

# FTTx in Telekom Slovenije

## Beyond NGA

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# Agenda

1. **Slovenia and Telekom Slovenije**
2. **Access and BB networks Telekom Slovenije**
3. **FTTx implementation**
4. **Conclusion**



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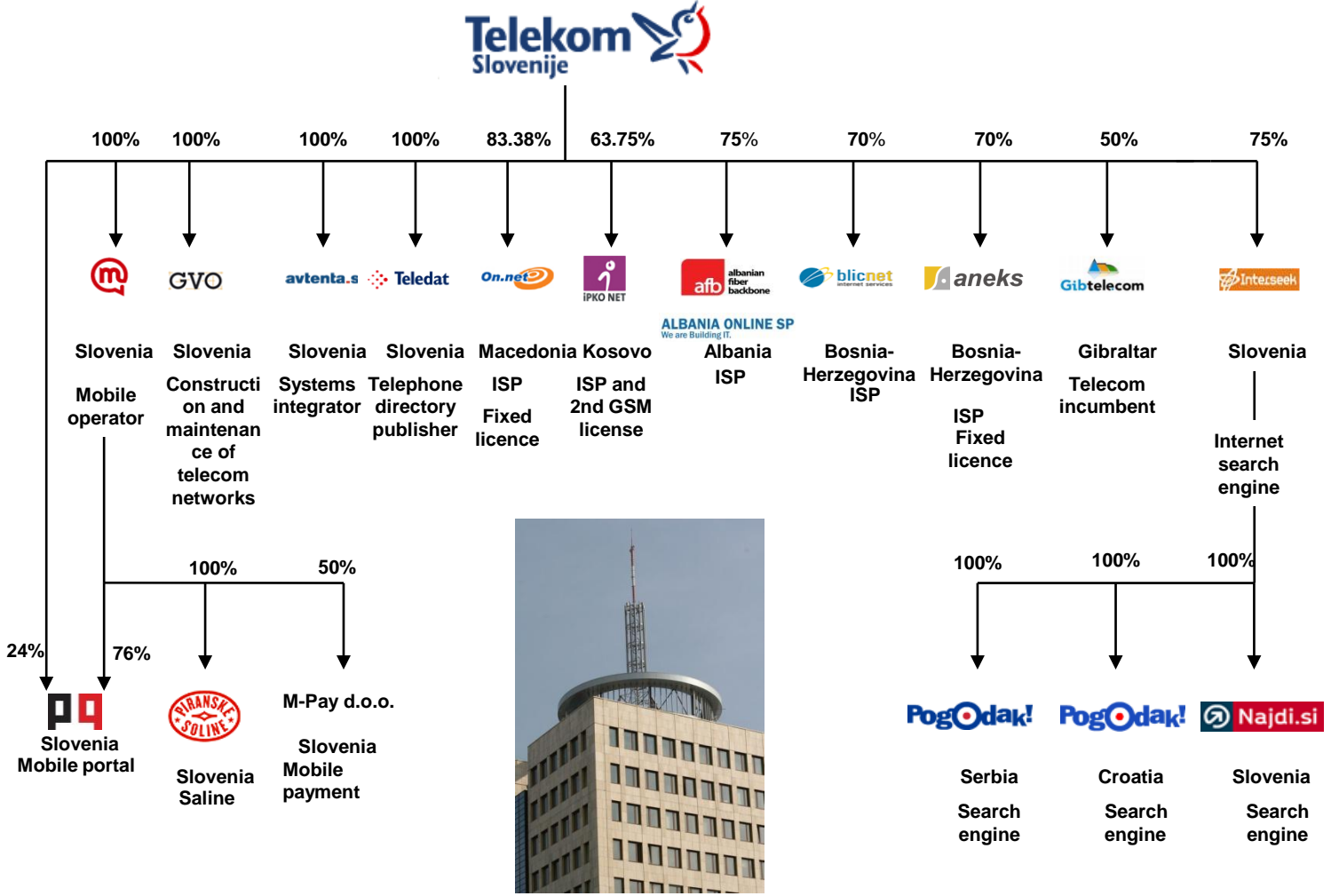
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# Short facts about Slovenia

