BELGIAN INSTITUTE FOR POSTAL SERVICES AND TELECOMMUNICATIONS

CONSULTATION AT THE REQUEST OF THE MINISTER

ON

THE STRATEGIC OPTIONS TO

PROMOTE THE DEVELOPMENT OF THE BROADBAND MARKET

At the request of BIPT the consultants of Analysys Mason and Hogan & Hartson have drawn up a report regarding the development of the broadband market in Belgium and have suggested a certain number of possible actions to promote competition on this market.

At the request of Mr Vincent van Quickenborne, Minister of Enterprise and Simplification, the suggested action items are submitted to the sector for consultation.

To respond to this document:

Deadline:	until 10 May 2009
Contact:	Reinhard Laroy, engineer-advisor (+32 2 226 88 22)
E-mail your reactions to:	reinhard.laroy@bipt.be

Reactions are to be sent by electronic way only.
Confidential parts in this document should be clearly indicated.

Report for BIPT

Promoting the development of the broadband market in Belgium

April 2009

Ref: 13725-35

analysys mason

HOGAN & HARTSON

Contents

Analysys Mason Limited
66 avenue des Champs Elysées
75008 Paris
France
Tel: +33 (0)1 72 71 96 96
Fax: +33 (0)1 72 71 96 97
paris@analysysmason.com
www.analysysmason.com

1 Executive summary

BIPT has commissioned telecoms consultancy Analysys Mason, in collaboration with international law firm Hogan&Hartson, to provide an opinion on the status of the broadband market in Belgium and suggest means of promoting its development.

Our assessment of Belgium's broadband market shows that market growth is slowing down and that competitive intensity, market dynamics and pricing levels are not satisfactory.

We have identified a series of key issues at retail, wholesale and other levels that hamper the development of the broadband market. Based on this, we have then examined the main areas of intervention, which we have broken down into suggested practical actions. These actions aim to address each of the key issues and drive the development of broadband in order to benefit consumers and the economy as a whole.

The key issues, areas of intervention and practical actions are summarized in the table below.

Key issues	*Areas of intervention*	*Practical actions*
- Slowdown in broadband penetration growth	1 - Stimulate demand for retail broadband Internet access	1a - Promote an increase in PC penetration rate 1b - Address the lack of interest for Internet from certain categories of population
- Concentrated market leading to lack of competitive intensity - High retail prices	2 - Encourage market entry of new players / strengthen existing alternative operators in order to increase competition and drive prices down	2a - Encourage consolidation of cable networks in Wallonia 2b - Educate consumers about their real needs in terms of broadband services 2c - Provide free migration within operator's retail broadband portfolio, when the operator changes the characteristics (speed, download cap, etc.) of the offer the user initially subscribed to 2d - Study and ease the migration process for an end user wishing to switch broadband provider
- Wholesale offers do not allow alternative DSL operators to provide end users with multiple-play offers (Internet+TV) on a national basis	3 - Allow the development of competition in the market of multiple-play offers	3a - Impose the provision of a wholesale offer, available on a national basis, allowing the broadcast of TV services

Key issues	*Areas of intervention*	*Practical actions*
- Issues with operational conditions for the provision by Belgacom of its wholesale offers - Operational and QoS issues with Belgacom's wholesale offers - Bitstream offers are key to the development of alternative operators	4 - Improve broadband wholesale offers (QoS, operational conditions, timing of availability, price)	4a - Impose cost orientation for all of Belgacom's wholesale broadband offers 4b - Improve the operational conditions of bitstream offers from Belgacom 4c - Audit the provision of wholesale services by Belgacom to alternative DSL operators 4d - Tighten non-discrimination obligation imposed on Belgacom, based on the principle of equivalence of inputs
- Cabinet and backhaul issues for sub-loop unbundling	5 - Promote the development of backhaul network infrastructures and cabinet upgrades that do not discourage alternative operators from investing	5a - Encourage investments from local authorities in local backhaul networks 5b - Tighten regulation of Belgacom's wholesale backhaul offers 5c - Ensure Belgacom's upgrade of street cabinets does not discourage other operators from investing
- Delay in decision-making from regulatory and control bodies - All decisions from BIPT are systematically taken to court by Belgacom	6 - Increase powers and efficiency of regulatory bodies and competition authorities	6a - Increase BIPT's powers 6b - Shorten the intervention and decision time of the Competition Council (Conseil de la concurrence) 6c - Strengthen the collaboration between BIPT and media regulatory bodies
- Lack of forward-looking visibility with regard to network roll-out and regulation	7 - Anticipate regulatory principles for FTTH access regulation	7a - Require transparency from broadband network operators with regard to their FTTH roll-out plans 7b – Provide visibility with regard to key principles of FTTH regulation
- Lack of coordination and harmonisation with regard to rights of ways and infrastructure sharing	8 - Harmonise access and sharing of passive infrastructures	8a - Harmonise rights of way in the public domain 8b – Facilitate infrastructure sharing

Figure 1.1: *Summary of market issues and key areas of intervention for broadband development, broken down into practical means of intervention [Source: Analysys Mason, Hogan&Hartson]*

2 Introduction

BIPT has initiated its second round of review for the broadband market. This process consists of the definition of relevant broadband markets potentially subject to ex ante regulation, the identification of operators with significant market power (SMP) and the determination of remedies to be imposed on SMP operators. As part of this process, BIPT is assisted by telecoms consultancy Analysys Mason and international law firm Hogan&Hartson.

Besides an assistance with market reviews, BIPT has commissioned Analysys Mason and Hogan&Hartson to provide an opinion on the status of the broadband market in Belgium and to suggest means of promoting its development. This request comes at a time when there have been a lot of comments[1] in the public domain and at European Commission level about Belgium now lagging behind in terms of broadband development compared to other European countries.

This report has the following objectives:

- Present – based on facts and market data – the status of development of the broadband market in Belgium in terms of penetration, prices and competition compared with other European countries
- Identify potential issues and market failures in the broadband market
- Suggest some actions to address the issues identified – without necessarily limiting these to areas of intervention that fall under BIPT's prerogatives.

The market data and assessment presented in this report are based on data collected by BIPT throughout its market review process, interviews and discussions with key stakeholders (main players, BIPT, Competition Council, consumer associations, etc.), international benchmarks and our own experience and analysis. The recommendations presented herein constitute the opinion of Analysys Mason and Hogan&Hartson and do not necessarily reflect BIPT's position.

2.1 Impact of broadband on the economy

As one of the largest sectors in the economy, the communications sector (in particular the broadband sector) is key to Belgium's competitiveness. Numerous studies have provided evidence that the development of competition in the information and communication technology (ICT) sector and the broadband market has a positive impact on the economy, contributes to gross domestic product (GDP) growth and brings social benefits to the population.

[1] - In a study published in 2007, consumer association Test-Achat stated that Belgium is no longer competitive in terms of broadband access and broadband tariffs compared with other European countries, see http://www.test-achats.be/internet/comparaison-tarifs-internet-pauvres-belges-s446353.htm
- In a public statement, Minister Van Quickenborne announced he aimed at reaching a "significant decrease in broadband tariffs", see http://www.belgiquemobile.be/2008/04/29/vincent-van-quickenborne-souhaite-une-baisse-significative-des-prix-de-ladsl/

For example, an OECD report on broadband and the economy (2008) estimated that the development of broadband can contribute up to 0.9% to gross value added (GVA) growth in the most advanced European countries in 2006.

Given the current economic climate in Belgium as well as in other countries, focusing on the development of a sector which can have such an impact on the economy can be seen as a hot topic.

There is therefore a need to ensure that the broadband sector in Belgium can meet the demand of modern digital age economy, with good quality of service, at affordable prices, to support the increase of Belgium's overall economic competitiveness.

In the past months, there have been several examples of national plans focusing on ICT development. For instance, the Digital Britain plan currently under finalisation,[2] Obama's digital plan[3] and France numérique 2012[4]. More recently, the Economic Stimulus Bill[5] passed by the US Congress on 13 February 2009 allocates USD7.2 billion to broadband expansion.

The ambition of this report is not to come up with a national ICT program, but to suggest pragmatic means of intervention in order to address specific broadband market issues. It could, however, pave the way for a more ambitious national broadband plan.

2.2 Structure of the document

This report is structured as follows:

- Section 3 provides an overview of the status of the national broadband market
- Section 4 describes an analysis of some of the main failures in the broadband market
- Section 5 presents several key areas of intervention to promote broadband development, broken down into practical means of intervention.

2 Digital Britain - The Interim Report, January 2009, Department for Culture, Media and Sport and Department for Business Enterprise and Regulatory Reform; http://www.culture.gov.uk/images/publications/digital_britain_interimreportjan09.pdf

3 Barack Obama's Technology and Innovation Plan, « *Barack Obama : Connecting and empowering all Americans through technology and innovation* », http://www.barackobama.com/issues/technology/; http://www.barackobama.com/pdf/issues/technology/Fact_Sheet_Innovation_and_Technology.pdf

4 France numérique 2012, Plan de développement de l'économie numérique, October 2008: http://francenumerique2012.fr/pdf/081020_FRANCE_NUMERIQUE_2012.pdf

5 For legislative status and Bill text, see http://thomas.loc.gov/home/approp/app09.html#h1

3 Status of broadband retail and wholesale markets in Belgium

3.1 Lines and penetration

As of H1 2008, broadband lines in Belgium reached 2.8 million, up from 1.8 million three years earlier (H1 2005), representing an average annual growth rate of 16%. Broadband penetration reached 26.4% of population in H1 2008, up from 17.5% in H1 2005, as illustrated in Figure 3.1 below. As of H1 2008, broadband lines represented more than 95% of total Internet connections[6]. Although broadband lines keep increasing, there has been recent signs of slow-down of broadband growth. Net adds have decreased at a 16% average annual rate between H1 2005 and H1 2008.

A comparison with other European countries demonstrates that Belgium, which used to be among the countries with highest broadband penetration, no longer belongs in the top tier of European countries. The latest report from the European Commission shows that Belgium is ranked 8th in terms of broadband penetration as of H1 2008. Broadband growth in Belgium is now slower than in many European countries, however this relative step back must be put in perspective: Belgium's current broadband penetration rate is for example similar to that of France.

