

DETERMINATION ON THE METHOD TO ASSESS MARGIN SQUEEZES IN BROADBAND OFFERS PROVIDED BY THE PT GROUP

- 1:50 CONTENTION OFFERS –

I. FRAMEWORK AND CURRENT SITUATION

On 25.06.2003¹, ICP-ANACOM acknowledged a margin squeeze practise concerning the ADSL lowest speed offer provided at the time by companies of the PT Group. ICP-ANACOM considered at the time that a monthly minimum difference of €8.00 per access between the “PT ADSL Network” retail price and costs would be an appropriate margin to cope with product marketing costs incurred at retail level, namely network, maintenance, operation and customer relations², and thus established a “retail-minus” rule to be observed by that offer.

According to that rule, which, as referred, assumed a minimum margin of €8.00, it was established that for the ADSL service with 512 kbps/128 kbps speed, the wholesale offer monthly price (for local access) should not exceed the lowest monthly retail price set for this speed, and practiced by companies of the PT Group, deducted of 40%.

Following that decision, PT Comunicações (PTC) decreased, *inter alia*, the local access monthly price for the 512 Kbps offer from €21,90 to €17,50, which, together with the aggregated access price reduction, guaranteed an €8,00 margin, and at the same time, compliance with the minimum 40% margin between retail price and local access price.

Subsequently, on 20.01.2004³, ICP-ANACOM determined the reduction to €16 of the local access price for the 512 kbps offer. As the companies of the PT Group did not decrease the retail price, the margin increased from €8,00 to €9,50.

In 2005, in the scope of the assessment of the wholesale broadband access market⁴, ICP-ANACOM determined that a price control, supported in the “retail minus” rule, which had been made clear in

¹ See determination at <http://www.anacom.pt/template31.jsp?categoryId=214843>.

² The reference made to margin should hereinafter be taken as the monthly margin per access between retail prices and costs incurred by operators with the “PT ADSL Network” wholesale offer, namely costs with local access and aggregated access.

³ See determination at <http://www.anacom.pt/template31.jsp?categoryId=216964>.

⁴ See determination of 24.06.2005 at <http://www.anacom.pt/template31.jsp?categoryId=215944>.

determination of 25.06.2003, as far as class 0 was concerned (512 Kbps, with 1:50 contention⁵), should be applied to all broadband offers and not exclusively to the offer that corresponded to class 0. It decided also that the “retail minus” rule should be applied by reference to all broadband access retail offers provided by the companies of the PT Group, whether they are supported in the public switched telephone network or in the cable distribution network.

Thus, following alterations introduced in the “PT ADSL Network” offer, namely new access classes at 4 Mbps and 8 Mbps, and the price reduction of access class at 2 Mbps, all of which with a maximum 1:50 contention, ICP-ANACOM, having assessed retail prices to be practised by PTC, and deeming there was strong evidence of a margin squeeze, in the light of available data, determined that PTC suspended the introduction of alterations to the “PT ADSL Network” offer until appropriate competitive conditions were ensured and confirmed. This are linked to the fact that, although offers under consideration conformed to the 40% relative margin, they did not guarantee an appropriate absolute margin.

As a direct result of this decision, PTC altered the “PT ADSL Network” wholesale offer, and in determination of 24.06.2005⁶, ICP-ANACOM, verifying that the estimated difference between the retail prices practised by the PT Group and the wholesale prices of OSPs were, generally speaking, significantly higher than the previous difference in the 512 Kbps offer – of €9,50 -, concluded they ensured the existence of fair competition conditions, and did not oppose to the entry into force of offers altered in that scope.

In 2006, PTC launched new metered and unmetered broadband offers, which in the case of unmetered offers represented margins exceeding €9,50, except for the 512 Kbps offer, which was based on a €8,64 margin.

The need to assess these successive offers increased the urgency to adapt the regulatory practise to the market reality and to clarify the method used by this Authority to assess situations of margin squeezes, increasing predictability, transparency and certainty for market agents. This framework aims also to:

- (a) Promote competition in the offer of electronic communications networks and services and of associated resources and services, ensuring that efficient operators provide feasible offers;
- (b) Encourage efficient investment in infrastructure and to promote innovation; and
- (c) Ensure that users derive maximum benefit in terms of choice, price and quality.

In this scope of this procedure, ICP-ANACOM requested of beneficiaries of the “PT ADSL Network” offer, on 17.07.2006, that they provided up-to-date information on marketing costs and gains of ADSL retail offers.

On 06.09.2006, PTC amended the “PT ADSL Network” wholesale offer, introducing new access classes (reaching 24 Mbps) and new prices for classes of local access and aggregated access.

⁵ The contention rate represents the relation between the bandwidth engaged by users of a central and the bandwidth that effectively connects that central to the Internet Service Provider. Thus, 1:50 contention rate indicates that the bandwidth connecting the ISP to the central is shared by users at a 1:50 ratio. For this reason, during usage peak hours, when several customers are connected at the same time, the potential connection speed is lower.

⁶ See determination: <http://www.anacom.pt/template31.jsp?categoryId=215924>.

Afterwards, PT.Com⁷ and TV Cabo⁸ informed ICP-ANACOM of their wish to launch new broadband Internet access retail offers, which were analysed by this Authority, in order to assess their compliance with the “retail minus” rule laid down in the above-mentioned decision of 24.06.2005.

Given the current situation where ADSL accesses in general are based on classes with a maximum 1:50 contention and where market dynamics are essentially supported on these offers, and as no relevant access database based on other contention rates yet exists, that allows for an accurate evaluation of offer marketing costs or of likely consumption⁹, the method described in detail in this determination focuses solely on offers with maximum 1:50 contention and on broadband offers supported on the cable distribution network.

It is also clear that offers with a maximum contention better than 1:50 are aimed mainly at a non-residential segment, where there is a higher level of competition and where the positioning of different offers does not depend on prices.

In view of the market evolution from now on, ICP-ANACOM shall assess whether it is necessary and proportionate to specify with the same degree of detail a methodology to implement the “retail minus” rule for offers with different maximum contention rates, taking into account that the referred “retail minus” rule applies to all offers, regardless of access speeds and contention rates.

This determination covers both metered and unmetered broadband offers.

It should be stressed that while this method is intended to be as inclusive as possible, even in the scope of offers with maximum 1:50 contention there may be very specific offers which may require an additional method.

