HAKOM

Electronic Communications in Croatia: Some Opportunities and Challenges

Croatian Post and Electronic Communications Agency

- HAKOM -

Hvar, 16th of September, 2011

CONTENT

1 Introduction

2 Market Data

3 Opportunities

4 Challenges

5 Conclusion

CONTENT

1 Introduction

2 Market Data

3 Opportunities

4 Challenges

5 Conclusion

CROATIAN MARKET

- The electronic communication market in Croatia is still slightly growing with many opportunities for faster growth
- Fast acceptance of the new technologies in mobile telecommunication networks
- Regulatory environment encourage market liberalisation
- Many ported numbers in both wireline and wireless networks
- Broadband access density still below EU average, but in mobile broadband Croatia is above EU average
- Analogue television switchover performed in October, 2010
- Digital dividend creates many new opportunities
- Lack on operators’ investment in new infrastructure
- High potential for multi-media services
- Several projects and subvention programs have been started

CONTENT

1 Introduction

2 Market Data

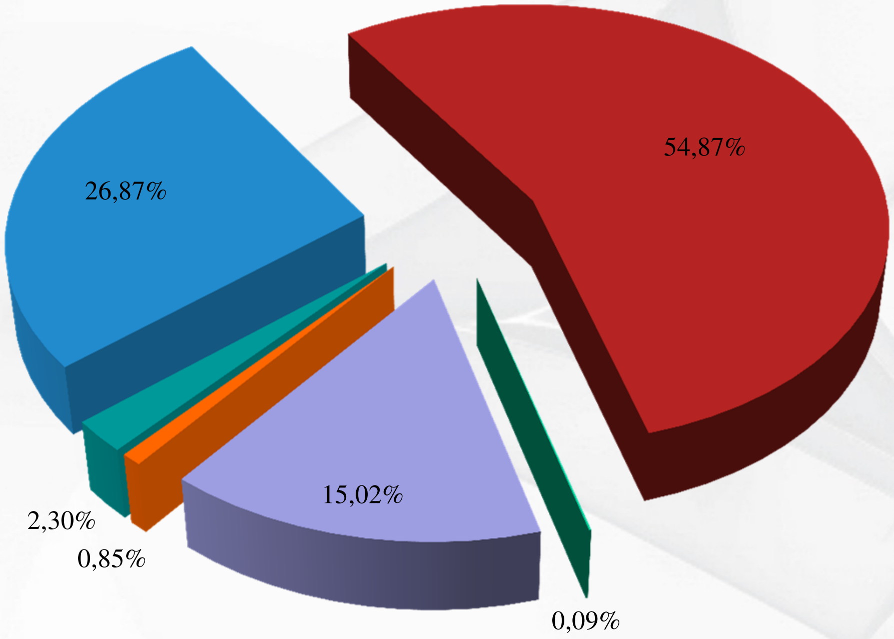
3 Opportunities

4 Challenges

5 Conclusion

REVENUE PER SERVICE TYPE

TOTAL REVENUE: 3.148.136.518 kn

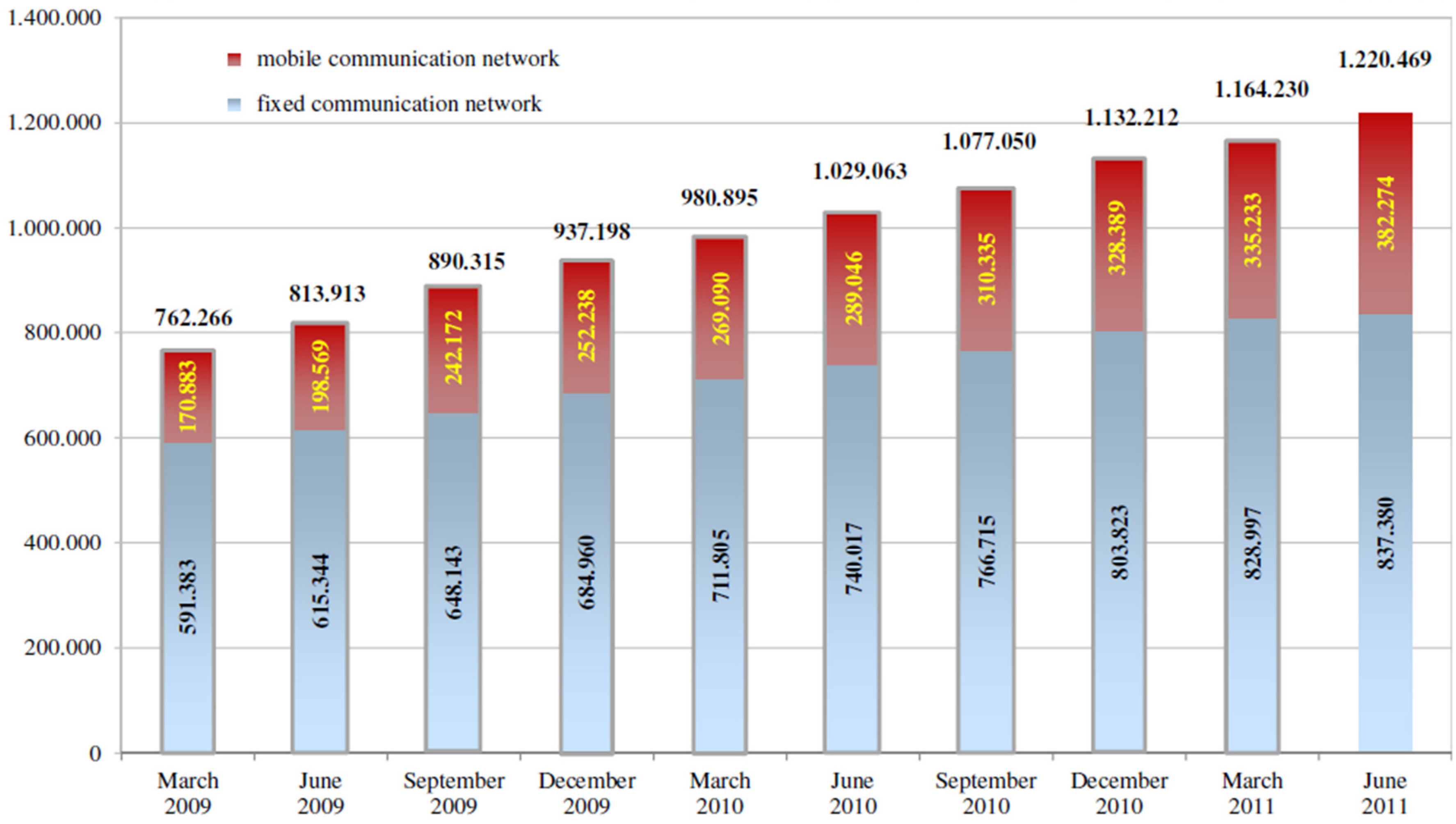


- Telephone service in fixed network: 845.765.959
- Telephone service in mobile network: 1.727.525.338
- Internet narrowband access: 2.746.239
- Broadband access: 472.709.505
- Television services: 26.907.886
- Network cables rent: 72.490.591

