



It takes two to tango

Is there a risk of joint dominance in the Dutch broadband market?

RBB Economics, 24 October 2014

1. Summary and conclusions

In this report, prepared at the request of KPN, we address the question whether the structure of the market for retail broadband access in the Netherlands, and the related retail markets for TV and fixed telephony services, would risk developing into one of joint dominance in the absence of existing ex ante wholesale regulation.

Telecom operator KPN and cable operator Ziggo¹ own the two largest fixed infrastructures for the provision of broadband, TV and telephony services to subscribers in the Netherlands. KPN is currently subject to wholesale access obligations that allow third party operators wholesale access to KPN's fixed telecom network² at regulated prices, enabling these parties to compete with KPN, Ziggo and others.³

Whilst historically, KPN was considered to have Significant Market Power (SMP) on the relevant retail market, allowing for access obligations to be imposed under the regulatory framework in place, this is no longer the case today. Ziggo's market share has gradually increased over time at the expense of KPN and other players, and is now the market leader in the retail broadband market.

In an apparent response to these market developments, Dutch regulatory authority ACM has postulated that, absent ex ante wholesale regulation, KPN and Ziggo may be considered to be jointly dominant and would jointly have SMP. At the moment this finding is yet to be substantiated, but it is highly relevant as it would allow ACM to continue to impose wholesale access obligations on KPN (and possibly on Ziggo too).

In this report we assess the likelihood and risk of joint dominance of KPN and Ziggo to exist or develop in the absence of the existing wholesale access obligations. We do this by applying the generally accepted framework for the assessment of joint dominance. This framework is not only grounded in economic theory, but also in jurisprudence from the European courts, and is used by the European Commission to assess the compatibility of national regulatory measures with the European regulatory framework for the markets for electronic communications.

This European framework prescribes that a number of conditions need to be fulfilled for a finding of joint dominance: the two (or more) parties would need to be able to tacitly agree on an important parameter of competition, they would need to be able to detect and punish deviations from the coordinated market outcome to make such deviation unattractive, and third parties should not be able to challenge the coordinated outcome.

Our main findings are that:

¹ The European Commission recently approved the acquisition of Ziggo by Liberty Global, which already owned Dutch cable operator UPC. As a result of the acquisition, the activities of Ziggo will be merged with those of UPC and rebranded as Ziggo.

² Originally these were the (copper loop) PSTN networks used for fixed telephony services only. Technological developments have allowed for the provision of broadband and broadband based TV services over these networks. Gradually, the old copper networks are being upgraded, or even as an entire customer line replaced, by fiber (the latter also referred to as Fiber to the Home or FttH). For ease of reference we use the term "fixed telecom network".

³ "Others" include for example regional cable operators like Caiway and ZeelandNet and local FttH networks.

- KPN and Ziggo are unlikely to (tacitly) agree on a coordinated outcome, whether in prices, market shares or investments. This is primarily due to the differences between the networks of KPN and Ziggo which translate into large differences as regards the need, timing and geography of investments in network upgrades.
- Credible retaliation mechanisms are unlikely to exist in the market(s) in which KPN and Ziggo compete. KPN and Ziggo do compete with each other in multiple markets and dimensions. Typically however, competitive actions cannot be easily reversed, which implies that there does not appear to be a credible mechanism to punish the other party in case of deviations and to return to the (tacitly) coordinated outcome thereafter.
- KPN and Ziggo may well be constrained by third party operators like Vodafone, T-Mobile, Tele2 and M7⁴. Some of these parties do compete on the basis of wholesale access, but they do not fully rely on this. Vodafone, T-Mobile and Tele2 are also mobile operators and M7 also offers services based on satellite.
- Finally, we consider it unlikely that KPN, in the absence of wholesale access obligations, would stop providing such access to third parties. In our view, KPN may well have incentives, in particular due to existing competition with Ziggo, to continue to provide wholesale access on a voluntary non-regulated basis. This seems supported by the fact that already today part of KPN's wholesale offer is not regulated, and the fact that KPN has already announced to make wholesale inputs available in the absence of regulation.

For these reasons we consider it to be highly unlikely that KPN and Ziggo can be considered jointly dominant. We consider it equally unlikely that there would be a *risk* of KPN and Ziggo becoming jointly dominant if current wholesale obligations would be relaxed.

⁴ M7 is active on the Dutch market with its CanalDigitaal and Online.nl brands.

2. Background

The markets for electronic communication services in the EU have fundamentally changed in the past decades. Liberalisation, harmonisation and privatisation in the 1980's and 1990's have transformed and opened-up markets historically served by (state owned) monopolies.

Sector specific regulation, and in particular wholesale access regulation, has assisted in this process. It has served to introduce and promote service based competition by allowing for wholesale network access, enabling new entrants to compete with former monopolists in downstream markets.

