Broadband Internet
Current and future challenges for regulators: a selection

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Reasons for not having Internet

Survey in Portugal Dec 2006

(INE - National Statistical Institute)

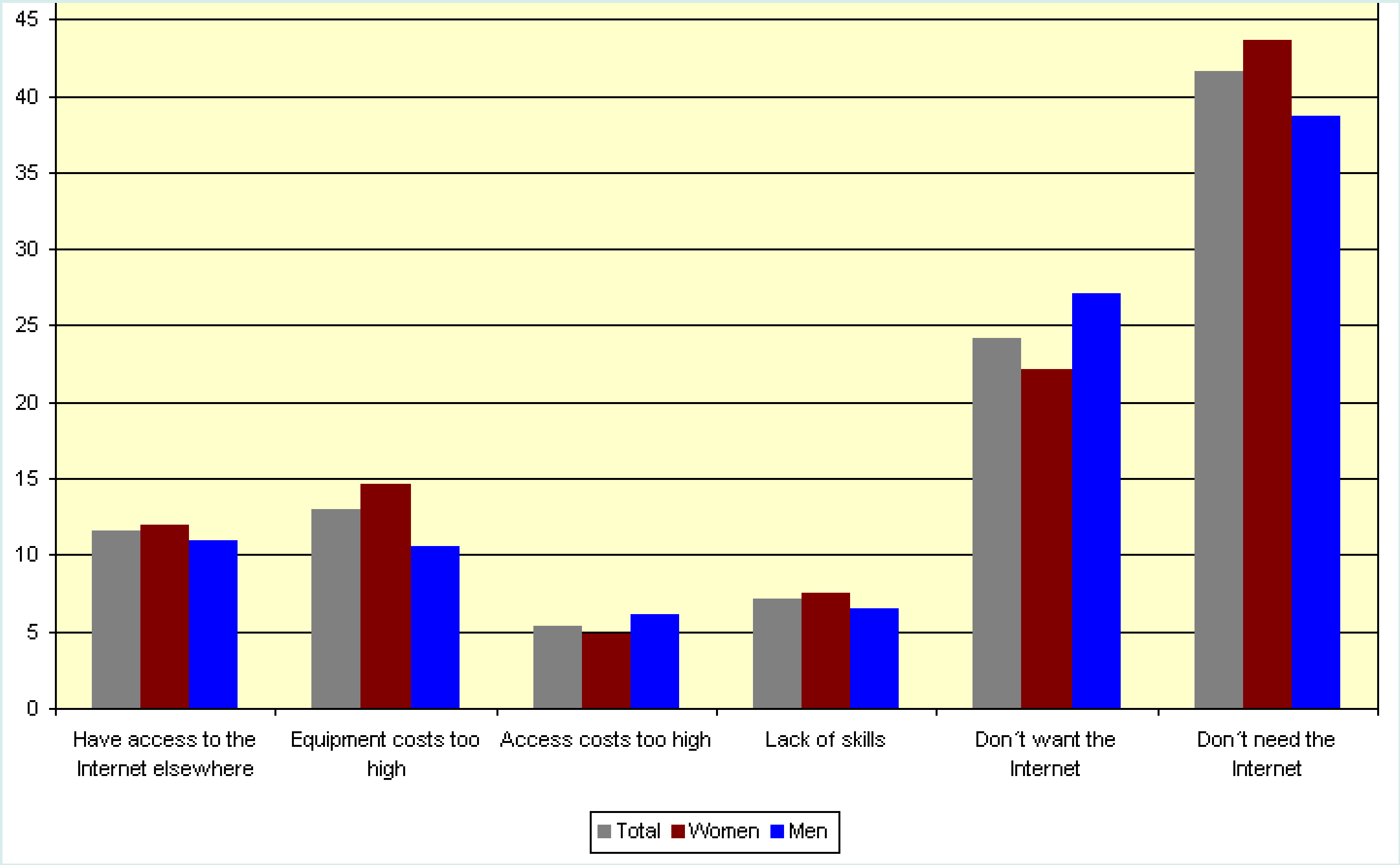
Table 3 - Main reasons for not having internet access at home (%)

	Jan-06	Dec-06
Does not need / has no interest	38.3	47.1
Has no computer	34.0	33.3
Its price is to high	8.6	9.7
Has no time	3.5	2.0
Has access at other locations	2.5	4.6
Has no geographical coverage	2.2	0.9
Other	10.9	2.5
Total	**100**	**100**

Base: Respondents without Internet access at home.
Source: Survey on the use of broadband - January 2006 and December 2006.

