have the option to absorb such costs using profits derived from other markets.

Removing the current IP interconnection regulation will likely result in short-term revenue loss for the Tier 1 ISPs as market forces will enable all stakeholders to negotiate domestic transit and peering prices down from current levels which are very high compared to that in other developed markets. Due to the opacity of these charges, we are unable to estimate the exact amount but it would be safe to guess that these will be likely in the hundreds of millions (in USD).

On the flip side, the market would react positively from an investment perspective as the change will restore the incentives for digital infrastructure investment from all other stakeholders. For foreign telecom carriers, CAPs and CSPs who are currently utilising their infrastructure overseas, it will make a lot more business sense for them to now deploy local infrastructure in South Korea. Local stakeholders who have been artificially constraining their traffic or holding back from launching more traffic intensive services will now be able to have a better cost structure which will in turn enable them to consider longer-term investments in infrastructure. This would enable the Tier 1 ISPs to capture new opportunities in areas such as data centre interconnect and backhaul from submarine cable landing stations.

For illustration, if foreign investment in data centres in Seoul was as proportionally attractive as in Tokyo (see Figure 12), then Seoul could have up to 14 additional data centres with a combined capacity of nearly 400MW[58], assuming the average capacity of these additional facilities was in line

[58] Based on normalising data centre supply in Seoul to that of Tokyo's level

> "So even if other global players build DCs those aren't attractive because they cannot bundle it with domestic transit. It is not an attractive environment to invest in so AI is not going to happen."
>
> – *CDN*

with that found in Tokyo. At an average cost to build a data centre at USD10 million per MW, this works out to USD4 billion in investments. More AI-ready data centres would in turn attract further investment in advanced technologies such as AI which has the potential to attract even more investment; the UK, a developed market of comparable size to South Korea, attracts USD2.6 billion more in VC investment in 2024 with a total investment double that of South Korea's.

There have been a number of studies that have investigated the economic impact of AI, including several recent OECD studies, all of which have found positive corelation between AI and GDP. For example, a 2025 OECD study predicted AI would contribute 0.16–1.28p.p. to annual labour productivity growth over the next decade for various scenarios of AI exposure and adoption.[59]

With a more vibrant interconnection ecosystem with active participation from local ISPs, international ISPs, both local and foreign CSPs and CAPs, we would also expect much more interest to land submarine cables in South Korea. This would also benefit the local Tier 1 ISPs in the longer term as they could save on costly international capacity as CAPs and CSPs start to bring more services and traffic onshore, and the unit price of international capacity and transit would also go down with more supply in the future.

In a 2022 study, Analysys Mason estimated the GDP impact arising from CAP's investments in submarine cables. Illustratively, had South Korea experienced the same amount of investment in submarine cables by CAPs as Taiwan, we estimated that the impact on its annual GDP would have been in excess of USD12 billion (KRW17 trillion) by 2026,[60] supporting an estimated 150 000 additional jobs across the economy.[61] These impacts grow and compound over time, as more dynamic, competitive and plentiful global connectivity supports persistently greater economic growth.

One activity that is supported by international submarine connectivity is cloud services. Enterprise cloud revenue in South Korea was estimated at KRW7.4 trillion in 2023.[62] Literature estimates for the economic impact multiplier of enterprise spending on cloud in South Korea range from 1.6 to 3.8, so the additional GDP impact of even a 5% increase in enterprise cloud spending (e.g. as a result from greater infrastructure availability or improved investment certainty) could range from KRW0.6-1.4 trillion a year.[63]

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59 OECD, 2025. "Macroeconomic productivity gains from Artificial Intelligence in G7 economies".

60 Taiwan has similar GDP per capita as South Korea, and less than half the population. The difference in economic impact between the two countries was around USD6 billion in Taiwan's favour, despite the smaller population. We estimate the impact on South Korea as about twice this number, given the population ratios.

61 Analysys Mason, 2022, "Economic impact of Google's APAC network infrastructure – 2022 update".

62 Tobetong, 2025. "년 국내 ICT 시장 전망 : 클라우드 편".

63 Analysys Mason, 2023. "Economic impact and dynamics of cloud services in South Korea". See Figure 5.4.

5.3.2 Other amendments to the IP interconnection regime could also be explored but these are expected to only provide short-term respite while infrastructure investments would require long-term certainly on regulations

Based on interviews with various stakeholders, two other possible options could be considered for how the IP Interconnection regime could be changed. These may however fall short of providing long-term regulatory certainty, which may still constrain investment in infrastructure, especially in data centres and submarine cables which are large capital commitments with delayed returns.

1) Regulate IP interconnection charges on a cost-oriented basis based on international best practice approach

Given the presence of a termination monopoly, the South Korean government could impose cost-oriented prices in a transparent manner to prevent ISPs from leveraging their monopoly to extract excessive prices for interconnection. This would require the government to conduct regular assessments of costs, using modelling approaches aligned with international best practice (i.e. LRIC models) to calculate cost-based unit pricing. In the context of interconnection, these costs are in practice likely to be very low, or near zero. The effectiveness of this approach would however depend on multiple factors including the independence, capacity and capability of the regulatory body, the consistency of the modelling approach and frequency of updates to the cost models.

