A review of ACM's findings of joint significant market power in the retail Internet access market

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Contents

1 Introduction and main findings

UPC/Ziggo has asked Oxera to consider ACM's recent draft decision on the ongoing regulation of access to KPN's copper and glass-fibre networks.[1] In particular, Oxera was asked to consider ACM's preliminary finding that KPN and UPC/Ziggo hold a position of joint significant market power (SMP) in the retail market for fixed Internet access.

1.1 Main findings

Oxera has assessed the question of joint SMP from an economic perspective, and from a number of angles, so as to reflect the specific regulatory context in which ACM has carried out its market analysis. Importantly, Oxera finds that ACM's conclusions do not hold from any of these angles.

A dynamic and competitive market over a three-year and longer horizon does not support a finding of joint SMP—ACM's time horizon is three years, in line with the regulatory cycle. Oxera shows that ACM paints too static a picture over the next three years, of a stable and mature market in which there are no disruptive technological and market developments.

As ACM itself emphasises in one part of the decision,[2] both KPN and UPC/Ziggo have made long-term investments in their networks and anticipate longer-term technological and product developments. The analysis of joint SMP should therefore also consider the impact of these competitive interactions over a longer time period on actions in the next three years. Oxera shows that longer-term considerations make joint SMP less likely over the three-year regulatory period considered by ACM.

In addition to these longer-term dynamics which drive competition in the short term, ongoing market developments mean that the market is in a continuous state of flux. These developments include the increasing popularity of bundles (for example, quad-play offers with mobile) and the entry of OTT players offering both communication services (for example, Skype) and media services (for example, Netflix). This provides incentives for UPC/Ziggo and KPN to compete aggressively and to continue investing to improve their services. The presence of these external parties (mobile and OTT players) would further undermine any scope for tacit collusion between KPN and UPC/Ziggo.

No joint SMP with or without regulation—ACM carries out the analysis of joint SMP in the (hypothetical) absence of wholesale access regulation. This is consistent with the regulatory framework in which the need for wholesale regulation must be determined by first assessing the competition concerns that would arise in the absence of such regulation. The ACM makes the point that this distinguishes its own analysis from that carried out by the European Commission in the context of the UPC/Ziggo acquisition.[3]

The main difference between the situations with and without regulation would be the presence of third-party operators offering services over KPN's network (in particular, Tele2, Vodafone and Euronet). Oxera acknowledges that these operators do add to the competitive dynamics of the retail Internet access market. However, their presence or absence is not decisive for whether there is joint SMP: the economic analysis shows that the main driver of competition in

[1] ACM (2014), 'Marktanalyse ontbundelde toegang; Ontwerpbesluit voor nationale consultatie', 31 October.
[2] Op. Cit., paragraph 657.
[3] Op. Cit., paragraph 655.

this market is the rivalry between KPN and UPC/Ziggo, and that therefore, even in the absence of third-party operators, there is no joint SMP.

The established criteria for joint SMP/tacit collusion are not met—there are established economic criteria to assess the existence or likelihood of tacit collusion—for example, as set out in the EU Horizontal Merger Guidelines.[4] The criteria relate to the incentives and ability to collude, including factors such as transparency, stability of the market, disciplining mechanisms, and external competitive pressure.

ACM refers to the Merger Guidelines and has assessed joint SMP with reference to these criteria.[5] Oxera shows that, based on a more thorough analysis of the market dynamics, the established criteria for joint SMP are not met in the retail Internet access market.

The UPC/Ziggo merger does not make a finding of joint SMP more likely—[CONFIDENTIAL].

ACM does not say anywhere in its decision that it disagrees with the Commission. It follows logically that any joint SMP that ACM now finds would also have existed before UPC and Ziggo were merged. Yet, as far as Oxera is aware, ACM (or OPTA) had not previously found joint SMP in this market. Implicitly ACM seems to be attributing the situation of joint SMP to the fact that there is now one large cable operator of a comparable size to KPN (ACM places much emphasis on the symmetry of market shares between KPN and UPC/Ziggo). At the very least, ACM should make it explicit in its decision whether it attributes joint SMP to the UPC/Ziggo merger, and thereby disagrees with the reasoning of the European Commission that the merger would not result in tacit collusion.

We also note that, following the merger, UPC/Ziggo is better placed and has more to gain from exploiting its existing (and future) competitive advantages over KPN. Operating on a near-national scale, UPC/Ziggo now has an increased ability to gain customers through its fixed Internet offerings. This incentive will be further enhanced following the forthcoming DOCSIS 3.1 upgrade for cable networks, which will allow even higher speeds.

Finally, we note that ACM states that the test it needs to meet is whether it is 'reasonable likely' that there is risk of joint SMP, not whether there is (a creation or strengthening of) joint SMP.[6] Whether this test is the right one is a legal question. In any event, Oxera shows that, based on a thorough analysis of the market and the economic criteria for tacit collusion, there is little risk of joint SMP occurring over the coming years.

1.2 Structure of this report

In section 2 we consider the ongoing market developments and competitive dynamics of the Dutch broadband market. We first consider the historical evidence of both price and quality competition between UPC/Ziggo and KPN, before turning to the likely future effects of an evolving consumer demand, the competitive pressure from OTT services, and the recent UPC/Ziggo merger.

[4] Official Journal (2004/C 31/03).
[5] ACM (2014), 'Marktanalyse ontbundelde toegang; Ontwerpbesluit voor nationale consultatie', 31 October, paragraph 652.
[6] Op. cit., paragraph 653.

In section 3 we consider why there are no incentives for KPN or UPC/Ziggo to share the market, how differentiated product offers make any coordination hard to achieve and sustain, and how competition from external parties (mobile and OTT players) adds to the dynamism in the market and further diminishes any scope for tacit collusion.

2 Market developments, competitive dynamics and the role of alternative operators

2.1 Overview: incentives of KPN and UPC/Ziggo to compete

This section considers the competitive dynamics and various market developments that have been observed in the market to date, and that are likely to continue over the next three years. These competitive dynamics, in addition to the factors considered in section 3, show that the established criteria for joint SMP/tacit collusion are not met, either currently or prospectively.

When considering past and current market evidence, one has to be mindful of the fact that this is in the presence of access regulation, whereas the hypothetical exercise that ACM has to perform is to analyse the retail Internet access market without regulation. However, our analysis in this section demonstrates that alternative operators such as Vodafone and Tele2, which use wholesale access provided by KPN to provide services, play a limited role in the competitive dynamics in the market, which are really driven by the fierce competition between KPN and UPC/Ziggo.

KPN and UPC/Ziggo have strong incentives to compete with each other, invest, innovate, and introduce new products and services. Historically the key competitive dynamic has been between KPN and UPC/Ziggo. Even under a counterfactual of no regulated access, the competitive forces described here remain valid, for a number of reasons.

- An examination of pricing by KPN and UPC/Ziggo demonstrates that KPN applies pricing pressure on UPC/Ziggo by adopting different price points with each of its sub-brands (Telfort and XS4ALL) and its flagship brand. Furthermore, there is no indication that the price movements of KPN, its sub-brands and UPC/Ziggo are coordinated or clustered at either the low, medium or high end of the triple play segment.[7]

- In this dynamic market, quality competition is often as important as price competition. Indeed, there is evidence that UPC/Ziggo and KPN have been engaging in a 'quality war' to offer the highest-quality user experience through faster broadband speeds, a greater variety of TV content, and one-stop shopping for multiple-product bundles, while also competing on price. Oxera would disagree with ACM's view that technical developments in this market are 'reasonably predictable' and therefore 'not destabilising' to the common understanding between KPN and UPC/Ziggo.[8] This is not the nature of the market.

- Evolving consumer demand (for higher bandwidth and greater service bundles), together with disruptive competition from OTT providers, gives incentives for UPC/Ziggo and KPN to compete aggressively going forward, and to continue investing to improve their services, with or without wholesale regulation.

- Finally, the merger between UPC and Ziggo does not change the dynamic competition in price and quality between KPN and UPC/Ziggo; if anything, it enhances it.

[7] We note that UPC/Ziggo does not offer a standalone retail broadband product. UPC/Ziggo's retail broadband service must be bought in a bundle with TV (and other services).
[8] ACM (2014), 'Marktanalyse ontbundelde toegang; Ontwerpbesluit voor nationale consultatie', 31 October, paragraph 672.

2.2 Price competition

2.2.1 Implications of the evidence

There is evidence of significant price competition between KPN and UPC/Ziggo. In May 2013 (before the UPC/Ziggo merger), **[CONFIDENTIAL]**. In the course of the Commission's Phase II review of the UPC/Ziggo merger, Oxera prepared an updated view of this analysis based on weekly market data from Telecompaper.[9] The update extends the period under examination to stretch from May 2011 to April 2014. The results of this analysis are presented in section 2.2.2 below.

As explained in section 3.3, retail broadband Internet is a highly differentiated product. As well as being offered at different speeds, using different technologies (which themselves offer different characteristics and service levels), at different price points, retail broadband is frequently supplied as one part of numerous different bundle offers. The operators have also historically offered various discounts or incentives alongside their standard offer—including fixed-period discounts, free content, or hardware giveaways.

Importantly, the graphs and data presented in section 2.2.2 do not capture all of the market complexities and are based on just the leading 'shop-front' offers presented at each 'tier' of the market. Not all possible offers are covered; for example, the graphs do not reflect any 'save' offers that may be made to existing subscribers.

Nevertheless, two key considerations stand out:

- KPN adopts a dual-pricing strategy, allowing it to apply further pricing pressure on UPC/Ziggo by addressing different price points at each tier of market with its flagship KPN brand and its Telfort/XS4ALL sub-brands. This allows it to simultaneously offer a higher (perceived) quality and price offer while still competing on price through its sub-brands; [10]

- there is no evidence of any clear coordination of price movements (or clustering) by KPN, its sub-brands or UPC/Ziggo. Although many (but not all) of the prices observed do have a general upwards trajectory throughout the period of study, the timing and magnitude of these changes are largely unrelated. Although UPC and Ziggo (shown separately in this contemporaneous analysis) could now be expected to price more similarly (following the UPC/Ziggo merger), neither of these providers demonstrate any sort of adherence to—or leadership of—KPN or its sub-brands' pricing.

Overall, a review of this analysis indicates that price competition occurs between UPC/Ziggo and KPN and its sub-brands. There is no reason to believe that this competitive pricing pressure would decrease in future, even in ACM's assumed counterfactual of no access regulation. This is because the established criteria for joint SMP/tacit collusion are not met (see also section 3), and in particular:

- **[CONFIDENTIAL]**. This indicates that UPC/Ziggo sees KPN as its closest competitor;

[9] This data was submitted to the European Commission by Ziggo as part of that Phase II review, in a series of weekly files prepared for Ziggo by Telecompaper.

