

# **Regulatory Activities and Electronic Communications Market Developments in Republic of Croatia**

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-HAKOM –**

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# Telecommunications Market Overview

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## **Wireline networks:**

- ❖ 9 operators in commercial service;
- ❖ 1 870 000 end users;
- ❖ 42 % penetration rate;
- ❖ 25,63% new entrants' users;
- ❖ 595 930 broadband access users

## **Wireline market liberalisation**

- ❖ 497 realised collocations;
- ❖ 243 565 CPS users;
- ❖ 334 980 ported wireline numbers;
- ❖ 116 232 unbundled local-loops – 6,83% of total lines in operation

# Telecommunications Market Overview

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## Mobile Telecommunications Networks:

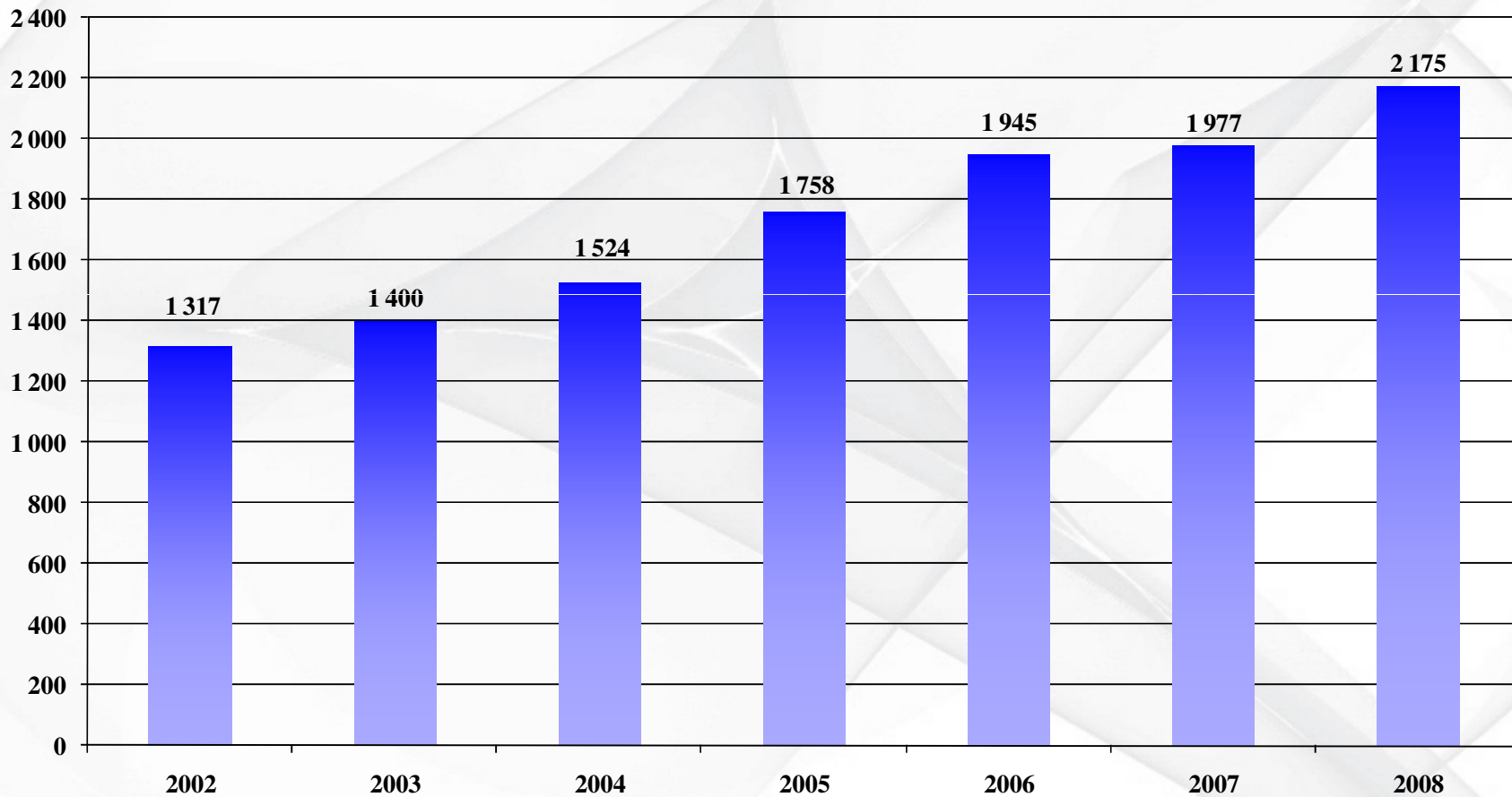
- ❖ 3 operators in commercial service;
- ❖ operation in three bands under technologically neutral licence;
- ❖ 6 106 820 end users ;
- ❖ 138% penetration rate;
- ❖ 198 570 broadband access users;
- ❖ 4,5 % broadband penetration rate;
- ❖ 98 500 ported numbers.