II. ASSESSMENT

1. PRELIMINARY MATTERS

- Concept of margin squeeze and application of the “retail minus” rule

According to the European Commission¹⁰, there is a margin squeeze where it “*could be demonstrated [...] that the dominant company's own downstream operations could not trade profitably on the basis of the upstream price charged to its competitors by the upstream operating arm of the dominant company*”. In other words, a margin squeeze occurs if the difference between prices charged to end users and (wholesale) prices charged to competitors for the provision of equivalent services is negative or insufficient to cover specific costs of products of the dominant operator to provide services to its own end users.

⁷ On 12.10.2006 and 13.10.2006.

⁸ On 18.10.2006.

⁹ According to information concerning March 2007, around 98% of offers supported on the “PT ADSL Network” had a maximum 1:50 contention rate.

¹⁰ Commission notice on the application of the competition rules to access agreements in the telecommunications sector (OJ C 265/2, of 22.08.1998)

According also to the Commission¹¹, “*in such a situation, anticompetitive pressure is exerted on competitors’ trading margins, which are non-existent or too narrow to enable them to compete with the established operator [...]. An insufficient spread between a vertically integrated dominant operator’s wholesale and retail charges constitutes anticompetitive conduct especially where other providers are excluded from competition on the downstream market even if they are at least as efficient as the established operator.*”

In the case at issue, we have a vertically integrated operator (the PT Group) that dominates the broadband Internet access wholesale and retail markets, and which is under the obligation to control prices through compliance with the “retail minus” rule in the relevant wholesale broadband Internet access market.

In these circumstances, to render concrete the “retail minus” rule, aiming to avoid margin squeeze situations, one should refer to the costs borne by the dominant operator, as a proxy to costs of a reasonably efficient service provider”¹².

Thus, on the basis of costs incurred by companies of the PT Group (especially PT.Com, the company with the highest number of accesses) when marketing retail offers, it is possible to evaluate whether costs presented by companies of that business group are reasonable, taking into account information of other reasonably efficient beneficiaries. For this purpose, as referred above, ICP-ANACOM requested of beneficiaries of the “PT ADSL Network” offer, on 17.07.2006, up-to-date information on marketing costs and gains of ADSL retail offers, having received information from the following companies:

- AR Telecom;
- Colt;
- PT Group;
- Nortenet;
- OniTelecom;
- Sonaecom;
- Via Net.Works; and
- Vodafone.

Information submitted by some beneficiaries was incomplete or insufficient, thus preventing the necessary degree of detail to calculate costs and gains per access and per offer, and no justification was presented for this lack of information. Missing data was thus requested from beneficiaries.

¹¹ See Commission decision of 21 May 2003 relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-1/37.451, 37.578, 37.579 - Deutsche Telekom AG).

¹² See above-mentioned Commission notice on the application of the competition rules to access agreements in the telecommunications sector. In the Public Consultation on the application of article 82 of the EC Treaty to situations of “exclusion” abuse, the Commission refers as follows: “*The typical benchmark for a reasonably efficient competitor is the integrated input owner. A margin squeeze could therefore be demonstrated by showing that the input owner’s own downstream operations could not trade profitably on the basis of the upstream price charged to its competitors by its upstream operating arm.*”

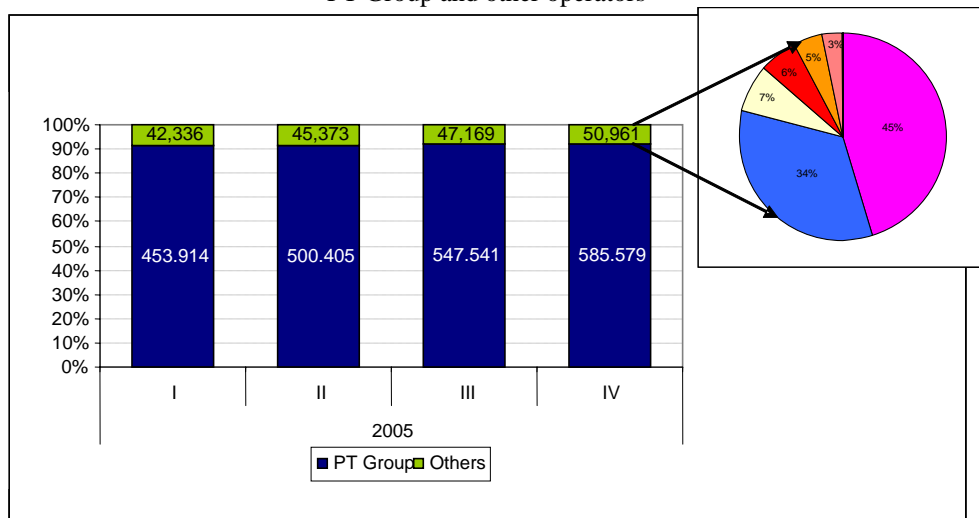
Even after ICP-ANACOM had insisted, information from these beneficiaries prevents it from being considered for the purpose of evaluating whether costs presented by companies of the PT Group are reasonable.

In fact:

- Sonaecom, having identified recurring and non-recurring costs, referred it was unable to distinguish the nature of costs – recurring v.s. non-recurring;
- Vodafone informs that product marketing costs and other costs (for example, related to invoicing, collection and bad debt liability, after sale services and customer service) are aggregated by different lines of the company's business, and it is thus impossible to single out exclusively the ADSL service costs;
- Nortenet and AR Telecom referred they are not able at the moment to break down cost items per retail offer.

On the other hand, several beneficiaries submitted very few accesses (see Graphic 1), which does not grant them sufficient scale to consider costs incurred with the reference retail offer marketing, for the purpose of assessing whether costs incurred by companies of the PT Group are reasonable. In view of this fact, the information provided by Via Net.Works and OniTelecom was used to assess whether costs indicated by PT.Com are reasonable.

Graphic 1. Distribution of ADSL accesses supported on the “PT ADSL Network” between the PT Group and other operators



ICP-ANACOM thus resorted in this decision to the most recent available data, which were submitted by OSP. During the prior hearing procedure, interested parties did not submit any further recent information able to reject data used by this Authority. Given also the relation with the operation scale and the reduction of some base costs, the tendency of the offer marketing unit costs to decrease was also weighted.