Area:	20.256 km <sup>2</sup>
Population:	2.006,694
Settlements:	5.988
Cities over 10.000	16 (2 over 50.000)
Households:	685.847
BB access:	56 %
CATV:	54 %



# Telekom Slovenije: after successful diversification, a future focus will be on stronger integration



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# Broadband in Telekom Slovenije

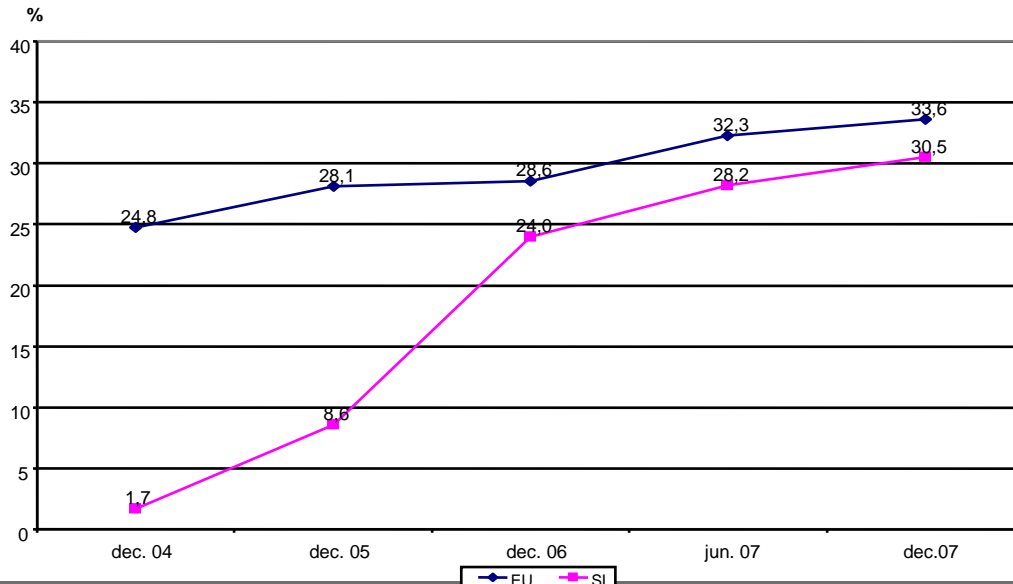
- **March 2001:** First commercial subscribers (ITU-T G.992.1 Annex B (ADSL/ISDN), ADSL packet 512/128 kbit/s)
- **February 2003:** ADSL packet 8192/768 kbit/s
- **September 2003:** IP TV over ADSL (1 STB, ATM, mcast on BRAS)
- **September 2004:** LLU
- **May 2005:** Triple play @ ADSL2+ @ IP/Ethernet DSLAM
- **January 2007:** VDSL2
- **April 2007:** First commercial FTTH subscribers
- **Triple play service:** data, VoIP, IPTV (120 channels, HDTV, EPG, VoD, nPVR, MPEG2 → MPEG4); analogue TV over FTTH (80 channels)
- **Prices:** Triple play@30 EUR; standalone: 20/20 Mbit/s@26 EUR, IPTV@12 EUR, VoIP@14 EUR, CATV@12 EUR