MARKET IS STILL GROWING DESPITE RECESSION
HIGH POTENTIAL IN BROADBAND ACCESS AND IPTV

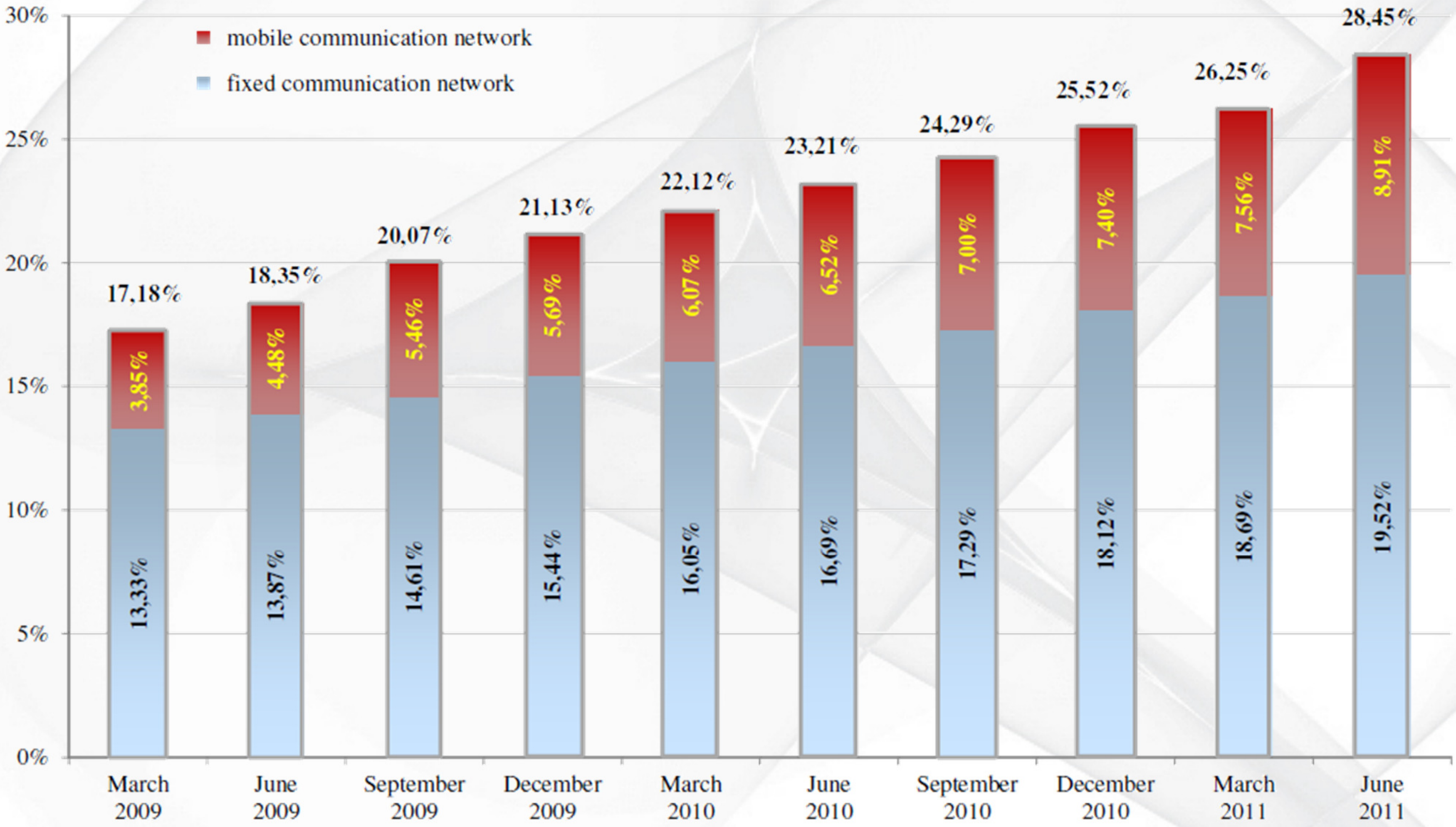
INTERNET BROADBAND ACCESS – Q2 2011