Wholesale access regulation is normally based on obligations imposed by the National Regulatory Authorities (NRA) on the incumbent operator of the fixed telecom network. It typically consists of the obligation to provide non-discriminatory wholesale access to the network at regulated prices. The legal basis for imposing such obligations is the finding of an operator with Significant Market Power (SMP) after an assessment of the relevant market(s). Within the regulatory framework the presence of SMP can be equated with a finding of a lack of effective competition.

Whilst wholesale access regulation has introduced competition between the incumbent telecom operator and new entrants with a business model based on wholesale access, technological progress and convergence have at the same time been catalysts in the development of infrastructure based competition between operators of fixed telecom networks and cable networks.

In a number of European countries, including the United Kingdom, Belgium, Portugal and the Netherlands, cable operators have developed into fully fledged competitors of fixed telecom network operators, and the third parties active on these networks. The cable operators compete head-to-head in the supply of fixed telephony, broadband and TV services to customers.

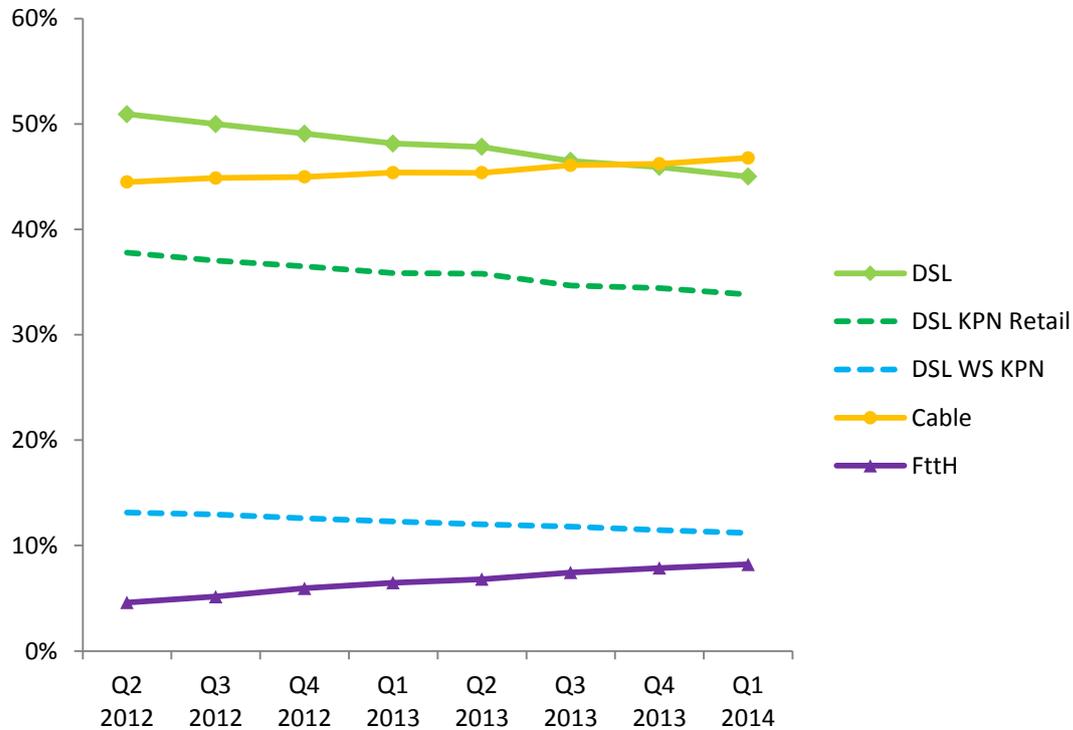
In combination these developments have resulted in a market structure characterized by competition between cable operators and (incumbent) fixed telecom operators and service based competition from fixed telecom network access-operators.

In the Netherlands for example, KPN is the owner and operator of the fixed telecom network. It competes with parties on its own network, such as Tele2, that buy wholesale access services. At the same time KPN and Tele2 also compete with cable operators such as Ziggo.

As shown in the figure below, the cable operators have been very successful in competing with the operators on the fixed telecom network. They have gradually but consistently increased their share of the broadband market at the expense of DSL connections, both retail and wholesale, implying that third parties on KPN's network have also lost market share to cable.

The figure clearly shows that cable has emerged as the leading broadband infrastructure in the Netherlands, measured by the number of connections.

Figure 1: Retail connections DSL, Cable and FttH, wholesale DSL connections as % of total retail broadband market in the Netherlands



Sources: ACM, Telecom monitor Q1 2014, KPN Quarterly reports. KPN wholesale DSL connections calculated on the basis of MDF plus WBA consumer lines minus WBA over FttH. DSL KPN retail is calculated as total DSL as reported by ACM minus KPN wholesale DSL connections.

With cable having overtaken DSL based operators on the fixed telecom network, it has become highly questionable whether there remains a basis to conclude that KPN is dominant and would have SMP on the broadband market.