# Telecommunications Market Overview

## Total Electronic Communications Revenue

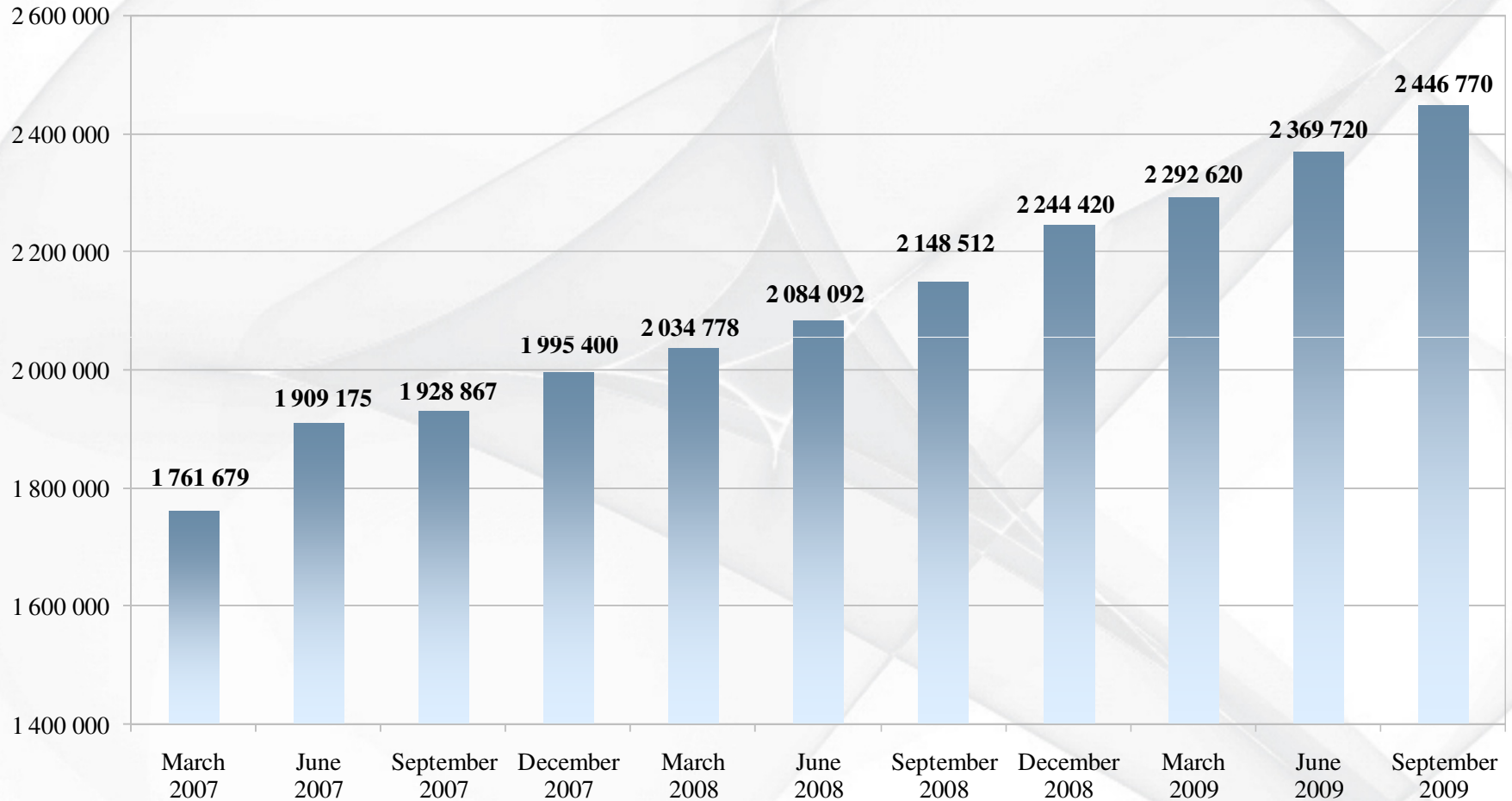
[million EUR]