# Strong infrastructure competition in Slovenija

## Q2/2008 situation

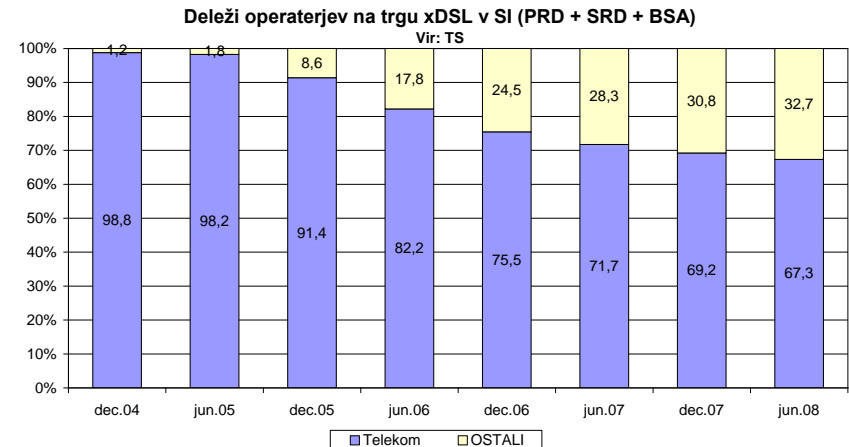
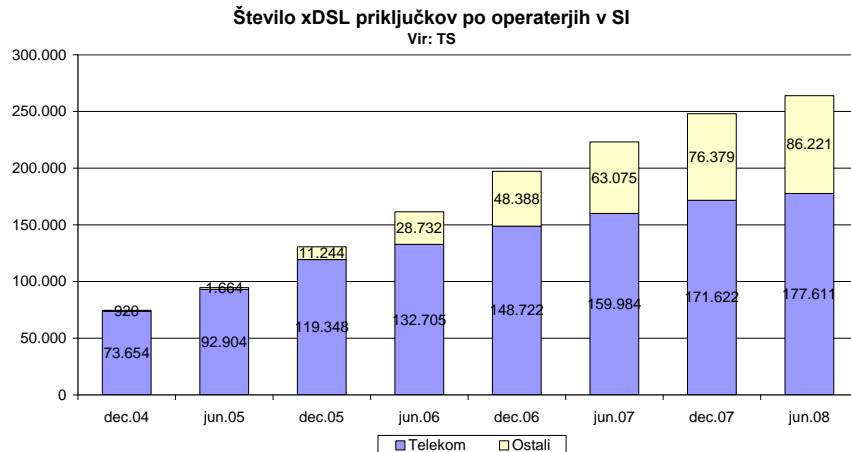
- BB market share of TS is 48% (from 100% in 2004)
- market share per technology:
  - 23% Cable (0% TS)
  - 8% FTTH (25% TS)
  - 69% DSL (67% TS)
- FTTH subscriber growth taking up
- Cable operators going for FTTH implementation
- TS has 25% FTTH market share

## FTTH in Slovenia: Telekom Slovenije is follower!



Comparison of LLU and BSA  
over xDSL EU and SI (Source:EU)

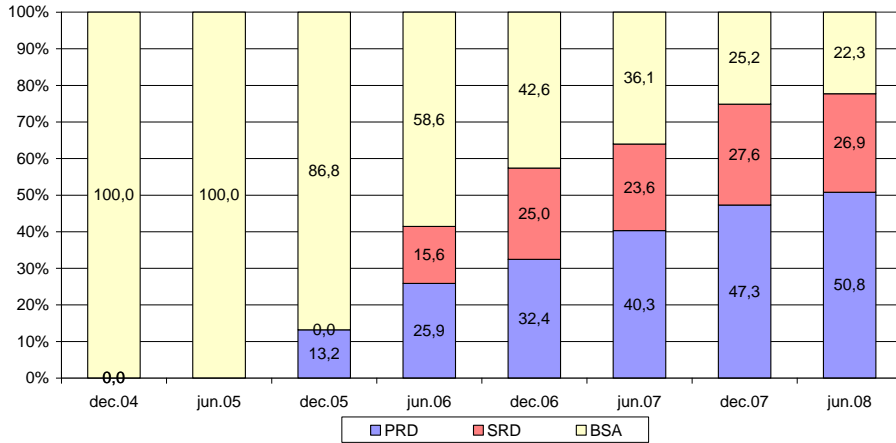
# Market share of alternative operators is increasing



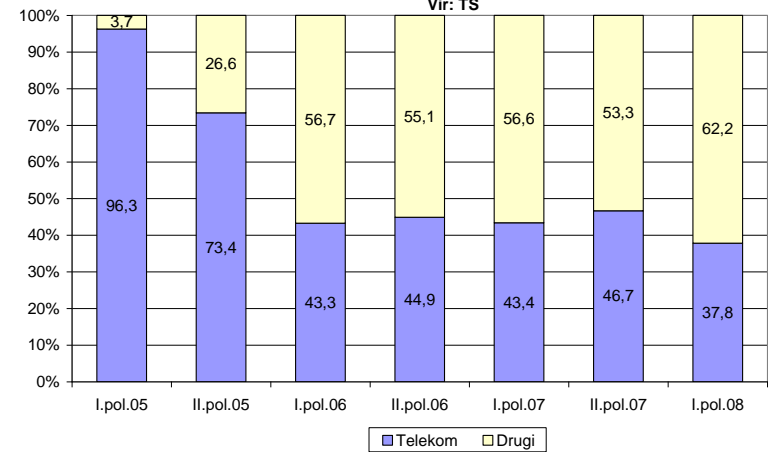
- Number of xDSL subscribers growing
- Market share of alternative operators increasing (Q2/2008 = >30%)