If such SMP finding would no longer be possible, then the logical conclusion would be that wholesale access remedies can no longer be imposed because competition in the market can be deemed effective. In other words, the rise of infrastructure based competition from the cable operators has resulted in effective competition and has taken away the need to impose obligations on KPN.

The only possible 'escape' from this conclusion would be a finding of joint dominance, i.e. a finding that KPN and (the new) Ziggo would be jointly dominant. Within the regulatory framework a finding of joint dominance would result in an SMP-finding concerning both KPN and Ziggo.

This indeed appears to be the preliminary view of ACM, the Dutch NRA, in the context of its (on-going) assessment of the broadband market. In particular this view is that, in the absence of wholesale access obligations, there would be a risk of joint dominance of KPN and Ziggo developing in the market. The preliminary view of ACM appears to be that the continuation of

wholesale access measures would be required in order to avoid this risk to materialise, i.e. to avoid that KPN and (the new) Ziggo would become jointly dominant.⁵

We will discuss the likelihood of joint dominance to emerge in the Section below. In our assessment below we assume, as ACM appears to have done, that absent wholesale access measures, KPN will no longer provide access to its network and that parties relying on KPN's wholesale inputs, such as Tele2, will exit the market. With this assumption, we will in fact assess the risk of joint dominance, rather than whether the current market structure could currently be characterized as one of joint dominance.

We will discuss the implicit assumption of ACM – KPN not providing wholesale access in the absence of access obligations - in more detail in the final Section of this report.

⁵ ACM presentation "Hypothesesessie marktanalyses", 19 May 2014.

3. Joint dominance

3.1. Introduction

In this Section we will first describe the framework for the assessment of joint dominance⁶ including the conditions need to be fulfilled for a finding of joint dominance. We will then assess whether or not these conditions are likely to be fulfilled on the Dutch broadband market in the absence of wholesale access regulation. On this basis we draw conclusions as to the risk of joint dominance of KPN and Ziggo to emerge in the Netherlands absent regulatory intervention.

3.2. Framework for the assessment of joint dominance

The framework for the assessment of joint dominance concerns issues in relation to the strategic interaction between firms, and the factors that influence the type of interaction chosen by these firms.

What is meant by joint dominance here is, in essence, a situation in which the few firms that are active in a market decide to cooperate rather than to compete, because there is an understanding that everyone is better off cooperating.

In an economic sense, this is not different from the typical trade-off that firms face when they decide whether or not to take part in an explicit (illegal) cartel agreement.⁷ What is meant here, in the context of assessing the likelihood of joint dominance, is the likelihood of a market structure arising in which firms decide, independently, i.e. without an explicit cartel being necessary, to cooperate rather than to compete.

In deciding whether to compete or not, firms face a trade-off between the short term profits of competing and the longer term profits of cooperating.

By competing, firms can increase their sales and profits in the short run. In the longer run however, such behaviour may result in a competitive response with decreasing prices and profits as a result. In the longer run therefore it may be more profitable to forego the short term gains of competition and cooperate instead.

In order for such a cooperative outcome to materialise, a number of conditions need to be fulfilled however.

First, and in particular in the absence of an explicit cartel agreement, it is required that the parties would be able to reach an implicit agreement. In practice this implies that the parties would need to find a so-called focal point for coordination, for example a certain price level that is considered to be in everyone's best interests.

⁶ Also referred to as collective dominance, tacit collusion and coordinated effects.

⁷ In the case of illegal cartel agreements the risk of being caught and the consequences thereof (fines, damages payments, reputational risks) will also be factored in.

Second, and in order for cooperation to be sustainable, there needs to be a credible punishment or retaliation mechanism in place that disciplines the coordinating firms and prevents deviations from the coordinated outcome. If deviation from the coordinated outcome remains undetected and unpunished, this destabilises the coordinated outcome as firms have incentives to deviate and opt for the short term gains at the expense of their competitors.

Third, there should be no external factors (e.g. new entrants, large buyers) that undermine the coordinated outcome by putting the longer term projected future profits of coordination at risk. If a firm would suspect that longer term future profits will be undermined, it is more likely to opt for the short term gains of competition.

Market characteristics play an important role in each of these elements and impact on the trade-off that firms face, i.e. have an influence on the shorter and longer term gains that firms expect from competition and coordination.

For example, if there would be a large number of firms active in the market, it will be more difficult to come to an agreement, individual firms have a bigger incentive to cheat as the short term gains are greater, and it is more costly for individual firms to punish deviations. The likelihood of coordination to arise as a market outcome therefore becomes smaller as the number of firms in the market increases.⁸

More formally put, market characteristics have an impact on the 'discount factor' i.e. on the way in which firms discount the longer term profits of cooperation. Hence, market characteristics impact on the trade-off between competition and cooperation.