# Telecommunications Market Overview

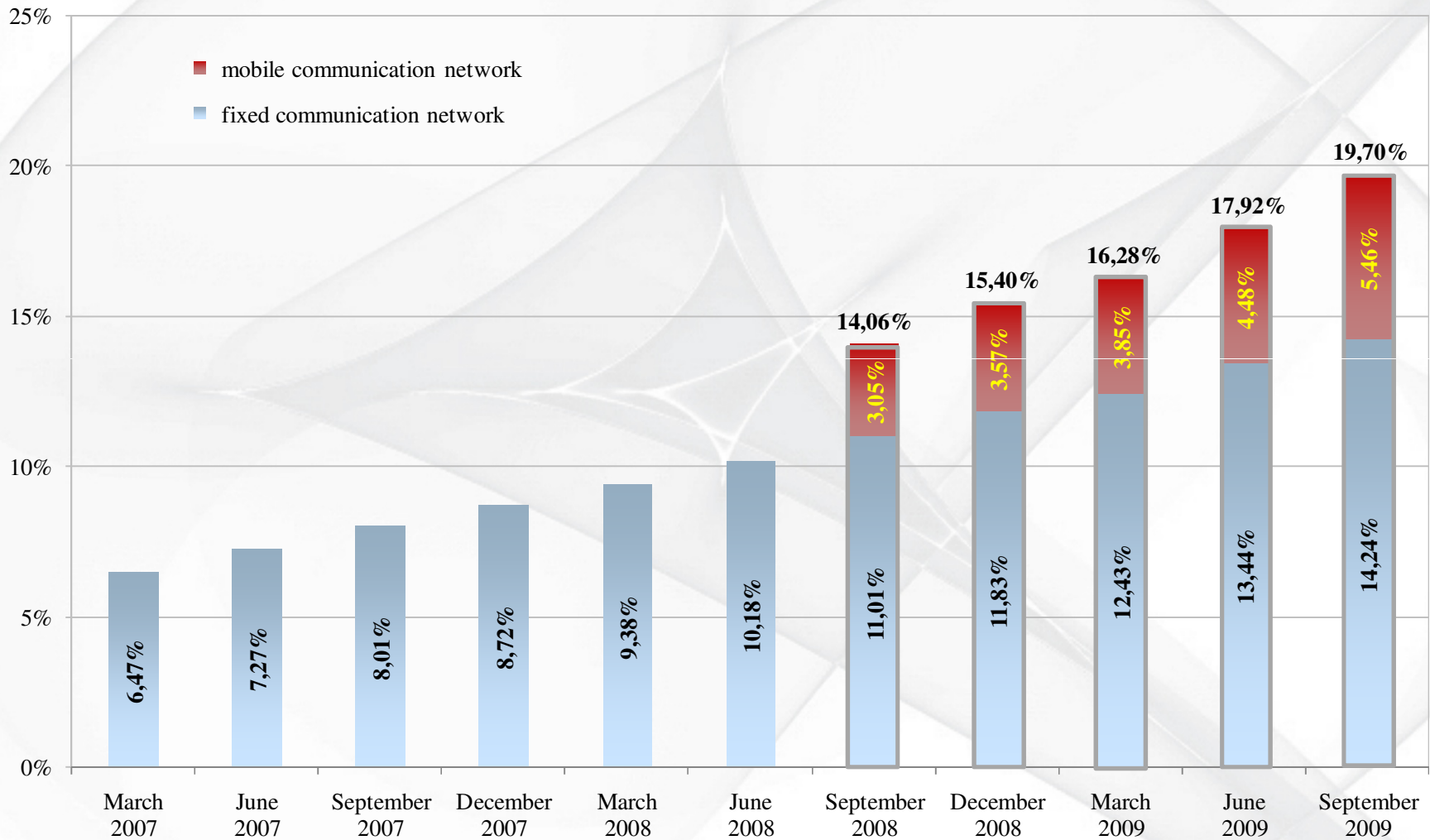
Number of Internet users





# Telecommunications Market Overview

## Broadband Penetration



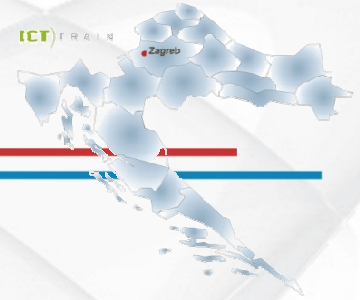




**Our way to European union ....**



# Our Way to European Union



- ❖ **The chapter 10. Information Society and Media has been closed**
- ❖ **Electronic Communications Act from 1st of July, 2008**
- ❖ **The whole package of secondary legislation within the competence of the Ministry of the Sea, Transport and Infrastructure (MMPI) and the Croatian Post and Electronic Communications Agency (HAKOM) has been adopted**
- ❖ **The legislative framework in electronic communications in Croatia has been fully completed – fully compliant to EU regulation**
- ❖ **Regulation of the electronic communications market in line with European practice**