[6] Source: ISPA

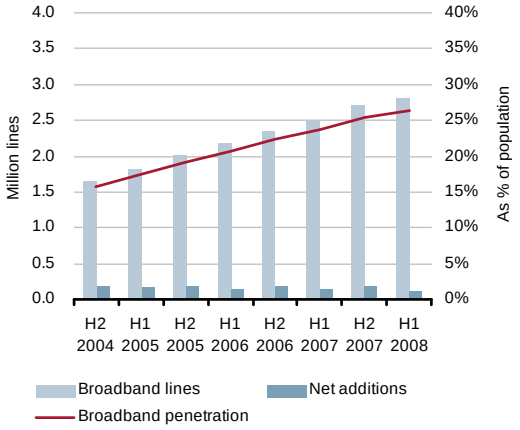


Figure 3.1: Evolution of broadband lines and broadband penetration in Belgium [Source: Analysys Mason, BIPT]

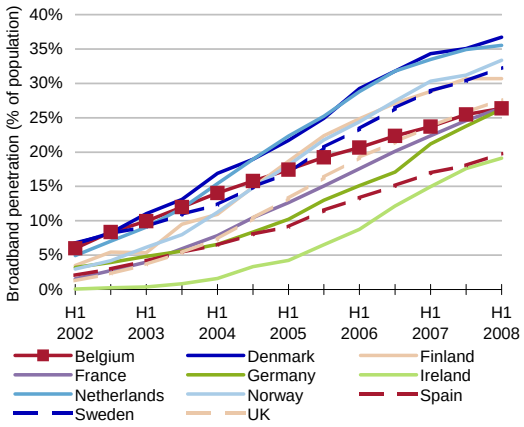


Figure 3.2: Benchmark of broadband penetration in Europe [Source: BIPT, OECD, ECTA, Analysys Mason]

It is also worth analysing broadband household penetration in light of PC household penetration. The analysis presented below, based on 2007 data from the OECD, shows that broadband penetration of PC households in Belgium is among the highest in Europe, at 84%, whereas PC penetration of households in Belgium is close to EU25 average, at 67%.

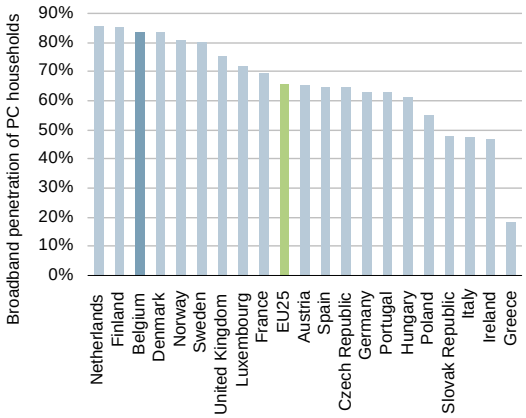


Figure 3.3: Broadband penetration of PC households in 2007 in Europe [Source: OECD, Analysys Mason]

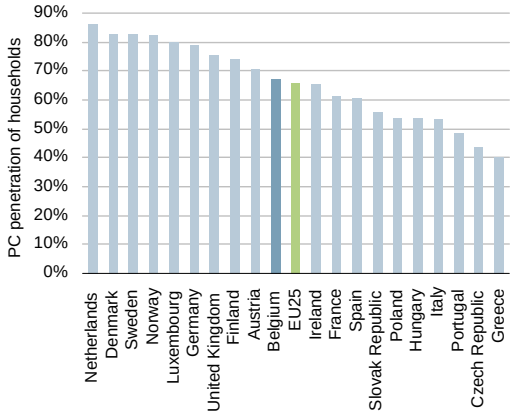


Figure 3.4: PC penetration of households in 2007 in Europe [Source: OECD, Analysys Mason]

This indicates that:

- Unlike other countries with lower broadband penetration of PC households, Belgium cannot rely on a future take-up of broadband among existing PC households, as almost all households owning a PC are already connected to broadband.

- As a result, the increase of broadband penetration is closely correlated with the increase of PC penetration.

3.2 Market players and positioning

Several operators are competing in the retail broadband market:

- Belgacom is the incumbent operator with 99.8% DSL coverage in January 2008. It provides a whole range of DSL-based services (ADSL, ADSL2, ADSL2+ and SDSL over its whole DSL footprint, as well as VDSL/VDSL2 on an upgraded portion of its network). At the end of 2008, Belgacom acquired Scarlet, Belgium's main alternative DSL operator.

- Cable operators are Belgacom's main competitors in the broadband market. They are only active in specific coverage areas and do not have national roll-out. In Flanders, Telenet has consolidated the local cable operators. Consolidation is ongoing in Wallonia under the Voo brand. However, there are still areas in Wallonia where cable networks can only provide TV services but cannot offer broadband services (in these areas, cable networks need to be upgraded to become bidirectional, i.e. able to offer broadband services).

- Alternative DSL operators include several ISPs (KPN/Tele2, Mobistar, Colt, Euphony, etc.) buying wholesale DSL services from Belgacom, i.e unbundled loops (LLU), bitstream offers (BROBA, and the upcoming Wholesale Broadband Access VDSL2 offer) or resale offers from Belgacom or other ISPs.

- Other operators provide broadband services based on alternative technologies like fixed wireless access or fibre (e.g. in business areas). These operators account for a marginal number of broadband lines.

Market shares

The Belgian broadband market is concentrated, with the two main players Belgacom (including Scarlet) and Telenet having an 83% market share as of H1 2008. The rest of the market is fragmented between other cable network operators (Voo in Wallonia, Numéricable in the Brussels region) and alternative DSL operators.

Belgacom's market share has remained fairly stable over the last few years, at around 50%, and Belgacom's and Telenet's combined market share has been stable at over 80% in the last two years.

Stable market shares of main operators Belgacom and Telenet are an indicator of the difficult competitive environment alternative operators face. Figure 3.6 indicates that alternative DSL operators experience difficulties in gaining market shares as indicated by their declining share of net adds in the last three years.

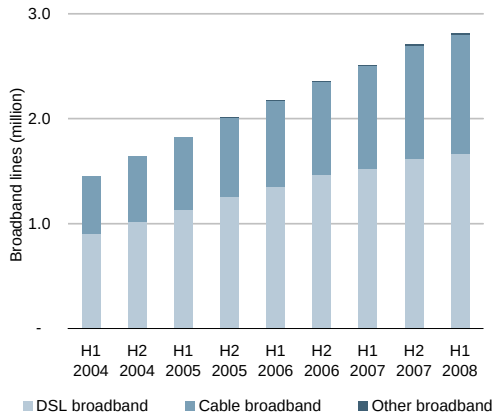


Figure 3.5: Evolution of broadband lines by operator type [Source: BIPT, Analysys Mason]

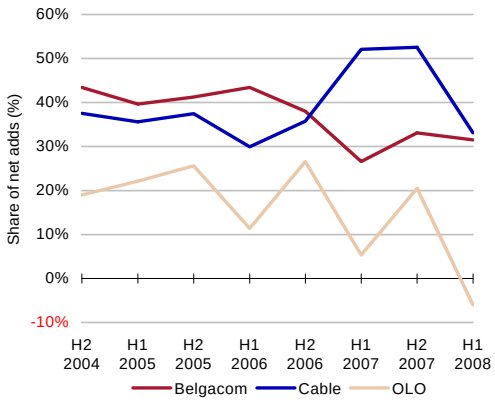


Figure 3.6: Evolution of market share of net adds [Source: BIPT, Analysys Mason]

Geographical analysis

The Belgian retail broadband market is characterized by geographical differences in terms of broadband penetration and market shares of main players. The figure below presents the geographical differences of broadband penetration in Belgium.

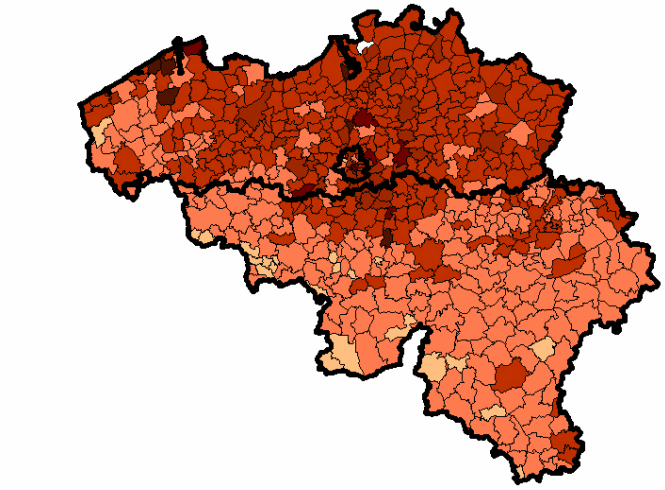
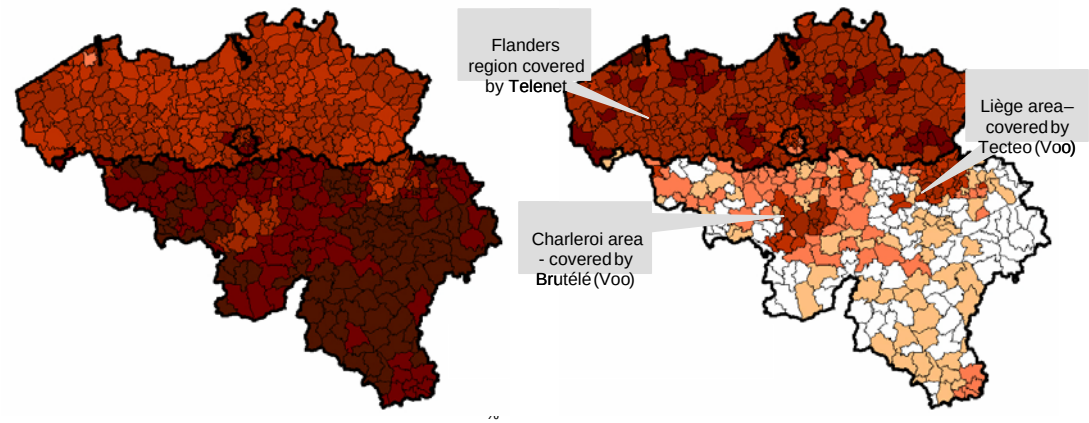


Figure 3.7: Broadband penetration in Belgium [Source: BIPT, Analysys Mason, July 2008]

Belgacom as well as cable operator retail market shares by geographical areas are illustrated on Figure 3.8 below.