[10] We understand from UPC/Ziggo that XS4ALL is positioned by KPN as a premium brand, while Telfort is positioned as a low-cost brand. This is reflected in the fact that Telfort features only in the low- and mid-tier market, while XS4ALL features only in the mid- and high-tier markets. The flagship KPN brand represents the 'mainstream' option and is available in all price tiers.

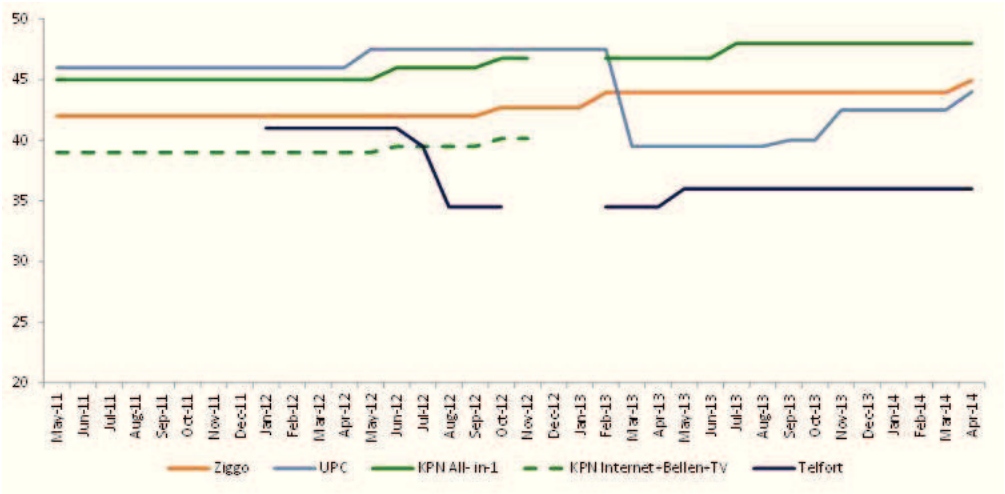
- **[CONFIDENTIAL]**, Ziggo confirmed that it, too, considers KPN to be its closest competitor (although the data provided by Telecompaper included details on all market participants);

2.2.2 Illustration and description of the evidence

Figure 2.1 shows the pricing of low-end triple-play services between May 2011 and April 2014. This shows no coordination between the pricing movement of UPC, Ziggo and KPN in this market segment. The price rise of UPC in March 2012 is not reflected by KPN at all until June, at which time a smaller price rise is implemented by KPN. In October 2012 there is a second price rise by KPN, but not by UPC. At the same time, KPN appears to attack this segment aggressively on price through its sub-brand Telfort, dropping the price for low-end broadband by around 15% in July and August 2012. This new price persists until a small rise by Telfort in May 2013. In March 2013, UPC implements a similarly sized price drop, which persists until a rise in November 2013. During the analysis period, Ziggo makes just three, small, price rises in October 2012, February 2013 and April 2014, all of which are seemingly unrelated to the price movements of either KPN or Telfort.

At the start of the analysis (May 2011), the available prices for low-end triple-play offers vary by around €7/month (15–18%). By the end of the year, this variation in prices had increased to around €12/month (20–25%).

Figure 2.1 Evolution of prices in low-tier triple-play offers by operator, May 2011 – April 2014 (€/month)



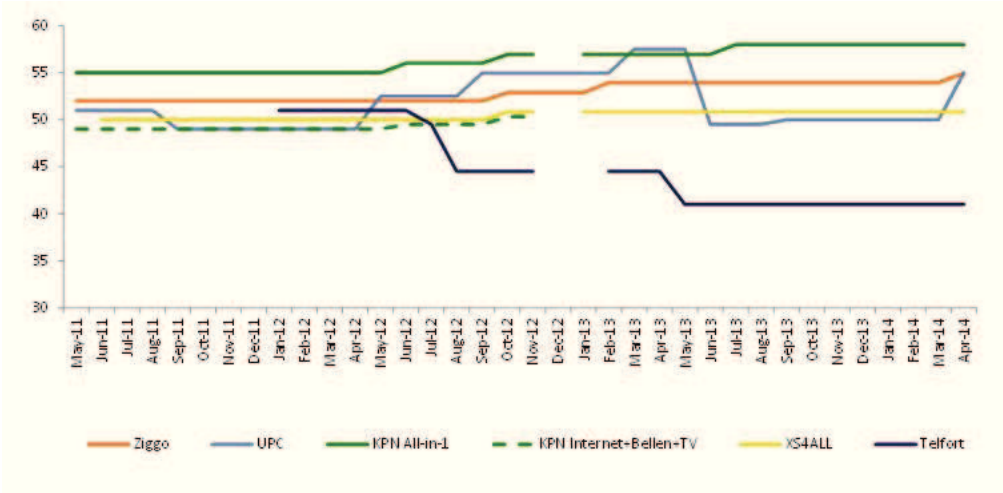
Source: Oxera based on data from Telecompaper's 'Ziggo Concurrentent Overzicht' spreadsheets; and own-price data provided by UPC. Missing observations in 2011, Nov-12 and Jan-13 due to data omissions by Telecompaper in those months. No Telecompaper spreadsheets available for Dec-12. Where possible, missing observations were completed with data provided by UPC and Ziggo. See Appendix A3 for details of bundles considered.

Similarly, Figure 2.2 presents the pricing of UPC/Ziggo and KPN's mid-tier triple-play offerings. Again, this portrays no pattern of coordination in the pricing strategies of KPN and UPC/Ziggo. A series of price increases by UPC between April 2012 and March 2013 occur at the same time as Telfort *drops* its price. UPC subsequently drops its price sharply in June 2013 before increasing it again in April 2014. Ziggo makes two smaller price increases through the period, with one further increase in April 2014. KPN also makes three price increases between May 2012 and July 2013, at different intervals to both UPC and Ziggo. The XS4ALL price remains relatively stable, with just a single small increase in October 2012.

Of particular note is the strategy by KPN to address three distinct price points with its brands: KPN, Telfort and XS4ALL. This allows KPN to compete on quality, while still maintaining pricing pressure on UPC/Ziggo through its sub-brand, Telfort.

At the start of the analysis period, the variation in prices in the mid-tier was around €6/month (11–12%), increasing to around €17/month (30–40%) by April 2014.

Figure 2.2 Evolution of prices in mid-tier triple-play offers by operator, May 2011–April 2014 (€/month)



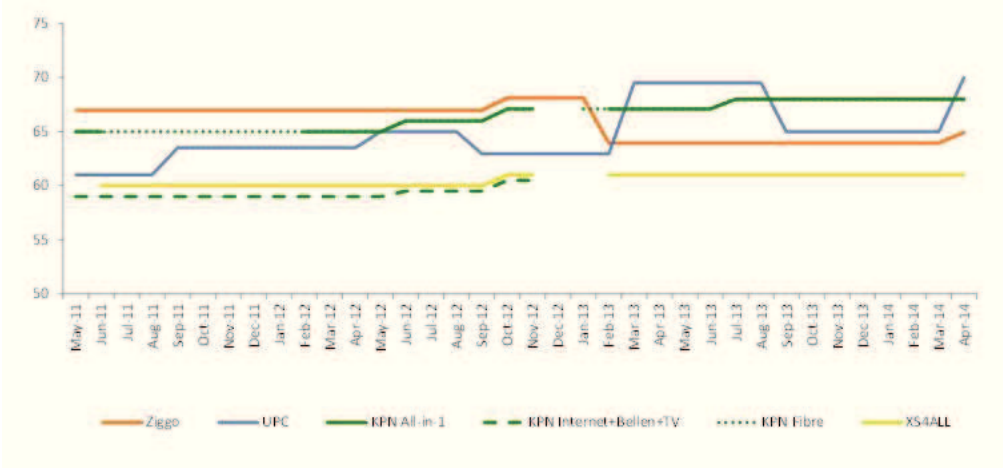
Source: Oxera based on data from Telecompaper's 'Ziggo Concurrentent Overzicht' spreadsheets; and own-price data provided by UPC. Missing observations in 2011, Nov-12 and Jan-13 due to data omissions by Telecompaper in those months. No Telecompaper spreadsheets available for Dec-12. Missing observations for UPC/Ziggo were completed with data provided by UPC and Ziggo. See Appendix A3 for details of bundles considered.

The picture does not change if we consider the high-end triple play offers portrayed in Figure 2.3. Once more, there is no evidence of price coordination by KPN, XS4ALL and UPC/Ziggo, and, again, KPN adopts a strategy of dual-price competition.

UPC implements a series of price rises through the period until March 2013 (with the exception of a price reduction in September 2012). This is followed by a sharp price drop in September 2013. Ziggo also portrays a sharp price drop, slightly earlier in March 2013. KPN makes a series of three modest price increases throughout the period, and XS4ALL is again relatively stable, with just a single small price increase in October 2012.

The variation in prices at this tier remains largely similar throughout. At the start of the year, prices varied by around €8/month (12–15%), increasing slightly to €9/month (13–15%) by April 2014. UPC and Ziggo appear to offer clear price incentives at various points, pricing variously above and below the KPN price.

Figure 2.3 Evolution of prices in high-tier triple-play offers by operator, May 2011–April 2014 (€/month)



Source: Oxera based on data from Telecompaper's 'Ziggo Concurrentent Overzicht' spreadsheets; and own-price data provided by UPC. Missing observations in 2011, Nov-12 and Jan-13 due to data omissions by Telecompaper in those months. No Telecompaper spreadsheets available for Dec-12. Missing observations for UPC/Ziggo were completed with data provided by UPC and Ziggo. See Appendix A3 for details of bundles considered.

2.3 Quality competition

The second important dimension of competition in the retail broadband market is in terms of access speed and service quality. As the basic broadband product becomes commoditised, providers seek to differentiate themselves with higher headline internet speeds and/or more attractive multi-play bundles.