2) Increase the traffic ratio under the current IP interconnection regime

Some stakeholders have suggested that in the absence of stronger remedies, the government could increase the traffic threshold above which the IP Interconnect fees apply. This ratio, currently at 1:1.8, would likely need to be revised significantly upwards as the currently levels are already distorted in this artificially constrained environment. However, this will only be a short-term solution as traffic will continue to grow and without continuous and frequent revisions in the future, the same issues will occur. This lack of regulatory certainty will continue to discourage investment in advanced technologies, particularly those requiring long-term capital commitments with delayed returns. Additionally, stakeholders have expressed concerns that the charges they are facing from ISPs are not wholly tied to the interconnection costs, but rather the presence of a termination monopoly, in which case changing the traffic threshold may not have the desired impact. Also, as highlighted under Section 4.1, the Tier 1 ISPs in South Korea are not actively adding peering capacity with each other which constrains transit services in the market. These limitations will need to be proactively addressed by the government if amendment of the existing IP interconnection regime is to be adopted.

> "This regulation was not made in a day, it has been there for a long time. Removing it would be paradise for us, but the ecosystem has been formulated very carefully over the previous decade. The next best option would be to increase the threshold – this has not been increased for a long time – if it was increased then the competition [between Tier 1s] would be more aggressive. [...] Government would have to check it and increase it every few years [as traffic grows]"
> – *CSP*

Given the trade-offs and options discussed above, we would strongly recommend for the South Korea government to remove the regulations associated with the SPNP regulations in order to rejuvenate digital infrastructure investments in South Korea, enable the necessary foundations for AI to flourish and ultimately maximise the benefits for South Korean citizens, businesses and the overall economy.

Annex A Overview of regulatory studies into IP interconnection

Regulators around the world have conducted studies to monitor developments and ensure that the ecosystem is functioning properly, particularly in response to calls from selected groups of ISPs for compensation for network investment. A summary of the conclusions from key studies is provided below.

IMDA (2016)

The Info-communications Development Authority (IMDA) of Singapore reviewed the state of domestic IP interconnection following the liberalisation of the telecoms sector in 2000, which led to an increase in the number of ISPs in the market. The report established that Singapore had a competitive IP transit market and a functioning peering landscape making regulatory involvement unnecessary. It also noted Singapore's position as global hub with many domestic and international points of presence (PoP).[64]

ACCC (2018)

The Australian Competition & Consumer Commission (ACCC) conducted a communications sector market study on IP interconnection following concerns over market power imbalances. ACCC found no evidence of anti-competitive conduct by the three major ISPs. The three ISPs now publish their peering criteria to increase transparency, a move the ACCC has welcomed.[65]

WIK Consult (2020)

WIK Consult conducted a study on behalf of Bundesnetzagentur, The Federal Network Agency, which examined developments regarding IP interconnection over the last five years. It found that 80% of traffic now arises from multimedia (video, social media, video games), which led to ISPs calling for IP interconnection fees. However, the report also showed transit prices have continued declining alongside an increase in CAP investment. While WIK identified seven cases of dominant ISP players abusing their market power, it noted that market-wide regulatory measures were not considered necessary given the IP interconnection market was generally highly competitive and disputes were resolved on a case-by-case basis.[66]

AMC (2021)

The Netherlands Authority for Consumers & Markets (AMC) considers the digital economy a key topic and periodically researches aspects of it including IP interconnection in EU markets. A previous study was conducted in 2014 and this 2021 revision wanted to re-validate the previous conclusions. The

64 IDA, 2016. "Explanatory memorandum issued by the info-communications development authority of Singapore".

65 ACCC, 2018. "ACCC assessment of internet interconnection agreements".

66 WIK Consult, 2020. "Competitive conditions on transit and peering markets", p.9-14.

study emphasised that despite data traffic tripling between 2012 and 2015, unregulated IP interconnection continues to function well in Europe and fosters healthy competition. This is, however, subject to the condition that the AMC would intervene if small entrants to the market were unfairly penalised or blocked.[67]

BEREC (2024)

The Body of European Regulators for Electronic Communications (BEREC) initially published a report in 2012 in response to the European Telecommunications Network Operators' Association (ETNO) call for IP interconnection fees. This initial report examined the market and was subsequently revisited in 2017 and 2024 to ensure the conclusions remained current and applicable. In this iteration, BEREC concluded that the market dynamics of the IP interconnection ecosystem were functioning properly, players were co-operating and therefore regulatory measures were unnecessary. BEREC also identified that CAPs have significantly increased investment in their own infrastructure, which was ultimately beneficial for ISPs.[68]

67 ACM, 2021. "IP interconnection market study 2021".

68 BEREC, 2024. "Report on the IP interconnection ecosystem".

Annex B Public interconnection locations for major ISPs

Figure B.1: Presence at domestic and international Public IXPs and Interconnection facilities by major ISP in South Korea and benchmarks [Source: PeeringDB, 2025]