HIGH GROWTH IN MOBILE NETWORKS, BUT MODERATE IN WIRELINE



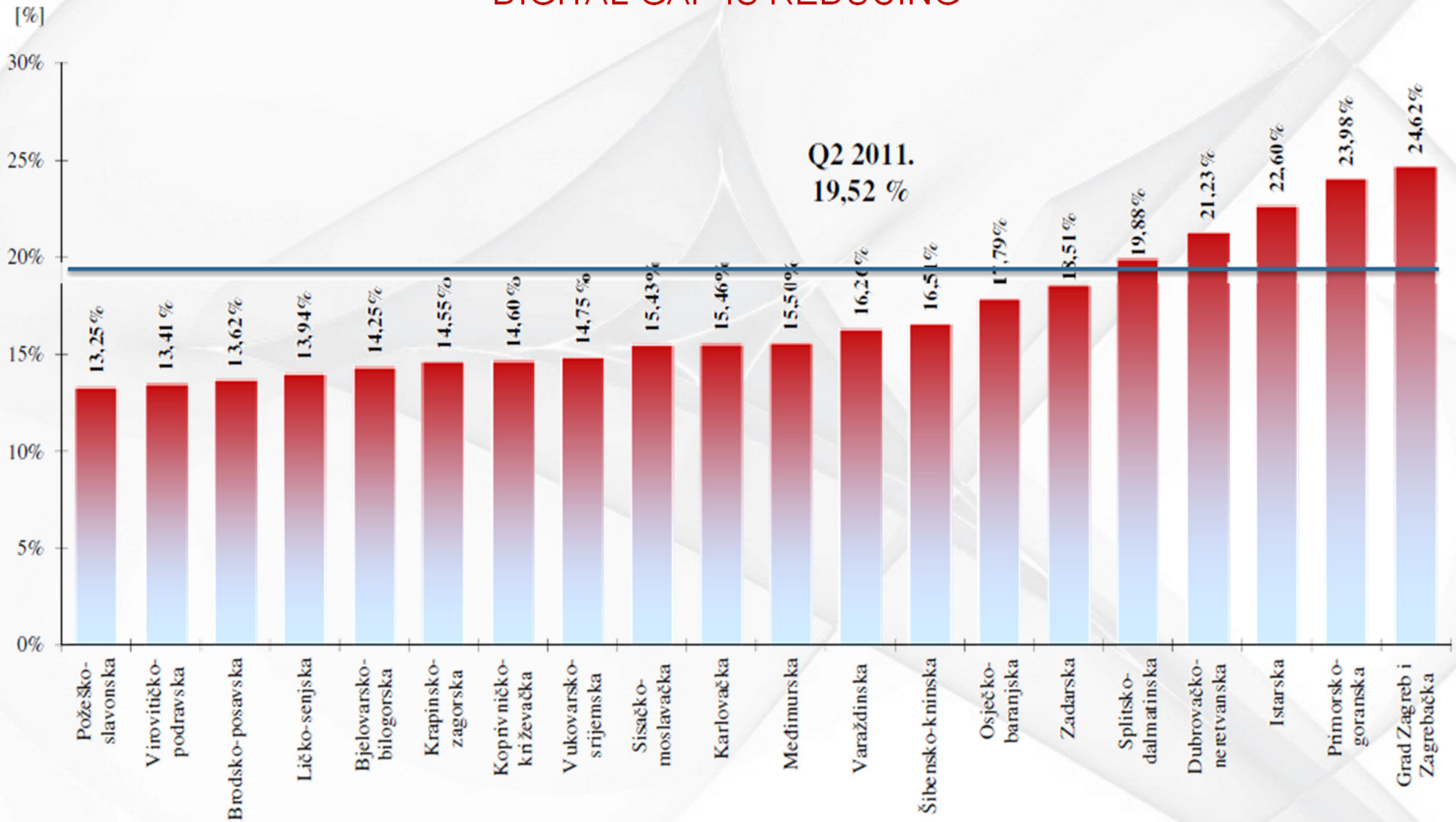
DENSITY OF INTERNET BROADBAND ACCESS – Q2 2011