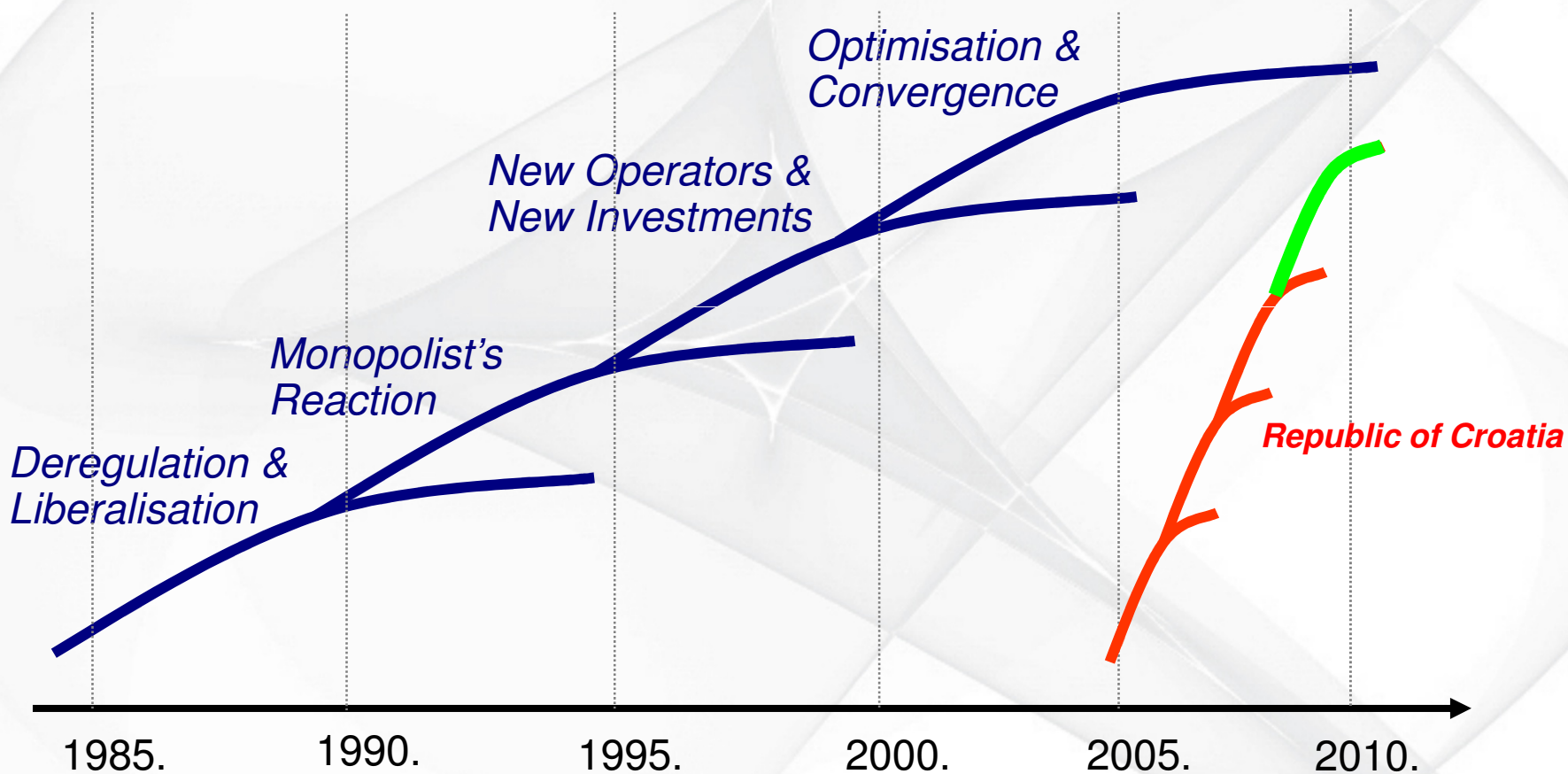
# Regulation of the Croatian Market

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- ❖ **Relevant market analyses were completed in July this year after public consultations**
- ❖ **The project of regulatory accounting has been started with Croatian Telecom**
- ❖ **Resolution of granting a new technology neutral licenses for the mobile operators**
- ❖ **Digital television switchover and digital dividend resolution is under way**
- ❖ **And much more...**

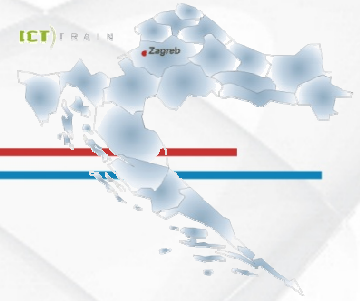
# Electronic Communications Market Evolution



Source: Analysys



# New Technology Implementation



- ❖ **Implementation of the New Generation Network (NGN) and New Generation Access (NGA)**
- ❖ **IP Multi-media System (IMS) is already in use**
- ❖ **A set of new end-user services in both wireline and wireless telecommunication networks**
- ❖ **IP TV is offered by several operators**
- ❖ **Quality of Service (QoS) gains on significance**
- ❖ **Digital Radio and Digital Television is not anymore vision, but has become a reality**