Belgacom's retail market share

Cable broadband operators' retail market share

Figure 3.8: Retail market share by geography: Belgacom (left) and cable operators (right) [Source: BIPT, Analysys Mason]

As presented in these figures, Belgacom's market share is high on a national basis but is lower in areas where cable networks are present. In their coverage areas, cable operators represent strong competition for Belgacom. These geographical differences can be aggregated at regional level, as shown below:

	Brussels	*Flanders*	*Wallonia*	*National*
Broadband penetration (as a % of population)	28%	28%	24%	26%
Belgacom's retail market share (as a % of broadband lines)	60%	42%	67%	50%
Cable operators' retail market share (as a % of broadband lines)	29%	53%	18%	40%
Alternative DSL retail market share (as a % of broadband lines)	11%	5%	14%	10%
Of which				
BRUO lines (LLU)	10%	1%	3%	3%
BROBA lines (bitstream)	1%	4%	11%	6%
Resale lines	0%	0%	0%	0%

Figure 3.9: Geographical differences for broadband penetration and retail market shares – July 2008 - Belgacom figures include Scarlet [Source: BIPT, Analysys Mason]

Overall, the geographical analysis shows that:

- Belgacom has a market share above 40% in all regions (and above 60% in the Brussels region and in Wallonia).
- Cable broadband is especially strong in Flanders (market share above 50%), where cable is consolidated by Telenet and bidirectional, but lower in the other areas (below 30%) where the bidirectional cable coverage is less important
- Competition from DSL alternative operators varies by region, but is overall fairly limited (10% at national level).

Apart from structural reasons (cable coverage and level of cable consolidation), geographical differences in terms of broadband penetration can also be explained by the more dynamic economic situation in the Flanders and Brussels regions (GDP, employment rate). As an illustration of this, PC household penetration rate in Flanders is higher than in Wallonia (73% versus 61%, as reported by the OECD in 2007).

3.3 Retail prices

Historically, prices of retail broadband services in Belgium have remained fairly stable for numerous years, with low increase of speeds and volume download caps. However, since end of 2007, the market has seen noticeable increases in terms of attractiveness: higher speeds for constant prices from main players Belgacom and Telenet.

The market is characterised by a relatively similar behaviour from Belgacom and Telenet, with Telenet offering slightly more attractive broadband offers (higher speed, higher monthly download cap) for a price similar to that of Belgacom's offers, as indicated in Figure 3.10 below.

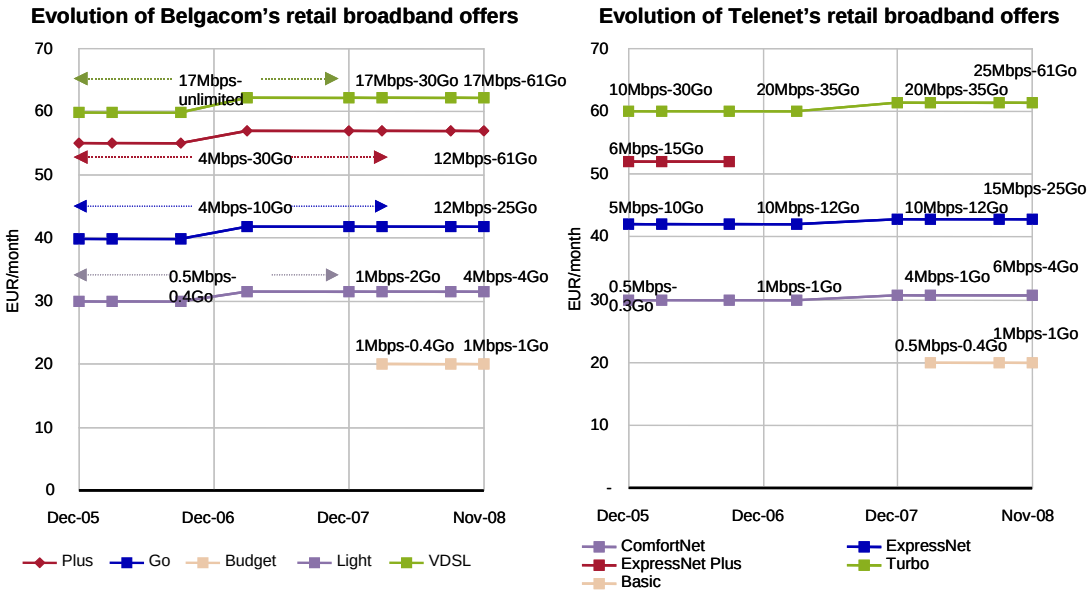


Figure 3.10: Comparison of Belgacom's and Telenet's historical broadband offers – price includes VAT [Source: BIPT, Belgacom's and Telenet's websites]

The increase in the attractiveness of broadband offers is reflected in the decreasing price per Mbit/s for Belgacom and Telenet. However, the real indicator of price should remain the price of the offer itself (shown in Figure 3.10 above), since it is the price end users really pay.

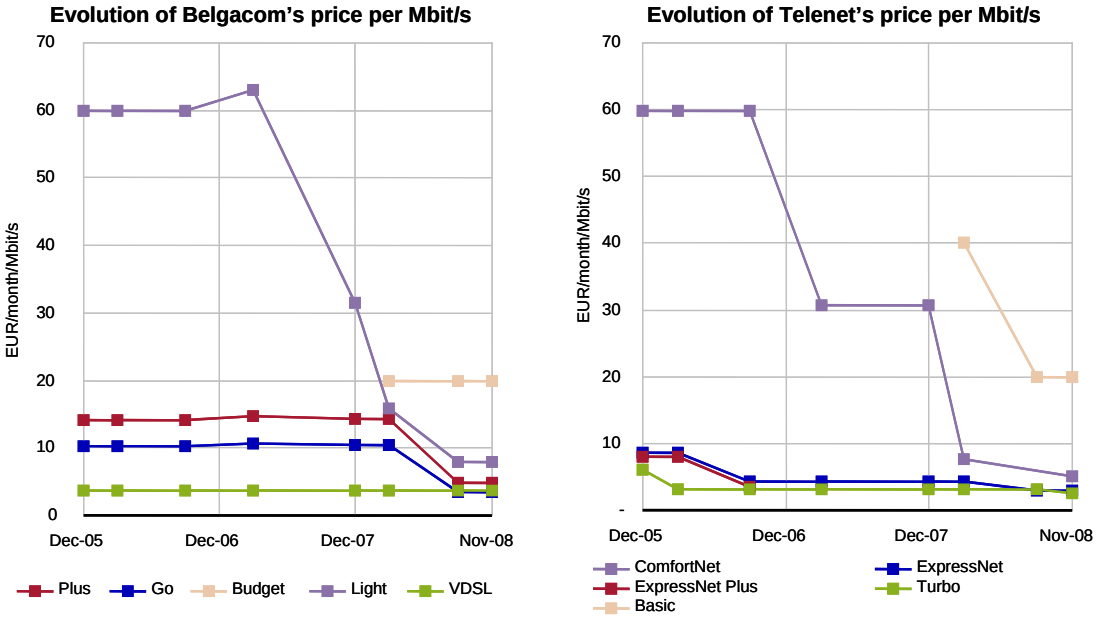


Figure 3.11: Evolution of average monthly price per Mbit/s for Belgacom's and Telenet's broadband offers [Source: operators websites, BIPT, Analysys Mason]

Other operators generally do not manage to offer significantly more attractive offers than those of Belgacom or Telenet, or when they do – for instance Numéricable, see Figure 3.12 below – their low market share and limited geographical reach (in the case of small cable operators) do not represent strong enough competitive pressure for Belgacom and Telenet to reduce their tariffs.

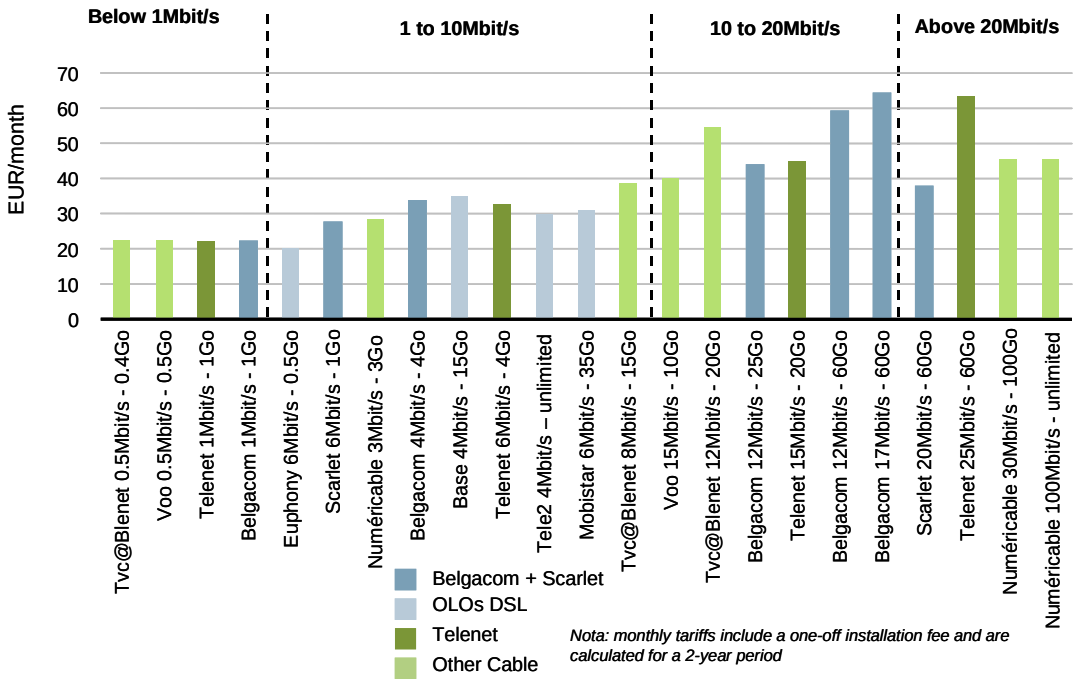


Figure 3.12: Average monthly tariffs – January 2009 [Source: BIPT, operators' websites, Analysys Mason]

As indicated by the OECD tariff comparison below, Belgium historically had high retail prices compared with other OECD countries.