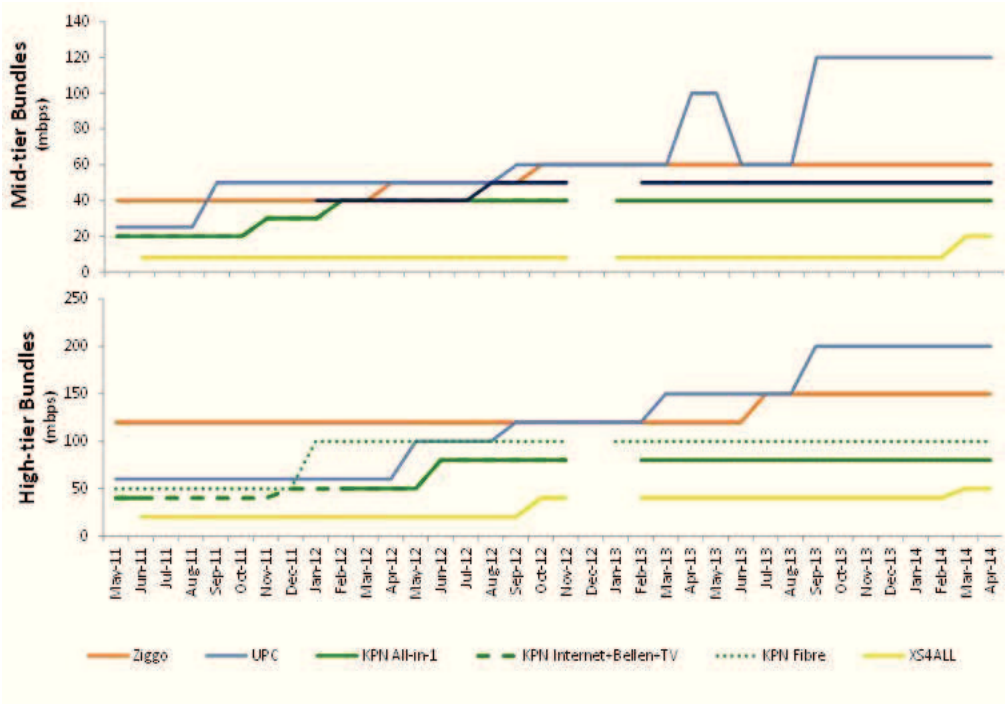
The table in appendix A1 illustrates this 'quality war' in the Dutch TV and Internet markets between August 2011 and April 2014.[11] It shows that in less than three years, around 100 product innovations and improvements took place. Close to two-thirds of these coming from UPC/Ziggo or KPN, with the rest from alternative operators, satellite and mobile competitors.

Furthermore, around half these innovations could be considered to have significant market impacts, such as the launch of IPTV services, rolling-out FTTH, launching HBO, bundling Spotify service, significant network speed upgrades, roll-out of LTE networks, introducing cloud computing services and introducing quadruple-play offerings. Notably, the vast majority of these significant innovations came from UPC/Ziggo or KPN (including HD channel packs, quad-play and 4G mobile networks by KPN; and WiFi hotspots, significant internet speed upgrades and the Horizon service by UPC/Ziggo).

At all levels of the market—but in particular for the mid- and high-tier products—UPC/Ziggo and KPN have continued to jostle with each other to provide the best Internet speeds to consumers. Figure 2.4 portrays the evolution of the speed offered in the mid- and high-tiers between May 2011 and April 2014. Of particular note is the fact that UPC/Ziggo offers higher speeds than KPN in both tiers, apparently making a competitive advantage out of its technical leadership.

[11] We refer to the internal UPC/Ziggo document reviewed in section 2.3 above, which also shows price and quality competition during 2012.

Figure 2.4 Evolution of download speeds in mid- and high-tier triple-play offers by operator, May 2011–April 2014



Source: Oxera based on data from Telecompaper's 'Ziggo Concurrentent Overzicht' spreadsheets. Missing observations in 2011, Nov-12 and Jan-13 due to data omissions by Telecompaper in those months. No Telecompaper spreadsheets available for Dec-12. Missing observations for UPC/Ziggo were completed with data provided by UPC and Ziggo. See Appendix A3 for details of bundles considered.

As we discuss next, evolving customer demand and disruptive competition from OTTs means that KPN and UPC/Ziggo will need to continue to innovate and introduce new products and higher internet speeds, with or without wholesale regulation.

2.4 Evolving customer demand and increasing importance of OTT services

This section takes a forward-looking view of the evolving retail broadband and wider communications services market in the Netherlands to consider the effect this is likely to have on UPC/Ziggo and KPN's incentives to compete with each other (irrespective of the presence of alternative operators) and to innovate.

2.4.1 Evolving customer demand

An important spur to technical development comes from retail market developments and evolving consumer demands. Competition in the Dutch retail communications market is heavily focused on triple-play bundles, with 49% of households choosing such a bundle in 2013;[12] and quad-play (incorporating mobile) is expected to increase significantly in the near future.

At the same time, consumer demand for higher broadband access speeds is increasing. For example, 44% of retail broadband connections as at June 2014

[12] ACM (2014), 'Battle for triple-play bundles intensifies', 13 March, available at: https://www.acm.nl/en/publications/publication/12775/Battle-for-triple-play-bundles-intensifies/.

were over 30Mbps compared with 30% as at September 2012, while connections over 100 Mbps increased from 3% to 13% over the same period.[13]

In a recent submission to the European Commission, KPN notes:

> The demand for bandwidth will continue to increase. The Dutch institute TNO predicted a 30% annual increase of bandwidth. Up to now, that figure seems conservative rather than optimistic. The bandwidth demand is driven by applications that require more bandwidth and more devices per broadband connection. There is no indication that this growth rate will become slower in the foreseeable future.[14]

This demand for ever-increasing Internet bandwidth is a derived demand stemming from wide-reaching changes in the communications and entertainment technologies that consumers use. For example, VOIP and video-conference technologies, OTT video and music streaming, and online gaming all require significant amounts of bandwidth. As consumers continue to adopt these services in multi-device households, network operators will come under increasing consumer pressure to deliver service upgrades in support of this usage.

This evolving customer demand (for service bundles and higher speeds) adds instability to the market, and is reflected in the asymmetry in market shares (and competitive positions) in different customer segments and service bundles, as we discuss in section 3.2.1. The symmetric aggregate market shares of KPN and UPC/Ziggo thus do not provide an accurate picture of the competition between KPN and UPC/Ziggo for different customer segments.

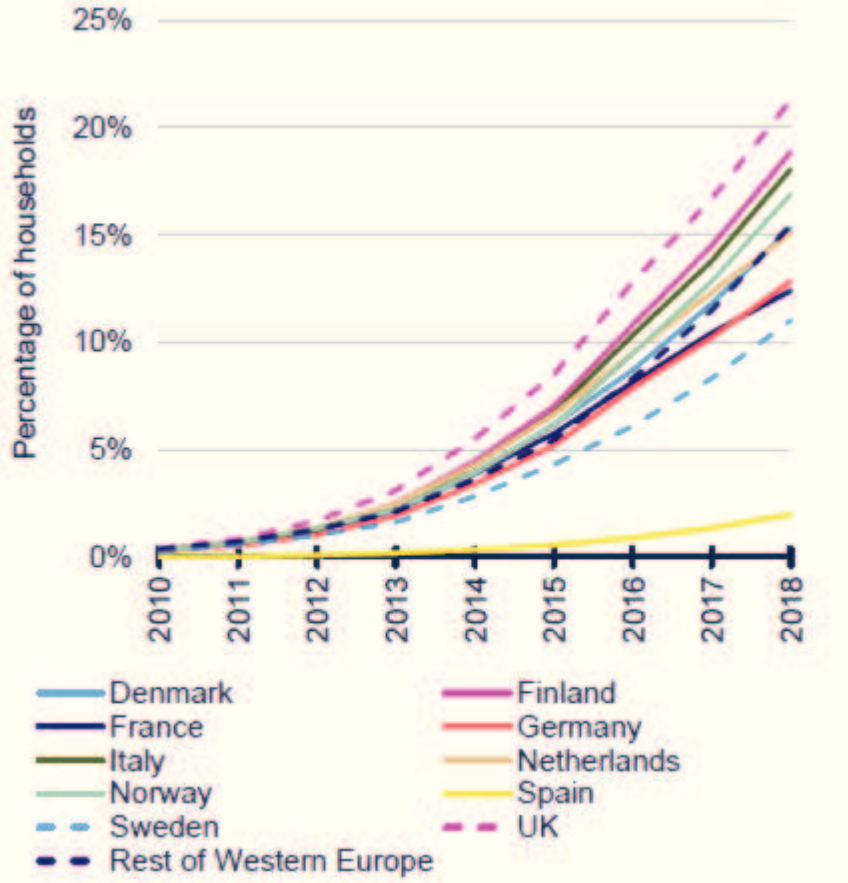
2.4.2 Competitive pressure from OTT services

As discussed above, consumers increasingly buy broadband services in bundles which include other services such as media and voice. These services add value to a broadband access connection and may be supplied by various OTT players in addition to traditional telecoms operators such as KPN and UPC/Ziggo.

Figure 2.5 depicts a forecast by Analysys Mason in 2014, showing a sharp increase in the expected penetration of OTT video service in household TV sets throughout Europe by 2018.

[13] ACM (2014), 'Telecommonitor Second quarter 2014', p. 34 available at https://www.acm.nl/en/publications/publication/13555/Telecom-market-figures-for-Q2-2014/).
[14] KPN (2013), 'KPN response to the European Commission's public consultation on a revision of the recommendation on relevant markets', 8 January, p. 1.

Figure 2.5 Household penetration of OTT video services on TV sets by countries in Western Europe



Source: Analysys Mason (2014), 'Limits of global convergence – The European TV industry in global competition', presentation to Euroreg 2014 by Lluís Borrell, Roland Husson and Nico Flores, 27 March, slide 6.

These services are an emerging challenge for telecom and cable operators, offering innovative services on the supply side and altering consumer habits on the demand side. With the continued expansion of broadband Internet, a number of high-profile OTT services have recently entered the media market, and increasingly impose competitive constraints on KPN and UPC/Ziggo's media offerings. Examples of such OTT services include Netflix, NLZiet, RTL XL, Kijk.nl and Videoland.

Similarly, OTT providers are also active in the provision of voice services. KPN recognises the threat from OTT players and, in a submission to the Commission, notes:

> An increasing number of new players are entering the market for electronic communication. Over the top (OTT) services are delivered to end user over the open Internet. Some of these services are competing directly with traditional services. Examples such as Whatsapp an iMessage compete directly with SMS and a number of VOIP services compete directly with traditional telephony services.
>
> Also established players in other markets are entering traditional telecom markets. Microsoft for instance introduced ‚Microsoft Lync' over the open Internet; a communication service that competes directly with traditional telephony services. Microsoft also owns Skype, a well-known OTT telephony solution. Facebook recently announced to make it possible for its users to call each other free of charge, which – given the large number of Face-book users - creates a

> strong and direct competition. For these OTT services, there is no need for national presence any more. Services delivered in one country, such as The Netherlands, can be hosted anywhere in the world.[15]

The competitive pressure from OTT players is independent of the presence of wholesale access regulation. From an economic perspective, these new services contribute to enhanced and more uncertain dynamics in the market. This changes in the way that communications services are consumed, together with the increasing demand for higher Internet speeds, are an important driver of both KPN and UPC/Ziggo's quality and service upgrades. Both these operators continue to plan for how to deliver the increasing bandwidth requirements—UPC/Ziggo, through its forthcoming DOCSIS 3.1 upgrades, and KPN, through its hybrid network upgrade approach, using DSL, pair-bonding and factoring as well as FTTH (see Table 2.1).

Table 2.1 KPN access network speeds (% of households)

Download speed (Mbps)	2013	2015
>40	~70%	~80%
100	~30%	~65%
200	~25%	~55%
500	~25%	~30%

Source: KPN Capital Market Days presentation, The Netherlands, by Joost Farwerck, 19 February 2014, slide 7.