After the *Airtours* judgement, the above framework for the assessment of coordinated effects in merger cases, and, by implication, the assessment of joint dominance, is firmly grounded in EU competition law and has also been incorporated in the Guidelines of the Commission for the assessment of SMP in electronic communications markets:⁹

“When assessing ex-ante the likely existence or emergence of a market which is or could become conducive to collective dominance in the form of tacit coordination, NRAs, should analyse:

(a) whether the characteristics of the market makes it conducive to tacit coordination; and

(b) whether such form of coordination is sustainable that is, (i) whether any of the oligopolists have the ability and incentive to deviate from the coordinated outcome, considering the ability and incentives of the non-deviators to retaliate; and (ii) whether buyers/fringe competitors/potential

⁸ See also Ivaldi et al., The economics of tacit collusion, Final report for DG Competition, European Commission, March 2003.

⁹ Court of First Instance, *Airtours/First Choice*, 6 June 2002. See also Bishop and Walker (2010), The Economics of EC Competition Law: Concepts, Application and Measurement, paragraph 7-072.

*entrants have the ability and incentive to challenge any anti-competitive coordinated outcome*¹⁰

It should be noted that the conditions mentioned in *Airtours* are cumulative; all conditions need to be fulfilled for coordinated effects to arise in merger cases, and, by implication, for joint dominance issues to arise.

As also expressly stated in the SMP Guidelines, it is therefore not sufficient, in the context of assessing joint dominance, to identify some market characteristics that could make a market more conducive to coordinated outcomes. Such a 'checklist approach' is insufficient to assess the likelihood of coordination to arise, as other factors may fundamentally undermine the ability and incentive for firms to coordinate.

*"While these [market] characteristics are often presented in the form of the abovementioned list, it is necessary to examine all of them and to make an overall assessment rather than mechanistically applying a 'check list'."*¹¹

The Commission has made clear in the past that it will carefully scrutinize notifications in which NRA's propose to impose obligations on the basis of a finding of joint dominance:

*"To support a finding of collective dominance, NRAs must prove to the requisite legal standard set out by the case law of the Community Courts and in line with the Commission's SMP Guidelines that the characteristics of the market make it conducive to collective dominance and that such form of coordination is sustainable. For the coordination to be sustainable, regulators must show on the basis of a cogent and consistent body of evidence that (i) none of the oligopolists have the ability and incentive to deviate from the coordinated outcome, because in case of such deviation the non-deviators would have the ability and incentive to retaliate and (ii) that no buyer, fringe competitor or potential entrant has the ability and incentive to challenge any anti-competitive coordinated outcome within the timeframe of the review"*¹²

3.3. Application of the framework

3.3.1. The ability to reach an agreement

As indicated, a necessary condition for a finding of joint dominance in the Netherlands would depend on the ability of KPN and Ziggo to agree on a coordinated market outcome. As also

¹⁰ Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services, OJ 165/6 of 11 July 2002.

¹¹ *Ibid.* paragraph 96.

¹² European Commission, Competition Policy Newsletter, First collective dominance cases under the European Consultation Mechanism on Electronic Communications, Number 2 – Summer 2005.

indicated, an important issue here is whether there would be a focal point available that would allow the parties to coordinate on.

Such focal point needs to be sufficiently simple and transparent, and, in order to be able to relax competition between the parties, should concern an important parameter of competition.

As we will show below, the differences between KPN's and Ziggo's networks and services make it highly unlikely for these parties to be able to reach any agreement.

3.3.1.1. Network differences

It is important to understand some of the fundamental differences between the KPN network and Ziggo's (post-merger) network before addressing the question whether they would be able to arrive at a coordinated market outcome.

As indicated KPN operates a fixed telecom network, which is characterized by a 'point-to-point' architecture, i.e. each user on the network has its own dedicated access line. In contrast, capacity on cable networks such as Ziggo's is shared between users.

This implies that the need for Ziggo to invest in network upgrades is primarily driven by the overall development of traffic on the network. In KPN's case, network investments are mainly driven by the need to get coverage with high(er) peak rates for subscribers.

This difference implies that upgrades of cable networks are typically rolled out quickly across the entire network, whereas investments by KPN are more local, i.e. its copper upgrades and replacement of customer lines based on copper by FttH take place on an area by area basis.

Not only the networks, but also the technology employed on those networks is different between Ziggo and KPN, which results in different options for future upgrades.^{13,14}

- ADSL 2+ (until recently the technology used on KPN's network) was becoming outdated fast. The superior alternative (measured in bit rates) is VDSL2 with vectoring, in which KPN is currently investing and which now covers about half of KPN's customers. With this, KPN is able to offer 80 Mb/s from the street cabinet, and both KPN and Tele2 can offer 40 Mb/s from the local exchange.
- Bit rates will be further increased but this requires large investments in copper upgrades and FttH. Also, due to the local nature of such investments, the speed that can be offered by KPN at any given point in time varies from region to region.