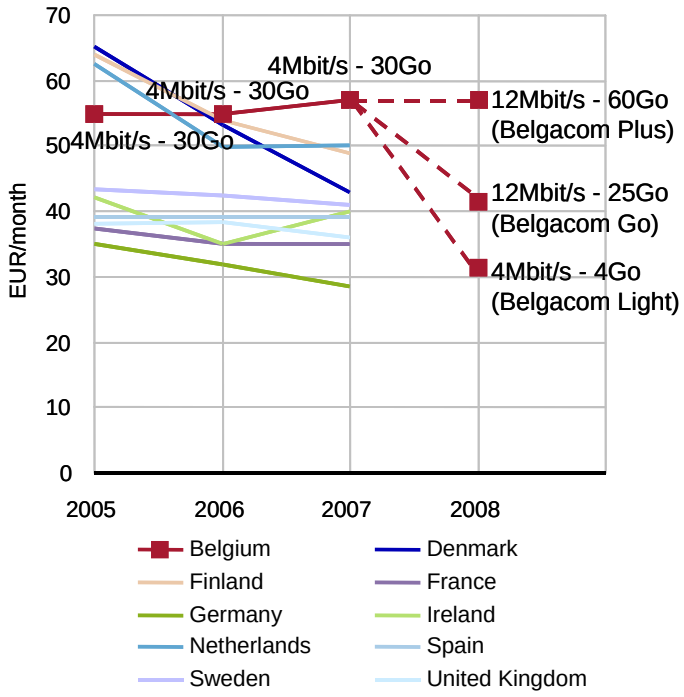


Figure 3.13: International comparison of retail tariffs for an OECD broadband basket and Belgacom's tariffs in 2008 [Source: OECD, Analysys Mason, Belgacom's website]

Even if the attractiveness of Belgacom's (and Telenet's) offers has increased since 2007, broadband offers in Belgium still remain less attractive than in neighbouring countries (for example France, the Netherlands, the UK). As shown in Figure 3.14 below, for an equivalent price to that of the low-end offers from Belgacom and Telenet (around EUR30), retail offers from main players in France, the UK and the Netherlands are more attractive: each country provides unlimited offers with higher speeds for lower prices, and triple-play offers are available for a similar price in France. In addition, the price of high-end broadband offers from Belgacom and Telenet (around EUR60) is significantly higher than the prices seen in neighbouring countries (around EUR30 in France, and below EUR50 in the Netherlands and the UK).

Figure 3.14: Benchmark of broadband offers from main ISPs in France, the UK and the Netherlands and comparison with Belgacom's and Telenet's low-end and high-end offers [Source: Analysys Mason, websites of operators, January 2009]

It should however be mentioned that these benchmarks do not take into account QoS levels experienced by end users ('advertised speed' versus 'real speed'), whereas we have been told (without necessarily having access to hard evidence about this) that the QoS in Belgium (i.e. contention ratios) would be higher than in some other European countries.

3.4 Trend towards multiple-play

In Belgium, as in other European countries, there is a strong ongoing trend in the broadband residential market towards the provision of multiple-play offers. Although multiple-play offers generally refer to any combination of services provided to a single customer, we refer as multiple-play offers in this document offers combining at least broadband and television services, as well as potential other services such as VoIP or mobile telephony.

Multiple-play subscribers

In Belgium, an increasing proportion of broadband end users subscribe to multiple-play offers. In parallel, the number of subscribers receiving digital TV services from cable networks or from Belgacom is increasing. As of H1 2008, Belgacom and Telenet cumulated close to 900 000 digital TV subscribers, as shown in Figure 3.15 below.

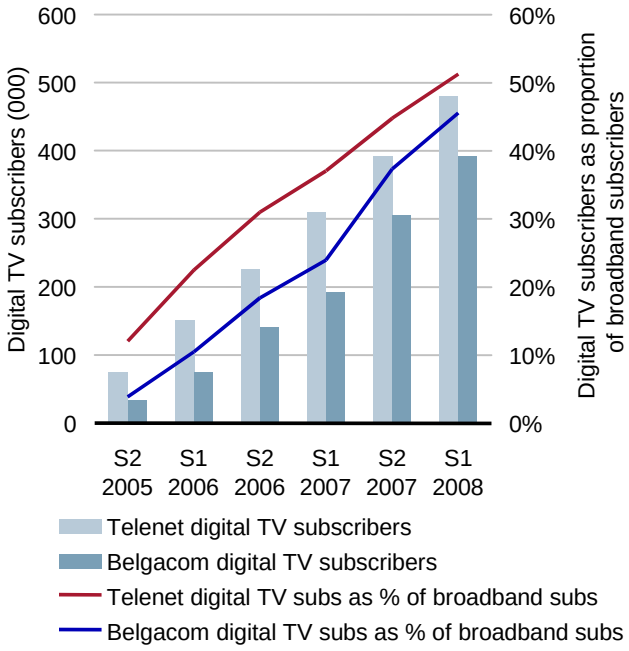


Figure 3.15: Evolution of Belgacom's and Telenet's digital TV subscribers [Source: Belgacom and Telenet reports, BIPT, Analysys Mason]

In the market of multiple-play offers including broadband and television services, competing players include Belgacom and cable operators (mainly Telenet, Numéricable and Voo).

However, alternative DSL players are unable to compete in the market of multiple-play offers:

- unbundling of the local loop theoretically enables alternative DSL operators to provide IPTV services, hence multiple-play offers. However, the use of LLU is in fact limited to the densest areas
- existing bitstream offers do not in practice allow an alternative DSL operator to provide television services to its end users (due to current technical and pricing structure of Belgacom bitstream offers[7])
- as a result, alternative DSL operators that have national commercial strategies cannot offer multiple-play offers.

As the shift towards multiple-play offers increases, the fact that alternative operators cannot provide IPTV services might significantly hamper their development in the broadband market.

Multiple-play offers

From a marketing point of view, the last few years have seen an increasing number of multiple play offers provided by cable operators and by Belgacom. Belgacom's triple-play offers are generally comparable to those of Telenet and other competitors. Numéricable currently provides the most aggressive offers, as shown in Figure 3.16 below.

[7] For example a live channel would need to be broadcasted independently to every single end-user, which would not be efficient in technical or economical terms.

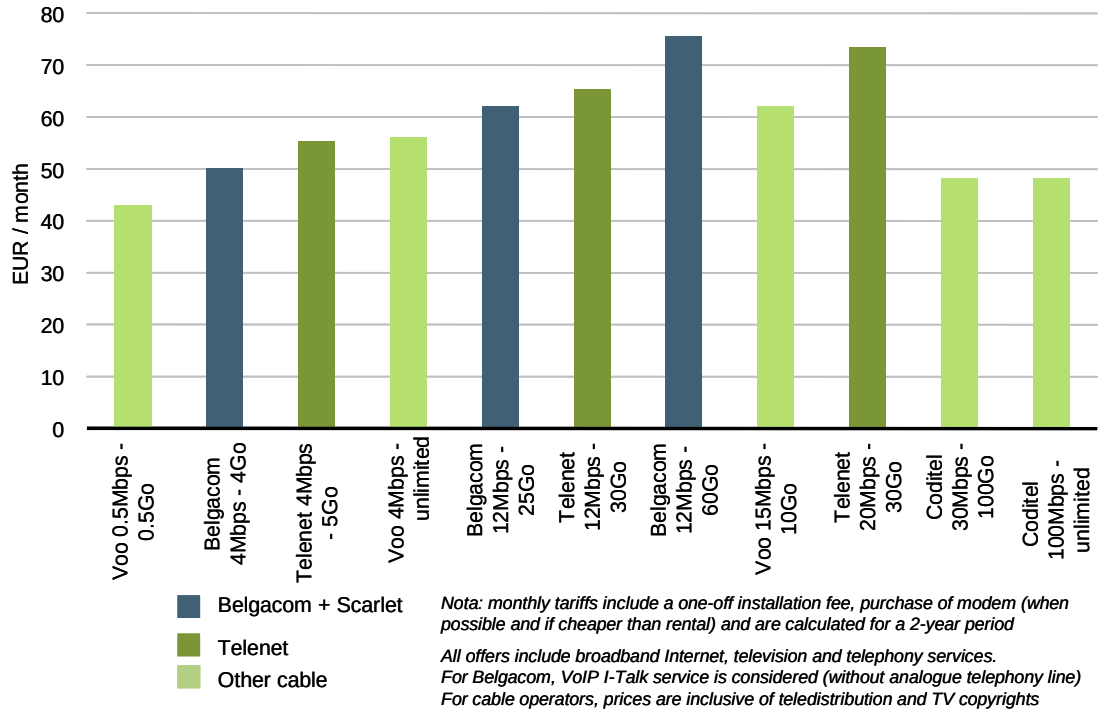


Figure 3.16: Comparison of average monthly tariffs for triple-play offers in Belgium [Source: operators websites, BIPT, Analysys Mason, March 2009]

Overall, triple-play offers in Belgium seem less attractive than those of main market players in France, the UK and the Netherlands, especially with high-end offers. However, the difference in attractiveness is less marked than for single-play broadband offers. Whereas triple-play offers in France are significantly more aggressive than in Belgium (EUR30 in France versus EUR40 to EUR70 in Belgium), low-end and high-end offers from Belgacom and Telenet are close to those available in the UK and the Netherlands, as shown in Figure 3.17 below.

