WIK-Consult report

Study for the Federal Network Agency Germany

Competitive conditions on transit and peering markets

Implications for European digital sovereignty

Final report

Authors:
Dr. Karl-Heinz Neumann
Dr. Lukas Wiewiorra
Dajan Baischew
Peter Kroon
with the
collaboration of
Philipp Thoste

WIK-Consult GmbH
Rhöndorfer Str. 68
53604 Bad Honnef

Bad Honnef, 28.02.2022

wik CONSULT

5.2.2.2 Deutsches Forschungsnetz/Deutsche Telekom

During the Corona pandemic, the Deutsches Forschungsnetz (German Research Network) was confronted with increasing data traffic due to increased home work and overloaded transfer points. The upstream service provider of the Deutsches Forschungsnetz was unable to find a short-term solution for the congested network transition with Deutsche Telekom. To improve connectivity, the association turned to another upstream service provider and also offered direct peering to Deutsche Telekom. This proposal was rejected by Deutsche Telekom. As a result, the association commissioned a chargeable "global upstream" with DT.[119] In contrast, the association was able to agree on a fee-free interconnection with the retail ISPs Liberty Global (UnityMedia), 1&1 Versatel, Telefónica Deutschland (O2) and Vodafone Deutschland (incl. Kabel Deutschland).

5.2.2.3 T-Mobile NL Routing

Another spectacular case of turbulence in internet traffic caused by the re-routing decision of a major ISP occurred in the Netherlands in October 2019. Van der Berg (2019) reports the critical situation of mainly small service providers as a result of a sudden change in peering policy by T-Mobile NL. T-Mobile drastically reduced their capacity at the IXP AMS-IX from 200 to 20 Gbit/s in October 2019 and rerouted all traffic of fixed and mobile customers via Germany. In order to reach T-Mobile's customers, all players peering at the AMS-IX had to renegotiate their peering agreements with T-Mobile. The smaller players did not do this and could no longer reach T-Mobile's customers. This also affected a number of cities and municipalities that are directly represented on the AMS-IX. Van der Berg (2019) derives from this situation the requirement that good access with low latency must be guaranteed by large ISPs vis-à-vis small providers. He links this to the demand that, if necessary, even the migration of IXP traffic to private peering must be prevented by regulation. ACM labelled this case an "IP traffic routing incident".[120]

Netflix, Akamai and Google were not affected. T-Mobile had already re-routed mobile traffic before October. This did not lead to any significant deterioration in quality. This changed abruptly when re-routing was extended to the fixed network on 24 October 2019. The performance of many sites collapsed. Packet losses skyrocketed. Some DNS services lost 30% of traffic. The problem resulted mainly from the fact that T-Mobile had not prepared the internet companies for the re-routing. As a result of strong public reactions and pressure from business customers directly connected to AMS-IX, T-Mobile made a quick turnaround after a week and restored the previous connectivity at AMS-IX without any immediate regulatory intervention.

119 DFN (2021).
120 ACM (2021), p. 7.