¹³ For a comprehensive description, see TNO-paper R10809, Cable and DSL: a Comparison of their Capabilities and their Upgrade Roadmaps, June 2014, ("TNO Cable/DSL), from p. 8 and OPTA, Marktanalyse ontbundelde toegang, MDF-, SDF- en ODF-access (FttH), 29 December 2011, par. 4.3.1 (ACM 2011).

¹⁴ TNO-Paper 10917, DSL in the Dutch Consumer Broadband Market, Innovation is about more Bandwidth, June 2014, pp. 4-5 (TNO Broadband).

- The newest (4th generation) technology (G.fast) enables speeds of up to 1 Gigabits per second for even shorter copper distances, but will not be available on a large scale before 2016-2017 and will require significant additional investments.
- At the same time, Ziggo and other cable operators already use EuroDOCSIS 3.0 technology that delivers at least 100-200 Mb/s. With DOCSIS 3.1, an upgrade of cable is possible to over 200 Mb/s on a large scale according to TNO, without the need for investments of the scale necessary for KPN to upgrade its network. This may in fact be an underestimate of the potential of DOCSIS 3.1 as the association of the Dutch cable operators indicates that current speeds of 300 Mb/s are already available, with significant further improvements to be possible.¹⁵

These technological differences result in differences in geography, timing and speed of network upgrades and the required investments for such upgrades. This translates into differences in the services that KPN and Ziggo can offer to subscribers, as well as in differences in the underlying network costs. In addition it should be noted that KPN itself has a heterogeneous service offering, based on FttH in some areas and on upgraded DSL in others.

3.3.1.2. No plausible focal points

Below we consider whether plausible focal points for coordination, and hence the ability to tacitly coordinate, are likely to exist. In terms of relevance for competition between KPN and Ziggo, the most likely focal points would be prices, quality adjusted prices or network investments, since this is one of the main drivers of costs.

3.3.1.2.a. Network investments

In theory, KPN and Ziggo could collude on delaying investments or not investing in network upgrades, which could result in significant savings.

Due to differences in the technology, and the timing and (lack of) transparency of network upgrades¹⁶ any coordination appears highly implausible.

A stand-still of investments at some point in time will always be to the clear disadvantage of one of the parties, i.e. the firm that needs to catch up, and to the benefit of the other party, i.e. the party that is ahead of the other. It is difficult to see how two networks with such different characteristics would ever be equal and could reach a mutual understanding on investments.

Moreover, the investments required to upgrade KPN's network are likely to be (much) higher than Ziggo's investments related to upgrades. More generally, Ziggo's cost base appears to be significantly lower than KPN's cost base which is likely due to differences in network costs.¹⁷

¹⁵ TNO Cable/DSL, p. 17 and <http://nlkabel.nl/wp-content/uploads/2014/02/Factsheet-Docsis-3.1.pdf>.

¹⁶ TNO Cable/DSL, pp. 3-4: "The comparison of copper and cable networks shows that copper and cable infrastructures and their upgrade roadmaps are different and thereby difficult to compare. [...] it is not feasible to develop a cable roadmap."

¹⁷ It is difficult to make a like for like comparison of the most recent Q2 results of Ziggo (this is before the merger with UPC's activities) and KPN. However, Ziggo reports an adjusted EBITDA percentage over its total revenues of over 55%, whilst the

That would make it very attractive to Ziggo to continue with relatively cost efficient network upgrades, as this would impose high costs on KPN to catch up, whilst improving Ziggo's competitive position.

As indicated, the typical upgrade of the Ziggo network would take the shape of a quick national roll-out over the entire network, whilst KPN's upgrades have a more local or regional character with investments in FttH for example. This also means that Ziggo cannot afford to delay investments. Even if its cable network offers higher speeds than KPN's DSL based offering, it needs to upgrade in order not to lose out to KPN in areas where KPN offers FttH based packages.

Finally, it is worth noting that Ziggo is now owned by Liberty Global, which is active as a cable operator in many countries. It seems much more logical and efficient to roll out new technologies for all its networks in Europe at more or less the same time, and not leave one or more countries behind.

3.3.1.2.b. (Quality adjusted) prices

A perhaps more straightforward focal point for tacit collusion would be retail pricing or quality adjusted retail pricing (e.g. to coordinate on a price per Mb/s for example).

There are a number of reasons however why it is unlikely that such a focal point for tacit coordination between KPN and Ziggo would exist in the Dutch broadband market.

