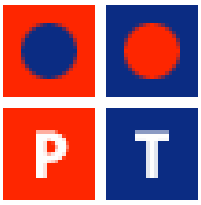

PT Comments

on the

Wholesale Broadband Access via Cable

as approved by the ERG12-Plenary, on 11 February 2005

for public consultation

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1. Introduction

The purpose of this public consultation is to prepare the foundation, in case there is functional equivalency between data over cable and DSL, to adapt the DSL bitstream access to PSTN to cable networks in order to assess the (technical) possibilities to provide bitstream access via cable networks.

The consultation first gives information on Cable Networks, on the worldwide regulatory framework, on the implementation of wholesale over cable in different countries, then it tries to enlarge the existing European Regulatory Framework to Cable Networks and then proceeds to describe and analyse eventual technical solutions to provide bitstream access.

PT will show that the information on the regulatory framework given in the consultation is based on inadequate premises; it also shows that the technical considerations presented on the consultation do not hold on real world technical environments for large scale deployments and with the reality of HFC technology.

In our comments to the ERG consultation document on bitstream, 14 July 2003, we have expressed the following views on wholesale broadband access via cable networks:

In the current regulatory situation, cable operators should not be requested to offer bitstream access.

Bitstream is related with PSTN and corresponds to a technical solution that splits voice frequencies from higher bitrates.

Cable operators may act as triple players. However, to offer bitstream, a cable operator needs to build a technical solution more complex that the one adopted in the PSTN and it

would not be proportionate to force them to do this kind of investment. Regulators should take into account the specific national situation of cable networks, as well as the investments required to implement particular bitstream solutions.

In terms of broadband internet access, cable operators are addressing an emergent (and specific) market that should be stimulated and not submitted to regulatory constraints.

Later on, PT had the opportunity to discuss these matters when answering the public consultation launched by ANACOM, November 2004.

We still believe that these views reflect our present position on wholesale broadband access via cable networks.

We would like, also, to recall the comments made by the Commission on ANACOM consultation: *It follows therefore that, before including cable networks in the relevant market definition, the NRAs should give due consideration to the technical, practical and economical feasibility for cable operators to offer facilities equivalent to bitstream access.*

This comment is very much relevant when considering any wholesale offer to be made by cable operators.

The comments made by PT to the public consultation launched by ANACOM, November 2004, showed that the bitstream access to cable networks, was not technical, nor practical or economical feasible.

In these conditions, bitstream access to cable networks should not be considered as part of wholesale broadband access (bitstream) relevant market.

Having said this, PT has a number of specific comments on some chapters of the paper approved by the ERG 12 Plenary, last 11 February:

2. Specific comments on ERG's paper

Worldwide Regulatory framework

The information provided about the regulatory framework in the American continent is quite interesting and shows that regulatory developments are not progressing consistently. Most of all, the regulatory framework in North America is far from being stabilised.

The regulators, due to pressures from lobbying groups of interest, which does not mean better service for the end-user, have been trying now for almost a decade to guarantee "Open Access" in both Canada and the U.S.

The consultation states that in the U.S. that is not happening. Even though the consultation states that Canada has trials underway of Open Access, the reality is quite different.

As written at *http://isp-planet.com/profiles/caip.html*: "The large cable companies have had to file tariffs for proposed rates which are currently under review; in the interim, they have been forced to provide access on a resell basis. (So far, there are no ISPs reselling cable access in Canada.) ".

In these conditions, it would be rather unwise to use these hints as guidelines for future developments in Europe. Especially in a situation where the new regulatory framework is being implemented and the structure of relevant markets would be under revision in the near future.

European Regulatory framework

The reasoning presented by ERG to support bitstream access to cable networks is based on certain key elements defining bitstream access, as for instance:

- a high speed access link to the customer premises (end user part);
- transmission capacity for broadband data in both direction enabling new entrants to offer their own, value-added services to end users;
- new entrants have the possibility to differentiate their services by altering (directly or indirectly) technical characteristics and/or the use of their own network;
- bitstream access is a wholesale product consisting of the access link and “backhaul” services of the (data) backbone network (ATM, IP backbone).

These elements were in fact present in the discussion of bitstream access to PSTN, using xDSL technology.

In this way, one should thing that if it works for PSTN, it should also work for cable networks.

The question is: Do the key elements of ERG Bitstream Common Position remain valid for cable networks?

We think they do not remain fully valid, as there are several aspects which should be taken into account.

First of all, the ERG Bitstream Common Position reads: “bitstream access is a wholesale product consisting of the DSL part (access link) and “backhaul” services of the (data) backbone network (ATM, IP backbone).”

On cable there is no physical Access link, but only a virtual Access link on top of the physical shared Access medium.

There, in fact, are important differences between a physical access link on DSL and a virtual access link on top of a physical shared access medium over cable infra-structure.