2.5 Effect of the UPC/Ziggo merger

ACM implicitly points to the recent merger of UPC and Ziggo as a source of worsening competition in the retail broadband market. Although ACM does not explicitly state that it disagrees with the Commission's Phase II review findings, it does cite the similarity of average (across different segments) market shares in the broadband market as a factor contributing to an increased risk of joint SMP (However, as we discuss in section 3.2.1, this symmetry in average market share hides asymmetries in different customer segments). Furthermore, precisely by altering its treatment of UPC/Ziggo since the previous market review without offering an alternative explanation, ACM makes a strong implication that the merger is viewed in this way.

However, following the merger, UPC/Ziggo is better placed and has more to gain from exploiting its existing (and future) competitive advantages over KPN. Operating on a near-national scale, UPC/Ziggo now has an increased ability to gain customers through its superior fixed Internet offerings. This incentive will be further expanded following the forthcoming DOCSIS 3.1 upgrade for cable networks, which will allow even higher speeds.

On the flipside, KPN now faces an increased vulnerability since a greater proportion of its customer base is now being contested for by the merged UPC/Ziggo. This increased vulnerability can be expected to result in KPN responding with *more* fierce competition, not less. An important example of KPN improving its ability to compete with UPC/Ziggo is its ongoing investments to upgrade its copper network while also rolling out its new FTTH network. This hybrid approach (see Table 2.2) helps KPN continue to compete with UPC/Ziggo, by providing higher broadband speeds (and a better IPTV services) sooner and at a lower cost than a FTTH-only approach. We also note that KPN

[15] KPN (2013), 'KPN response to the European Commission's public consultation on a revision of the recommendation on relevant markets', 8 January, p. 2.

now has full control of Reggefiber and this provides it with complete control over Reggefiber's FTTH rollout in the Netherlands.[16]

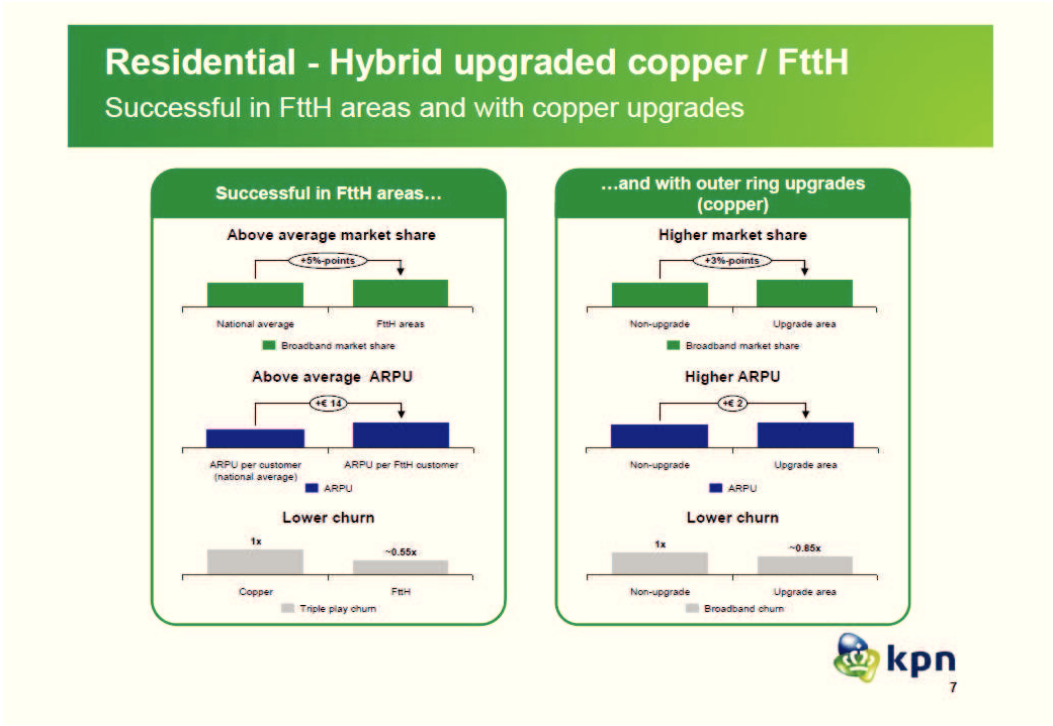
Table 2.2 KPN's options for optimising hybrid network

	Download speed (Mbps)	Upload speed (Mbps)
VDSL2	>40	10
VDSL2 vectoring	>100	30
VDSL2 bonded vectoring	>200	60
FTTH	>500	>500

Source: KPN Capital Market Days presentation, The Netherlands, by Joost Farwerck, 19 February 2014, slide 7.

There is evidence that this hybrid approach is working for KPN, which is in a better competitive position in areas with hybrid upgraded copper *or* FTTH. For example, KPN currently has a larger market share and ARPU in these areas, as well as lower churn rates (see Figure 2.6).

Figure 2.6 KPN success in FTTH and hybrid upgraded copper areas



Source: KPN Capital Market Days presentation, Consumer, by Jaap Postma, 19 February 2014, slide 7.

[16] http://corporate.kpn.com/press/press-releases/kpn-receives-regulatory-approval-for-full-control-of-reggefiber.htm

3 The established criteria for joint SMP/tacit collusion are not met

3.1 Established criteria followed by ACM

Looking forward, even if it is assumed (as ACM does) that, without regulation, KPN would no longer provide wholesale access to its network on purely commercial terms[17] the evidence examined in this report points towards a competitive market for retail broadband in the Netherlands. In particular, neither the incentive nor the required market conditions for coordination between KPN and UPC/Ziggo are apparent.

In its analysis, ACM references[18] the criteria laid down in the European Commission's guidelines on the assessment of horizontal mergers as one framework for assessing the possibility of joint SMP.[19] These criteria stipulate three factors that are required for the effective coordination needed to exercise joint SMP.

1. **Transparency around a focal product**: in order to coordinate behaviour, firms must identify both the product and factors (such as price or features) on which they are coordinating. Furthermore, if a deviation from the coordinated outcome is to be easily detected, the actual behaviour of each party must be both observable and comparable.
2. **A credible punishment mechanism**: if a deviation from the coordinated outcome is detected, firms require a quick and effective retaliation to discipline the deviant party. To be credible, the punishment strategy must inflict sufficient harm on the deviant firm without any substantial long-term harm to the retaliatory party (although a short period of profit sacrifice may be accepted to enforce a longer-term beneficial outcome).
3. **A sufficiently stable market**, such that neither current nor potential future fringe competitors could disrupt a coordinated outcome.

Furthermore, ACM considers the following.

4. **The degree of symmetry between the parties**: as discussed in section 2.5, the European Commission considered this point at length in its Phase II review of the UPC/Ziggo merger. It concluded that the apparent increase in symmetry from more equal market shares was insufficient to have any effect on the likelihood of coordination, all the more so given the critical *asymmetries* between KPN and UPC/Ziggo that remain.

The following sub-sections consider first the incentives that KPN and UPC/Ziggo have to enter a coordinated outcome, before assessing the possibility based on the first three points above.

We conclude that ACM's assessment of the likelihood of joint dominance is lacking, and that KPN and UPC/Ziggo have neither the incentive nor the ability to exercise joint SMP over the retail broadband market.

[17] We note that KPN has a well established wholesale business and could build on this in the future by offering wholesale access on commercial terms. This could enable it to earn wholesale revenues in addition to retail revenues. Therefore the assumption that KPN would no longer provide wholesale access to its network on purely commercial terms is questionable.
[18] ACM (2014), 'Marktanalyse ontbundelde toegang; Ontwerpbesluit voor nationale consultatie', 31 October, paragraph 652.
[19] European Commission 'Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings', para. 39 ff.

3.2 No incentive for KPN or UPC/Ziggo to share the market

ACM paints a picture of two highly symmetrical operators providing near-identical products and that, as a result of these similarities, these operators are incentivised to reach a tacit agreement and 'share' the market. This assessment is lacking in several dimensions.

First, as discussed and evidenced in section 2, given short- and long-term dynamic competition in the communications market in the Netherlands (characterised by fierce competition between KPN and UPC/Ziggo, evolving consumer demand and disruptive competition from OTTs), KPN and UPC/Ziggo have strong incentives to compete with each other, invest, innovate and introduce new products and services.

Second, there remain significant asymmetries between KPN and UPC/Ziggo despite their apparent similarities. Principal among these differences are market shares in different market segments, scope economies, and the technical positions and upgrade opportunities that each operator enjoys. These asymmetries mean that UPC/Ziggo and KPN are incentivised to obtain subscribers while they can, and both operators are incentivised to upgrade their respective networks to compete more effectively with each other.

3.2.1 Critical asymmetries in market segments and scope economies between KPN and UPC/Ziggo

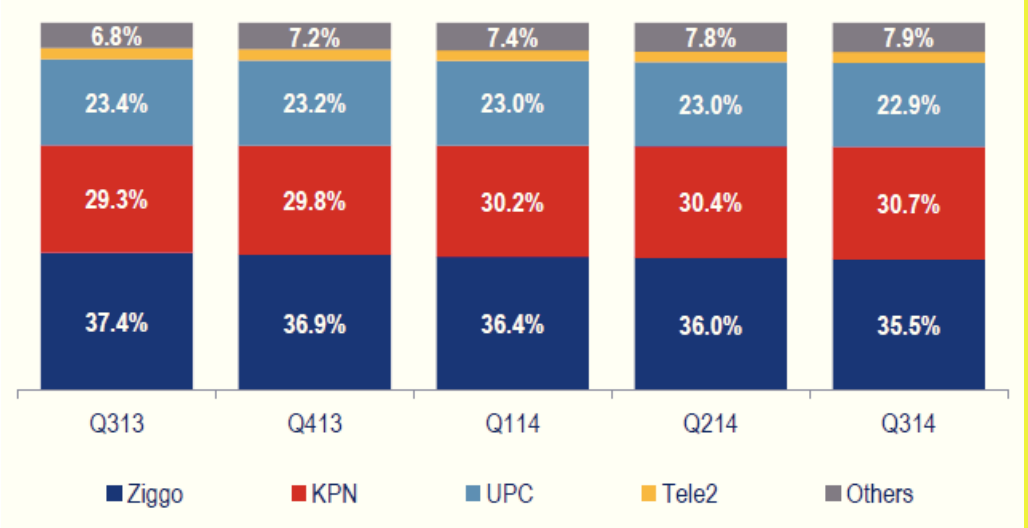
While there are some symmetries between KPN and UPC/Ziggo (e.g. in average market shares across different consumer segments and geographic reach), there remain asymmetries in KPN and UPC/Ziggo market shares in different customer segments (and the business market) as well as the scope economies available to each firm. These differences mean that KPN and UPC/Ziggo have incentives to compete vigorously.