The main reason for this is the heterogeneity of the retail offers of both players:

- Both KPN and Ziggo offer different single and bundled packages at different pricing points, resulting in a multitude of prices.
- KPN offers packages on both its DSL based networks and, increasingly, over those parts of its networks that have been upgraded to FttH.
- KPN is active with different brands, each offering different price and quality combinations: next to its KPN brand, it also active with the no frills Telfort brand and the premium XS4ALL brand.
- The nature of the packages offered is different, in the sense that, for historic reasons, the base service for the cable operators is the cable connection with a basic TV offering. For KPN it base service used to be the fixed line connection for its telephony services and is now the broadband internet connection, without which it is not able to offer a bundle on the fixed network that includes TV.¹⁸ Part of the

combined EBITDA of KPN generated by its consumer residential, business and (wholesale) NetCo segments (I.e. excluding consumer mobile in the Netherlands and mobile activities in Germany and Belgium) is around 30-35%. In the first six months of 2014, KPN invested € 253 million in its fixed network; Ziggo invested € 177.5 million or 30% less in the same period. These are our best guesses based on publicly available information. Whilst the actual values may be different our best guess estimates provide a rather strong indication that Ziggo's EBITDA margins are higher and the investments required to upgrade its network are lower.

¹⁸ Though KPN also offers stand-alone DVB-T based TV services (Digitenne)

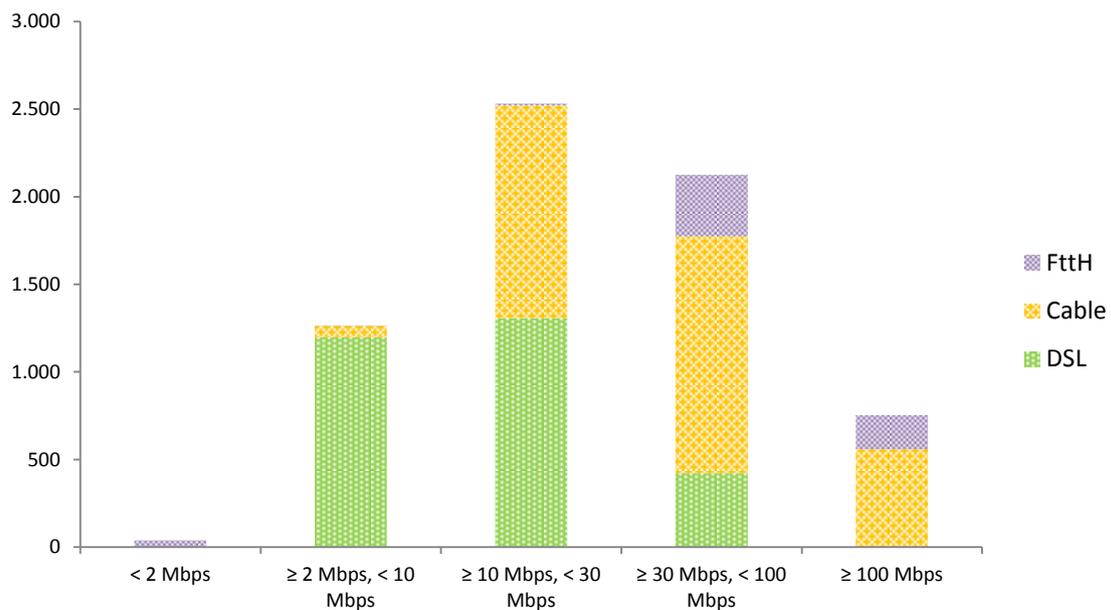
explanation for the cable operators' success seems to be that consumers are more likely to add broadband and telephony to their TV subscription than to add TV to their KPN-broadband subscription.

- As indicated, whilst FttH can offer at least similar speeds as Ziggo's cable network, DSL typically is outpaced by cable network upgrades in the speed it can offer, despite the copper upgrades undertaken by KPN, and hence KPN is unable in a large part of its network to offer speeds that are comparable to cable.

Inherent speed differences are also likely to make coordination on some focal point highly unlikely.

The figure below, based on ACM's quarterly telecom monitor, provides an overview of the types of broadband connections offered, showing the speed difference between DSL and cable subscriptions, and the different positioning of FttH relative to both cable and DSL. The cable operators are almost absent in the lower speed categories whilst the DSL operators are much less present or even absent in the higher bandwidth categories.

Figure 2: Broadband: speed of retail connections (x 1,000) by infrastructure (Q1 2014) (Excluding wholesale supplies)



Source: ACM Telecom monitor Q1 2014

The ability of cable operators to offer high bandwidth services compared to DSL in their entire network is also evident from the packages offered to consumers.

For example, Ziggo offers triple play packages for € 44.95 per month with 30 MB/s (base), € 54.95 with 90 MB/s (plus) and € 64.95 with 180 MB/s (extra), whereas KPN offers a base

package for € 45 per month with 10 MB/s, € 59.00 with 50 MB/s (standard) and € 82.50 with 50 MB/s (premium) as well.¹⁹

Even though prices appear relatively comparable for these packages, the speed differences that are related to the differences between cable and DSL, suggest that tacit collusion on such price levels would be highly unattractive to KPN, as this would undermine its competitive position. It rather provides a strong incentive to KPN to continue to invest in upgrading its network to FttH, and make the best use of the capacity available (i.e. by competing for new customers).