ABOVE EU AVERAGE IN MOBILE NETWORKS, BUT BELOW IN WIRELINE



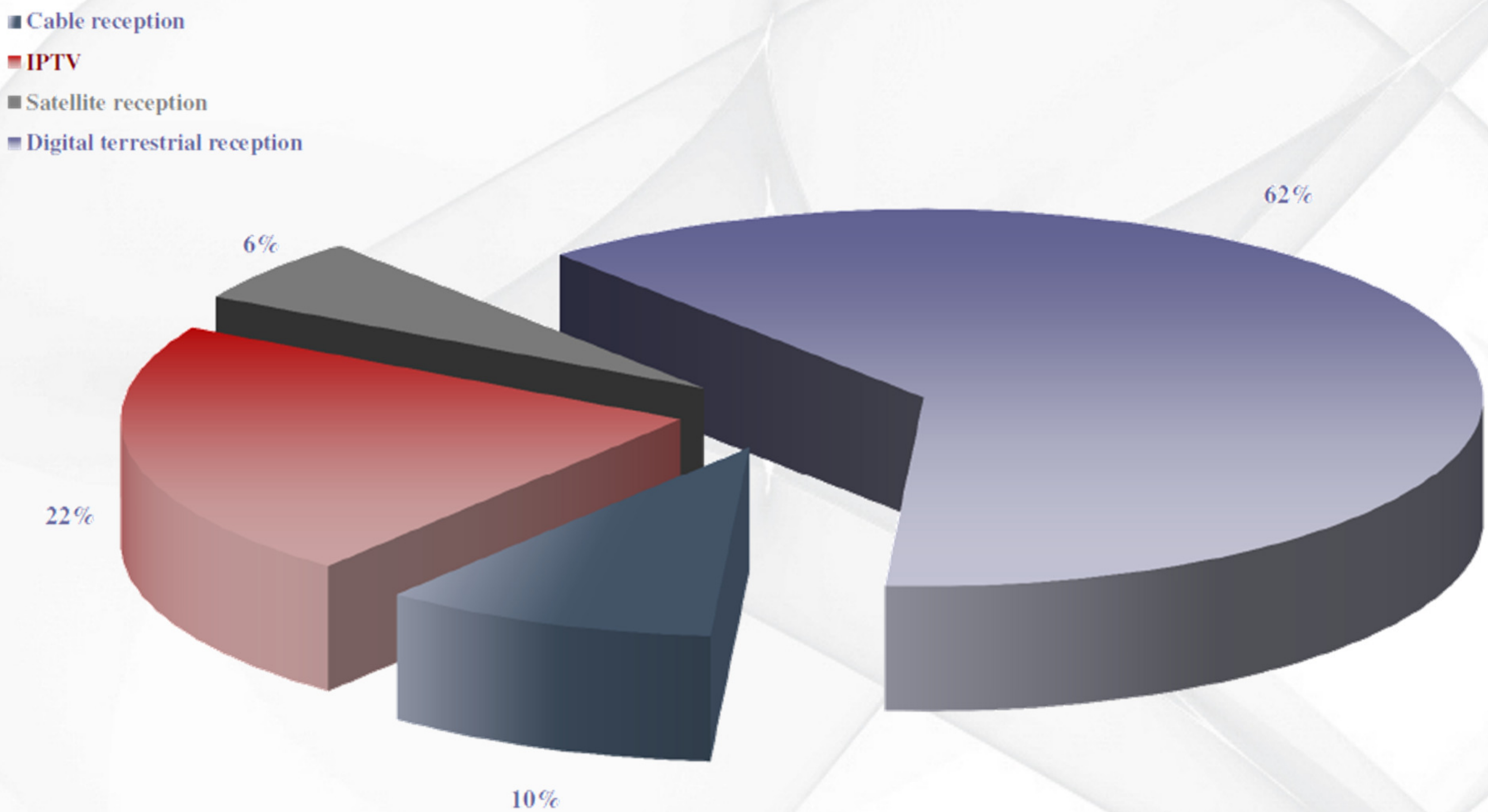
DENSITY OF INTERNET BROADBAND ACCESS IN WIREL NETWORKS PER COUNTY IN CROATIA – Q2 2011

VERY LOW DENSITY IN RURAL AREAS AND ON THE ISLANDS
DIGITAL GAP IS REDUCING



TELEVISION BASED SERVICES – Q2 2011

HIGH POTENTIAL FOR IPTV, SAT TV AND CABLE TV



Note: The number of Digital terrestrial reception = (Number of HH in Republic of Croatia - number of HH without TV) – (number of Cable reception + number of IPTV + number of Satellite reception)

CONTENT

1 Introduction

2 Market Data

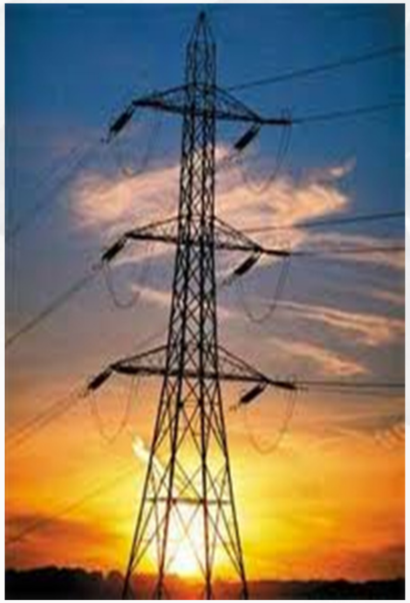
3 **Opportunities**

4 Challenges

5 Conclusion

INFRASTRUCTURE

- Broadband access is the infrastructure of the first decades in the 21st century that creates an eco-system for sustainable GDP growth like railways in the 19th century, power transmission lines in the first half of the 20th century and highways in the second half of the 20th century