Reasons for not having Internet

Survey in Sweden 2006
(Sweden Statistics)



Challenges for regulators

Variation on current themes

- ➔ Geographical markets: sub-national?
- ➔ Naked DSL
- ➔ Bitstream for TV: Multicast over gigabit Ethernet
- ➔ IP interconnect: new economic models?

NGA: brand new challenges

- ➔ Who believes in infrastructure competition?
- ➔ VDSL2+: the Dutch case
- ➔ FTTH: the French case

Geographic markets

- ➔ So far, regulators have defined national markets
- ➔ UK: Ofcom proposes to lift obligations imposed on BT in areas served by 4 operators (or more) provided the exchange serves >10K homes and businesses
- ➔ Alternative approach: one geog. market but vary remedies depending on level of competition:
  - ➔ e.g. Italy – bitstream access: at exchanges where at least 50 lines have been unbundled, after 12 months, Telecom Italia no longer has to provide new bitstream access lines (investment ladder)

Naked DSL

- ➔ Definition: provision of shared access or bitstream where the end-user has no PSTN subscription
- ➔ 7 EU-15 MSs have imposed Naked DSL
- ➔ 8 EU-15 MSs have not (yet?)
- ➔ Commission is pushing for it (e.g. comments to German notif re. M12 – Feb 2007)
- ➔ WLR vs Naked DSL

Bitstream for TV: multicast

- ➔ Today in Europe all ANOs IPTV offerings are based on LLU – or own facilities
- ➔ Italian decision on detailed rules implementing Telecom Italia’s access obligations (May 23, 2007)
- ➔ TI’s bitstream offer to include multicast functionality using Ethernet/IP interface
- ➔ Replication of TI’s IPTV offer based on bitstream!

Bitstream for TV: multicast

- TI argued that distribution of audiovisual content belongs to broadcasting transmission market (M18) where TI has no SMP

- AGCOM argued that
  - multicast functionality is already available at TI's network nodes
  - Multicast is designed to provide all types of data/content (not only audiovisual) to multiple network termination points

IP and interconnection

- ➔ Which economic model?
  - ➔ Calling Party Pays (PSTN model)
  - ➔ Bill and Keep (BAK) ‘The Internet model’
- ➔ Calling Party Pays means no prospects of regulatory forbearance
- ➔ Pressure from regulators to move to BAK
- ➔ Operators (as a rule) are opposing it

IP and interconnection

- ➔ Fear amongst operators that cost recovery would not be possible as end-users would not accept Receiving Party Pays regime
- ➔ Deterrent to investment: incentive for operators to handover traffic for termination as close as possible to termination (‘hot potato’ issue)
- ➔ CPP is, in some cases necessary, to ensure QoS
- ➔ I/C should be based on perceived value of message
  - ➔ Sending an email of high importance vs
  - ➔ Downloading data of high importance

Next Generation Networks

- ➔ NGN: threat or opportunity for competition?
  - ➔ Reinforce economies of scope/scale
  - ➔ New interconnect models (e.g. BAK)