# Alternatives migrating from BSA to LLU

Deleži posameznih dostopov (PRD, SRD, BSA) novih vstopnikov v SI  
Vir: TS



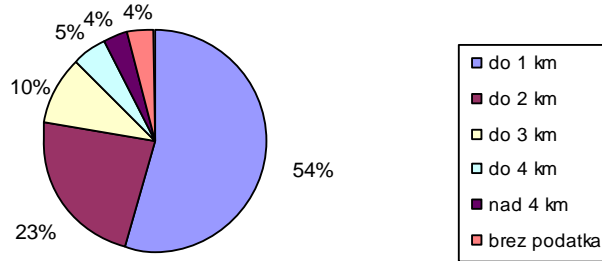
Deleži novih xDSL priključkov na trgu xDSL v Sloveniji  
Vir: TS



- Fast progress in Ladder of investment
- Market share of new DSL connections is in favour of alternative operators

# Access networks today: last mile is relatively short, pairgain systems are bottleneck

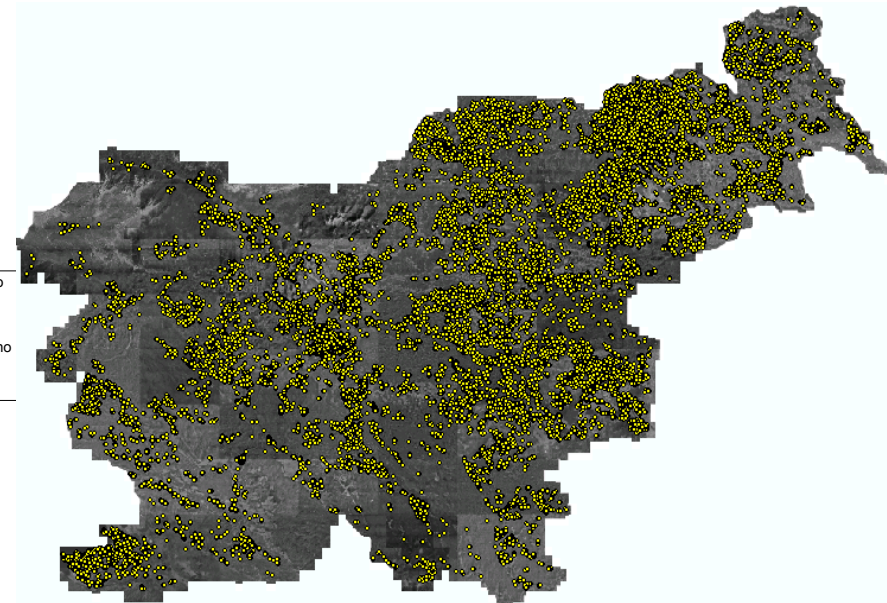
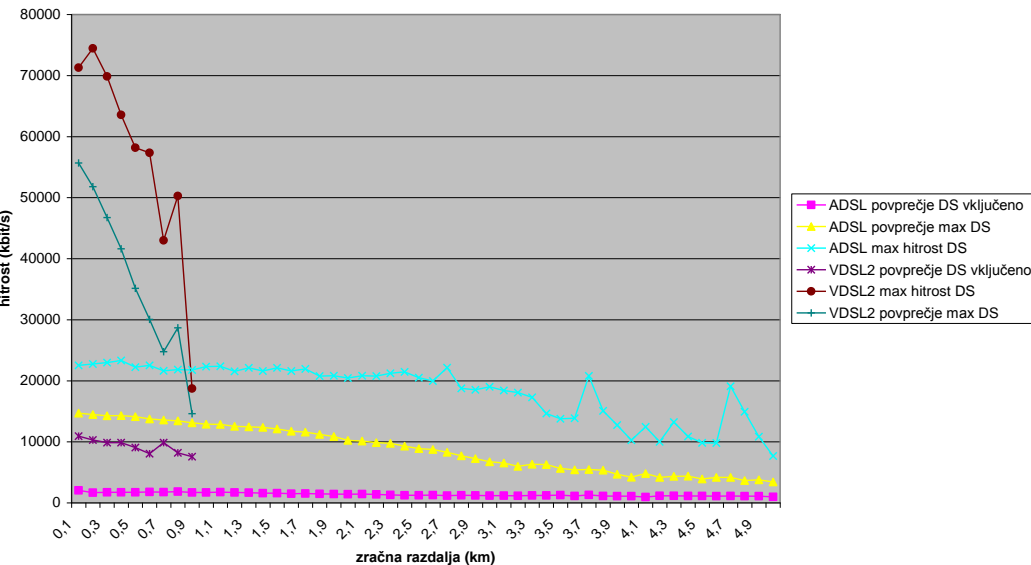
Number of POTS, ISDN-BA, PRD