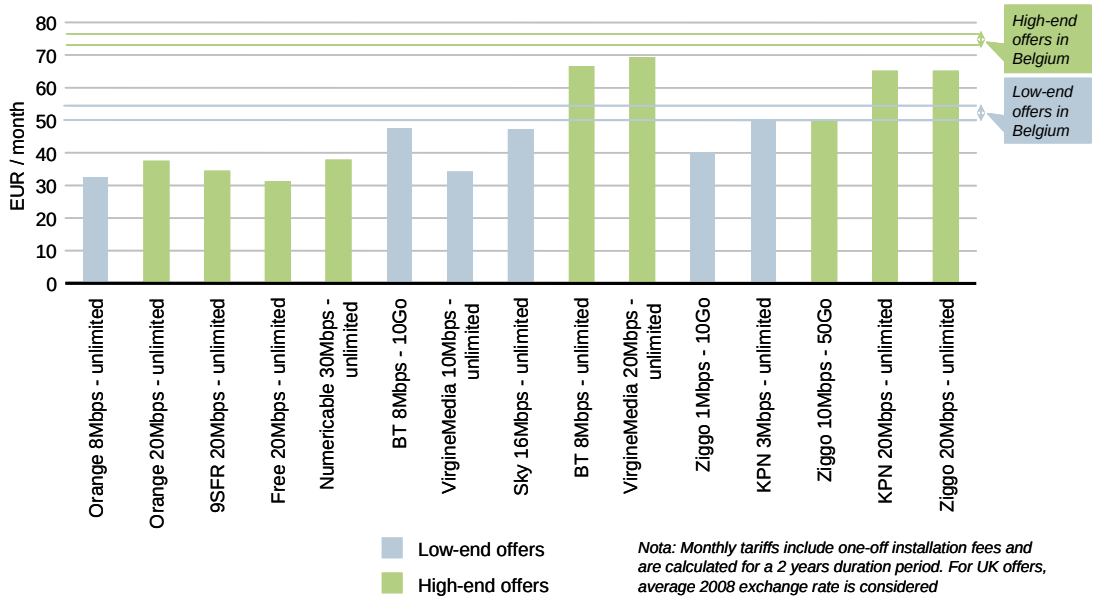


Figure 3.17: *Benchmark of broadband offers from main ISPs in France, the UK and the Netherlands and comparison with Belgacom's and Telenet's low-end and high-end offers[8] [Source: operators' websites, BIPT, Analysys Mason, January 2009]*

[8] Belgacom's high-end offer: 12Mbit/s with 60Go monthly cap + Belgacom TV + I-Talk.

Telenet's high-end offer: 20Mbit/s with 30Go monthly cap + TV + FreePhone Europe.

Belgacom's low-end offer: 4Mbit/s with 4Go monthly cap + Belgacom TV + I-Talk.

Telenet's low-end offer: 4Mbit/s with 5Go monthly cap + TV + FreePhone Europe.

4 Issues identified in the broadband market

4.1 Issues in the retail broadband market

The analysis of the retail broadband market reveals a number of key issues:

Slowdown in broadband penetration growth

Belgium is no longer in the top tier European countries in terms of broadband penetration. The number of net adds is currently decreasing.

Concentrated market leading to lack of competitive intensity

The Belgian broadband market is concentrated with Belgacom and Telenet having a combined market share of 83% for retail broadband lines. The structure of this market is characterized by two established operators with an extensive access infrastructure[9], strong and relatively stable market shares, which may not be conducive to vibrant competition.

High retail prices

Despite an increase in attractiveness of broadband offers in the past year, retail prices in Belgium remain high compared to neighbouring countries.

4.2 Issues in the wholesale broadband market

The analysis of the wholesale broadband market also reveals a number of key issues:

Wholesale offers do not allow alternative DSL operators to provide end users with multiple-play offers (Internet+TV) on a national basis

Whilst the market is moving towards multiple-play offers (including Internet and TV), alternative DSL operators cannot compete on a national basis since:

- local-loop unbundling (LLU) is not economically viable in the whole territory and is currently marginally used
- bitstream offers do not allow ISPs to provide TV services

As a result, multiple-play offers can only be offered by Belgacom and cable operators, leading to duopolistic situations in each cable area.

Operational and QoS issues with Belgacom's wholesale offers

Operational and discrimination issues have been reported by ISPs as regards the provision of wholesale services by Belgacom (BRUO, BROBA).

Among the main issues is the fact that wholesale offers do not always allow alternative DSL operators to replicate broadband retail offers from

[9] although limited to the Flanders region in the case of Telenet

Belgacom (as this has been the case with VDSL2 where Belgacom launched its retail offer before the existence of a corresponding wholesale offer).

Bitstream offers are key to the development of alternative DSL operators

LLU is only marginally used in Belgium with only 6% of DSL lines being unbundled (26% of DSL lines from alternative operators).

In addition, as part of the roll-out of its VDSL network, Belgacom is laying out fibre up to street cabinets and has announced the closure of a number of main distribution frames (MDFs). As a consequence, wherever MDFs will close, LLU will no longer be available at the MDF level, but at the street cabinet level (sub-loop unbundling). The economic case for sub-loop unbundling is even more difficult than that of LLU. MDF closure announcements might therefore discourage investment by alternative operators in unbundling.

In this context, it is likely that the development of LLU will remain low, hence bitstream offers will be the main wholesale offers allowing alternative DSL operators to compete in the broadband market at national level. It is therefore important to focus on the quality and the characteristics of bitstream offers (including wholesale VDSL2 bitstream offer).

Cabinet and backhaul issues for sub-loop unbundling

The lack of attractive backhaul offers is a barrier to the development of unbundling for alternative DSL operators. In addition, in its roll-out of VDSL, street cabinets used by Belgacom are small and might in many cases not enable other players to install their VDSL equipment (DSLAMs).

4.3 Other related issues

Our assessment has also highlighted a number of related issues:

Lack of efficiency from regulatory bodies and competition authorities

There is widespread concern in Belgium about the long and complex decision process at regulatory level (BIPT and media regulators) and at competition authorities level (Conseil de la Concurrence).

In addition, the regulatory and legal environment is such that BIPT's decisions are systematically taken to court by Belgacom or other SMP operators, creating uncertainties for the market and dragging resources from BIPT away from its key priorities.

Lack of forward-looking visibility with regard to network roll-out

BIPT and alternative operators have raised numerous concerns about the lack of transparency from Belgacom with regard to NGA roll-out (VDSL roll-out, MDF closures), and its impact on the provision of wholesale services. In addition, alternative operators have also complained about the lack of visibility with regard to future regulation and the impact on their

and regulation	own network infrastructure strategy.
Lack of coordination and harmonisation with regard to rights of way and infrastructure sharing	Rights of way are handled by local authorities (regions, or even municipalities) in Belgium. It seems that there is a lack of coordination, leading to inefficient and lengthy processes as well as large price differences from one area to another, therefore hampering investments. In addition, there does not seem to be a common inventorying of existing and planned network infrastructure which could facilitate infrastructure sharing between network operators.

5 Actions to promote the development of the broadband market

5.1 Areas of intervention

The analysis of broadband market issues at retail, wholesale and transverse levels leads to the identification of eight key areas of intervention in order to stimulate broadband development:

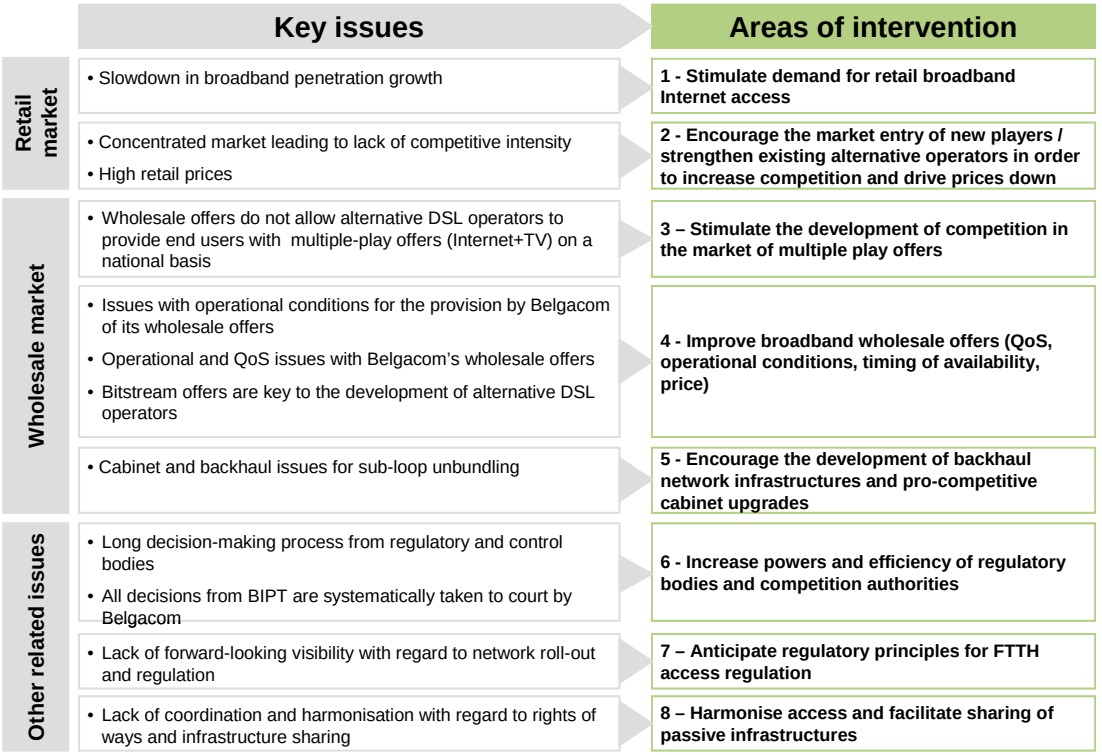


Figure 5.1: Analysis of key issues in the broadband market and identification of areas of intervention [Source: Analysys Mason, BIPT]

5.2 Suggested actions for each area of intervention

For each area of intervention, we have identified and investigated several practical actions. This section presents the rationale behind the identification of these actions, but does not however detail how to implement them. At the end of this section, we provide a high-level assessment regarding the potential impact of these actions on the market and their difficulties of implementation.

As one might expect, some suggested actions presented below are not necessarily new and may even have previously been recommended by other parties (working groups, consumer associations, etc.). We have however chosen to include in our list the ones we believe (i) do address specific market issues identified and (ii) for which more can be done to ensure their successful implementation (e.g. more active promotion of existing actions, more coordination between parties involved, more rigorous application of a measure, etc.).

5.2.1 Stimulate demand for retail broadband Internet access

We suggest the following potential means of intervention:

- 1a – Promote an increase in PC penetration rate
- 1b – Address the lack of interest for Internet from certain categories of population.

1a – Promote an increase in PC penetration rate

The Belgian authorities should investigate ways to promote an increase in PC penetration rate. Actions could include:

- **Implementation of subsidy programs for personal computers** e.g. employer subsidies, such as the former 'PC privé' plan (which was launched but with limited success in 2003), immediate tax cuts for the purchase of a PC ('TVA zéro').
- **Taking a softer line with regard to the ban of commercial bundles**, so as to allow the bundled sale of PC and broadband connections. This action should however be appropriately designed so as not to reinforce the positions of the biggest players such as Belgacom or Telenet, whose buying power will be greater than that of other players.
- **Commission a study to assess the impact and the cost of a measure consisting of a subsidy for a PC/broadband connection for underprivileged social classes**.