- **Relevant data to build up a method**

The necessary data to assess any margin squeeze situations in a framework of the application of the “retail-minus” rule may be organized in three large groups:

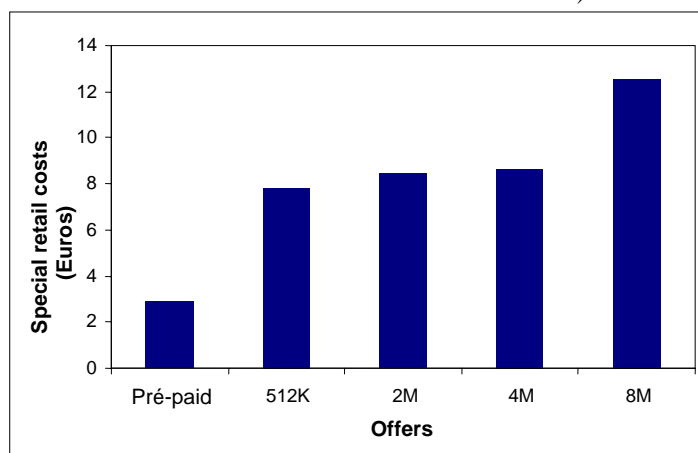
- Revenues;
- Costs incurred with the “PT ADSL Network”;
- Costs supported to provide services to end customers.

Estimates of revenue achieved with the marketing of retail ADSL offers shall be presented in section 2.

Estimates of costs incurred with the “PT ADSL Network” were calculated according to the method and based on assumptions presented in section 3.

As regards the second component of costs, the estimates of which are presented in section 4, it should be referred that they concern a number of costs that aggregate both specific costs of each offer, and that depend on their specific features (for example, international IP connectivity or sales commissions) and costs that are independent of the features of the offer under consideration (for example, costs of servers and outsourcing, package and modem) – see Graphic 2. It should be noted that marketing costs of offers considered by ICP-ANACOM include all services and components necessary to the provision of the broadband Internet access service that are incremental to components and costs attached to the “PT ADSL Network” wholesale offer.

Graphic 2. Costs incurred in marketing retail ADSL offers (except for costs with the “PT ADSL Network” offer)



In confirming the “retail minus” rule, to guarantee a minimum margin between retail prices and wholesale costs, one may establish a margin either for each individual offer or for the set of offers marketed by companies of the PT Group.

As components of revenues and costs vary from one offer to another, the margin assessment applied to the set of offers could conceal situations of cross-subsidization within such offers and would not reflect all costs incurred with the offer, as referred above. This type of situations may prevent the entry of providers who wish to provide the market with a specific offer, and subsequently, condition

the whole market. For this reason, the rule(s) to be rendered concrete should take regard of each retail offer, the ones which already exist and those to be established in the future.

This Authority takes also notice that:

- The set of offers provided by OSP does not fall fully within the scope of offers of the PT Group;
- In average, OSP resort to less classes of service than the PT Group.

These observations represent concrete market data which favour the adoption of a method that provides for the analysis of competition conditions on an offer-by-offer basis.

The “retail minus” rule may also be rendered concrete by defining the margin (“minus”) as:

- (a) An absolute value;
- (b) A relative value (percentage of the retail price); or
- (c) A combination of an absolute and a relative value.

As a general principle, the best option to express a margin is to choose the one that best reflects underlying costs of services under consideration. In this case, and as referred above, there are costs per access which remain constant regardless of the type of offer and other which vary according to the features of offers.

In fact:

- (a) The definition of an absolute margin has the advantage of preventing any decrease of the absolute margins of competitors, which would take place in case the margin was defined as a percentage of the retail price and the latter was reduced;
- (b) Setting a relative margin has the potential advantage of ensuring a higher degree of flexibility as regards the definition of the product price. However, as referred, in case retail prices decrease, the reduction of corresponding wholesale prices may not be sufficient, thus resulting an absolute margin that leads to a margin squeeze;
- (c) opting for a combination of an absolute value and a relative value both enables a lower risk of a margin squeeze, and takes into account the market changing nature. With this approach, in case retail prices decrease, the margin absolute value is reduced, but it will increase in percentage terms.

ICP-ANACOM thus opts for a combination of an absolute value and a relative value, referred in point c), taking into account the best adaptation to costs effectively incurred in the provision of different offers.

When providing an ADSL offer at retail level, a provider has costs and gains, which may have a recurring or non-recurring nature, which in this last case are amortised for the period of stay of the customer. Having ICP-ANACOM requested this parameter explicitly from beneficiaries of the “PT ADSL Network” offers, it follows from replies received that¹³:

- (a) it varies between 14 and 21 months (according to an OSP);
- (b) it exceeds 24 months, the churn engaged to this product being quite low (according to another OSP);
- (c) it varies between 29 and 31 months for business customers (according to a third OSP);
- (d) it is of around 37 months for (business) customers acquired in 2002 (stated a fourth OSP);
- (e) it varies between 4 and 5 years (declared another OSP).

In any event, the average period of customer stay is closely related to customer satisfaction with service conditions provided by the OSP, and it is likely that more effective operators indicate a higher average period of stay.

Taking into account replies from operators, and notwithstanding the fact that, in time, it is likely that customer stay period may increase with the maturity of the offer, ICP-ANACOM adopts, for this purpose, a customer stay period (T) of 36 months:

$$T = 36 \text{ months} \qquad (1)$$

It should be stressed that the European Commission, for example, in Decision of 16.07.2003 (Procedure COMP/38.233 – *Wanadoo Interactive*) used a 48-month period to amortise non-recurrent values.

In theory, the margin assessment should be performed taking into account discounted cash flows¹⁴. However, given the increased complexity and low impact on end result, non-recurring cost and revenues are amortised by dividing them for the average customer stay period and adding them respectively to recurring costs and revenues.

The following sections aim to define a clear method that may be used by market agents to assess whether a specific broadband Internet access offer, already existent or yet to be launched in the market, ensures the existence of competition conditions.

As referred above, to assess whether there is a margin squeeze situation, the following factors should be estimated:

- (a) Revenues charged to end users (section 2);
- (b) Wholesale costs incurred in the “PT ADSL Network” offer, namely the ones related with local and aggregated accesses (section 3); and

¹³ The PT Group informed it lacked data on the year of customer acquisition.

¹⁴ DCF assessment.

- (c) Specific costs of products of the dominant operator to provide services to end customers, namely costs associated to marketing, invoicing and collection, network and customer equipment, IP connectivity and all service and component costs necessary to the provision of a broadband Internet access service that are incremental to components and costs attached to the “PT ADSL Network” wholesale offer (section 4).