## BB Services:

- HSI: 188.000
- VoIP: 80.000
- IPTV: 60.000

Hitrost na ADSL/VDSL2 priključkih (IPBANI)



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# FTTH milestones and objectives of Telekom Slovenia

- April 2007 - Mass P2P fiber deployment
  - Filling available ducts space
- 2008 - more focus on FTTN:
  - Civil works & available ducts
  - 'black holes' & pairgain reduction
- FTTH customers today:
  - 70.000 homes passed
  - 13.500 customers
    - 0,1 % > 20/20 Mbit/s
    - 1 IPTV: 41 %
    - 2 IPTV: 19 %
    - CATV: 44 %
    - VoIP: 96 %

IPTV is the driver!

# P2P will prevail in long turn

- **P2P**

- Future proof (unlimited speed per subscriber - possibility of 10Gbit/s)
- End-to-End Ethernet – no additional complexity
- CPE is a mass market product
- Greenfield players are deploying P2P

- **PON +**

- Usually quoted reasons:
  - Less fibres
  - Less space (CO, underground pipes)
- Not quoted reasons:
  - Preventing LLU
  - Impact of suppliers

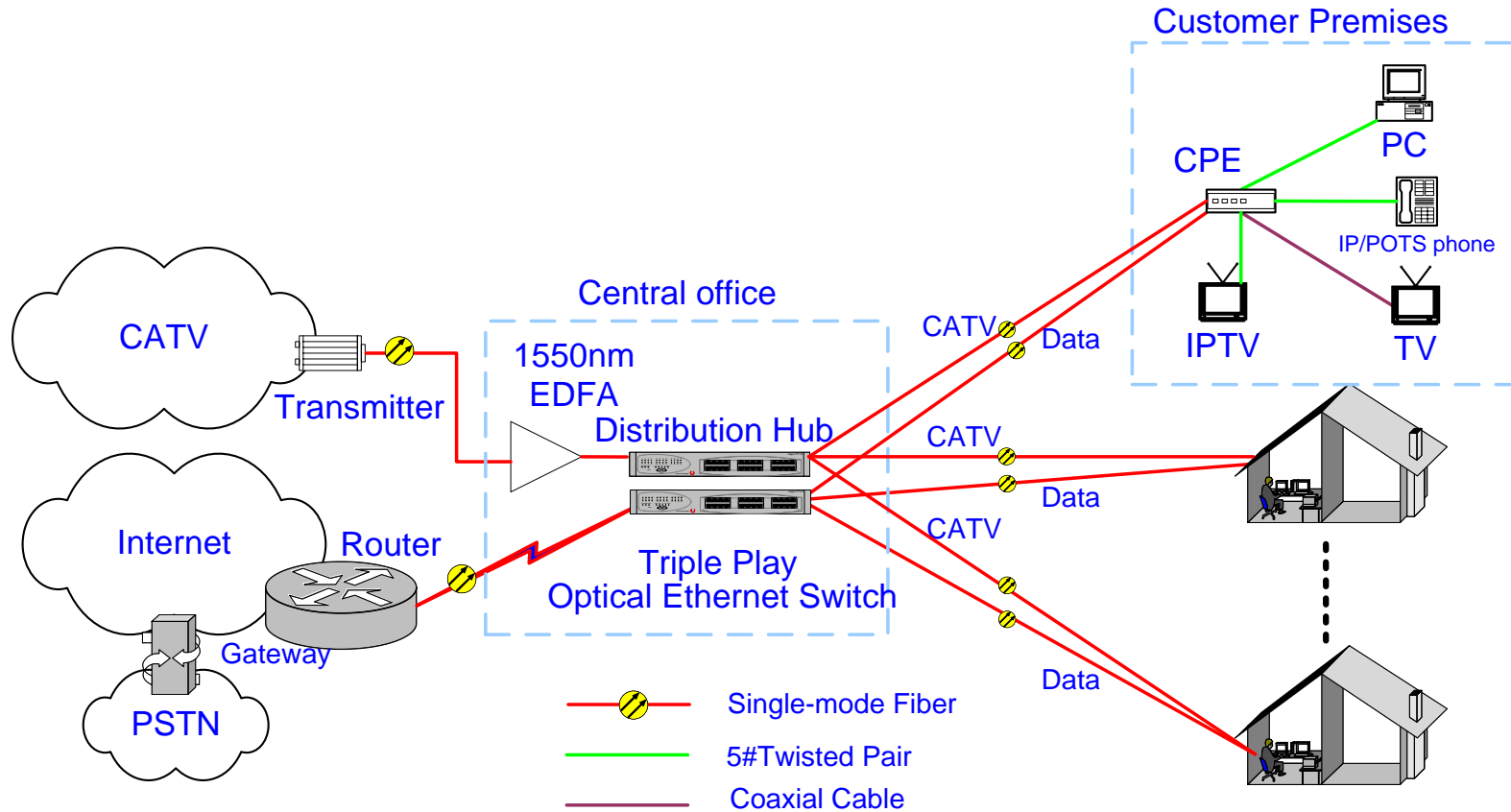
- **PON -**

- IPTV limited
- Interoperability
- Higher cost (SW + CPE)
- More BW – upgrades?
- No backward compatibility

- **WHY CATV**

- Traditional customer prefers classical TV instead of IPTV today.
- CATV customer will be offered other services - IP services.

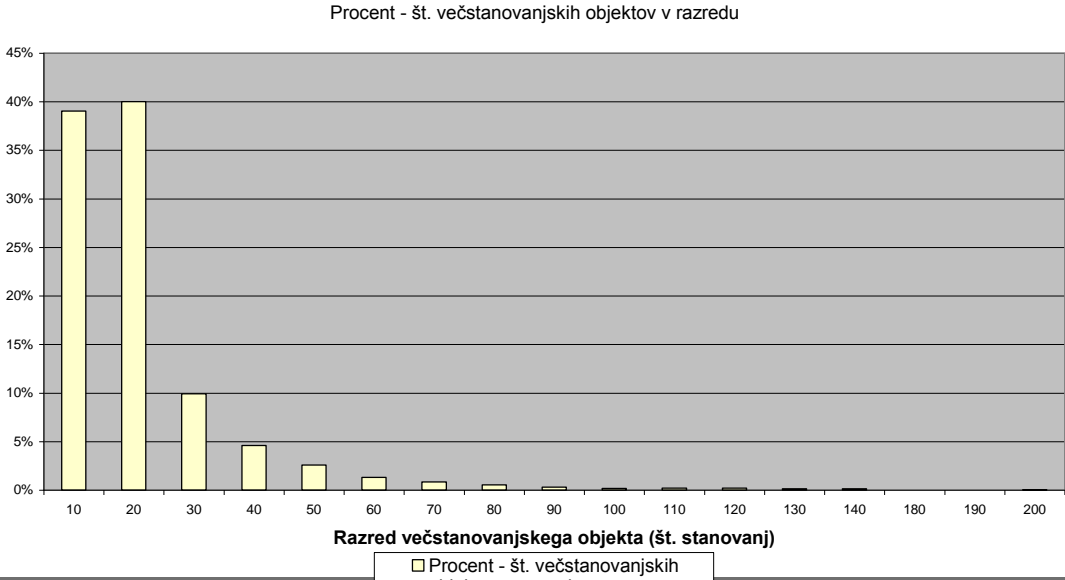
# Technical solution: P2P two fibers: IP + CATV