- No saturation for telecommunications based on broadband access

DIGITAL DIVIDEND OPPORTUNITY

- Croatia is one of the first 15 countries in the world and the first one in the region who successfully performed digital television switchover
- Frequency band 790 – 862 MHz is free for use in mobile telecommunications networks thus setting a solid base for introduction of Long Term Evolution (LTE) based multi-media services in the rural areas
- Direct connection between increase of broadband access density in different network types and growth of Gross Domestic Products (GDP)
- Use of digital dividend in Croatia for mobile telecommunication services is one of the engines to take national economy from recession

INTERNET BROADBAND ACCESS

- Further growth of broadband access density, especially in rural areas and on the islands
- HAKOM's subvention program over 5 years and with more than 100 000 000 kuna for broadband access development in rural areas
- Close cooperation with local authorities, municipalities, schools and institutions for primary health
- „Looking to the Future" project with HAKOM and faculties from the Universities of Zagreb, Split and Osijek
- Technology neutrality – Long Term Evolution (LTE), High Speed Data Packet Access (HSDPA), Wireless Local Area Network (WiMax), Fiber to the Home (FttH), x Digital Subscriber Line (ADSL, VDSL), Satellite, Cable TV,…
- Possibility to get subvention from European funds

CONTENT

1 Introduction

2 Market Data

3 Opportunities

4 Challenges

5 Conclusion

DIGITAL DIVIDEND CHALLENGE

- Italy illegally uses Croatian frequencies, including some in the frequency range of 790 – 862 MHz (digital dividend)
- Negative commercial impact on tv-stations and tv-based services providers due to problems with frequency piracy from Italy
- „Frequency pollution” from Italy blocks use of digital dividend in Croatia, especially on the coast, thus blocking mobile telecommunication operators to invest in LTE at 800 MHz and in other frequency bands
- Digital dividend still can’t be used on all Croatian territory, not only due to Italy, but also due to other our neighbours, who still broadcast analogue tv-signal in the frequency range of digital dividend
- The mobile communication operators still don’t invest enough in the new technologies and in new end-user services
- Some of them have started the field trials for LTE 800 MHz

NETWORK EXPANSIONS

- Rapid installation of the new Base Stations (BS) in mobile telecommunications networks is prerequisite for further broadband access growth, especially for use of digital dividend and LTE technology
- Communities, municipalities are a big obstacle for further investments in broadband access expansion
- Regulatory environment is in favour of new investments, taking in consideration risk and long period for return of investments, but also preventing market monopoly
- Government has to find more efficient and feasible mechanism for investment in other areas than high dense urban, like city centre of Zagreb, Split and Rijeka

LACK OF OPERATORS' INVESTMENTS

- Rather low investment by the operators in both FTTH and LTE infrastructure
- Short term goals oriented, therefore there are no visible mid- or long-term network expansion plans
- Fear of becoming „Bit-pipeline" for Skype, Google, Facebook,…
- Questionable success of „triple play"
- Start to think „outside the box"?
- Why there are no investments in VDSL as the evolution of ADSL?
- Low interest in high-speed data transmission via optical fiber due to cost to the end-user and lack of new services that take advantage of such speeds

CONTENT

1 Introduction

2 Market Data

3 Opportunities

4 Challenges

5 **Conclusion**

CONCLUSION

- Electronic communications are still one of the most vital branches of Croatian economy
- There is still a high growth potential, especially in broadband access and IP based multi-media end-user services
- All the players on the market have to invest much more in both existing and new infrastructure in order to avoid business problems in the future
- The Government, both national and local authorities, including the Regulator, have to prepare a base and provide support for faster and higher growth of broadband access density, especially in rural areas and on the islands
- Broadband access density growth is in direct conjunction with economical growth and quality of life
- Execute contingency plan for all possible obstacles that might jeopardize any of the development programs

Thank you

for your attention !

Dražen Lučić, Ph.D.
Executive Director

HAKOM
CROATIAN POST AND ELECTRONIC COMMUNICATIONS AGENCY
Jurisiceva 13
HR-10000 Zagreb, CROATIA
Tel: +385 (0)1 48 96 000
Fax: +385 (0)1 49 20 227
www.hakom.hr