Just to highlight the most relevant and basic differences:

- On DSL the high speed access link is unique to the customer premises.
- On Cable the high speed access medium is shared among several subscribers.
- Service differentiation on DSL has no side effects on the access link of other subscribers.

- Service differentiation on Cable may provoke side effects on the shared access medium.

Technical solutions to provide bitstream access on Cable

The consultation describes several points of eventual interconnection and access to cable networks.

Analysing each solution:

CMTS Access

This is not a feasible solution because:

1. Cable Plants need to be "tuned to perfection" according to strict empirical and theoretical rules "Proof of Performance". The Proof of Performance of a Cable Plant guarantees that the RF signals are delivered to perfection at the costumer premises on the shared physical Access Medium of the plant, therefore minimizing the effect of CNR, CSO and CTB. Giving access to the Cable Plant shared Access medium to equipment (CMTS) of other operator does not seem to be a feasible proposition.
2. A CMTS needs to modulate a downstream frequency. Depending on the plant topology and plethora of services offered by the MSO downstream frequencies can be one of the scarcest resources of the MSO.
3. Cable modems have to be pre-tuned to the ISP where the user is a client.
4. Handover at the network side is only a supposition. However it is not clear how it can be achieved.
5. ISP network collocated at the CMTS or infra-structure implies building and maintains either the leased lines or the optical backbone to interconnect the ISP network to the CMTS.

Interconnection at the aggregation point

There are no such solutions as described in the consultation paper and it is not clear how they can be implemented, how traffic segregation allows the new entrant to design its own service offerings or how backhaul can be connected to the new entrant's own network at this aggregation point.

There are also no indications on how OAM&P (Operations, Administration, Maintenance and Provisioning) servers can be installed within the incumbent's own network and managed remotely, and neither is described what solution gives the new entrant a significant amount of ability to differentiate its offerings from the incumbent.

Handing over at the service provider edge

There is no description of a tunnelling facility that would imply using the incumbent cable operator's access and backbone's networks and management and provisioning servers.

Solutions for Identifying Subscriber Traffic

Layer 2 Solutions

PT cable operator (TV Cabo) has only router based CMTS, no old proprietary CMTS therefore these solutions do not apply.

Layer 3 Solutions

Theoretically this model may be very interesting.

However it will take time before it is proven that several basic issues are really stabilised:

- Proof of technology;
- Provisioning processes, tools, APIs and integration between the MSO and the ISP;

- Service troubleshooting and costumer complaints handovers;
- Scalability;
- IP address negotiation with RIPE;
- Zone planning and capacity planning at the access level, from different ISP at different QoS levels with automatic provisioning. Usual zone planning is manual.

In fact, the CMTS handle all of the MAC and the PHY of the DOCSIS protocols. They also handle all layer 3 communications.

Practice has proven that this equipment needs resources head-room to handle in good form the access functions of the network. Everyday end users find other uses of their connection (such as P2P) which increases the burden on the limited resources of the edge equipment.

Best practices for network design require the segregation of functions.

Final comments and conclusions

Theoretical solutions exist for cable operators to provide “bitstream” type services to third parties, mostly in a lab environment or for small operations using Layer 3.

Contrary to what the consultation states, there is no demonstration of large scale deployment.

The consultation paper states: “This can be demonstrated and confirmed both by the fact that all major cable data equipment vendors provide comprehensive solutions for accomplishing this but also by the fact that “open access” is a commercial reality in a number of countries (e.g. in Europe NTL in the UK, outside “open access” can be found above all in Canada, Israel, and some operators in the US) “.

The reality is somehow different:

1. In 2002, Freeserve and NTL agreed to implement Freeserve broadband over NTL cable access network. Today Freeserve changed its name to Wanadoo.

Here is a quote from their site: “Wanadoo Broadband is only available on a BT phone line “

2. In Canada there is no Open Access, as stated above.
3. In the US all the big cable operators have proper ISP services. What is also true is that some small operators without critical mass will join forces with specific ISPs.

Contrary to the beliefs enshrined in the consultation, our research as shown that there are no big real life installations of cable in wholesale operations, even though in some countries and in some markets there have been in the past some regulatory views pointing to that direction.

In fact, even though some countries wished to start a wholesale service, some 7 years ago, such as in Canada CRTC 99-8, it did not yet start.

Besides, technology issues, there are also a number a provision and costumer care difficulties in bringing to life cable “bitstream” wholesale.

Cable plants have a risk of fraud associated to the service. Supply of broadband access for a third party whose customers do not subscribe the basic analogue TV package has a significant risk of fraud, since access to the TV contents can only be restricted by a easily identifiable frequency filter which is very easy to remove.

In old networks, where the frequencies are fully used for analogue services and where the data frequencies are interspersed even if there is a BSA offer, filter costs are high and the costumer still needs to have the basic analogue TV package.

Therefore, PT considers that ERG Common Position on Bitstream, published 23 April 2004, should not be revised to include cable networks, at this stage.

Any revision of this ERG document should only be discussed after the revision of the Recommendation on Relevant Markets.