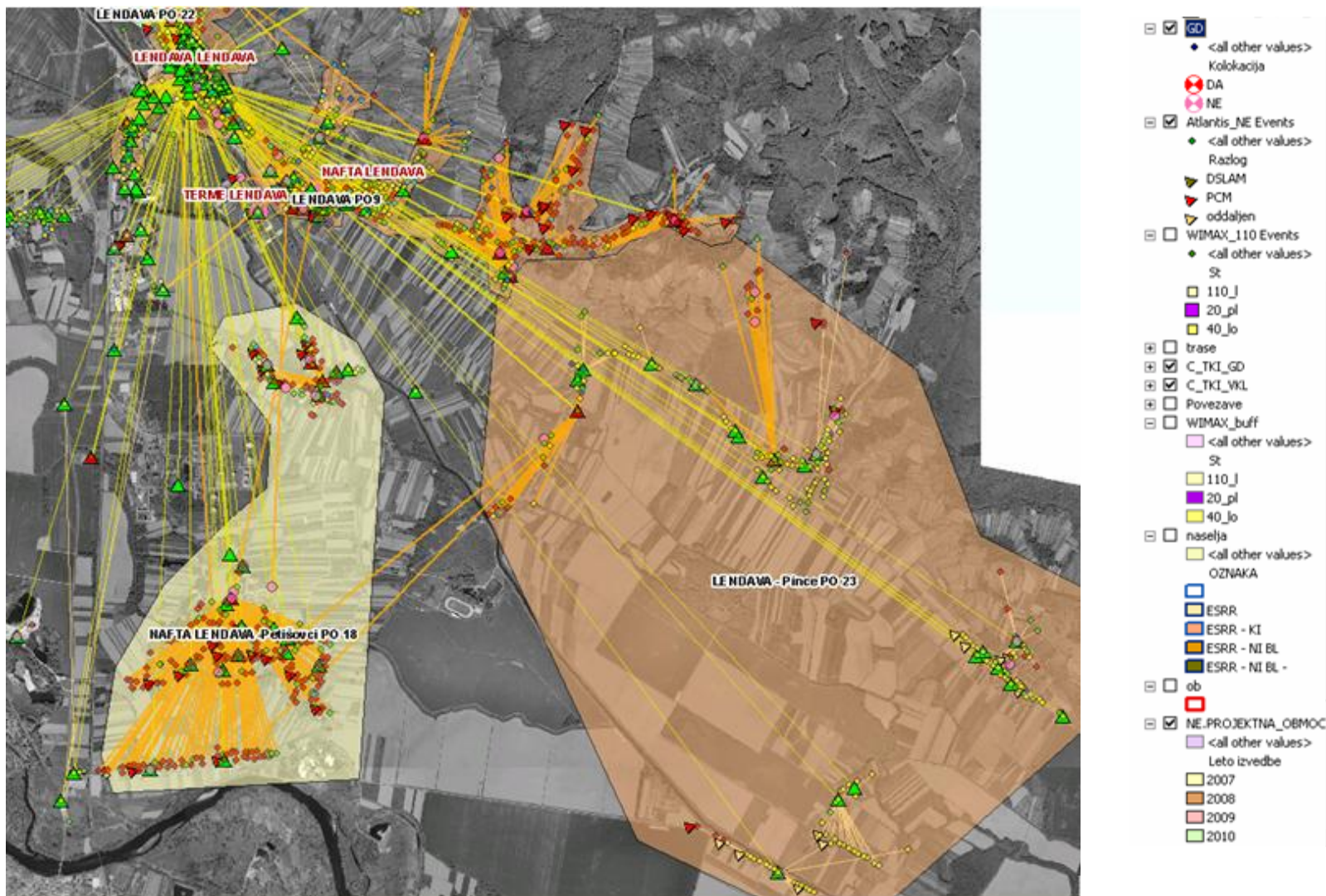
# FTTx vs Others = why bother with FTTH?