These actions could lead to an increase in PC penetration, which is currently not in the high end of European benchmarks as indicated in Figure 5.2 below. Figure 5.2 also shows the correlation between broadband and PC household penetration and indicates that the increase of broadband penetration is (as one could expect) interrelated with the increase of PC penetration.

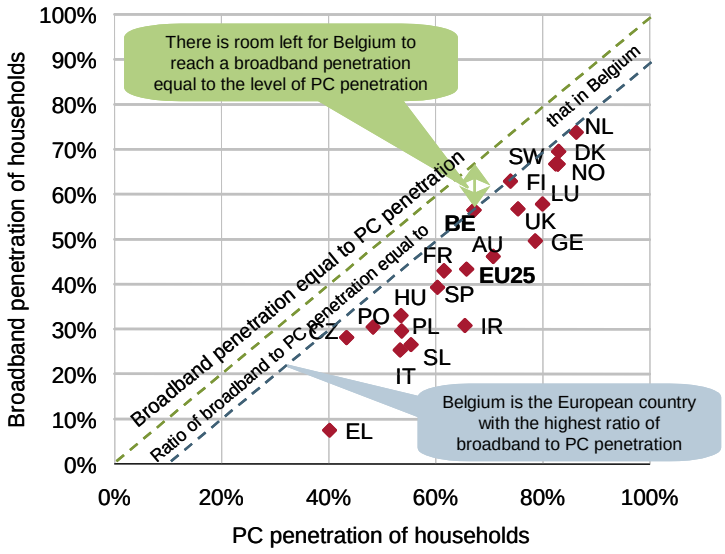


Figure 5.2: Correlation between broadband and PC household penetration [Source: OECD 2007, Analysys Mason]

1b – Address the lack of interest for Internet from certain categories of population

Belgian authorities should look into means to **encourage and communicate about the development of innovative Internet applications**. This should include a focus on the **development of e-administration services** (public services available on the Internet).

Raising the awareness and interest of the population for Internet appears to be a relevant area of intervention, as several consumer studies[10] have indicated that the lack of need and interest in Internet are among the main reasons why Belgian families do not have Internet.

Moreover, it should be ensured that all public government buildings are connected with broadband connections. This would require to evaluate the functioning and possible extension of the I-line program. This program currently covers the broadband connection of secondary and superior education schools, hospitals and public libraries but does not formally include primary schools. There seems to be areas of improvement for the I-line program, and we would therefore recommend the **creation of a working group to review the I-line program's achievements to date, future objectives and scope as well as its functioning.**

Among others, it should also be assessed how operators others than Telenet and Belgacom could also be involved actively in this program, so that the I-line program does not only benefit to the two most established players.

10 SPF Economie ICT study in 2007, AWT study commissioned by Cabinet Van Velthoven in 2006.

5.2.2 Encourage market entry of new players/strengthen existing alternative operators in order to increase competition and drive prices down

We suggest the following actions:

- 2a – Encourage consolidation of cable networks in Wallonia
- 2b – Educate consumers about their real needs in terms of broadband services
- 2c – Provide free migration within operator's retail broadband portfolio, when the operator changes the characteristics (speed, download cap, etc.) of the offer the user initially subscribed to
- 2d – Study and ease the migration process for end users wishing to switch broadband provider.

With regard to high retail prices, we believe that direct intervention on prices is not an appropriate solution at the moment. Means of intervention should rather focus on increasing competition, which in turn would lead to a decrease in retail prices and hence indirectly tackle this issue.

2a – Encourage consolidation of cable networks in Wallonia

Cable consolidation is ongoing in Wallonia. Brutele, Tecteo and NewCo are now commercializing their products under the Voo brand. However, it seems that there are still some governance issues within the Voo entity. It should be ensured that everything, e.g. at political level, is done **to facilitate and encourage cable consolidation**, especially in view of the investments required in the short-to-medium term to:

- upgrade cable networks with a bidirectional capacity (in the geographical areas where this is not yet the case)
- upgrade cable networks to Eurodocsis3.0 standard.

This consolidation could encourage the strengthening of a strong player in Wallonia, which could foster the development of broadband market, in the same way that the consolidation of local cable networks in Flanders by Telenet led to the creation of a strong broadband provider, representing a 'counter power' to Belgacom.

2b – Educate consumers about their real needs in terms of broadband services

We believe that the **development of comparative websites, freely accessible (for instance initiated by consumer associations such as Test Achat)**, should be encouraged in order to:

- help consumers identify the appropriate speed and download cap which would best suit their broadband usage
- assess which ISP retail offers address these requirements.

These actions, aimed at educating consumers with the assessment of their broadband needs, would enable broadband users not to pay for more than what they actually need.

In addition, this education would make it possible to lower the barrier to entry for consumers interested in broadband services but concerned about prices: they might realise that some cheaper low-end offers might suit their requirements in terms of broadband services.

In France[11] and in the UK[12], public authorities or regulators publish papers allowing consumers to assess which broadband connection is adapted to their usage. In Belgium, the SPF Economie publishes its Internet user's guide[13], which among others, provides advice about elements to be considered when choosing an Internet access provider. BIPT is also currently developing a tariff simulation tool, in order to allow consumers to gain a better understanding of main telecoms tariff offers (including broadband) to inform them about the most adequate offer to their needs. Measures could be taken so that **more communication is done around the publication of such user's guides and website comparisons/simulations** (e.g. endorsement by government bodies).

2c – Provide free migration within operator's retail broadband portfolio, when the operator changes the characteristics (speed, download cap, etc.) of the offer the user initially subscribed to

The last few years have seen an increase in the attractiveness of broadband offers (for instance higher speed, higher monthly download cap offered by Belgacom and Telenet for their main offers) but at constant retail price. When a retail offer evolves, existing customers of this offer can benefit from its enhanced characteristics, but are generally not informed about alternative options they could benefit from (e.g. being "downgraded" to a cheaper offer with similar characteristics to the previous offer). When customers want to migrate to a "lower" offer, they generally have to incur a migration fee. This is a barrier to switching for the customer and can result in subscribers paying for a service whose characteristics are higher than what their usage requires.

We believe that whenever a retail offer is changing, the operator should inform its customers (for instance by sending a letter) about the offer evolution and give them the possibility to migrate freely to another offer of the portfolio.

2d – Study and ease the migration process for end users wishing to switch broadband provider

In order to see the benefit of competition, end users must be able to shop around when they want to, to switch broadband providers without undue effort, service disruption and without incurring unfair costs for service termination. This would add fluidity to the market as it would ensure that existing broadband customers are not unduly locked with their service provider.

11 Guide pratique des communications électroniques – published by the Conseil de la Consommation.

12 Advice for consumer: broadband speeds – published by Ofcom.

13 Latest Internet user's guide was published in 2008.

In order to ensure this is the case, we would recommend that a **study/consultation is conducted to analyse if and to what extent customers complain about problems that are related to broadband migrations**.

In the UK, after having noticed a steady increase in the number of customers complaining about problems related to broadband migrations, Ofcom launched a consultation about broadband migrations and took a decision at end of 2006 to ease transfer from one operator to the next.[14]

5.2.3 Allow the development of competition in the market of multiple-play offers

3a – Impose the provision of a wholesale offer, available on a national basis, allowing the broadcast of TV services

As explained in Section 4.2, alternative DSL operators cannot currently provide end users with multiple-play offers combining TV and broadband services on a national basis, whereas there is a strong trend of the retail market towards these multiple-play offers.

In order for alternative operators to be able to compete in the market of multiple-play offers, the regulatory bodies in Belgium – both BIPT and media regulators – should, in coordination, **ensure the existence of wholesale offers allowing alternative DSL operators to broadcast TV services on a national basis** with a reasonable return on investment. Failure to do so would prevent alternative DSL operators to be competitive in a key market segment and *de facto* limit competition to Belgacom and cable operators.

Among the technical options for this type of wholesale offer, the following options could be investigated further by BIPT and the media regulators:

- a multicast service available with Belgacom's bitstream offer
- the resell of broadcast TV services (as imposed by the Dutch Regulation Agency OPTA to cable operators in Netherlands)
- an offer allowing the sharing of TV platform.

The implementation of this type of wholesale offer would require a close coordination between BIPT and media regulators.

[14] See Ofcom's decision on "Broadband migrations: enabling customer choice". Ofcom imposed on broadband operators to comply with the MAC process, whereby broadband operators that are loosing a customer must provide the MAC on request, and broadband service providers who are gaining a customer must, when presented with a valid MAC, use the MAC process to ensure a seamless transfer. MAC stands for Migration Authorization Code and is a unique identifier for single broadband users.

5.2.4 Improve wholesale broadband offers (QoS, operational conditions, timing of availability, price)

We suggest the following actions:

- 4a – Impose cost orientation on all of Belgacom's wholesale broadband offers
- 4b – Improve the operational conditions of bitstream offers from Belgacom
- 4c – Audit the provision of wholesale services by Belgacom to alternative DSL operators
- 4d – Tighten non-discrimination obligation imposed on Belgacom, based on the principle of equivalence of inputs.

4a – Impose cost orientation on all of Belgacom's wholesale broadband offers

Belgacom's BROBA offers, allowing alternative DSL operators to provide DSL, SDSL, ADSL2 and ADSL2+ extended-reach services are subject to a cost orientation obligation.

However, the increase in broadband speeds in the market will lead alternative DSL operators to rely more and more on the wholesale VDSL2 offer to provide their retail services. In addition, as explained in Section 4.2, due to the lack of economic case for unbundling of the sub-loop on a significant geographical scale, combined with the limited roll-out of LLU and the forthcoming closing of Belgacom's biggest MDFs, bitstream offers are and will remain wholesale offers of utmost importance to promote competition in the broadband market.

In this context, BIPT should investigate the relevance of **imposing a remedy of strict cost orientation on Belgacom's wholesale VDSL2 offer**.

4b – Improve the operational conditions of bitstream offers from Belgacom

Due to the ongoing importance of wholesale bitstream offers for the development of competition in the broadband market, it is important to **ensure that bitstream offers are enriched with a wide range of technical options and quality of services** for alternative DSL operators, in order for them to be innovative and to be able to differentiate their retail broadband offers from those of Belgacom.

Areas of improvement for Belgacom's wholesale bitstream offers can include:

- Additional points of collect, in particular for Belgacom's wholesale VDSL2 offer: current WBA VDSL2 offer includes only five national points of collect, and it should be investigated whether it would be useful and appropriate to add points of collect which would be 'lower' in the network.