2. ESTIMATE OF REVENUES

From data gathered by ICP-ANACOM, the following categories of revenues may be identified as relevant:

- Installation (also known as service activation) - P_i ;
- Monthly charge - P_M ;
- Traffic (additional) - P_T .

2.1. Installation/Activation

The installation price is usually a direct tariff element. However, given the existence of promotions (for example, as a rule companies of the PT Group provide free activation for online purchases with 12-month contracts), the average installation revenue is lower than the installation price.

According to information submitted by PT.Com, it should be concluded that the installation revenue is around [start confidential information – SCI] [end confidential information – ECI] of the installation price. To estimate the installation revenue (the monthly equivalent), the following formula should be used:

$$P_i = \frac{(1 - d_i) \times I}{T} \quad (2)$$

Where I is the installation price in euros and d_i corresponds to the average discount given on the installation/activation price, estimated at 10%.

Nevertheless, it should be taken into account that if companies of the PT Group carry out general promotions related to the offer of a kit (which usually includes a modem and a microfilter) and activation, the kit installation revenues considered for the purpose of this determination are null.

2.2. Monthly charge

The PT Group markets currently two main types of broadband Internet access offers:

- Unmetered offers¹⁵; and
- Metered offers, with or without compulsory charges¹⁶.

¹⁵ Which is the case for offers at 256 kbps, 1Mb, 8 Mb and 24 Mb (information gathered on 09.02.2007).

¹⁶ Which is the case for “Free” (information gathered on 09.02.2007).

Monthly charges revenues of unmetered offers, unless promotions have been offered, namely a discount for a given number of months, are a direct tariff element. Where new customers are given a d_M discount for n months, monthly charge revenues are given by:

$$P_M = M - \frac{n \times d_M \times M}{T} \quad (3)$$

Where M is the product's monthly charge in euros and n is the number of months for which the d_M is given. These revenues may be weighted taking into account the monthly gains generated by existing customers and monthly gains generated by new customers (this would imply estimating the expected number of subscriptions).

For metered offers, payment of a fixed value V may be provided every n months (for example, an annual sum, where $n = 12$), revenues of which (P_V) are given by:

$$P_V = \frac{V}{n} \quad (4)$$

Where V is the fixed value to be paid every n months, in euros.

2.3. Traffic (additional)

Unmetered offers marketed by PT.Com usually have traffic limits. Beyond this limit, traffic consumption is charged. As traffic limits in retail offers have increased¹⁷, it is likely that revenues with additional traffic will decrease. Until new data enable the review of the level of offer consumption, it is assumed that revenues of metered offers additional traffic are null.

As referred above, companies of the PT Group have marketed or are currently marketing metered offers with (i), compulsory charges, (ii) monthly charges which include traffic time and (iii) other offers that do not imply compulsory charges nor monthly payments but include the payment of an annual sum. In this kind of offers, the tariff involves prices per time unit (for example, in the case of metered offers of the PT Group, the time unit for charging purposes is 10 minutes, having been recently changed to 1 minute).

In this case, average revenues depend on the Internet access traffic profile, namely the average duration of each session and number of sessions per month.

¹⁷ For PT.Com offers (Sapo) with speeds at 256 Kbps, 1 Mbps, 8 Mbps and 24 Mbps and 1:50 contention, current traffic limits are as follows:

- 3 Gb for national traffic and 1 Gb for international traffic (256 Kbps);
- 10 Gb for national traffic and 4 Gb for international traffic (1 Mbps);
- Unlimited national traffic and 30 Gb for international traffic (8 Mbps);
- Unlimited national traffic and 60 Gb for international traffic (24 Mbps).

The end user was considered to subscribe to the electronic invoice and to a direct debit payment. Otherwise, traffic limits, in some situations, may be lower. Information gathered on 09.02.2007.

For an offer without compulsory charges nor monthly charges, the average monthly revenue of the offer is given by adding the sum given by the usage price for i hours per month and the likelihood of using the offer i hours per month (given an expected monthly average level of use). For an offer with compulsory charges this component (C_M) must also be taken into account.

The average “traffic” revenues, for offers without a monthly charge¹⁸, are thus given by:

$$P_T = \sum_{i=1}^h \text{Max}[C_M; (P_U \times N_U \times i)] \times P_i | U_M \quad \text{where} \quad \sum_{i=1}^h P_i | U_M = 1 \quad (5)$$

And for an offer with a monthly charge that includes traffic time,

$$P_T = M + \sum_{i=LH+1}^h [P_U \times N_U \times (i - LH)] \times P_i | U_M \quad (6)$$

Where h is the monthly use time limit (it is considered that as from 40 hours every month the series stabilizes), LH is the hourly limit attached to the offer, C_M is the equivalent minimum monthly charge in euros (where appropriate), P_U is the average revenue per invoicing unit, N_U is the number of invoicing units per hour, P_i is the likelihood of using the offer i hours per month and U_M is the expected monthly average level of use in hours.

As regards the likelihood of using the offer i hours per month (P_i), the distribution of the monthly use of metered offers provided by the PT Group is close to a negative exponential distribution (see Graphic 3), the parameter of which is the monthly average use (U_M). The cumulative function of the monthly usage distribution [$F(i)$], that is, the likelihood of using the offer up to i hours per month, is given by:

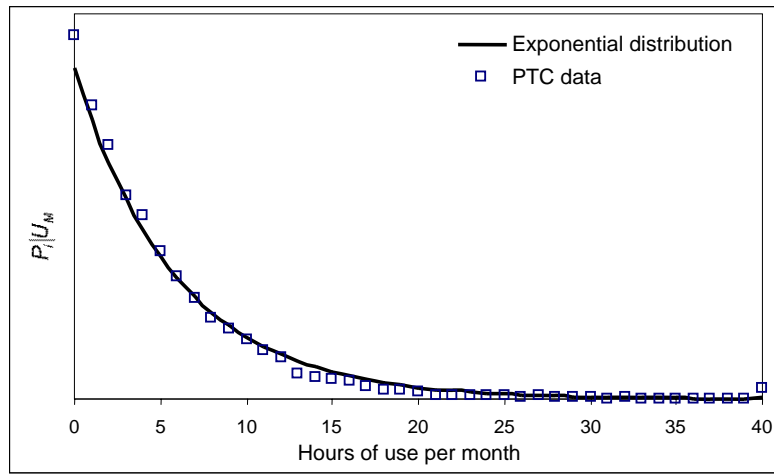
$$F(i) = 1 - \exp\left(-\frac{i}{U_M}\right) \quad (7)$$

The likelihood of using the offer between $i - 1$ and i hours per month, is thus given by:

$$P_i | U_M = F(i) - F(i - 1) \quad (8)$$

¹⁸ With or without compulsory charges.