At the same time, it is difficult to imagine that Ziggo would have a strong incentive to lower the speed of its offer, or to increase its prices to arrive at similar price/quality combinations as KPN.

As long as it has sufficient capacity on its network, degrading the speed of its offer would lead to prevent gaining market share from switching DSL customers, and would also risk losing customers to KPN's FttH based offer in other parts of the country at the same time.

Increasing prices above the price points that Ziggo currently has is equally unattractive. Ziggo has more to gain to continue to offer higher speed services at similar price points allowing it to gradually increase its market share and to not lose out to FttH.

3.3.2. Absence of a credible punishment mechanism

In the absence of clear focal points that would allow KPN and Ziggo to arrive at a mutual understanding, the first condition for a finding of joint dominance is not fulfilled. Without the ability to reach an implicit agreement, there is no basis for a finding of joint dominance.

Even if however such a focal point could be identified, it is unlikely that a credible punishment mechanism exists that would discipline KPN and Ziggo to stick to a mutually beneficial coordinated outcome and would prevent cheating.

A deviation from a coordinated outcome to not invest is investment, and a punishment mechanism would be to for the other party to significantly increase investments in response. However, both parties have a clear incentive to continue to invest, and such investments are irreversible, implying that once investments are made, there is no return possible to the coordinated outcome. This means that there is no credible punishment mechanism in relation to coordination on network investments.

It is equally difficult to see how punishment, and a return to the coordinated outcome, would work with regard to pricing, even if a focal point would exist.

If Ziggo would increase the speeds without changing prices for example, which is in essence a (quality adjusted) decrease in price, KPN would have difficulties to respond as it is unlikely to be able to match Ziggo's offer, at least on its DSL based part of its network. In that sense, KPN cannot play 'tit for tat' with Ziggo as a way of retaliating.

¹⁹ The premium offer includes Spotify and HBO subscriptions.

It therefore appears that, at least at the moment, Ziggo has the upper hand and has the ability and incentive to increase its market share by upgrading its offer on the back of network upgrades - it would have little to win from a coordinated market outcome in particular if KPN is unable to respond to deviations.

3.3.3. External factors

Thus far we have above ignored potential outside sources of competition that could undermine potential collusive outcomes. An important potential factor that could undermine the stability of any mutual understanding between Ziggo and KPN is the presence of mobile operators like T-Mobile, Vodafone and Tele2.

With increasing mobile broadband speeds mobile operators may increasingly constrain fixed line operators in the provision of broadband, but also in the provision of telephony and ultimately also TV services. The mobile operators are already upgrading their networks to 4G, with Long Term Evolution Advanced (LTE-A) being the next step, allowing for download speeds which are comparable to fixed line offerings.

3.3.4. Conclusion

Based on the above, we consider it highly unlikely that Ziggo and KPN would be able reach a tacit agreement on any of the important parameters of competition. In addition we consider it highly unlikely that, even if Ziggo and KPN would be able to agree on a mutually beneficial coordinated outcome, a credible punishment mechanism exists that would help avoid deviations from such coordinated outcome. A finding of joint dominance would hence not be in accordance with the characteristics of the markets in which Ziggo and KPN operate. These conclusions would equally apply to a finding that, in the absence of wholesale access measures, there would be a risk of joint dominance emerging. In addition the emergence of joint dominance is unlikely in view of the presence of mobile operators that can be expected to increasingly compete with fixed line operators as technological developments will enable them to offer comparable speeds and services.

4. KPN's incentive to stop providing wholesale access

The preliminary view of ACM appears to be that, in the absence of wholesale access obligations, there would be a significant risk of joint dominance of KPN and (the new) Ziggo emerging in the market.

In the above we have discussed the likelihood of joint dominance and concluded that such a market structure is unlikely to emerge as it is not supported by the characteristics of the market. In short, we have difficulties understanding how KPN and Ziggo would be able to arrive at a coordinated outcome and how a credible punishment mechanism would work in practice.

A critical assumption that underlies ACM's view is that KPN would stop providing wholesale access to third parties, in the absence of wholesale access obligations, as apparently the current access obligations would prevent joint dominance to emerge.

This implies that ACM should not only substantiate the risk of joint dominance in its market assessment, but should also substantiate why KPN would not want to provide wholesale access to third parties in the absence of obligations to do so. In fact, the logical order for ACM to assess these issues is to first prove that KPN is unlikely to provide voluntary access to its network, and then to prove that there would be a significant risk of joint dominance to emerge. Both elements would be essential for a finding of joint dominance.