- SLAs should be determined for the WBA VDSL2 offer, in terms of answering delay for service delivery, QoS agreements, fault solving, process for service recovery, etc.). Appropriate penalties should also be defined.

- Ensure that broadband speeds available with BROBA ADSL/ADSL2/ADSL2+ are available with wholesale VDSL2 offer when/where these BROBA offers are no longer available.

We note that these suggested areas of improvement are globally included in BIPT's draft decision related to WBA VDSL2 offer.

The extension and improvement of QoS criteria and the cost orientation of all bitstream services (suggested as intervention 4a) should also allow alternative DSL operators to provide television services (such as video-on-demand) to their customers.

4c – Audit the provision of wholesale services by Belgacom to alternative DSL operators

In the last few years, alternative DSL operators have raised numerous concerns about the quality of the provision of wholesale services by Belgacom. In order to investigate these complaints and identify potential discriminative behaviour by Belgacom, an audit of the provision of wholesale broadband services by Belgacom should be launched by BIPT, in terms of process and systems. It is our understanding that BIPT is in the process of launching this audit. **This audit should lead to conclusions on the existence or not of Belgacom's discriminatory behaviour** and should **define a clear action plan in case such behaviour is identified**.

4d – Tighten non-discrimination obligation imposed on Belgacom, based on the principle of equivalence of inputs

In addition to their complaints as regards potential discriminatory behaviour by Belgacom in the provision of wholesale broadband services, alternative DSL operators have also raised complaints about their inability to replicate some of Belgacom retail broadband offers, in the absence of corresponding wholesale broadband offers. As an example, Belgacom started launching VDSL/VDSL2 retail broadband services in 2005, but the Wholesale Broadband Access VDSL2 offer though published in 2008 has not been implemented yet.

BIPT should investigate the relevance of **imposing a tighter non discrimination obligation on Belgacom**. As part of such an obligation, the incumbent would be required to apply equivalent treatment between its own downstream business and independent third parties, enabling alternative DSL operators buying bitstream wholesale offers from Belgacom to provide the same retail offer to the end user as Belgacom.

This obligation would make it possible to:

- lower the risks of occurrence of discriminatory behaviour from Belgacom
- prevent Belgacom from launching retail offers that cannot be replicated with its wholesale offers previously approved by BIPT.

This would imply that:

- wholesale offers (which correspond to a retail offer from Belgacom) should be approved by BIPT and available before the launch of the retail offer by Belgacom
- Belgacom demonstrates that each retail offer can be replicated by alternative operators based on its wholesale inputs by submitting to BIPT a document for each retail service showing exactly which wholesale inputs are being used by Belgacom to build the relevant retail service.

5.2.5 Promote the development of backhaul network infrastructures and cabinet upgrades that do not discourage alternative operators from investing in LLU

In order to strengthen the economic case for sub-loop unbundling and encourage further investment in LLU, public authorities and BIPT should ensure that appropriate backhaul offers are available to alternative DSL operators, and that any further upgrades to cabinets made by Belgacom do not foreclose investment by alternative operators. We therefore recommend the following actions:

- 5a – Encourage investments from local authorities in local backhaul networks
- 5b – Tighten regulation of Belgacom's wholesale backhaul offers
- 5c – Ensure Belgacom's upgrades of street cabinets do not foreclose investment by other operators.

5a – Encourage investments from local authorities in local backhaul networks

Public authorities could **encourage local authorities to invest in the development of backhaul networks** in order to expand the footprint of MDF unbundling as well as unbundling of the local loop. These backhaul networks could also facilitate the further development of NGA networks by all operators.

In France, ARCEP estimates that around 40% of MDFs were unbundled thanks to the intervention and investment of local authorities in backhaul infrastructure.

Encouraging investment will have to be done with care in a context of economic downturn. Also, public intervention should focus on areas where private operators are unlikely to roll out network. In addition, government and local authorities will have to ensure they do not create new local monopolies and that network built with state subsidies and operated by private operators (for example in a public/private partnership) would be open to all operators throughout wholesale backhaul offers. Any investment scheme would have to be compatible with state-aid rules.

5b – Tighten regulation of Belgacom's wholesale backhaul offers

In order to strengthen the economic case for unbundling of the sub-loop and to stimulate the development of LLU, it should be investigated whether a **tighter regulation of Belgacom's wholesale backhaul offers** should be imposed. The availability of appropriate backhaul offers

(Ethernet backhaul, dark fibre, etc.) as well as duct access could encourage alternative DSL operators to invest in LLU and sub-loop unbundling since a large proportion of the cost for the alternative operator corresponds to the backhaul connection from their point of presence to the MDF/street cabinet.

BIPT's recent decision on NGA imposed on Belgacom to provide regulated duct access, Ethernet backhaul and dark fibre offer, cost oriented, for access to street cabinets, local exchange (LEX) and local distribution centre (LDC). We believe this decision should help foster the development of LLU. It is important that its application by Belgacom is closely monitored by BIPT.

5c – Ensure Belgacom's upgrades of street cabinets do not foreclose investment by other operators

In its NGA decision, BIPT notices that, as part of its VDSL roll-out, Belgacom opted for the installation of small street cabinets. In this document, Study and ease the migration BIPT wonders if Belgacom, as a foreseeing operator, should have reserved enough space in the street cabinets installed as part of its VDSL roll-out, to allow installation of VDSL DSLAM for alternative operators. BIPT also wonders if Belgacom did it purposely to hamper the development of competition.

As the roll-out of VDSL is well advanced (above 60% of population is covered), Belgacom future VDSL deployment will mainly take place in less dense areas where sub-loop unbundling is likely not to be economically viable. It is therefore likely that demand from alternative DSL operators will be very low in these areas. As a result, imposing specific obligation on the size of these new street cabinets might not be necessary (if there was no demand from alternative operators). However, for street cabinets already installed, we would recommend BIPT addresses space issues with Belgacom on a case-by-case basis, depending on the demand from alternative DSL operators.

5.2.6 Increase powers and efficiency of regulatory bodies and competition authorities

Belgium has been ranked last of EU25 countries on its institutional environment, as a result of "continuing legislative weaknesses" in the latest ECTA regulatory scorecard[15]. This highlights a concern, shared by governmental bodies, consumer associations and operators that the efficiency and powers of regulatory and control authorities in Belgium are not optimal. These concerns relate to the functioning and powers of the regulatory bodies (BIPT, media regulators, CSA, VRM and Medienrat) as well as the Competition Council.

The lack of efficiency is characterized by:

15 ECTA's regulatory scorecard is available at the following URL: http://www.ectaportal.com/en/basic651.html

- Long decision-making process. As an example, 26 months elapsed in Belgium between the national consultation for Markets 11 and 12 and the final decision from BIPT, whereas the average duration with other national regulatory authorities is closer to 12–18 months. This timing is mainly due the complexity of regulatory cooperation and coordination between BIPT and the regional media regulators. Also, decisions from the Competition Council related to telecoms cases can take up to several years.

- Systematic appeal against BIPT's decisions, which, as ECTA reports, remains a "significant source of legal uncertainty in Belgium where numerous challenges combine with lengthy court processes to delay the outcome".

In this context, public authorities should look into ways of making the regulatory decision process smoother, as well as increasing the collaboration between the different regulatory bodies. Therefore, we suggest the following means of intervention:

- 6a – Increase BIPT's powers
- 6b – Shorten intervention and decision-making time of the Competition Council (Conseil de la Concurrence)
- 6c – Strengthen the collaboration between BIPT and media regulatory bodies.

6a – Increase BIPT's powers

We would recommend **strengthening BIPT's economic and technical teams** (i.e. additional resources) in order to efficiently cope with its regulatory workload: setting-up of regulatory measures and decisions, approval process for regulated services, checking the proper application of measures (i.e. cost orientation, non discrimination). More resources will help BIPT be more reactive to requests, conduct more qualitative and quantitative analysis and define long-term strategic regulatory plans.

It should be investigated how **BIPT's sanction powers and injunction powers could be increased**. With more power and the ability to impose quickly stringent penalties, the incentive of SMP players to follow BIPT's decision would be stronger, and SMP players could be less prone to adopt anti-competitive behaviours.

6b – Shorten the intervention and decision-making time of the Competition Council (Conseil de la concurrence)

In the last few years, there have been several examples of cases investigated by the Competition Council about which the Council's decision-making process was particularly lengthy (typically Belgacom's take-over of Scarlet). Such a long decision process damages the confidence of market players in the Competition Council's ability to intervene in a timely manner. As a consequence, there is a risk that less actions are referred to the Competition Council, which could be detrimental to the market.

Moreover, in light of the current shift of market regulation from ex ante towards ex post regulation, the role of the Competition Council is instrumental to ensure that appropriate ex post regulation is effective, allowing fair competition to develop. This role is all the more important as the current market evolves towards the bundling of different services (Internet, television, fixed telephony, mobile telephony) and therefore requires thorough ex post regulation (i.e. to investigate potential cross-subsidies, margin squeeze, etc.).

An appropriate and efficient ex post regulation can happen only if the Competition Council can take decisions in a reactive way. Government should **investigate how to increase the efficiency of the Competition Council and whether it would be reasonable and justified to impose a maximum duration for the investigation of certain cases by the Competition Council**.

6c – Strengthen the collaboration between BIPT and media regulatory bodies

The ongoing move of the residential market towards the provision of multiple-play offers including broadband and television services is an illustration of the increasing convergence of the media and telecoms worlds. In this context, there is a growing need for collaboration and consistency between telecoms and media regulators. We would recommend to **conduct a review of the prerogatives and interactions between telecoms and media regulators** in order to increase the efficiency of the overall regulatory process.

5.2.7 Anticipate regulatory principles for FTTH access regulation

In recent years, alternative operators have complained about Belgacom's lack of transparency with regard to its network upgrades and how this might affect the provision of wholesale services. The announcements of Belgacom's VDSL network roll-out and LEX closures appeared as a "fait-accompli" for BIPT and alternative DSL operators. This led to subsequent delays in the implementation of appropriate regulatory measures associated with these network roll-outs.