Graphic 3. Likelihood of using the offer between $i - 1$ and i hours per month according to data supplied by PT and to a negative exponential distribution



ICP-ANACOM shall adopt the exponential distribution to estimate the monthly use profile for as long as this distribution faithfully represents the true level of use (which may only be assessed after the offer has been made available in the market).

Based on the pattern concerning the use of broadband Internet access metered offers provided by the PT Group, the following values were adopted for these offers:

$$D_S = 26 \text{ minutes} \quad (9)$$

$$U_M = 6,6 \text{ hours} \quad (10)$$

Assuming also that the duration of sessions follows a negative exponential distribution, the average revenue per invoicing unit is given by:

$$P_U = p_U \times \frac{D_U}{D_S} \times \sum_{i=1}^{\infty} i \times [F(i \cdot D_U) - F((i-1) \cdot D_U)] \quad (11)$$

With

$$F(x) = 1 - \exp\left(-\frac{x}{D_S}\right) \quad (12)$$

Where p_U is the invoicing unit price in euros, D_U is the invoicing unit duration in minutes, D_S is the session average duration in minutes. This formula may be adjusted in relation to the number of tariff options.

3. WHOLESALE COSTS ESTIMATE (WITH “PT ADSL NETWORK” OFFER)

Costs incurred by providers with the “PT ADSL Network” wholesale offer may be broken down in costs concerning:

- Local access (installation - C_{IAL} - and monthly charge - C_{MAL});
- Physical access in the aggregated access (installation - C_{IAG} - and monthly charge - C_{MAG});
- Speed of aggregated access - C_{DAG} .

3.1.1. Local access costs (installation and monthly charge)

The local access installation cost is a tariff direct element. Although at the moment the “PT ADSL Network” offer presents two different prices (€38.00, where the provision does not require a splitter or travelling, and €99.76, for a provision that requires a splitter/micro-filter and travelling), most installations do not require a splitter or travelling.

Thus, for the purposes of this decision, the local access installation cost is assumed to be given by:

$$C_{IAL} = p_{IAL} \quad (13)$$

Where p_{IAL} is the local access installation price without splitter and without travelling, currently set at €38.00. This non-recurring component must be amortised, being divided by T .

As regards classes of unmetered local access, the local access monthly charge is a direct element of the “PT ADSL Network” offer for each local access class.

As far as metered local access classes (that is, the ones that include a specific period of use) are concerned, it is necessary to estimate an average cost, like the method used to estimate revenues, taking into consideration the usage profile. The average cost of the local access monthly charge (C_{MAL}) for local access metered classes is thus given by:

$$C_{MAL} = MAL + \sum_{i=LH+1}^h ([P_U \times N_U \times (i - LH)] \times P_i | U_M) \quad (14)$$

Where MAL is the local access monthly charge in euros and other parameters are estimated by resort to formulas (7) to (12).

3.1.2 Physical access costs in the aggregated access (installation and monthly charge)

As regards the offer of an ADSL product, it is necessary to use a physical access in the aggregated access, which must have the capacity to support the speed generated by local accesses. Thus, when a specific offer is launched, it is necessary to estimate the maximum number and type of circuits needed to enable the flow of expected local accesses speed, which depends on the maximum speed

of the offer, and, naturally, on the maximum contention rate¹⁹. Average consumptions also depend on whether there are traffic limits and on the value of such limits, thus the following estimates are valid on the basis of this assumption.

Thus, it is necessary first to estimate, for offers with maximum 1:50 contention, the average consumption of a given offer. For this purpose, taking the starting offer (in this case, class 21 offer – 256 Kbps maximum downstream speed) the average consumption is given by:

$$CONS_0 = D_0 \times 1:50 \quad (15)$$

Where D_0 corresponds to the maximum downstream speed, in Kbps, of the starting class²⁰ with maximum 1:50 contention.

As acknowledged in determination of 24.06.2005, the evolution to higher speed offers does not imply that consumption will vary proportionally to the maximum speed of offers. ICP-ANACOM deems also that, on an initial stage, consumption variation given the migration/introduction of an offer depends heavily on the specific conditions on which it occurs.

ICP-ANACOM has used in the past words that suggested extreme situations concerning offers (a) in which customers were “forced” to migrate and; (b) where all customers chose the offer voluntarily and fully in line with their own needs.

However, having been adopted an average offer period of stay of 36 months, this Authority acknowledges that in the medium/long term, it is likely that customers of all offers available in the market tend to show a similar traffic profile, with a mix between customers who have migrated voluntarily, who predominate, and those that were “forced” to do so.

Thus, taking into account that the number of accesses chosen voluntarily will tend to be higher than other types of accesses, it is deemed that the formula used before by ICP-ANACOM to estimate traffic consumption in situations of voluntary migration will be the most appropriate to estimate, in a stable situation, the average consumption of each local access.

In the light of the above, it is considered that the following formula represents a better estimate for consumption:

$$CONS_n = CONS_i \times 1,45^{\log_2 \left(\frac{D_n}{D_i} \right)} \quad (16)$$

Where $CONS_i$ corresponds to the traffic consumption estimated in the speed class immediately below the new class and where the 1,45 coefficient was estimated taking into consideration the most up-to-date information submitted by PT.Com.