Asymmetries in market segments

We note that, despite the relatively symmetric aggregate market shares, there is asymmetry in the market shares of KPN and UPC/Ziggo in different customer segments. For example, KPN dominates the low speed segment, while UPC/Ziggo is stronger in the higher speed segments. This current position reflects KPN's historical position in the broadband market. UPC/Ziggo is also currently stronger in the triple play segment as can be seen in Figure 3.1 below.

As discussed in Section 2.4.1 customer demand is evolving with retail demand for both higher speeds and bundled offers increasing. This means that both KPN and UPC/Ziggo have incentives to compete with each other to increase their market shares in these growing customer segments which are often more profitable as well (for example churn rates for triple play subscribers is lower – see Figure 3.4). Indeed there is evidence that both KPN and UPC/Ziggo actively pursue strategies to capture market shares in these segments (see Figure 3.2 for and Figure 3.3 for UPC and KPN's triple play strategy).

Figure 3.1 Market shares in the triple-play segment



Source: Telecompaper (2014), 'Dutch Broadband Q3 2014', 18 November.

KPN and UPC/Ziggo competition for triple play bundles

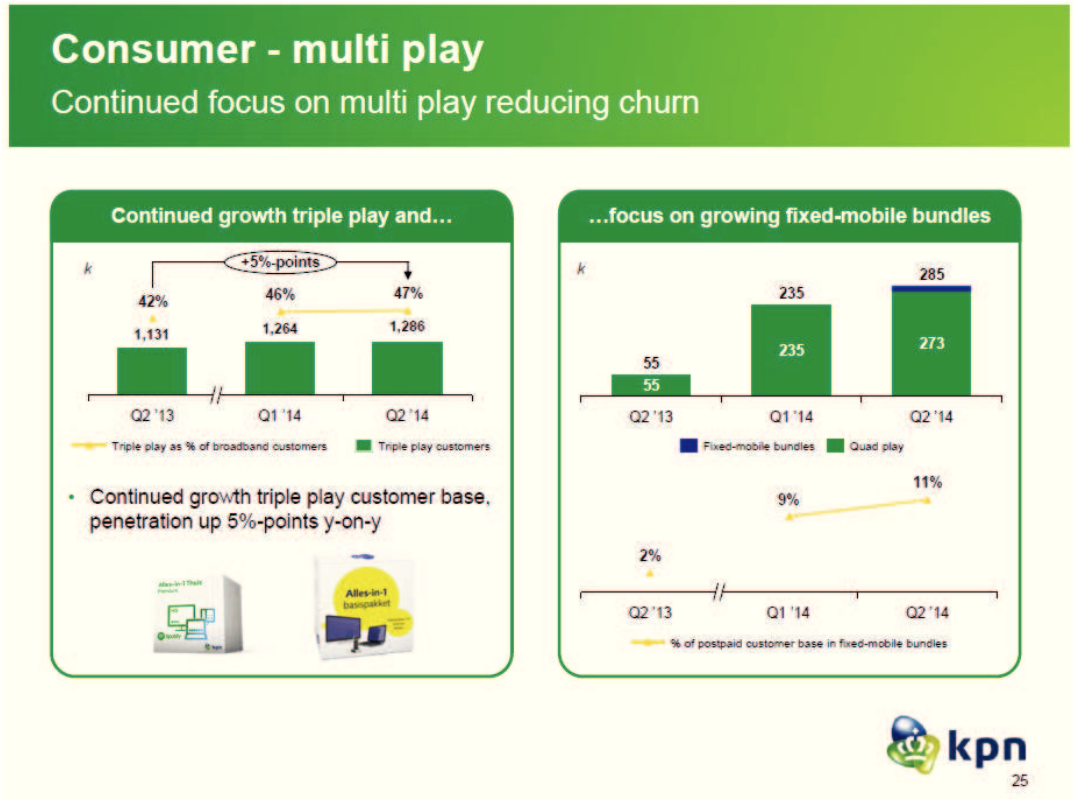
As can be seen in Figure 3.2 and Figure 3.3, both UPC and KPN actively target triple play customers, and bundling is successful strategy to reduce churn (Figure 3.4).

Figure 3.2 [CONFIDENTIAL]

[CONFIDENTIAL]

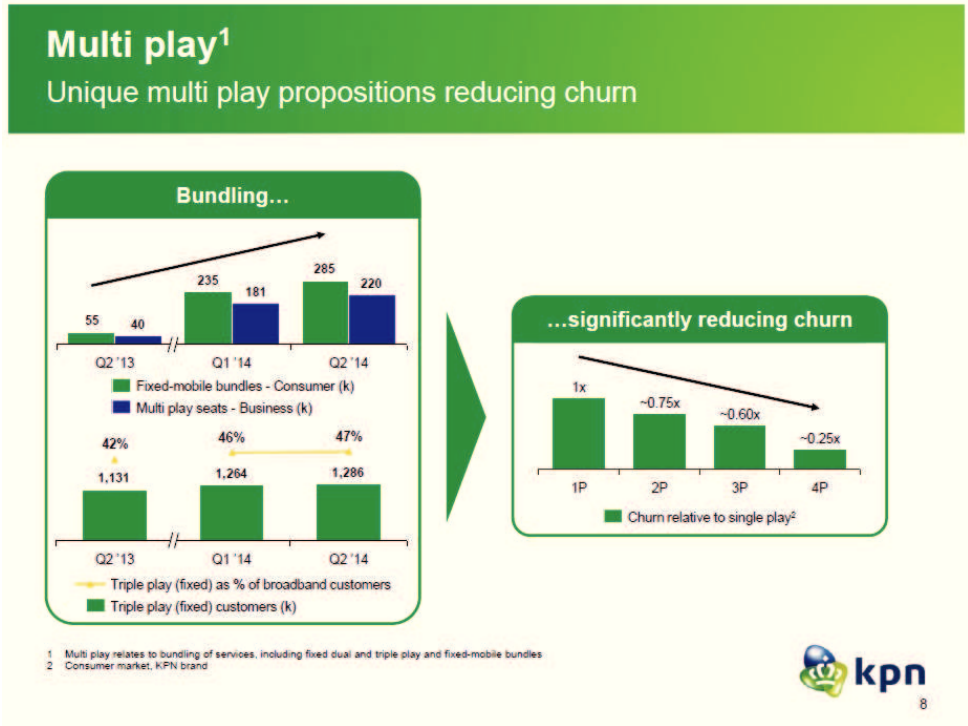
Source: UPC NL, **[CONFIDENTIAL]**.

Figure 3.3 KPN triple play strategy



Source: KPN, Second Quarter 2014 Results Presentation, 30 July 2014, slide 25.

Figure 3.4 Bundling as a strategy to reduce churn



Source: KPN, Second Quarter 2014 Results Presentation, 30 July 2014, slide 8.

Asymmetries in scope economies and investment incentives

In addition ACM recognises that there are asymmetries in scope (most notably in the provision of mobile services with KPN owning a mobile network which

UPC/Ziggo does not and in the provision of business services). These are significant differences, especially the scope economies in the provision of mobile services, as quad play service bundles become increasingly popular.[20]

We also note that the investment incentives for KPN and UPC/Ziggo are likely to be affected by these differences in scope economies. For example, given KPN's strategy to use mobile-fixed bundles to improve its position in the bundles market (Figure 3.3), its investment will be split between its fixed and mobile networks. UPC/Ziggo (which does not operate a mobile network) on the other hand is likely to focus investment in its cable network **[CONFIDENTIAL]**. These asymmetries in investment incentives and further asymmetries in the investment and technology cycles (discussed next) are further reasons why KPN and UPC/Ziggo will have incentives to compete vigorously.

3.2.2 Asymmetry in investment and technology cycles

A second factor providing a disincentive for KPN and UPC/Ziggo to coordinate is the marked difference in these firms' investment costs and technological development cycles. This, combined with the lack of a credible commitment mechanism (see section 3.4) makes long-term coordination to reduce competitive interaction unlikely.

The two network operators (KPN and UPC/Ziggo) work with technically dissimilar systems and, as a result, face substantially different cost profiles (an important point lost by ACM's simplistic assessment of the operators as similarly 'high fixed cost, low marginal cost' firms). **[CONFIDENTIAL]**. The implementation of DOCSIS 3.1 **[CONFIDENTIAL]** to offer speeds in excess of 200mbps (and up to 10Gbps in lab testing).[21] This upgrade also benefits from backward compatibility, reducing the need for—and cost of—customer premises equipment (CPE) upgrades.

In contrast, to reach speeds of this magnitude with existing technologies, KPN would need to continue with the (multi-billion Euro) roll-out of its glass-fibre network. This is both time consuming and highly costly for KPN. In order to remain competitive with the more rapidly advancing cable network, KPN is also investing heavily in upgrades to its copper network, such as the roll-out of VDSL2 bonding and vectoring technologies.

The dynamic nature of these technical dissimilarities means that the opportunity to gain a technical advantage through network upgrades will come at different times for each of UPC/Ziggo and KPN. For example, the ITU have just announced the adoption of a new 'G.fast' standard allowing the provision of up to 1Gbps broadband over existing copper infrastructure.[22] Although the areas in which this technology will be practical are limited by line-length, over time developments such as this (as well as fibre roll-out) will erode the current position of technical leadership enjoyed by cable. This results in a 'leap-frogging' of technical superiority in the market, between KPN and UPC/Ziggo at any given time.

Knowing this—combined with the low marginal cost of operation, compared to the high cost of network investment—when a window of opportunity to enjoy a technical advantage presents itself, both KPN and UPC/Ziggo are strongly

[20] ACM (2014), 'Marktanalyse ontbundelde toegang; Ontwerpbesluit voor nationale consultatie', 31 October, paragraph 626.
[21] Speed tests by Virgin Media, reported by ISPreview at: http://www.ispreview.co.uk/index.php/2014/07/virgin-media-uk-lab-testing-10gbps-docsis-3-1-broadband-upgrade.html, accessed 9th December 2014.
[22] http://www.itu.int/net/pressoffice/press_releases/2014/70.aspx#.VIb9bTGsV50

incentivised to take that opportunity, creating instability for any hypothetical coordination.

This is because having made the investment to gain a technical advantage, each party is then incentivised to compete vigorously with the other to attract new subscribers onto its superior platform. In contrast, if one of the parties does not take the opportunity to invest, it leaves itself exposed to a much larger competitive threat in the future. Assume (as would seem reasonable) that the available technologies continue to develop; and that the competing party is presented with a new technical upgrade option—outstripping the upgrade foregone by the first party—which it chooses to make. This competing party now has a far superior network and the first party has missed the window of opportunity to take a technical leadership position to attract subscribers. Other than competing on price alone, the first party has no recourse in the face of the superior competitive offer.

Considering the available evidence from the market, Oxera finds that KPN and UPC/Ziggo have been—and can be expected to continue—competing in quality, investing in network upgrades and expanding their services to continue to attract subscribers. Appendix A1 details a number of the recent upgrades and service offers that both KPN and UPC/Ziggo have introduced in this way.