In light of these past experiences and their detrimental impact on the market, it is important to ensure that better transparency and visibility are provided to the market with regard to future FTTH roll-out. This is the aim of the following suggested actions:

- 7a – Require transparency from broadband network operators as regards their FTTH roll-out plans
- 7b – Provide visibility with regard to key principles of FTTH regulation

7a – Require transparency from broadband network operators as regards their FTTH roll-out plans

We would recommend that BIPT **requests that every broadband operator in Belgium gives at least three months' notice prior to any FTTH roll-out plan**, describing the main network

architecture choices, as well as potential impact on the evolution of existing and future wholesale broadband offers provided to other operators.

7b – Provide visibility with regard to key principles of FTTH regulation

In order to provide visibility to the market, **the key principles of future FTTH regulation** should be clarified. These principles should ensure that:

- FTTH investment is encouraged and protected
- FTTH roll-out does not lead to the re-creation of an access monopoly, whereby end users connected with fibre would not be able to choose another provider of electronic communication services.

We would recommend BIPT to provide first regulatory principles as part of its ongoing review of Markets 4 and 5, in particular as regards potential access regulation. These principles could include guidelines for locating and sharing the concentration points, imposing a minimum number of households served from a passive splitters' location, ensuring that sufficient spare space is available for optical distribution frame (ODF) and splitters from several operators, etc.

5.2.8 Harmonise access and sharing of passive infrastructures

As highlighted by the Comité Consultatif des Télécommunications and by the ECTA, there is a need for harmonisation of access and sharing of passive infrastructures to encourage investments in network roll-out. Harmonisation is particularly important to stimulate future potential NGA roll-out, as well as to facilitate infrastructure roll-out in less dense areas.

We suggest the following actions:

- 8a – Harmonise rights of way in the public domain
- 8b – Facilitate infrastructure sharing

8a – Harmonise rights of way in the public domain

There is an identified need for common procedures governing rights of way for telecommunications. According to the ECTA, Belgium is reported to be particularly inefficient in terms of rights of way harmonisation, as different procedures exist from region to region and municipality to municipality. Several cities have defined rules by sector codes (telecoms, water, gas, etc.) for the use of the public domain. Many of the procedures are similar, but not identical, which is considered to hamper investments.

In this context, we would recommend the **launch of a consultation process aiming at harmonising and simplifying processes and price ranges for rights of way**.

Belgium could for instance look at best European practices in terms of rights of way framework among which is the UK: operators must follow a common procedure to apply for rights of way, defined in the Communications Act, and Ofcom is the single point of contact. There are also common procedures in place allowing the efficient resolution of disputes regarding rights of way.

8b – Facilitate infrastructure sharing

A range of potential actions could be envisaged to **facilitate infrastructure sharing**, and in particular telecoms ducting. These actions need to be supported by the government as well as local authorities. With regard to duct sharing, the government should facilitate the imposition of specific rules to public utilities. Among the potential actions to facilitate infrastructure sharing, we would recommend the following:

- **inventory and publication of available passive infrastructure (e.g. ducts**
- **monitoring of ongoing and future infrastructure projects**
- **systematic installation of ducts when civil works are undertaken in the public domain**
- **systematic installation of in-building ducts during the construction of new buildings**
- **standardization of engineering rules for infrastructure sharing**.

5.3 Analysis of the relative impact and implementation difficulty of our suggested actions

We summarise below the list of potential actions that could help promote the development of the broadband market:

- 1a – Promote an increase in PC penetration rate
- 1b – Address the lack of interest for Internet from certain categories of population
- 2a – Encourage consolidation of cable networks in Wallonia
- 2b – Educate consumers about their real needs in terms of broadband services
- 2c – Provide free migration within operator's retail broadband portfolio, when the operator changes the characteristics (speed, download cap, etc.) of the offer the user initially subscribed to
- 2d – Study and ease the migration process for end users wishing to switch broadband provider
- 3a – Impose the provision of a wholesale offer, available on a national basis, allowing the broadcast of TV services
- 4a – Impose cost orientation on all of Belgacom's wholesale broadband offers
- 4b –Improve the operational conditions of bitstream offers from Belgacom
- 4c – Audit the provision of wholesale services by Belgacom to alternative DSL operators
- 4d – Tighten non-discrimination obligation imposed on Belgacom, based on the principle of equivalence of inputs
- 5a – Encourage investments from local authorities in local backhaul networks
- 5b – Tighten regulation of Belgacom's wholesale backhaul offers
- 5c – Ensure Belgacom's upgrades of street cabinets do not foreclose investment by other operators

- 6a – Increase BIPT's powers
- 6b – Shorten the intervention and decision-making time of the Competition Council (Conseil de la concurrence)
- 6c – Strengthen the collaboration between BIPT and media regulatory bodies
- 7a – Require transparency from broadband network operators as regards their FTTH roll-out plans
- 7b – Provide visibility with regard to key principles of FTTH regulation
- 8a – Harmonise rights of way in the public domain
- 8b – Facilitate infrastructure sharing.

These actions can be categorised based on their likely impact on the development of the broadband market, as well as their difficulty of implementation, in terms of cost, timescale, legal complexity, political implication. We provide below a high-level classification of the suggested actions in terms of impact and difficulty of implementation. We have also split these actions according to whether they are under BIPT's control or beyond BIPT's control.

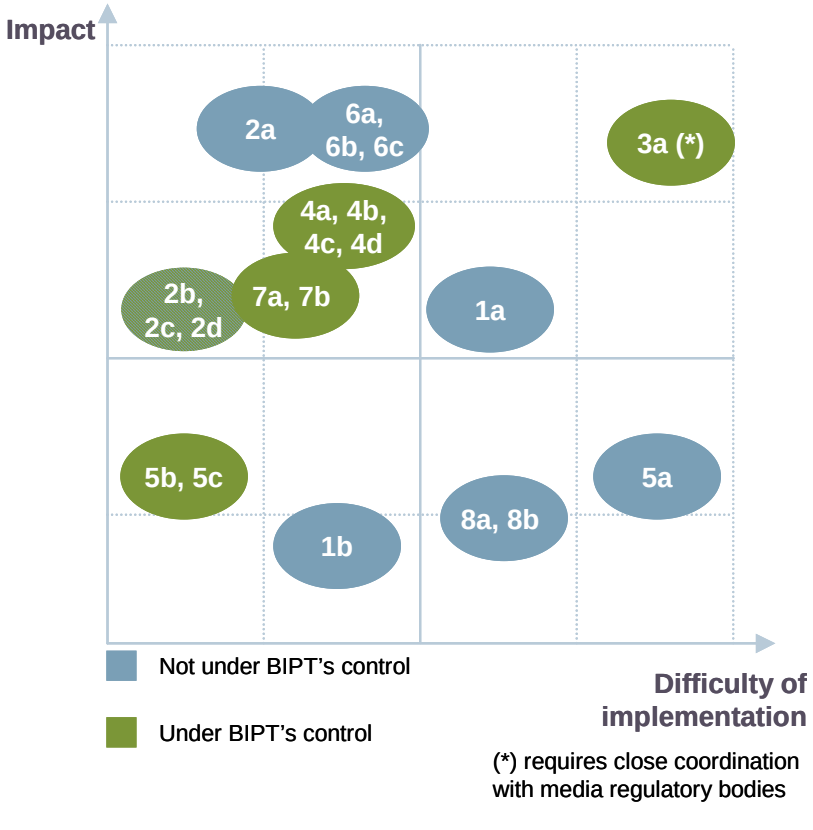


Figure 5.3: High-level classification of suggested means of intervention by impact on broadband development and difficulty of implementation [Source: Analysys Mason, BIPT]

The classification provided, although obviously subject to debate, is aimed at defining priorities of intervention. It makes it possible to identify several groups of actions:

- actions with high impact and low difficulty of implementation: quick wins with highest priority
- actions with low impact but low difficulty of implementation: quick wins with lower priority

- actions with high impact but difficult to implement: long-term actions with high priority
- actions with low impact and difficult to implement: actions with lowest priority.

Quick wins with highest priority: actions 2a, 4a, 4b, 4c, 4d, 6a, 6b, 6c, 7a, 7b

- We believe that all actions aiming at increasing the powers and efficiency of the regulatory bodies and competition authorities could have a significant impact on the development of a fair competition, by smoothing the decision process and allowing regulation to play its role in a timely fashion. Implementing these changes will mainly depend on the political will to do so.

- We also believe that tighter regulation of wholesale offers from an operational, technical and pricing point of view should define a new level playing field for alternative DSL operators and increase competition at a national level. The ongoing market review of Markets 4 (unbundling) and 5 (bitstream), as well as the forthcoming audit of Belgacom's wholesale offers will be key to the improvement of wholesale broadband conditions.

- The consolidation of cable networks in Wallonia could lead to the strengthening of a real operator representing a counter power to Belgacom, based on infrastructure. It is mainly a matter of political will to encourage this consolidation.

- Furthermore, actions aimed at providing more visibility to the market as regards future major upgrades of Belgacom's network and associated regulatory guidelines. Again, the review of Markets 4 and 5 is a good opportunity for BIPT to intervene on these actions.

Quick wins with lower priority: 1b, 2b, 2c, 2d,5b,5c

- Actions aiming at informing customers about their needs in terms of broadband services and about easing the migration process to offers from their current provider or to offers from other providers are not complex to implement. Although they are useful, these actions are likely to take time to have an impact on the market.

- Actions related to the reinforcement of backhaul regulation and the regulation of street cabinets consist mainly in making sure that BIPT's decisions on NGA are respected by Belgacom.

- Actions aiming at addressing the lack of interest for Internet also go in the right direction but might not have a significant impact on the take-up of broadband in the coming years.

Long-term actions with high

- Actions to increase PC penetration rate should drive broadband penetration up, although it is likely that the impact will take some time

priority:1a, 3a

to materialise.

- The imposition of wholesale offers allowing ISPs to provide IPTV services is key for them to compete in the market of triple-play offers. However, even if regulation can impose these wholesale offers, it is likely that there will be technical hurdles to pass before the wholesale offers are available in practice.

Long-term actions with low priority: 5a, 8a, 8b

- Actions aiming at harmonising rights of ways and infrastructure sharing are not expected to have an impact on the broadband market in the short term, but could have an impact in the longer term, once alternative operators are ready to invest in infrastructure, for instance as part of the NGA roll-out.

- Encouraging investment from local authorities in local backhaul networks could stimulate infrastructure roll-out by market players and improve the economic case for LLU. However, it is unlikely that this action will materialise in the short term in the current economic situation.