

## Byte-sized battle over data transport fees

Significant investments in the infrastructure are required by network operators like Telekom to support the increasing data traffic driven by major Internet companies like Meta. In this context, the question arises whether major Internet companies should contribute more significantly to the infrastructure costs via IP data transport fees paid to network operators.

In light of a legal dispute between Telekom and Meta in Germany, this article provides an overview of the dynamics in negotiations over IP data transport fees between major Internet companies and network operators.

### Global internet traffic and investment needs

Global internet traffic surged by over 300 percent from 2017 to 2022, with six major Internet companies. Alphabet, Apple, Amazon, Meta, Microsoft, and Netflix – accounting for nearly half of it.

The European telecommunication industry faces substantial investment demands, requiring an additional €42 billion annually by 2030 to develop Next Generation Networks (NGNs) necessary for the digital transformation.<sup>1</sup>

<sup>1</sup> See European Commission (2020), "Identifying Europe's recovery needs", p. 18.

Currently, major Internet companies pay little to no fees for data transport in Europe. Accordingly, telecom operators primarily monetize through end-user fees, providing end users Internet services. As a result, telecom operators claim that there is an imbalance in the financial burden of network maintenance and expansion.

### The fair share debate

The European Union is engaged in a debate to determine whether major Internet companies should contribute more significantly to the costs of Internet infrastructure. If these companies paid higher fees to network operators, it could potentially reduce costs for end users and increase incentives for telecom operators to invest in NGNs.

On the other hand, higher data transport fees for major Internet companies could reduce their incentives to invest in content or increase app usage fees. This „fair share“ discussion aims to address the disparity in contributions towards infrastructure costs.

## Legal dispute: Telekom versus Meta

A significant legal dispute arose when Meta unilaterally cancelled a long-standing IP data transport agreement with Telekom in Germany and stopped paying fees but continued to feed its data into Telekom's network via dedicated direct network interconnections.

Both parties accused each other of abusing a dominant position – Meta by denying IP data transport fees and Telekom by demanding them. This led Telekom to initiate legal action, which resulted in a ruling in Telekom's favour. Meta is required to pay for past and future data transport through a direct connection to Telekom users, though it has appealed the decision.

## Network operators cannot deny network access

E.CA used a Nash bargaining model to analyse bilateral negotiations between major Internet companies and network operators regarding data transport fees. In this model, payoffs under a non-amicable outcome influence payoffs under an amicable outcome.

We find that from the outset network operators' bargaining position is weak because under a non-amicable outcome major Internet companies have the option to rely on indirect connections to the operators' networks.

That is, network operators cannot deny major Internet companies network access in case of negotiation failure because indirect connections, facilitated through transit providers, commercial Content Delivery Networks (CDN), cloud operators, or other network operators, provide a strategic alternative for Internet companies.

If an indirect connection is chosen and the network operator has no out-of-ratio agreement with the alternative provider in place, the network operator is not compensated for the transport of the major Internet company's data from the outer edge of its network to end users.

Furthermore, given the large number of indirect connections to each operator's network, it would not be

economically viable for network operators to terminate all such connections in an effort to prevent major Internet companies from leveraging this strategic alternative.

## Internet companies' quality lever

Importantly, major Internet companies can intentionally cause congestion within a telecom operator's network, by spontaneously re-routing significant amounts of data traffic through these indirect connections

Such congestions degrade the connection quality for all services routed through the affected interconnects, thereby compromising the network operator's competitive position.



Congestions by major Internet companies degrade the connection quality for all services routed through the affected interconnects.



**This compromises the network operator's competitive position.**



This tactic serves as a quality lever for the major Internet companies. The ability to strategically induce congestion at indirect interconnects into an operator's network strengthens major Internet companies' bargaining position in case of negotiation failures.



Such actions, particularly during strategic moments like network tests, can severely impact the network operators' payoffs.

Consequently, many network operators feel compelled to accept zero data transport fees to maintain valuable direct connections with major Internet companies.

## Examples of spontaneous indirect re-routing leading to congestion

Historical examples demonstrate how major Internet companies like Meta and Netflix have leveraged indirect connections to cause congestion and impair network operators' connection quality. In South Korea, Meta temporarily disabled in-country cache servers, resulting in increased connection times.

In the USA, Netflix used the transit provider Cogent to route traffic to Comcast and Verizon, leading to network congestion. Similar incidents involving Cogent and other network operators have occurred in various countries.