- FTTH:
  - 2007: without civil works: 970 EUR
  - 2008: Urban areas: 1.310 EUR
  - 2008: Rural areas: 1.860 EUR
  - Up to 7.000 EUR/HH in rural areas!
- FTTB:
  - 24 port: 2.041 EUR
  - 48 port: 1.160 EUR
  - 96 port: 689 EUR
- FTTN:
  - 200 port: 815 EUR

- ADSL2+:
  - 240 port: 122 EUR
- VDSL2:
  - 216 port: 247 EUR
- Wimax:
  - 200 port: 650 EUR



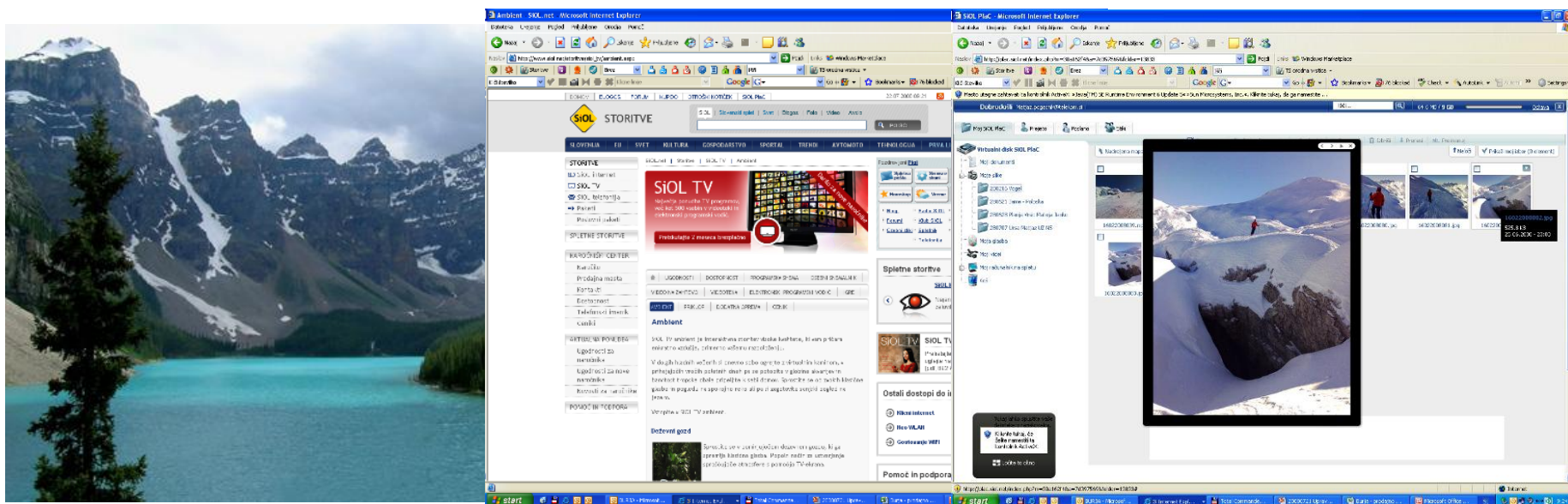
# xDSL vs FTTx → network perspective





# Focus on applications, services and content

- HD programs only for FTTH customers
- Ambient - videoarts in VoD (SD and HD)
- Security package, WiFi AP
- Siol Plac! Network storage



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## FTTH is a must!

- TS is follower in FTTH → Main FTTH driver is competition
- FTTN driven by services
- Build it and they come! → NOT WORKING!
- 3-4 parallel infrastructures - who will survive?
- NGA is here!
- Who will compensate for OTTs? BBC, Disney

### TS expectations:

- **Market analyses and definition on sub-national level → different obligations in different areas and markets**
- **Up-to-date market situation should be considered**
- **Coherent approach to regulation (markets 4 and 5 together)**
- **Symmetrical obligations for all FTTH players**
- **Slovenija has unique situation!**



[www.telekom.si](http://www.telekom.si)

**Thank You for Attention!**