

ACM IP Interconnection consultation

1. General comments

1. Ziggo welcomes ACM's draft report on IP Interconnection in the Netherlands. The draft report provides a thorough analysis of IP Interconnection, its developments and potential competition problems. Ziggo is of the view that the report is comprehensive and gives a fair view of the current state of play on the IP Interconnection market.
2. ACM is correct in concluding that the IP Interconnection market consists of both transit and peering, which is usually based on a make or buy decision. Transit is generally available as a default mode for IP interconnection and seems to be efficiently priced.
3. Due to the falling prices of equipment the market is fiercely competitive, providing all parties with multiple options to connect to the major networks and ensure they can always buy the connectivity they are looking for.
4. As ACM correctly states peering happens when parties find mutual benefit in realizing positive economic value. If this value is of equal to both parties this may result in a settled or settlement free peering deal. This however does not mean that the underlying data transfer is without any cost to both parties. Data transfers always have an associated cost with them.
5. Ziggo agrees with ACM that the relative position of the various actors in IP interconnection has shifted over the past decades and this is expected to continue. Overall, given the competitive nature of the market, the alternative for peering being efficiently priced and the often shared incentives of parties to agree to a peering agreement there are no difficulties for any type of party to realize any end to end connection.
6. Ziggo also supports ACM's finding that ISPs in the Netherlands hold relatively few eyeballs and face strong competition from each other. Thus the likelihood of competition problems is very low.

2. Suggestions and minor comments

7. Ziggo is of the view that the report can be further improved if ACM takes into account the below suggestions.

2.1. Quality aspects of peering

8. Under section 3.1 ACM says: "*From the perspective of the end user, congestion results in missing or stuttering communication or streaming media via the Internet.*"

This absolute statement is too restrictive. Congestion on a given interconnection point *may cause* a quality degradation of the services flowing across that interconnection point (e.g. services such as streaming media), but it does not by definition as this statement reads that congestion always results in missing or stuttering communication.

9. In section 3.2 ACM repeats a couple of times that peering will improve the quality of the interconnection (QoS), due to shorter distance and fewer hops. While on the face of it this argument appears to be true, quality is subject to many factors.
10. In addition quality is a subjective term and often depends on customer expectation and the type of services used. The determining factor should be the total Quality of Experience (QoE) by the consumer and the overall Quality of Service (QoS) of the network. Whether or not there is high latency and/or jitter may not necessarily be of significant importance for a given service. For example for many "traditional internet services" such as surfing or video content these two factors don't necessarily play an important role **[Confidential]**. This can be different for next generation applications such as self-driving cars or e-health where these factors are very important. The point is that this needs to be assessed on a case by case basis and that it is impossible to make general statements.

2.2. Peering policies

11. In its description of peering policies, ACM identifies three types of policies: open, restrictive and selective. Ziggo finds these labels to be biased and implying that open policies are good, whilst restrictive and selective ones are bad. The truth is that peering policies have many dimensions:

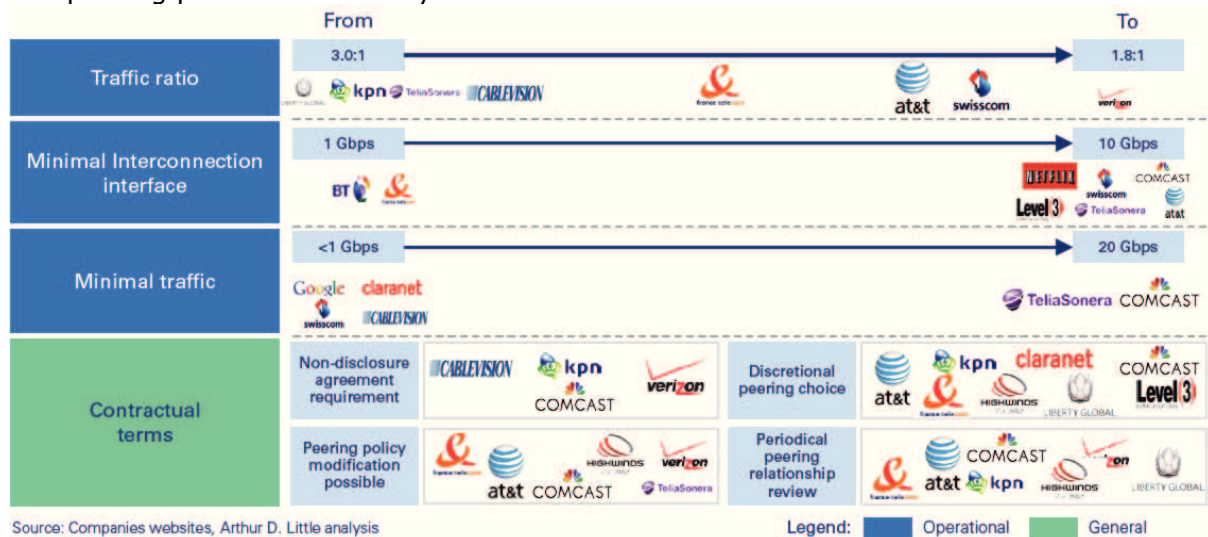


Figure 1: Peering policy features¹

12. As described by ACM, peering is a business where both parties try to attain mutual benefit through peering, however each party has its individual goals. In that sense the peering policies reflect this. CAPs usually have policies that ACM typifies as being "open" because on average they have more data for other parties than that these have for them. As such IP Interconnection is a business expense for CAPs. Thus peering policies of CAPs are not so much "open" from a philosophical point of view that these parties think openness is an aim in and of itself. Their main goal is to agree to as many settlement free peering agreements as possible to reduce the cost of their data transport.
13. On the reverse side of that argument labeling ISP policies as either restrictive and selective gives these policies a negative connotation, whereas ISPs are simply protecting their own interests and that of their retail customers, by wanting to

¹ Arthur D Little (2014), The Future of the Internet, (<http://www.adlittle.com/time-viewpoints.html?&view=673>)

maintain control of the data flows over their own network. Data flows for which the ISP will incur a cost for transportation.

14. A more neutral description of both sides of the spectrum would be to typify peering policies of CAPs as orientated towards getting settlement free peering agreements in order to lower their costs for IP interconnection. Thus their focus is cost alone. ISPs on the other hand have to take more effects into account when agreeing to take on board higher volumes of traffic as their main focus is providing good retail services in a competitive broadband market. This makes ISPs more focused on other factors than just price. ISP peering policies reflect this by asking for traffic to stay within certain ratios and requesting certain legal flexibility for the ISP to adopt their peering policies if needed.
15. ACM typifies settled peering as paid peering. This would seem to imply that this type of agreements would always lead to a payment of sorts, however this is not the case. In that sense it is more of a hybrid form of agreement that more closely resembles settlement free peering than paid peering, as settlement free peering is the basis for the agreement. Only if one of the parties goes beyond the agreed upon traffic ratios does an element of the traffic become paid.
16. With regards to the "fee rider" issue ACM does a fair attempt to reflect both sides of the argument. Ziggo would add that from an ISP perspective this discussion is quite simple: transporting data has a cost associated with it. This is why our (retail) customers pay us for transporting data and this should be the same for CAPs, who push significant amounts of data to a (small) group of our customers. A blunt approach to this issue could be to recoup the cost of building out the network to accommodate this traffic over all end users. A more precise method is to only charge the source, in this case the CAPs who can then reflect this in their own pricing.

2.3. Actors and stakeholders in IP interconnection

17. ACM suggests that only ISPs use transit to connect to networks with which they do not have a peering agreement. This however is also true for other customers such as CAPs and CDN providers.
18. CAPs always have choice in how to deliver their content to end-users. They may decide to offer their services via a third party infrastructure like third party CDN providers or alternatively they may decide to invest in their own infrastructure (such as networks and CDNs). This is a similar make or buy decision as between peering and transit. This gives CAPs two ways to ensure their content is delivered and removes any dependency they might have on ISPs to reach end-users.
19. Also, we find it unlikely that OTT providers will be able to deliver their services without a CDN or a proxy. A CDN or proxy is an intrinsic part of a CDN which is required to deliver content over the Internet. Whether this CDN is from a third party or owned and managed by the CAP itself is the relevant issue and not whether the CAP chooses to use a CDN or not.
20. In that same vein it would be incorrect to say that the sole role of a CDN is to make content available closer to the end user, as a CAP always needs a CDN, regardless of whether it is close or not. ACM again assumes that proximity of a CDN is necessarily related to a better quality connection. This however need not be the case as it is dependent on more variables than only proximity.
21. ACM links proximity to a better quality as it reduces jitter and latency. Many services however (such as Internet video) do not necessarily need a short latency and depend

more on the protocol used and both the perceived and expected Quality of Experience (QoE, not to confuse with QoS) from the end consumer perspective.