Moreover, whilst the full competitive cycle between KPN and UPC/Ziggo might extend beyond the three-year forward-looking window examined by ACM, many of the steps necessary for this competition to unfold will occur during this assessment timeframe and should not be discounted.

For example, the development of the DOCSIS 3.1 standard; the continued expansion of KPN into new services and bundle offerings such as TV and quad-play; the phasing of glass-fibre roll-out together with KPN's roll-out of VDSL2 bonding and vectoring technologies to allow it to compete sooner with the increased broadband speeds offered over cable, all offer short-term examples of the competitive interaction between KPN and UPC/Ziggo. With these upgrade steps underway, not only is coordination likely to be a sub-optimal strategy for the parties; but for the reasons discussed above any attempt at coordination could be expected to be unstable and ultimately collapse.

Finally, in this regard Oxera also disagrees with the comments made by ACM about incentives to collude because of long-term horizons.[23] ACM's point here is a purely theoretical one: if parties have a long-term horizon and give great weight to future income streams (in technical terms, they have a low discount rate; in non-technical terms, they are patient), they are more likely to collude, as the short-term benefit from 'cheating' is outweighed by the long-term benefits of maintaining coordination. However, ACM's theoretical point carries no weight here. As discussed in this section, the effect of the parties' longer-term outlook is rather the other way around: it makes them less likely to collude in the next three years.

[23] ACM (2014), 'Marktanalyse ontbundelde toegang; Ontwerpbesluit voor nationale consultatie', 31 October, paragraphs 674-676.

3.3 Differentiated product offers make any coordination hard to achieve and sustain—No focal product

3.3.1 Differentiated offerings

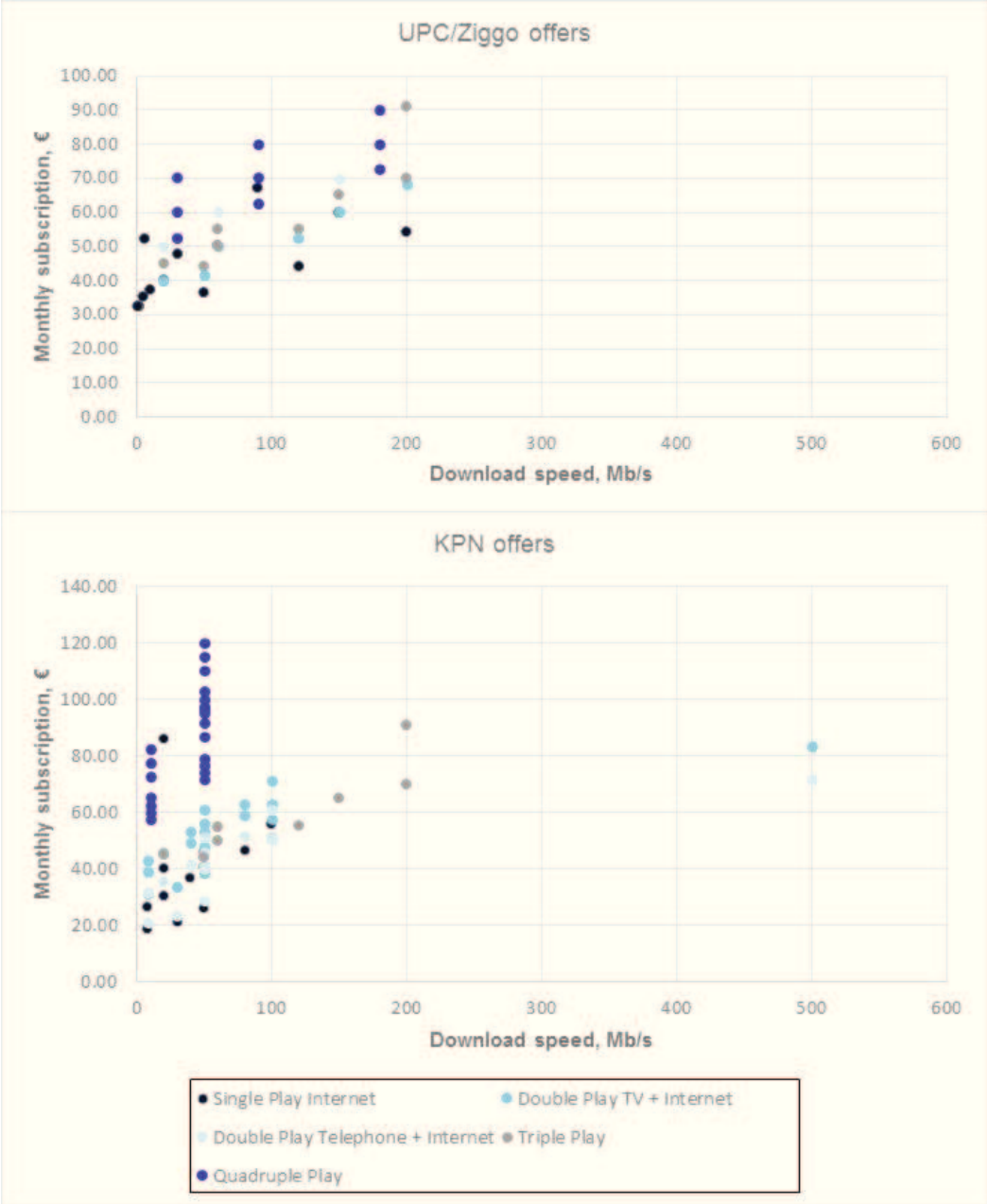
As ACM highlights,[24] retail broadband Internet access is a highly differentiated product. As well as being offered at different speeds, using different technologies (which themselves offer different characteristics and service levels), at different price points; retail broadband is also frequently supplied as one part of numerous different bundle offers.

Assessing 'the price' of the broadband offered in a dual, triple, or even quad-play bundle is not straightforward. More so given the large number of variations possible with respect to the other bundle elements. This complicated retail structure obfuscates the market, making any form of tacit collusion unstable and thus unlikely.

The table in Appendix A2 details the wide variety of offers from KPN and UPC/Ziggo that include broadband Internet (we note that UPC/Ziggo does not offer a stand-alone retail broadband product, it only sells broadband bundled with TV and other services). These include stand-alone offers, dual-play, triple-play and—increasingly—quad-play bundles. The wide variation in the price and Internet speed offered in these bundles, both between KPN and UPC/Ziggo and within each operator's own product portfolio is clear from Figure 3.5. UPC/Ziggo currently offers a greater range of speeds in its bundles, up to 200mbps, at comparatively competitive price points. KPN on the other hand offers a range of bundles up to 100mbps, with a particularly large range of price points including 50mpbs broadband. It does not offer anything in the 100mbps to 200mbps range, but is able to offer 500mbps in glass-fibre areas.

[24] ACM (2014), 'Marktanalyse ontbundelde toegang; Ontwerpbesluit voor nationale consultatie', 31 October, paragraphs 555-567 and 623-628.

Figure 3.5 UPC/Ziggo and KPN individual and bundle offerrings by Internet download speed and price



3.3.2 Churn figures also inappropriate for monitoring

We note that like market shares (3.2.1), churn figures can also not be used as a basis for market monitoring and coordination between KPN and UPC/Ziggo.

It is recognised in the economics literature that price transparency is a crucial aspect of coordination. If prices are unobserved (or, as in this case, suitably obfuscated, as operators cannot observe which particular package a consumer switches to) a firm losing sales and observing churn rates cannot determine *why* this is happening—an unexpected change in demand, or a deviation from the coordinated outcome by the other parties. In such a case, it can be expected that a punishment strategy will be erroneously employed in instances of naturally decreasing demand, having the effect of destabilising the coordination.

In addition although the churn rate may be observable, it would be an insufficient instrument to monitor a coordinated outcome for deviations. This is because there is no single, simple measure of churn that KPN or UPC/Ziggo can easily monitor. Rather, churn can differ between product categories (e.g. individual TV/voice/broadband service, double-play bundles, triple-play bundles), subscriber types (e.g. low-/high-value subscribers), etc. This variety of churn parameters makes identifying churn as a result of competitor actions substantially more difficult.

Furthermore, number portability platforms (which are inherently pro-competitive) might assist with identifying where subscribers are switching to it provides no further information on *why* consumers are choosing to switch (for example, which of the many product features offered by a competitor is attractive to a switching subscriber.

In summary, monitoring churn would seem to provide firms with too little information to act as an effective monitoring tool for a coordinated outcome. The degree of transparency overall is insufficient.

3.4 ACM's proposed 'punishment mechanism' is not credible

ACM puts forward the theory that KPN and UPC/Ziggo would have a deterrent mechanism to enforce coordination, in the form of 'price wars'.

However, it is questionable how credible the threat of a price war in response to coordination deviations would be. For a threat to be perceived as credible, it must be understood to be the self-interested response of the punishing firm *given* the deviation has occurred. In this case, it is hard to conclude that a (possibly irreversible) price war would be in the best interest of either KPN or UPC/Ziggo if the other had deviated from the coordinated outcome. This casts doubt on whether the threat of a price war would ever actually be enacted.

Moreover, in a typical theory of coordination, a punishment strategy will be enacted for long enough following a deviation to negate any gain to the deviating party. Following this, both parties would return to the coordinated outcome. However if the coordinated outcome was to include a reduced investment in network upgrades then a deviation would be represented by an *irreversible* investment in network infrastructure. In this case, there is no prospect for a return to the pre-deviation coordinated outcome following a punishment period.

Finally, the nature of the market is such that consumers are typically locked-in to a contract with their existing provider for a certain length of time. Such switching costs may impact on the efficacy of a price war as a punishment strategy. The degree of churn, it is possible for the punishment to stimulate from the deviating party is limited by the contract terms.

Overall, whilst a price war might be an effective punishment mechanism, it does not appear to be a *credible* one. Knowing this, the parties are less inclined to adhere to any coordinated outcome that might be envisaged, making a position of joint SMP unlikely.

3.5 Price elasticity evidence indicates fierce competition, and does not imply risk of tacit collusion

ACM in essence paints a picture of an overall retail broadband market with inelastic market demand (paragraph 684 of the ACM report mentions a market

elasticity of -0.4)[25], but high firm-specific elasticities (or cross-price elasticities) for KPN and UPC/Ziggo. This follows from the research by Blauw, which suggest a price elasticity of demand for copper-based Internet access of -2.14.[26] ACM draws as an inference from this high elasticity that either KPN or UPC/Ziggo can simply reduce price temporarily as a disciplining mechanism, as such a price reduction would immediate attract switchers.

In the previous sub-section we already commented on why this disciplining mechanism is not credible. Here we add the following comments.

First, the evidence that the overall market is inelastic is not clear-cut. ACM cites a study dating from 2008 by Cadman and Dineen. The retail broadband market has changed significantly since then, in particular with the growth of multi-play packages. It would not be straightforward to measure a 'market' elasticity when the market itself consists of highly differentiated products.