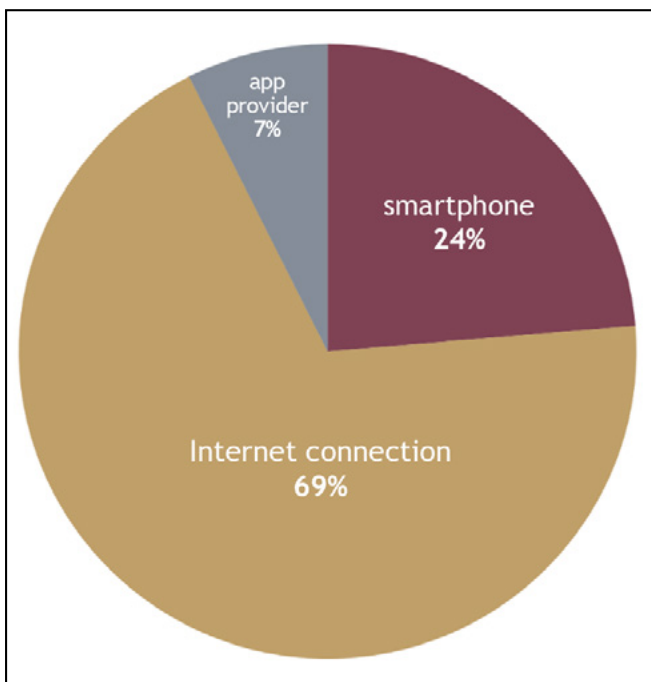
## Strength of the quality lever

Drawing on the results of a representative customer survey, we find that if Meta's traffic routing frequently resulted in congestion at indirect interconnects into Telekom's network, it would lead to more than ten times higher revenue loss for Telekom compared to Meta. This can be explained by the following factors:

1. End users are more likely to attribute connection problems to telecom operators than to major Internet companies.
2. End users have a close substitute for the Internet services of the telecom operators but not for content and applications offered by major Internet companies.
3. Connection problems impact end users' willingness to pay for an Internet connection and influence their choice of telecom operator.

Figure 1 illustrates that end users attribute connection problems rather to the Internet Service Provider than to the app provider.

Figure 1: Perceived main root cause of connection problems



Notes: The results are based on 1,918 respondents, who use a social network or messenger. The question is asked with respect to WhatsApp in 1,685 cases and with respect to all other social networks and messengers in 233 cases.

Source: E.CA Economics based on a customer survey.

## User attribute connection problems rather to Internet Service Providers than to Content and Application Providers

In particular, when respondents were asked whether the smartphone, internet connection, or app provider was the likely cause of a failure or high latency in loading photos and videos, 69 percent of respondents attributed the connection problems to the internet connection, 24 percent to their smartphone and only seven percent to the app provider.

The survey results further indicate that even minor deteriorations in connection quality can significantly impact end users' willingness to pay and their choice of telecom operator.

Consequently, Meta can credibly threaten Telekom with spontaneous traffic re-routing, as its own revenue loss would be minimal compared to Telekom's.

Moreover, the fees Telekom received from Meta per year prior to 2021 for providing a direct connection are small compared to the potential revenue loss Telekom would face from the use of this quality lever.

This suggests that Telekom has strong incentives to prevent Meta from using this tactic and to continue transporting Meta's traffic through a direct connection without payment, as most telecom providers in Europe currently do.

We conclude that the quality lever available to major Internet companies, combined with Telekom's lack of a "no-access outside option", results in a significant imbalance in relative bargaining power. This imbalance can explain why network operators have been compelled to accept zero fees for providing a direct connection.

## Status of proceedings

A first-instance decision by the Landgericht Köln supports Telekom's stance, requiring Meta to pay a substantial sum for unpaid fees. Meta has appealed the decision and continues to refuse to pay data transport fees to Telekom.

Furthermore, Meta made use of the quality lever in its strongest form: it threatened to re-route its traffic on short notice via transit providers with insufficient capacities.

This re-routing would have caused significant quality deteriorations in Telekom's network, lasting until new agreements with the transit providers and capacity expansions could be arranged.

After negotiations to maintain a direct connection failed, Meta began routing its data to Telekom's network via a transit provider, asserting that this exempts it from paying for data transport. Telekom had to expand capacities for the new transfer points at its own expense. It insists on charging Meta for the data transport, viewing it as a valuable advance service for Meta's business model.

## Conclusion

The case underscores the need for balanced bargaining power in negotiations over internet infrastructure funding and fair contributions from major Internet companies to sustain and enhance the Internet infrastructure.

The economic framework presented highlights the strategic implications of current practices, indicating an imbalanced bargaining position to the benefit of major Internet companies arising from the quality lever. In our view, a more balanced bargaining position would benefit both consumers and the broader digital economy.

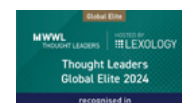
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