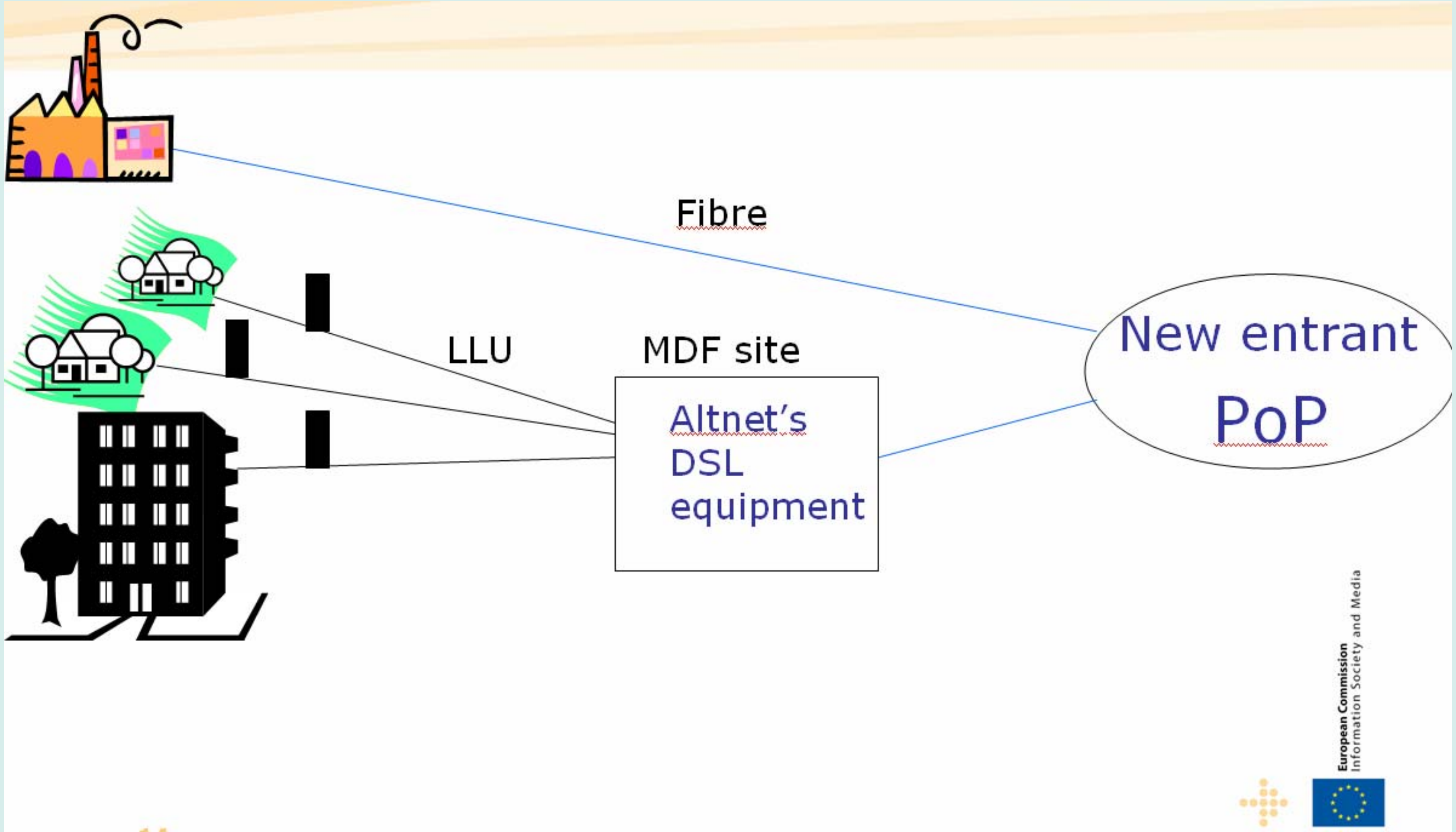
- ➔ NRA’s role is to ensure interconnection and interoperability at all levels
  - ➔ PSTN: stable technology; three levels; one service
  - ➔ NGN: ?
    - ➔ multiple standards
    - ➔ Quadruple play
    - ➔ More or fewer PoI?

KPN All-IP network

- ➔ KPN plans to migrate to cost-effective broadband All-IP network over next few years
- ➔ KPN plans to offer unbundled access at street cabinet level (unbundling of sub-loops - SLU)
- ➔ Fibre network built to street cabinets
- ➔ Phasing out of MDF locations