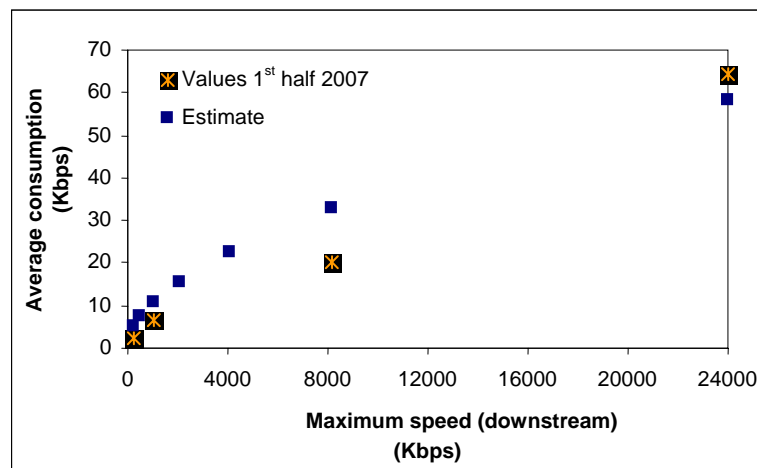
¹⁹ It should be stressed that, in terms of the “PT ADSL Network” offer, it is recommended that the OSP subscribes, in the IP aggregated access, for each end customer, a speed value equivalent to the downstream speed of the local access class divided by the contention (for example, a fiftieth of the local access downstream speed for classes 0, 4, 5, 11, 12, 14 and 20).

²⁰ As referred, ICP-ANACOM considers that the starting class corresponds to class 21 - maximum speed 256 Kbps / 128 Kbps.

As referred above, the formula (16) is valid for unmetered offers with similar traffic limits to those considered in the scope of PT.Com retail offers. For metered offers, taking into account available data, a null consumption is assumed. These data and assumptions shall be subject to a review where further information justifies such a step.

Graphic 4 compares the consumption estimated through formula (16) and PT.Com average consumption per access for the 1st half of 2007.

Graphic 4. Estimate of average consumption for classes 1:50 based on formula (16) and values indicated by PT.Com for the 1st half of 2007



ICP-ANACOM will continue to monitor quite closely and in detail the evolution of traffic consumption of offers that already exist and those which are launched in the market, especially as regards offers with higher speeds.

At the level of aggregated access – sizing in terms of physical circuits and speed – ICP-ANACOM deems that traffic calculated for local accesses should increase by 10%. The reason for this traffic increase relatively to traffic generated in the local access is the existence of “ATM tunnelling costs”²¹. Thus, when weighting speed costs in the aggregated access and in the sizing of this access²², this Authority will now consider the existence of a traffic increase by 10%.

For the purpose of breaking down costs of the aggregated access, it is considered that launching an ADSL offer aims for at the least 13 thousand users, a number of customers which was reached, at the end of the first three years of the offer, by main OSP supported on the “PT ADSL Network” offer:

$$U = 13.000 \quad (17)$$

It should be noted that the above assumption only influences the cost of the physical access monthly charge in the aggregated access.

Bearing in mind the assumptions described above, the capacity (in Kbps) engaged for the physical means in the aggregated access which is needed to support a given offer, as economically as

²¹ The aggregated access is supported on the ATM protocol, ATM packages including 48 cells payload and 5 cells header.

²² The estimate of specific marketing retail costs should not consider this traffic increase as it is a result of the internal use of ATM protocol in the “PT ADSL Network” – costs of the wholesale offer.

possible, is obtained by multiplying the offer average consumption per access and the minimum number of users:

$$Cap_{AG} = CONS_n \times 1,1 \times U \quad (18)$$

Having estimated the necessary capacity, it is necessary to identify the most advantageous circuit(s), economically speaking, taking into consideration monthly prices established in the “PT ADSL Network” offer (p_{circ}). The aggregated access installation cost must be passed on for as long as the aggregated access is expected to be active. ICP-ANACOM considers that the installation cost passed on for the expected period of activity, in the light of available information, tends to be null (it does not depend on the average period of stay of customers). For this reason, it is considered that the physical aggregated access cost depends only on the monthly price of circuits that constitute it:

$$C_{CAG} = \frac{\sum p_{circ}}{U} \quad (19)$$

It could be argued that the cost of the aggregated access monthly charge (physical access) should not be estimated on the basis of ADSL classes, as OSP engage from PTC physical aggregated accesses to support the full traffic of their local accesses. Nevertheless, OSP and PTC product portfolio will hardly be similar, and each offer should be assessed individually (that is, it should present a profit margin when considered on its own). Without prejudice, it is considered that this assumption has a very low impact on the final result.

3.1.3. Aggregated access speed costs

Having achieved the offer consumption, according to the method explained in the previous section, the estimation of costs of the aggregated access speed is immediate. The average consumption per access of the offer under consideration (in Kbps), plus 10% resulting from the ATM tunnelling, must be multiplied by the monthly price per Mbps of the total speed of IP aggregated accesses (p_{DAG})²³. That is:

$$C_{DAG} = CONS_n \times 1,1 \times p_{DAG} \times 0,001 \quad (20)$$

4. ESTIMATE OF SPECIFIC COSTS OF PRODUCTS OF THE DOMINANT OPERATORS TO PROVIDE SERVICES TO END CUSTOMERS

From the information gathered on specific costs with the provision of services to end customers (hereinafter referred to as retail costs), it is verified that there is a positive relation between offer marketing costs²⁴ and their retail prices and average consumptions. In fact, it is likely that, for example, commissions and bad debt liability increase where the offer price increases as well. It is also natural that, for example, the cost with IP connectivity cost increases with the average consumption per access. Bearing in mind these assumptions, ICP-ANACOM deems that marketing costs²⁵ for unmetered offers should be estimated on the basis of the average consumption per access

²³ On 01.08.2007, the p_{DAG} corresponded to €6.00 per Mbps.

²⁴ National and international IP connectivity, servers and outsourcing, client acquisition and product marketing, invoicing, collection and bad debt liability, after sale services and customer services.

²⁵ Monthly costs where non-recurring costs were amortised for T months.

and of the retail price of offers. It is possible to estimate such costs through a regression, according to the following formula (promotion costs²⁶ not included):

$$C_{RET-N-TEMP} = CF + CV_{CONS} \times CONS + CV_{PRCS/IVA} \times PRCS/IVA \quad (21)$$

Where,

$$CF = 3,78 \quad (22)$$

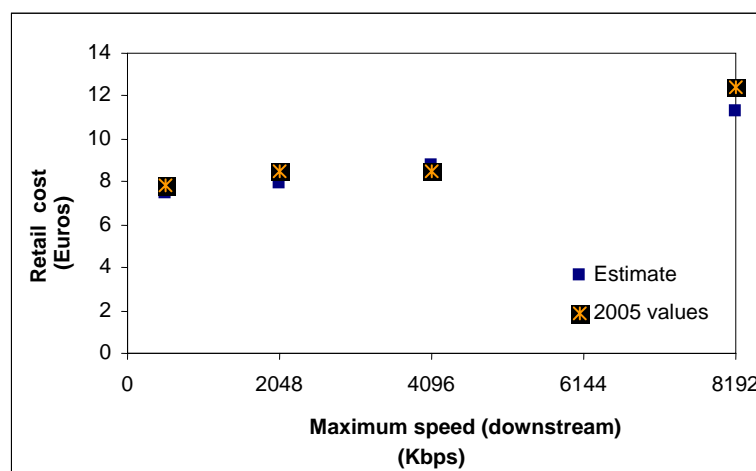
$$CV_{CONS} = 0,06 \quad (23)$$

$$CV_{PRCS/IVA} = 0,11 \quad (24)$$

Where CF is the marketing fixed cost of the offer, CV_{CONS} is the offer marketing cost that varies on the basis of consumption and $CV_{PRCS/IVA}$ is the offer marketing cost that varies on the basis of the price (VAT not included).