Second, the fact that the firm-specific elasticities are high, as implied by Blauw, shows just how competitive the market is in the absence of coordination. ACM cannot simply rely on the theoretically circular principle: the more competitive a market is absent coordination, the greater the attractiveness of coordination to the parties. One has to look at the facts of the case to determine whether the parties are able to sustain coordination in order to avoid fierce competition. The analysis in this report demonstrates that this is not the case, and that fierce competition is the more natural outcome in the market.

3.6 Competition from external parties prevents coordination

As mentioned earlier consumers increasingly buy broadband services in bundles. Some services in these broadband bundles may be supplied by other service providers (i.e. not KPN or UPC/Ziggo). Examples of such services include mobile services (in the case of UPC/Ziggo) and OTT media services like Netflix.

We have previously discussed the disruptive competition by OTTs which leads to a dynamic market with both KPN and UPC/Ziggo competing fiercely in the market. In the subsection below we discuss competition from mobile providers (like Vodafone) which creates a further competitive disequilibrium in the market.

The presence of these external parties means that any collusive agreement between KPN and UPC/Ziggo is only be sustainable with the implicit or explicit agreement of these eternal parties. There is no evidence to show that this is the case.

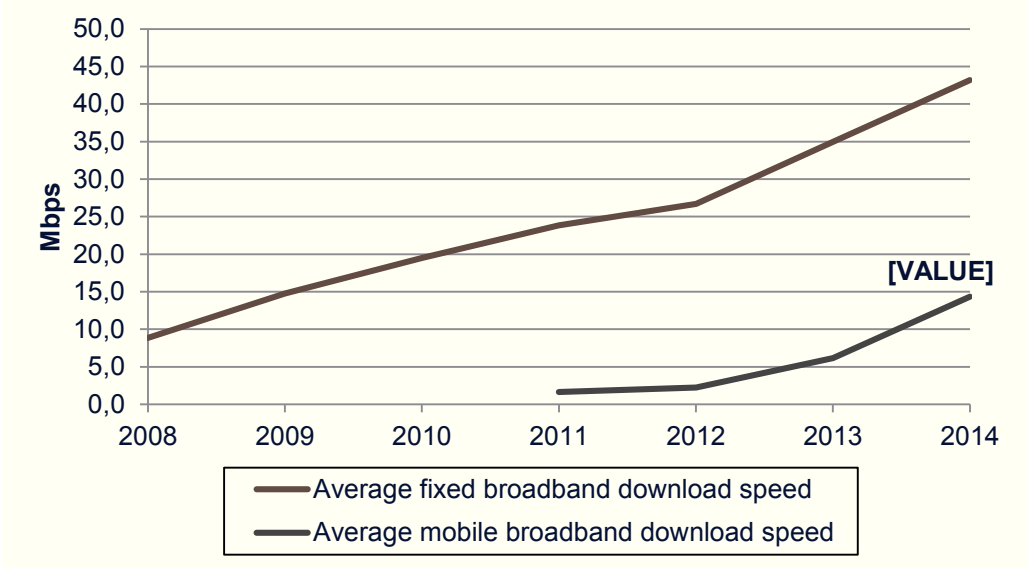
3.6.1 Competition from mobile

Although ACM considers mobile to lie outside the relevant market (retail fixed Internet access), it is not to say that mobile Internet cannot still pose a constraint on the fixed Internet operators. In fact, the evidence suggests that mobile Internet is likely to be a competitive driver over the longer term. Mobile Internet offers the obvious advantage over fixed Internet of easy portability. At present, this is counterbalanced by the fixed Internet operators' competitive advantage in terms of speed and bandwidth. However, this advantage must be maintained through ongoing investment as the mobile operators continue to extend their technologies.

[25] ACM (2014), 'Marktanalyse ontbundelde toegang; Ontwerpbesluit voor nationale consultatie', 31 October.
[26] Op. Cit., Table 36.

As is clear from Figure 3.6, the average speed offered over mobile Internet networks is roughly 5 years behind those offered on fixed Internet.

Figure 3.6 Fixed and mobile average intenet speeds over time



Source: Oxera

The pressure on KPN and UPC/Ziggo to invest will be maintained by the continuing threat of alternative technologies, such as LTE mobile services. This threat is already being realised, as a 2013 Telecompaper report on the Dutch market notes:[27]

> "The further development of LTE services is expected to lead to more mobile broadband connections and in some cases also as a replacement for fixed-line broadband services (particularly in rural areas)."

Table 3.1 and Table 3.2 illustrate the rapid increase in 4G connected subscribers and network coverage in the Netherlands. Moreover, mobile data speeds show a notable increase with the advent of 4G LTE technologies, now approaching 50 Mbps. This compares favourably with the speeds currently offered by UPC/Ziggo and KPN on lower-end packages and raises the possibility of greater direct competition from mobile operators.

Table 3.1 Estimated 4G enabled mobile subscribers in the Netherlands

Provider	2013 Q2	2013 Q3	2013 Q4	2014 Q1
KPN	20,000	200,000	543,000	1,022,000
Vodafone	-	200,000	-	900,000
T-Mobile	-	-	270,000	400,000
Total	20,000	400,000	813,000	2,322,000

Source: Various public sources, including MNO press releases and technology news.

[27] Telecompaper report, "Dutch broadband market Q3 2013":

Table 3.2 Indicative 4G coverage in the Netherlands, by operator

Provider	2013	2014	2015 (Projected)
KPN	70%	97%	100%
Vodafone	n/a	70%	100%
T-Mobile	10%	27%	100%

Source: Various public sources, including MNO press releases and technology news.

In light of the (arguably) superior convenience offered by mobile services, fixed-line operators must maintain their network quality and continually increase network speeds in order to retain a competitive advantage.

We note that future mobile broadband speeds are expected to increase further as 5G becomes available, with expected theoretical download speeds reaching 10 gigabits per second.[28] Thus, mobile operators will be able to offer services of an increasingly better quality to their subscribers. KPN and UPC/Ziggo have a clear incentive to continue investing in their networks and maintain their current competitive advantage over mobile operators in terms of broadband speeds and bandwidth.

[28] http://www.ispreview.co.uk/broadband_mobile.php

A1 Product innovations made by cable, telecom and mobile operators in the Netherlands (Aug-11 to Apr-14)

Date	UPC	Ziggo	KPN	Others
Aug-11	50/2.5 Mbps Internet tier introduced as core portfolio offer		Live TV service for iPads to be launched	
Sep-11		iTV added to Ziggo TV packages		
Oct-11			Spotify offered to customers for no extra cost Web-TV service launched	
Nov-11		Ziggo TV App for tablets and smartphones introduced		
Dec-11		Orion Webbox launched		
Jan-12			500 Mbps via fibre networks introduced	Apple TV offered by T-Mobile Online
Feb-12	Mobile Internet introduced		HD channels added to basic TV tier	
Mar-12			HD Voice added as regular service	LTE for tablets and laptops launched by Tele2
Apr-12	Internet speed raised up to 100 Mbps		HBO on fibre networks offered	500 Mbps over FTTH introduced by Vodafone
May-12	10 HD channels added in mid- and high-end packages Unlimited free calling to mobile phones added		Movie alert service launched App allowing customers to view their data, voice, and SMS consumption launched	
Jun-12			HBO launched SMS-alert for EPG introduced Broadband speed raised to 80Mbps	T-Mobile & Deezer Music Fixed option launched by T-Mobile
Jul-12	Internet speed upgrade in low-end triple-play package		Live TV service for smartphones launched	
Aug-12		Ziggo Muziek launched	IPTV service extended to smartphones 24/7 free customer service offered	Online back-up offered by Tele2 FTTH launched by Tele2 3G femtocell offloading launched by Vodafone
Sep-12	Horizon Gateway and Orion introduced		Cloud Storage service for mobile and business customers	

Date	UPC	Ziggo	KPN	Others
	Multiple screen channels added to basic TV package Internet speed upgrade to mid-tier triple-play customers		introduced	
Oct-12				HD, catch-up TV offering adjusted by Tele2
Nov-12				50/5 Mbps VDSL Internet launched by CanalDigitaal 'Follow me' service introduced by CanalDigitaal
Dec-12	HBO launched			5 GB free cloud storage offered by Vodafone
Jan-13			'Complete' Quadruple-play offering launched	Movie recording function to TV app added by CanalDigitaal Speeds upgrade made by T-Mobile
Feb-13			4G services in Amsterdam and North-Holland introduced	Unlimited calling to fixed, mobile launched by Tele2 Red bundles introduced by Vodafone
Mar-13		Cloud-based interactive TV service launched	Alert service in case of service disruptions introduced	
Apr-13	Internet speed upgrade to 30, 100 and 200 Mbps Unencrypted access introduced	Wi-Fi spots service launched		LTE at no extra charge introduced by T-Mobile Speed upgrade to 14.4 Mbps for tablets and laptops made by T-Mobile
May-13				Data allowance for Red bundle doubled to 2 GB by Vodafone
Jun-13		Free basic Internet security added	new data-centric mobile plans launched	Dual-play deal without TV launched by CanalDigitaal HD deal for Digitenne customers introduced by CanalDigitaal Wi-Fi in large cities launched by Vodafone Wi-Fi zone in

Date	UPC	Ziggo	KPN	Others
				Rotterdam introduced by T-Mobile
Jul-13	Horizon H2 + remote introduced	Internet speed upgrade to 20/2, 60/6 and 150/15 Mbps CI+1.3 module introduced	Security package for smartphones and tablets introduced Windows 8 app for IPTV service added	Fibre services launched by CanalDigitaal
Aug-13				4G in big cities added by Vodafone
Sep-13	Internet speed upgrade to 50, 120 and 200 Mbps	Ziggo Mobiel launched	Series recording to TV service added	Free access to HBO Go for new Red customers offered by Vodafone
Oct-13	Wi-Fi spots roll-out started	Free Wi-Fi for all consumers launched	VoIP app for mobile calls on home Wi-Fi network added Film1 launched IPTV programme restart service added	DTT service launched by CanalDigitaal 0 GB data LTE bundle added by T-Mobile
Nov-13		CI+1.3 interactive module added	VoD service with Videoland launched IPTV service extended to Xbox	4G services launched by T-Mobile
Dec-13			4G added to Basic subscriptions	
Jan-14			Vectoring roll-out expanded 500 Mbps FttH service expanded 3G speed upgrade to 14.4Mbps	Size of Red data bundles increased by Vodafone Choice of home broadband plans expanded by Vodafone
Feb-14			Fairphone added 4G roaming launched	Services on alternative FTTH networks launched by CanalDigitaal Mobile Internet speed upgrade by Vodafone
Mar-14			4G roll-out completed	HBO added by Tele2 LTE service expanded by Vodafone
Apr-14		Cloud mail service introduced Internet speed upgrade to 30/3, 90/9 and 180/18 Mbps		4G mobile hotspots introduced by T-Mobile

Source: Oxera, based on information provided by UPC/Ziggo.