22. Ziggo suggests that ACM focus more on this QoE vs QoS differentiation and how this varies per type of services. Not all services (Ziggo would suggest this is true for most services today) need a CDN close to the customers for meeting a given QoE.
23. QoE is briefly touched upon in section 3.4.1.1 but deserves a deeper analysis in this report. A comparison should be made between the different protocols and different kinds of services. Only such an analysis could give a factual representation of the importance of proximity. Ziggo would expect however that such an analysis would find that proximity is not an important (and certainly not the most important) factor for the contribution to a better QoE of today's services.
24. Another relevant point made in the Cogent – France Télécom (FT) case under section 4 is where the Autorité concluded that the differences between the end-to-end QoS of peering and transit are in reality very small, especially if one would acquire transit from only one transit provider. This reinforces the point that CAPs dependency on ISPs is very limited and that competition between peering and transit services are not affected by QoS issues.

2.4. Trends

25. ACM suggests in their description of current trends that some CAPs, such as Netflix, use transparency measures to "allow naming and shaming of ISPs not willing to cooperate". This reads to generally suggest that ISP are not willing to cooperate with CAPs. However, at the same time it could equally be said that CAPs are unwilling to meet standardized commercially accepted peering conditions with regards to traffic ratios. The reason for this might be (but Ziggo suggests ACM verifies this with CAPs) that there currently is no need for CAPs to have peering agreements with ISPs to ensure sufficient quality as their current transit agreements suffice for this purpose.
[Confidential]
26. With regards to ISPs ACM implies that CAPs are seen as potential competitors. In certain circumstances CAPs may also be partners of ISPs. This is demonstrative of the dynamic nature of the market, where partnerships change and shift and it is not easy to make such categorical statements.
27. This is also illustrated by the passage on "cord cutting". Clearly ISPs who bundle their internet services with TV services have an incentive to partner with CAPs to ensure their retail customers do not have an incentive to only purchase an internet connection with them. An example of this is how Ziggo now offers a similar type of S-VOD service in My Prime, competing with Netflix, Videoland and NL Ziet.

2.5. The Dutch IP interconnection market

28. Under 3.5.2 ACM states: "*KPN also owns, via Ziggo is part of Liberty Global which operates a European backbone network (AS6830), with extensions to the United States, over which Liberty Global sells transit services.*". Ziggo understands this should refer only to Ziggo and the reference to KPN should be removed.

2.6. The Liberty Global – Ziggo case

29. With regards to the Liberty Global – Ziggo case ACM observes that the EC noted that if CAPs would not be able to reach Liberty Global's customers through public or private peering, the only way to achieve this would be via transit. Ziggo however

fails to see the relevance. As ACM itself concluded that transit is a suitable alternative to peering there is no real issue here worth mentioning as Ziggo's customers can be perfectly reached via transit.

2.7.Likelihood of actual competition problems in the Netherlands

30. [Confidential]

31. ACM itself concludes that CAPs are sometimes unwilling to enter into paid peering agreements, despite these being cheaper than transit, because they are afraid of setting a precedent. ACM correctly concludes that there is no issue here (despite the fact that this could be seen as irrational behavior), because transit is a good alternative for CAPs that do not wish to peer on commercial terms. Secondly, and this merits more explicit mentioning by ACM, it can be the explicit choice of the CAP not to peer, although this option is available from ISPs at a lower cost.

3. Conclusions

32. Ziggo welcomes ACM's comprehensive draft report on IP Interconnection in the Netherlands giving a fair view of the current state of play on the IP Interconnection market.
33. The main points Ziggo would like to make is that, although ACM correctly concludes that peering and transit are substitutes, ACM at times implies that the choice for one over the other has to do with quality. In Ziggo's view the quality difference between the two is negligible, a point that is also made in the report itself but not consistently. In that sense Ziggo would suggest ACM take a closer look at the impact on the QoE and the choices that CAPs have to improve the end-user experience.
34. In addition Ziggo would suggest that certain descriptions of the ongoing negotiations between ISPs and CAPs could be presented in a more neutral way. At times the report seems to imply that ISPs are unwilling to provide CAPs with a peering agreements due to "restrictive" or "exclusive" policies, where in fact ISPs are simply offering a service on a commercial and non-discriminatory basis to all parties interested in transporting data. The fact that settlement free peering exists does not mean that peering is a free service without underlying costs.