Graphic 5 shows estimates using formula (21) for retail costs and the same costs obtained based on PT.Com data.

Graphic 5 Estimate – assuming similar prices to those practiced at the time and consumption estimated on the basis of formulas (15) and (16) – and PT.Com data on 2005 for retail costs



The estimate for retail costs obtained for offers at 512 Kbps and 2Mbps is around 25% lower than the lowest retail costs of Via Net.Works and OniTelecom, which certainly includes promotion costs.

²⁶ Although not considered in this formula, ICP-ANACOM, based on specific conditions of offers notified by companies of the PT Group, may consider in the future additional costs related to the provision of offers to end customers. For example, currently and up to 30.07.2007, Sapo provides in all unmetered offers the service “Internet Fora de Casa” (away from home Internet) that allows the free-of-charge use of PT Wi-Fi coverage to access the Internet – information gathered on 12.02.2007. However, it is considered that the offer provided by Sapo may be only applied to new customers and not all shall be able to effectively enjoy it (for example, a PC user who engages an ADSL service may not have the conditions or incentive to enjoy a Wi-Fi access offer). Also as regards this issue, due weight shall be given to promotion costs related, for example, to the offer of computers or other associated offers (for example, telephone traffic/subscription).

As regards metered offers, as long as they maintain low speeds (256 Kbps), retail costs will be low as well, mainly because:

- Consumption is practically null (and thus, the IP connectivity cost, for example, is residual); or
- Such offers are pre-paid and thus invoicing, collection and bad debt liability costs are negligible.

The estimated monthly cost, based on PT.Com information, is of [SCI] [ECI] (where non-recurring costs were amortised for T months).

$$C_{RET-TEMP} = 2,90 \quad (25)$$

Costs of activities and equipment related to the retail market (for example, modem, and international connectivity price) have decreased, and it is likely that these cost decreases continue as a result of a larger scale and experience of markets associated to the ADSL broadband Internet access service.

In this context, following the example of previous decisions on other offers, this Authority deems appropriate to provide for an annual reduction by 5% of all mentioned costs concerning 2005 (that is, the value to be considered for 2007 must be $0,95 \times 0,95$ of the value estimated for 2005), thus values for 2007 are given by:

$$CF = 3,43 \quad (26)$$

$$CV_{CONS} = 0,05 \quad (27)$$

$$CV_{PRQS/IVA} = 0,10 \quad (28)$$

$$C_{RET-TEMP} = 2,63 \quad (29)$$

5. EXAMPLE OF THE PRACTICAL IMPLEMENTATION OF THE “RETAIL MINUS” RULE SPECIFICATION

Follows a practical example of the application of the method to assess margin squeezes in broadband offers provided by the PT Group, for an unmetered retail offer at 1 Mbps, with the following features:

- (a) Installation/Activation price (no VAT included): 20.66 euros;
- (b) Service monthly charge (no VAT included): 20.65 euros;
- (c) No promotions²⁷.
- (d) Supported in class 20 of the “PT ADSL Network” wholesale offer.

- Estimate of revenues

²⁷ As referred above, it is estimated that there is an average discount relatively to the installation/activation price of 10% (that is, d_I - present in formula (2) – corresponds to 0,10).

According to formulas (2) and (3):

$$P = \frac{(1 - d_I) \times I}{T} + M - \frac{n \times d_M \times M}{T} = \frac{0,9 \times 20,66_{\text{euros}}}{36_{\text{meses}}} + 20,65_{\text{euros}} - 0 = 21,17_{\text{euros}}$$

- Estimate of wholesale costs

The cost incurred with the “PT ADSL Network” wholesale offer is given by the following formula:

$$C_G = \frac{P_{IAL}}{T} + C_{MAL} + C_{CAG} + C_{DAG}$$

(a) Local access

As regards local access, the installation and monthly charge must be considered:

$$C_{IAL} = \frac{P_{IAL}}{T} = \frac{38}{36} = 1,06_{\text{euros}}$$

$$C_{MAL} = 9,85_{\text{euros}}$$

(b) Aggregated access

First, it is necessary to estimate the traffic consumption per access in the class in which the retail offer is supported (class 20), based on the consumption estimate of the starting offer (class 21, with maximum 256 Kbps downstream speed):

$$CONS_0 = \left(\frac{256_{\text{kbps}}}{50} \right) = 5,12_{\text{kbps}}$$

Subsequently, it is necessary to estimate the consumption per access in the relevant service class:

$$CONS_{\text{Classe20}} = 5,12_{\text{kbps}} \times 1,45^{\log_2 \left(\frac{1024_{\text{kbps}}}{256_{\text{kbps}}} \right)} = 10,76_{\text{kbps}}$$

By multiplying the estimated value of the increased consumption of “ATM tunneling” costs for the number of users given by formula (17), the aggregated access speed corresponds to:

$$CONS_{\text{TOTALclasse20}} = 10,76_{\text{kbps}} \times 1,1 \times 13.000 = 153.868_{\text{kbps}}$$

Taking into account the prices of physical accesses of the aggregated access included in the “PT ADSL Network” wholesale offer, it is necessary to identify the combination of physical accesses that, for an estimated total consumption, minimizes the total cost. In this case, it corresponds to the combination of an access STM-1 and an access E3.