A2 The wide variety of Internet packages and price points offered by KPN and UPC/Ziggo

Price (€/month)	KPN offers	UPC/Ziggo offers
18.50	(INT) Telfort Internet Instap	
21.00	(INT) Telfort Internet Standaard	
21.00	(2PTEL) Telfort Instap + Bellen Standaard	
23.50	(2PTEL) Telfort Standaard + Bellen Standaard	
26.00	(INT) Telfort Internet Extra	
26.50	(INT) KPN Internet Instap	
28.50	(2PTEL) Telfort Extra + Bellen Standaard	
30.50	(INT) XS4All Basis	
31.00	(2PTV) Telfort Internet Instap + Interactieve TV	
31.50	(2PTEL) KPN InternetPlusBellen Instap	
32.20		(INT) UPC Internet 2
32.20		(INT) UPC Internet Starter
33.5	(3P) Telfort Alles-in-1 Instappakket	
33.50	(2PTV) Telfort Internet Standaard + Interactieve TV	
35.30		(INT) UPC Internet Power
35.58	(2PTEL) XS4ALL Internet Basis + Bellen	
36	(3P) Telfort Alles-in-1 Standaardpakket	
36.50		(INT) UPC 50 Mb Internet
36.50	(INT) KPN Internet Standaard	
37.05		(INT) UPC Internet Power
38.50	(2PTV) Telfort Internet Extra + Interactieve TV	
39.00	(2PTV) KPN Internet Instap + Digitenne	
39.95		(INT) Ziggo Internet Z1
39.95		(2PTV) Ziggo TV + Internet Z1
40.00	(INT) XS4All Lite	
40.00	(2PTEL) Telfort Glasvezel Internet & Bellen 50	
40.67	(INT) XS4All Extra	
41	(3P) Telfort Alles-in-1 Extrapakket	
41.50		(2PTV) UPC 2-in-1 Basis
41.50	(2PTEL) KPN InternetPlusBellen Standaard	
41.50	(2PTEL) KPN Glasvezel Instap + Bellen	

Price (€/month)	KPN offers	UPC/Ziggo offers
43.00	(2PTV) KPN Internet Instap + Interactieve TV	
44		(3P) UPC Alles-in-1 Basis
44.00		(INT) UPC 120 Mb Internet
44.95		(3P) Ziggo Alles-in-één Basis
45	(3P) Telfort Alles-in-1 Glasvezel	
45	(3P) Telfort Alles-in-1 Glasvezel Basis	
45.75	(INT) XS4All Glas Basis	
45.75	(2PTV) XS4ALL Basis + Interactieve TV	
45.75	(2PTEL) XS4ALL Internet Extra + Bellen	
46.50	(INT) KPN Internet Premium	
47.50	(2PTV) Telfort Glasvezel Internet & Interactieve TV 50	
47.55		(INT) UPC Fiber Power 30
48	(3P) KPN Alles-in-1 Instap	
49.00	(2PTV) KPN Internet Standaard + Digitenne	
49.90		(2PTEL) Ziggo Internet Z1 + Telefonie
49.95		(INT) Ziggo Internet Z2
49.95		(2PTV) Ziggo TV + Internet Z2
50		(3P) UPC Alles-in-1 Standaard
50.00	(2PTEL) Telfort Glasvezel Internet & Bellen 100	
50.83	(3P) XS4ALL Basis + Bellen + Televisie	
50.83	(2PTEL) XS4ALL Glas Basis + Bellen	
51.50	(2PTEL) KPN InternetPlusBellen Premium	
51.50	(2PTEL) KPN Glasvezel Standaard + Bellen	
52.20		(INT) UPC Internet Power
52.45		(4P) All-in-one basic + mobile lot
52.5	(3P) Telfort Alles-in-1 Glasvezel 100	
52.50		(2PTV) UPC 2-in-1 Power
53.00	(2PTV) KPN Internet Standaard + Interactieve TV	
53.00	(2PTV) Glasvezel Instap + Interactieve TV	
54.00		(INT) UPC 200 Mb Internet
54.95		(3P) Ziggo Alles-in-één Plus
55		(3P) UPC Alles-in-1 Power

Price (€/month)	KPN offers	UPC/Ziggo offers
55.92	(2PTV) XS4ALL Extra + Interactieve TV	
55.93	(INT) XS4All Glas Extra	
57.5	(4P) Alles-in-1 instap + Budget mobiel 100 (2y) no Internet	
57.50	(2PTV) Telfort Glasvezel Internet & Interactieve TV 100	
58	(3P) KPN Alles-in-1 Standaard	
58	(3P) KPN Alles-in-1 Glasvezel Instap	
59.00	(2PTV) KPN Internet Premium + Digitenne	
59.90		(2PTEL) Ziggo Internet Z2 + Telefonie
59.95		(4P) All-in-one basic + mobile loads
59.95		(INT) Ziggo Internet Z3
59.95		(2PTV) Ziggo TV + Internet Z3
60	(4P) Alles-in-1 instap + Budget mobiel 300 (2y) no Internet	
61	(3P) XS4ALL Extra + Bellen + Televisie	
61.00	(2PTV) XS4ALL Glas Basis + Interactieve TV	
61.01	(2PTEL) XS4ALL Glas Extra + Bellen	
62.45		(4P) All-in-one plus + mobile lot
62.5	(4P) Alles-in-1 instap + Basis mobiel 150 (2y)	
63.00	(2PTV) KPN Internet Premium + Interactieve TV	
63.00	(2PTV) Glasvezel Standaard + Interactieve TV	
64.95		(3P) Ziggo Alles-in-één Extra
65	(4P) Alles-in-1 instap + Basis mobiel 300 (2y)	
66.08	(3P) XS4ALL Glas Basis + Bellen + Televisie	
67.05		(INT) UPC Fiber Power 90
68	(3P) KPN Alles-in-1 Premium	
68	(3P) KPN Alles-in-1 Glasvezel Standaard	
68.00		(2PTV) UPC 2-in-1 Extra Power
69.90		(2PTEL) Ziggo Internet Z3 + Telefonie
69.95		(4P) All-in-one basic + mobile "Hééél veel"
69.95		(4P) All-in-one plus + mobile loads
70		(3P) UPC Alles-in-1 Extra Power
71.18	(2PTV) XS4ALL Glas Extra + Interactieve TV	
71.5	(4P) Alles-in-1 standaard + Budget mobiel 100 (2y) no Internet	

Price (€/month)	KPN offers	UPC/Ziggo offers
71.50	(2PTEL) KPN Glasvezel Premium + Bellen	
72.45		(4P) All-in-one extra + lot
72.5	(4P) Alles-in-1 instap + Mobiel instap (2y)	
74	(4P) Alles-in-1 standaard + Budget mobiel 300 (2y) no Internet	
76.26	(3P) XS4ALL Glas Extra + Bellen + Televisie	
76.5	(4P) Alles-in-1 standaard + Basis mobiel 150 (2y)	
77.5	(4P) Alles-in-1 instap + Mobiel standaard (2y)	
79	(4P) Alles-in-1 standaard + Basis mobiel 300 (2y)	
79.95		(4P) All-in-one plus + mobile "Héééél veel"
79.95		(4P) All-in-one extra + loads
82.5	(4P) Alles-in-1 instap + Mobiel premium (2y)	
83.00	(2PTV) Glasvezel Premium + Interactieve TV	
85.90	(INT) XS4All Fast	
86.5	(4P) Alles-in-1 standaard + Mobiel instap (2y)	
88	(3P) KPN Alles-in-1 Glasvezel Premium	
89.95		(4P) All-in-one extra + "Héééél veel"
91		(3P) UPC Alles-in-1 Extreme Power
91.5	(4P) Alles-in-1 standaard + Mobiel standaard (2y)	
95	(4P) Alles-in-1 premium + Budget mobiel 100 (2y) no Internet	
96.5	(4P) Alles-in-1 standaard + Mobiel premium (2y)	
97.5	(4P) Alles-in-1 premium + Budget mobiel 300 (2y) no Internet	
100	(4P) Alles-in-1 premium + Basis mobiel 150 (2y)	
102.5	(4P) Alles-in-1 premium + Basis mobiel 300 (2y)	
110	(4P) Alles-in-1 premium + Mobiel instap (2y)	
115	(4P) Alles-in-1 premium + Mobiel standaard (2y)	
120	(4P) Alles-in-1 premium + Mobiel premium (2y)	

Note: This is based on portfolio of products offered in 2013-14. This portfolio has changed since but still shows a similar picture of diversity. (INT) indicates an Internet only product. (2PTV) indicates a dual play bundle, with TV. (2PTEL) indicates a dual play bundle with fixed voice telephony. (3P) and (4) represent triple- and quad-play bundles respectively.
Source: Oxera based on Telecom Paper data and supplemented by web research.

A3 Bundle offers considered within each market tier for Oxera's pricing analysis

	Low-end	Mid-tier	High-end
Ziggo	Ziggo Alles-in-één Basis	Ziggo Alles-in-één Plus	Ziggo Alles-in-één Extra
KPN	Alles-in-1: InternetplusBellen Basis + Interactieve TV (May/11-Jun/11), Voordeelpakket (Jul/11-Oct/11), Alles-in-één Basis (Nov/11-Jan/12), KPN Alles-in-één Instap (Feb/12 onwards) Internet+Bellen+TV: InternetplusBellen Basis + Digitenne TV	Alles-in-1: InternetplusBellen Extra + Interactieve TV (May/11-Jun/11), Sneller Internet (Jul/11-Oct/11), Alles-in-één Extra + sneller internet (Nov/11-Jan/12), KPN Alles-in-één Standaard (Feb/12 onwards) Internet+Bellen+TV: InternetplusBellen Extra + Digitenne TV	Alles-in-1: InternetplusBellen Premium + Interactieve TV (May/11-Jun/11), KPN Alles-in-één Premium (Feb/12 onwards) Internet+Bellen+TV: InternetplusBellen Premium + Digitenne TV Fibre: KPN Alles-in-1 Glasvezel Standaard
UPC	Alles in één – Voordeelpakket (May/11-Aug/13), UPC Alles-in-1 Basis (Sep/13 onwards)	Meer TV met 25MB (May/11-Aug/11), Alles in één - Voordeelpakket met 50Mb (Sep/11-Aug/12), Horizon met 60Mb (Sep/12-Feb/13), Alles-in-1 Power (Mar/13-May/13), Alles-in-1 Standaard (Jun/13-Aug/13, Alles-in-1 Power (Sep/13 onwards)	Meer TV en Sneller Internet (May/11-Apr/12), Meer TV met 100MB (May/12-Aug/12), Horizon TV met 120MB (Sep/12-Feb/13) Alles-in-1 Extra Power (Mar/13 onwards)
Telfort	Telfort Alles-in-1 Standaardpakket	Telfort Alles-in-1 Extrapakket	
XS4ALL		XS4ALL Basis + Bellen + Televisie	XS4ALL Extra + Bellen + Televisie

Source: Oxera assesment of available Telecom Paper data

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