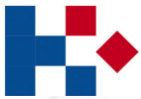


Broadband Competition, Investment and Regulation in Croatia

**Croatian Post and Electronic
Communications Agency
- HAKOM -**

Budva, 5th of February, 2010



COMPETITION ON RETAIL BROADBAND MARKET

- 631.669 wireline and 242.172 wireless broadband connections (3Q 2009.)

- Key market players:

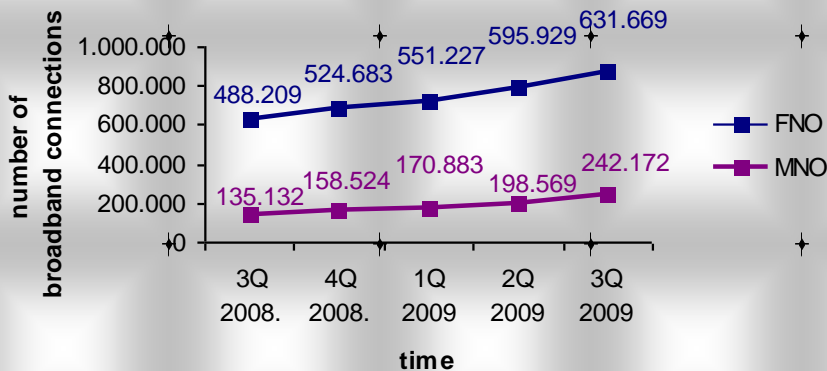
- WIRELINE (FNO):

- HT,
 - Iskon,
 - Optima telekom,
 - Amis,
 - B.net,...
- } A
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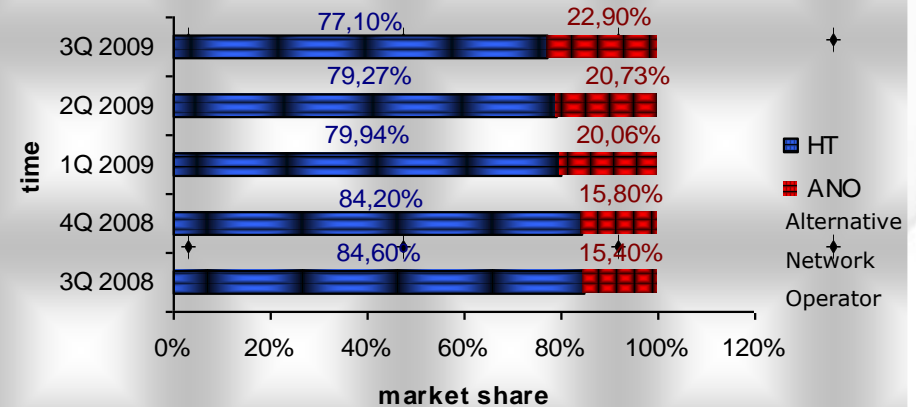
- WIRELESS (MNO):

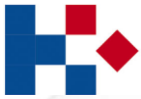
- T-Mobile
- Vipnet
- Tele2

increase in number of broadband connections



fixed operator's market share (number of broadband connections)





INVESTMENTS IN BROADBAND

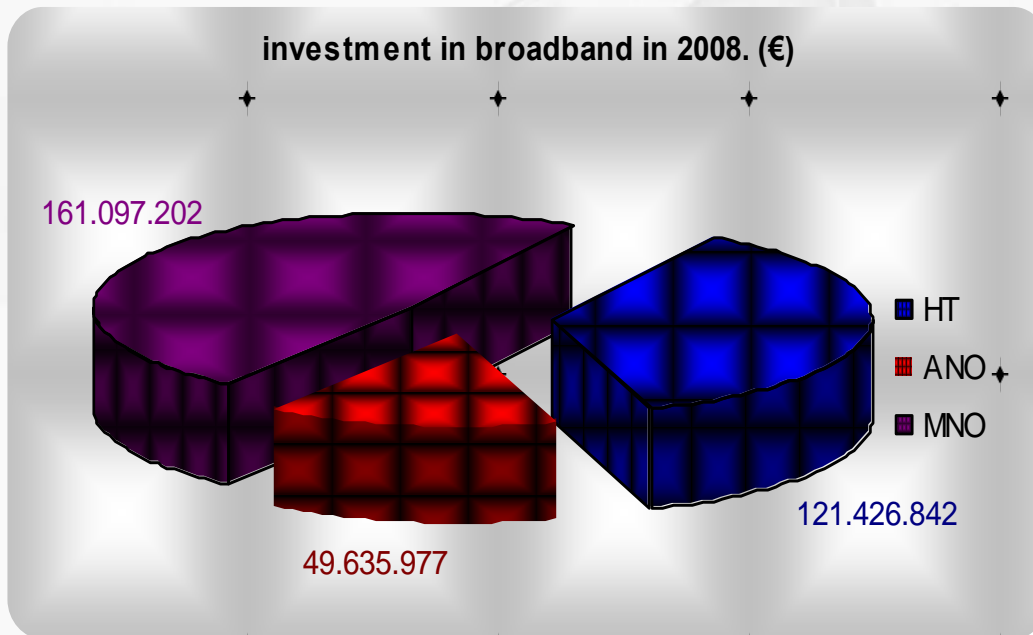


- WIRELINER (HT + ANO):

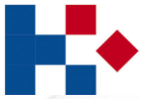
- HT – main investor in NGN
- ANO

- WIRELESS (MNO):

- T-Mobile
- VIPnet
- Tele2



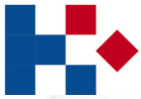
- 332.160.435 € - total investment in broadband in 2008



- **Preventing HT of misusing the status of SMP on wholesale access markets:**
 - Wholesale infrastructure access (market No.4)
 - Wholesale broadband access (market No.5)

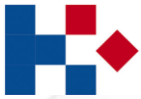
- **Regulation of the access markets irrespective of the technology used**

- **Ensuring conditions that will foster:**
 - Investments in broadband
 - Competition on retail broadband market



EXPERIENCE WITH REGULATION – market No.4

- **By imposing remedies to HT, HAKOM has enabled:**
 - access to full and shared Unbundled Local Loop (ULL) – copper pair
 - access to full and shared sub-loop unbundling (SLU) in two ways
 - access to fiber unbundling – Point-to-Point (P2P) solution
 - access to collocation service
- **HT has published reference offer for:**
 - full and shared LLU – copper pair
- **HT should publish reference offers within 90 days from the reasonable request for:**
 - full and shared SLU
 - fiber unbundling (P2P solution)



EXPERIENCE WITH REGULATION – market No.5

- **By imposing remedies to HT, HAKOM has enabled:**
 - access to a bitstream service regardless of the access technology used (copper / copper + fiber / fiber) at the:
 - IP level
 - Ethernet level
 - DSLAM / OLT or other corresponding level
 - provision of private virtual channels for VoIP, IPTV and Video on demand
 - access to HT's network with own backhaul capacity
- **HT published reference offer for:**
 - Bitstream Access (BSA) at IP level – copper pair (on 1st of October, 2009)
 - BSA at IP level – FttH (both P2P & PON solutions) (in January, 2010)
- **HT should publish reference offers within 90 days from the reasonable request for:**
 - BSA at Ethernet & DSLAM level – copper pair
 - BSA at IP, Ethernet & DSLAM level – FttC
 - BSA at Ethernet & OLT level – FttH (both P2P & PON solutions)



HAKOM



**Thank you
for your attention !**

**Dražen Lučić, Ph.D.
Executive Director**



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