The likelihood of KPN not providing voluntary access to its network is dependent on the incentive that KPN would have to foreclose third parties from access to its network, and the market (input foreclosure). This is akin to the assessment of vertical mergers in which competition authorities typically investigate whether post-merger incentives would exist to foreclose downstream rivals of critical inputs.

"The incentive to foreclose depends on the degree to which foreclosure would be profitable. The vertically integrated firm will take into account how its supplies of inputs to competitors downstream will affect not only the profits of its upstream division, but also of its downstream division. Essentially, the merged entity faces a trade-off between the profit lost in the upstream market due to a reduction of input sales to (actual or potential) rivals and the profit gain, in the short or longer term, from expanding sales downstream or, as the case may be, being able to raise prices to consumers."²⁰

In practice, the question whether an incentive to foreclose exists is assessed by comparing the foregone upstream profits resulting from no-longer selling upstream inputs to rivals with increased downstream profits that may result from increased downstream sales as a result of additional downstream sales to customers lost by the foreclosed rivals (this is often referred to as the 'vertical arithmetic').

²⁰ Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings, OJ C265/6 of 18 October 2008.

The outcome of such an assessment is critically dependent on a number of variables that we will briefly discuss below in the context of the particular context of the Dutch broadband market.

First, one would need to estimate the lost profits upstream, i.e. the gross profits that KPN would forego if it would no longer provide wholesale inputs to Tele2 and other operators. The assessment of these lost profits should take account of the mix of wholesale inputs that KPN currently provides. A complicating factor is that the mix of wholesale inputs that KPN would provide is likely to change over time for technological and demand side reasons (in the direction of more WBA type access i.e. access to the active network layer, away from MDF type access i.e. access to the passive layer of the network). As the combination of wholesale inputs shifts, so may the foregone profits from an input foreclosure strategy as KPN will earn different gross margins on different inputs.

Second, one would need to estimate the additional downstream profits that KPN would earn as a result of selling more retail services due to the need for customers of foreclosed operators to switch. Here, similar complexities arise. For the estimation of the additional downstream profits one would need to know the extent to which those customers switch to KPN relative to cable. In addition it is also necessary to estimate, of those customers switching to KPN, to which KPN brand they switch. This is relevant because the margin that KPN earns will be different for the services of its different brands.

Telfort is KPN's no frills brand, XS4ALL is KPN's premium brand and the KPN brand itself is positioned in the middle. The extent to which customers of the third parties active on KPN's network switch to cable or to one of the KPN brands will likely depend upon the specific characteristics of the customer base of the foreclosed operator. Tele2 for example positions itself as a cheap brand, meaning that if its customers would need to switch, they are more likely to switch to Telfort than to KPN or XS4ALL. As the margin earned on the Telfort services can be expected to be lower than the margin on the KPN and XS4ALL services, this is highly relevant for the vertical arithmetic, and hence for the assessment of the incentive to foreclose.

Third, it is required to assess the cost implications of a smaller wholesale and a larger retail operation and the associated migration costs, as this will have impact on the margins and hence on the upstream losses and downstream profits that one would expect under a foreclosure scenario.

Fourth, the general service and price offerings of cable operators will probably continue to improve over time. If KPN, in the absence of access regulation, would stop providing wholesale services to third parties, Ziggo and other cable operators will likely seize the opportunity to make special offers to customers that have to switch. This reduces the likelihood that a sufficient number of customers will switch to KPN' retail services to render foreclosure profitable and/or it could significantly reduce the profitability of foreclosure by increasing the costs for KPN to attract those customers, as a result of KPN having to match the special offers of competitors.

Although not explicit in the vertical arithmetic, KPN will hence have to factor in the inherent risks of following an input foreclosure strategy. The benefits will depend on whether customers will also in practice switch to KPN to a sufficient degree to result in foreclosure being profitable. One can postulate assumptions as to how customers are likely to respond, but such assumptions may not hold in practice.

As shown in Figure 1, third parties that rely on KPN's wholesale inputs represent around 10% of the retail market. This means that an input foreclosure strategy would put very significant wholesale revenues at risk. It also means from an operational perspective that executing an input foreclosure strategy would be very challenging as it would result in a very high number of customers to switch in a short period of time.

Finally, it should also be noted that in practice, and regardless of the outcome of any hypothetical calculations, it is not to be expected that KPN would resort to an input foreclosure strategy in the absence of wholesale access measures. KPN already provides wholesale broadband access (WBA) services on a voluntary basis, and it has recently presented a voluntary wholesale offer.²¹ Although strategies may change over time, this strongly suggests that KPN considers it in its own best business and financial interest to continue to provide wholesale access, even in the absence of an obligation to do so.

Taken together, these factors significantly undermine a critical assumption of ACM for a finding of (a risk of) joint dominance.

²¹ https://www.kpn-wholesale.com/media/484444/2014_05_19_-_position_paper_open_wholesale_model_-_final.pdf. This offer applies to both copper and FtH.