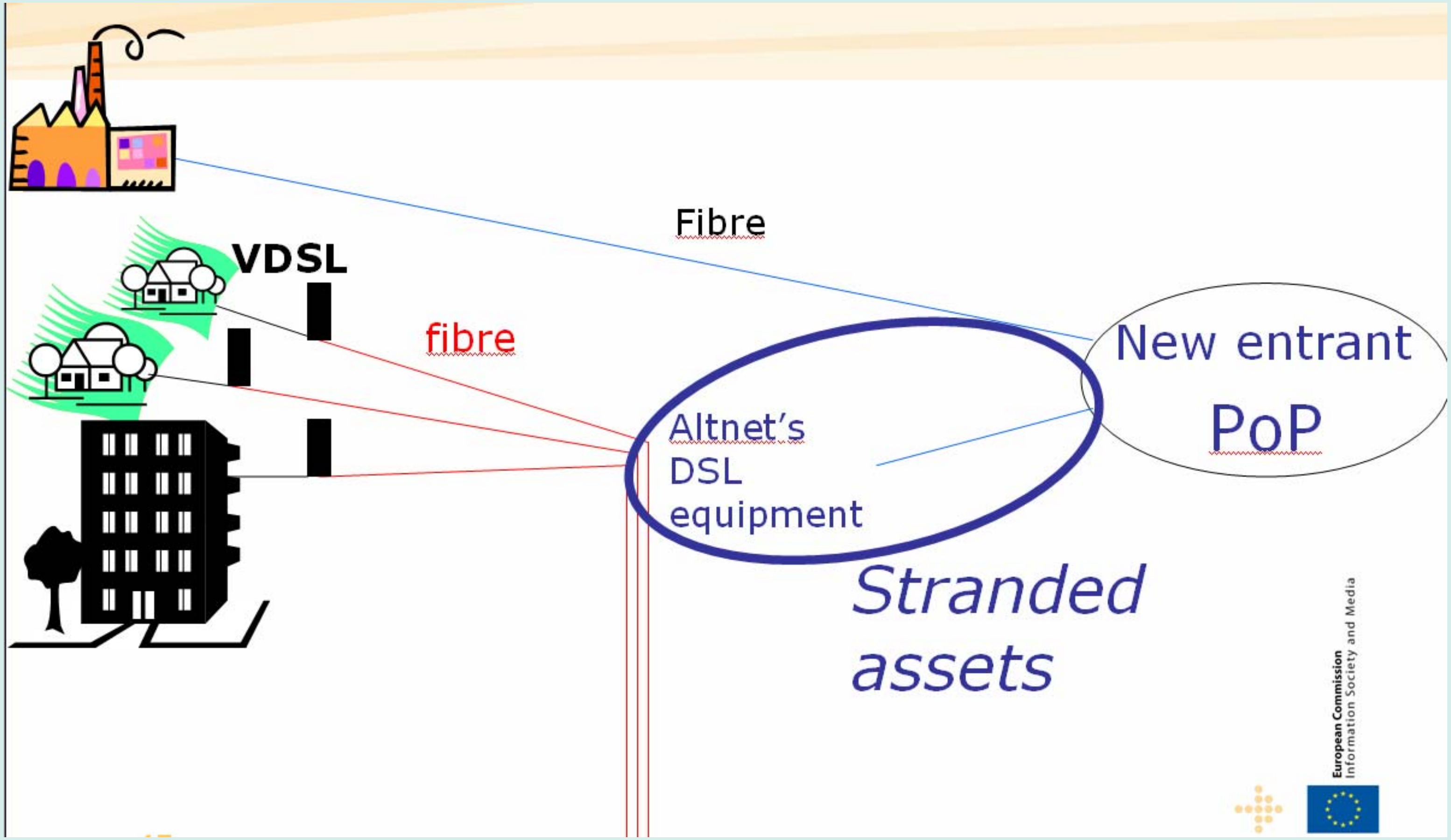
KPN All-IP

- Provision of broadband services by ANOs based of unbundled copper loops – source CEC



KPN All-IP

➔ Potential stranding of new entrants’ assets if MDF sites are closed – source CEC



KPN All-IP network

- ➔ OPTA study (January 2007) shows that SLU is not a full alternative to LLU because of higher costs for ANOs (and smaller target market at a given MDF)
- ➔ Only for a limited number of street cabinets is SLU deemed economically viable for ANOs
- ➔ Dilemma for OPTA
  - ➔ KPN invests in a NGN that will deliver additional services and lower costs
  - ➔ ANOs can no longer use MDFs
  - ➔ Fall back from LLU to bitstream

- ➔ Climbing down the investment ladder?

France

- ➔ Access to passive infrastructure
- ➔ Government action plan in Nov. 2006: 4 Mio subscribers connected to fiber by 2012
  - ➔ Reference offer for Ducts
  - ➔ Access to civil engineering infrastructures
  - ➔ Access to in-house cabling
  - ➔ Facilitate the installation of ducts

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