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IP Interconnection on the Internet: A European Perspective for 2022

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Analysys Mason is releasing a report addressing the interplay between IP interconnection and network usage fees in the context of European cloud services

- Large telecom operators in Europe under the umbrella of ETNO have re-introduced the idea of Internet companies **paying ISPs for terminating traffic to end users**, in the context of the 'fair contribution' debate
- ETNO raised this idea of regulated traffic-related charges paid directly to telecom operators in 2012, but **regulators including BEREC took the view that the interconnection regime was working well**, a view that was reiterated by BEREC in 2017
- The rationale for reopening this appears three-fold:
  - that traffic to deliver Internet content is imposing costs on ISPs, and that it is increasingly concentrated in five or six 'tech giants' who are the targets of ETNO's proposal
  - that the large Internet companies that interconnect this traffic onto ISPs' networks should help pay for the gigabit-capable networks to meet EC policy targets for the Digital Decade
  - and that regulation is required because ISPs have insufficient bargaining power to force Internet companies to pay them what they want
- In this paper we review the evidence available in the public domain, and conclude that **current negotiated interconnection arrangements are enabling rich content and cloud offerings**, and that if anything th**e balance of bargaining power appears to remain in favor of some large ISPs**

Analysys Mason's report on IP interconnection

We would like to thank our sponsors, Amazon Web Services, Google, and Microsoft for their support of this report; we prepared this report independently

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Freely-negotiated Internet interconnection has enabled sustained growth for Internet access and online services, incl. innovation in business models and investments

- **Negotiated Internet interconnection** has supported the development and growth of the Internet since the earliest days
- Interconnection takes the form of **peering** or **transit**
  - in a **peering** agreement, two providers exchange their own traffic with one another, almost always without settlements or even a contract
  - in a **transit** arrangement, one provider pays the other for access to the entire Internet
- **Internet companies** have made **significant innovations and investments** to improve the delivery of content on the Internet with **better quality for users and lower costs for ISPs**
  - large Internet companies are large investors in digital infrastructure, as acknowledged by ETNO (USD18 billion a year on average in Europe between 2014 and 2017, growing rapidly); this funds data centres, network links and interconnection points across Europe[1]
  - content delivery networks (CDNs) distribute content at **dozens of interconnection points** across Europe, **where ISPs can easily connect and expand their network capacity**; they also **cache static content** (e.g., video) close to end users, including 'on-net' inside ISPs' networks, which helps **mitigate costs and improve quality of experience**
  - a wide range of European consumers, SMEs, non-profits, public service organisations, and indeed content providers including broadcasters or music streaming services, all use public cloud services and **rely on seamless, scalable Internet interconnection to access any of these services from any European ISP**
- Internet companies and ISPs have **shared interests** – more attractive content and services, enabled by ISPs' networks, drive demand for better connectivity

[1] Analysys Mason (2018), *Infrastructure investment by online service providers*. Available at https://www.analysysmason.com/consulting-redirect/reports/online-service-providers-internet-infrastructure-dec2018/

Evidence shows that the ISPs who are the most vocal on this issue enjoy favourable bargaining positions for interconnection, which they exercise freely

- The evidence already shows ISPs exerting bargaining power
  - recent public disputes typically stem from **ISPs imposing conditions and fees** on traffic delivery, including curtailing capacity used for interconnection (e.g., Init7 in Switzerland)
  - short of a dispute, some **large ISPs operate selective or restrictive peering policies**, forcing Internet companies to pay for peering or transit to reach end users (as documented in the WIK-Consult report[1], and visible in ARCEP's paid peering data)
  - public evidence shows, on the contrary, that **Internet companies have mostly open interconnection policies** and do not seek payment for interconnection to their content, services, and infrastructure
- Regulated network usage fees would **enable ISPs to exercise their 'termination monopoly'**
  - ISPs could impose **high fees** on Internet companies as the only way to reach their broadband subscribers
  - similar developments happened with mobile termination rates, which European regulators have spent **twenty years regulating**
  - **evidence from South Korea**, the one country that has imposed network usage fees, demonstrates **the complexity and unintended consequences of regulating Internet interconnection**

[1] WIK-Consult (2022), *Competition conditions on transit and peering markets: Implications for European digital sovereignty*, available at https://www.bundesnetzagentur.de/EN/Areas/Telecommunications/Companies/Digitisation/Peering/download.pdf?__blob=publicationFile&v=1

Network usage fees would not just impact large Internet companies, but a wide range of Internet users, including public cloud users

- Network usage fees could impact the **price and quality of Internet content and services**
  - the fees could be passed back to **users in the form of higher prices** for content and services
  - Internet companies could also **reduce investment in content delivery** to compensate for the cost of terminating traffic
  - this could **increase the costs of ISPs'** access the content, particularly for **smaller ISPs** who may need to buy transit or increased international connectivity to access content in fewer locations
- Proposed fees could have a broad impact on **users, including businesses using cloud services**
  - **broadcasters, music streamers, and games publishers use public cloud** to deliver services – including more and more European companies who use public cloud services
  - even if the fees are targeted at large companies, the impacts will be broadly felt as **SMEs, consumers, and public sector organisations also use their cloud services** extensively to access software, email, storage, and myriad other uses
- Policy-makers should consider these impacts closely
  - regulatory intervention will be **complex** and is likely to have to contend with **unintended consequences**, as in South Korea
  - increased costs for public cloud services may impact the **digitalisation of the European economy**, undermining Europe's Digital Decade objectives

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The debate should be driven by policy objectives supported by evidence, and reflect how the current interconnection regime is benefitting European citizens/businesses

- Additional details from proponents of network usage fees would be required to support a debate around regulated network usage fees
  - specific evidence that **the conclusions of BEREC in 2012 and 2017 do not hold in 2022**, including evidence that Internet companies have leveraged bargaining power towards ISPs
  - **reaction to the ongoing outcome in South Korea** and how it can be avoided in Europe
  - **regulatory specifics**:
    - how would network usage fees be set?
    - who would pay them?
    - who would set them?
    - how would quality be maintained?
  - **how to guarantee that network usage fees would enhance investment** in connectivity infrastructure?

Our paper is now freely available at: https://www.analysysmason.com/ip-interconnection-european-perspective-2022

For more information, Analysys Mason has several relevant studies:

- A recent report showing that the use of the Netflix Open Connect CDN alone reduced the transport costs for ISPs by USD1 billion in 2021[1]
- Reports describing the benefits of caching,[2] and the evolution of Internet interconnection in more detail[3]
- Reports on infrastructure investments by Internet companies,[4] which are being updated and supplemented by a broader estimate of the impact on the economics of broadband ISPs (forthcoming)

[1] https://www.analysysmason.com/netflix-open-connect

[2] https://www.analysysmason.com/consulting-redirect/reports/benefits-of-caching-may20/

[3] https://www.analysysmason.com/consulting-redirect/reports/ip-interconnection-korea-white-paper/

[4] https://www.analysysmason.com/consulting-redirect/reports/online-service-providers-internet-infrastructure-dec2018/

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