Thus, the monthly charge of a physical aggregated access per local access is estimated by means of formula (19), as follows:

$$C_{CAG} = \left(\frac{4500_{\text{euros}} + 1800_{\text{euros}}}{13.000} \right) = 0,48_{\text{euros}}$$

The monthly charge of the aggregated access speed per access estimated on the basis of traffic consumption per access, which was estimated at 10,76 kbps, is given by:

$$C_{DAG} = \text{CONS}_{\text{Classe20}} \times 1,1 \times p_{DAG} \times 0,001 = 10,76_{\text{kbps}} \times 1,1 \times 96_{\text{euros}} \times 0,001 = 1,14_{\text{euros}}$$

- **Total wholesale costs per month**

It results from estimates shown above that monthly costs incurred by operators with the “PT ADSL Network” wholesale offer amount to:

$$C_G = \frac{P_{IAL}}{T} + C_{MAL} + C_{CAG} + C_{DAG} = 1,06_{\text{euros}} + 9,85_{\text{euros}} + 0,48_{\text{euros}} + 1,14_{\text{euros}} = 12,53_{\text{euros}}$$

- **Estimate of specific retail offer marketing costs**

Specific retail offer marketing costs are given by formula (21):

$$C_{RET-N-TEMP} = CF + CV_{CONS} \times CONS + CV_{PRQS/IVA} \times PRQ_{SIIVA}$$

$$C_{RET-N-TEMP} = 3,43_{\text{euros}} + (0,05_{\text{euros}} \times 10,76) + (0,10_{\text{euros}} \times 20,65_{\text{euros}}) = 6,03_{\text{euros}}$$

Taking into account estimates drawn up, the difference between the offers’ wholesale revenues and costs corresponds to:

$$\text{Retail Gross Margin} = 21,17_{\text{euros}} - 12,53_{\text{euros}} = 8,64_{\text{euros}}$$

As the estimated retail gross margin exceeds the estimate of specific 1Mbps retail offer marketing costs, it is deemed that the offer guarantees minimum competition conditions for OSP.

III. DETERMINATION

Considering:

1. The assessment in point II which is an integral part hereof;
2. That prices of broadband Internet access offers provided by the companies of the PT Group, with maximum 1:50 contention, whether they are supported in the public switched telephone network or in the cable distribution network, are subject to a price control obligation, supported in the “retail minus” rule;
3. That by determination of 6 June 2007, the Board of Directors of ICP-ANACOM decided to grant a prior hearing to interested parties as regards the draft decision it

intended to adopt, and that comments received, the respective assessment and reasoning for the decision are included in the “Report of the draft decision concerning the method to assess margin squeezes in broadband offers provided by the PT Group - 1:50 contention offers”, which is also an integral part hereof;

The Board of Directors of ICP-ANACOM, in the scope of assignments provided for in points b), e), f) and n) of article 6 of its Statutes, approved by Decree-Law no. 309/2001, of 7 December, in the exercise of powers provided for in points b) and g) of article 9 of mentioned Statutes, bearing in mind regulation objectives provided for in points a) of paragraph 1 and in point b) of paragraph 2 of Law no. 5/2004, of 10 February, and to implement measures determined following the assessment of the wholesale broadband access market, hereby determines the following:

1. In order to render operational the “retail minus” rule, for a given broadband Internet access offer provided by a company of the PT Group, with maximum 1:50 contention, a minimum difference between monthly revenues per access and monthly costs per access for the “PT ADSL Network” wholesale offer shall be guaranteed, on the basis of:

€3,43 + €0,10 × $PRC_{S/IVA}$ + €0,05 × $CONS$, for unmetered offers; or €2,63 for metered offers.

Where:

$PRC_{S/IVA}$ is the offer retail price, no VAT included; and

$CONS$ is the offer consumption, based on formulas (15) and (16).

- 1.1 The estimate of monthly revenues per access referred to in point 1 shall be calculated as follows:

$$P = \frac{(1 - d_I) \times I}{T} + M - \frac{n \times d_M \times M}{T}, \text{ for unmetered offers; or}$$

$$P = \frac{(1 - d_I) \times I}{T} + P_V + P_T, \text{ for metered offers,}$$

Where:

d_I is the average discount given on the installation/activation price ($d_I = 0,10$);

I is the service installation/activation price in euros;

T is the stay period (stay period ($T = 36$));

M is the product’s monthly charge in euros;

d_M is the discount included in the monthly charge;

n is the number of months for which the d_M discount is given;

P_V corresponds to the payment of a fixed value V to be paid every n months, given by formula (4), where appropriate; and

P_T corresponds to traffic revenues, given by formula (5), for offers without a monthly charge, or by formula (6) for offer with a monthly charge that includes traffic time, parameters of which are estimated through formulas (7) to (12).

- 1.2. The estimate of monthly costs per access of the “PT ADSL Network” wholesale offer referred to in point 1 is given by:

$$C_G = \frac{p_{IAL}}{T} + C_{MAL} + C_{CAG} + C_{DAG}$$

Where:

p_{IAL} is the local access installation price without splitter and without travelling;

T is the stay period (stay period ($T = 36$));

C_{MAL} is the local access monthly charge, which in the case of classes of service with traffic limits, is estimated through formula (14) and parameters of which are estimated through formulas (7) to (12);

C_{CAG} is the cost of the physical access in the aggregated access, estimated based on formulas (15) to (19);

C_{DAG} is the cost of aggregated accesses speed, estimated based on formulas (15), (16) and (20).

2. Companies of the PT Group must inform ICP-ANACOM of conditions applied at retail level, including any available promotions, ten (10) days ahead of the day on which such conditions are to come into force, submitting grounds that evidence compliance herewith.
3. In case a company of the PT Group intends to launch a broadband Internet access offer with a contention rate other than 1:50 or the model of which does not fit into the method described in the assessment described in point II, which is deemed an integral part hereof, it shall submit to ICP-ANACOM duly reasoned information that evidences that margin squeezes are not produced.
4. The method defined herein and respective values shall be updated within one (1) year at the most, in case new data on speed per access and other market data identified by interested parties, duly substantiated, justify this step.
5. When launching offers intended to carry out a block migration of customers of lower speed offers, PT Comunicações shall ensure, for a six-month (6) period from the entry into force of new retail offer conditions, that all migration requests and any speed alteration, regardless of the aggregation mode and whether or not a change of service provider is involved (transfer of provider), are provided free-of-charge, and that all customer migration is duly carried out, in appropriate and non-discriminatory conditions.
6. The method to assess margin squeezes established in point 3 of determination of 25.06.2003 is hereby replaced.