# Market analysis

|  | 2003<br>Recommendation  | 2007<br>Recommendation |
|--|---|------------------------|
| <i>Call origination on the public telephone network provided at a fixed location</i>                                       | <b>Market 8</b>   | <b>Market 2</b>        |
| <i>Call termination on individual public telephone networks provided at a fixed location</i>                               | <b>Market 9</b>   | <b>Market 3</b>        |
| <i>Transit services in the fixed public telephone network</i>  | <b>Market 10</b>  | <b>3CT</b>             |
| <b>Wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location</b> | <b>Market 11</b>  | <b>Market 4</b>        |
| <b>Wholesale broadband access</b>  | <b>Market 12</b>  | <b>Market 5</b>        |
| <i>Access and call origination on public mobile telephone networks</i>   | <b>Market 15</b>  | <b>3CT</b>             |
| <i>Voice call termination on individual mobile networks</i>  | <b>Market 16</b>  | <b>Market 7</b>        |
| <b>Public network mobile services</b>  | <b>old market according to the TA<br/>3CT</b>                 |                        |
| <i>SMS termination on individual mobile networks</i>   | <b>service part of the old interconnection market<br/>3CT</b> |                        |



# Market analysis

| MARKET   | SMP  | REMEDIES   |
|--|--|--|
| Wholesale call origination on the public telephone network provided at a fixed location (Market No. 2)         | HT (Croatian Telecom)  | Access to and use of the specific network elements;<br>Non-discrimination;<br>Transparency;<br>Price control and cost accounting;<br>Accounting separation   |
| Wholesale call termination on individual public telephone networks provided at a fixed location (Market No. 3) | HT (Croatian Telecom); Amis Telekom;<br>H1 Telekom;<br>Iskon Internet;<br>Metronet;<br>Optima Telekom;<br>Primatel;<br>VIPnet;<br>Voljatel | <p style="text-align: center;"><b><u>HT</u></b></p> Access to and use of the specific network elements;<br>Non-discrimination;<br>Transparency;<br>Price control and cost accounting;<br>Accounting separation |
|  |  | <p style="text-align: center;"><b><u>OTHER SMP OPERATORS</u></b></p> Access to and use of the specific network elements;<br>Non-discrimination;<br>Transparency;<br>Price control (asymmetry)                  |





# Market analysis

| <b>MARKET</b>  | <b>SMP OPERATOR(S)</b> | <b>REMEDIES</b>  |
|--|------------------------|--|
| Wholesale access to the network infrastructure (including shared and full access) at a fixed location (Market No. 4) | HT (Croatian Telecom)  | Access to and use of the specific network elements;<br>Non-discrimination;<br>Transparency;<br>Price control and cost accounting;<br>Accounting separation |
| Wholesale broadband access (Market No. 5)  | HT (Croatian Telecom)  | Access to and use of the specific network elements;<br>Non-discrimination;<br>Transparency;<br>Price control and cost accounting;<br>Accounting separation |





# Market analysis

| MARKET  | SMP OPERATOR(S)               | REMEDIES   |
|---|-------------------------------|--|
| Wholesale voice call termination on individual mobile networks (Market No. 7) | T-Mobile;<br>VIPnet;<br>Tele2 | Access to and use of the specific network elements;<br>Non-discrimination;<br>Transparency;<br>Price control and cost accounting |
|   |                               | Access to and use of the specific network elements;<br>Non-discrimination;<br>Transparency;<br>Price control (asymmetry)         |



# Spectrum management

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- ❖ **Frequencies licensed independently from service provision (general authorisation)**
- ❖ **No limitations on service provision**
- ❖ ***Spectrum basics:***
  1. **National Frequency Allocation Table**
  2. **Allocation plans**
  3. **Frequency database**



# Spectrum licensing

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- ❖ Licensing – defined in FAT for each frequency band
- 1. **General license** – no individual license, harmonised use in Europe, list on <http://www.hakom.hr/default.aspx?id=369>
- 2. **On request** – individual license – PMR, amateur, microwave links, satellite...
- 3. **Public tender** – procedure when there is more interested parties that available spectrum
- 4. **Auction** - procedure when there is more interested parties that available spectrum, still hasn't been used in Croatia



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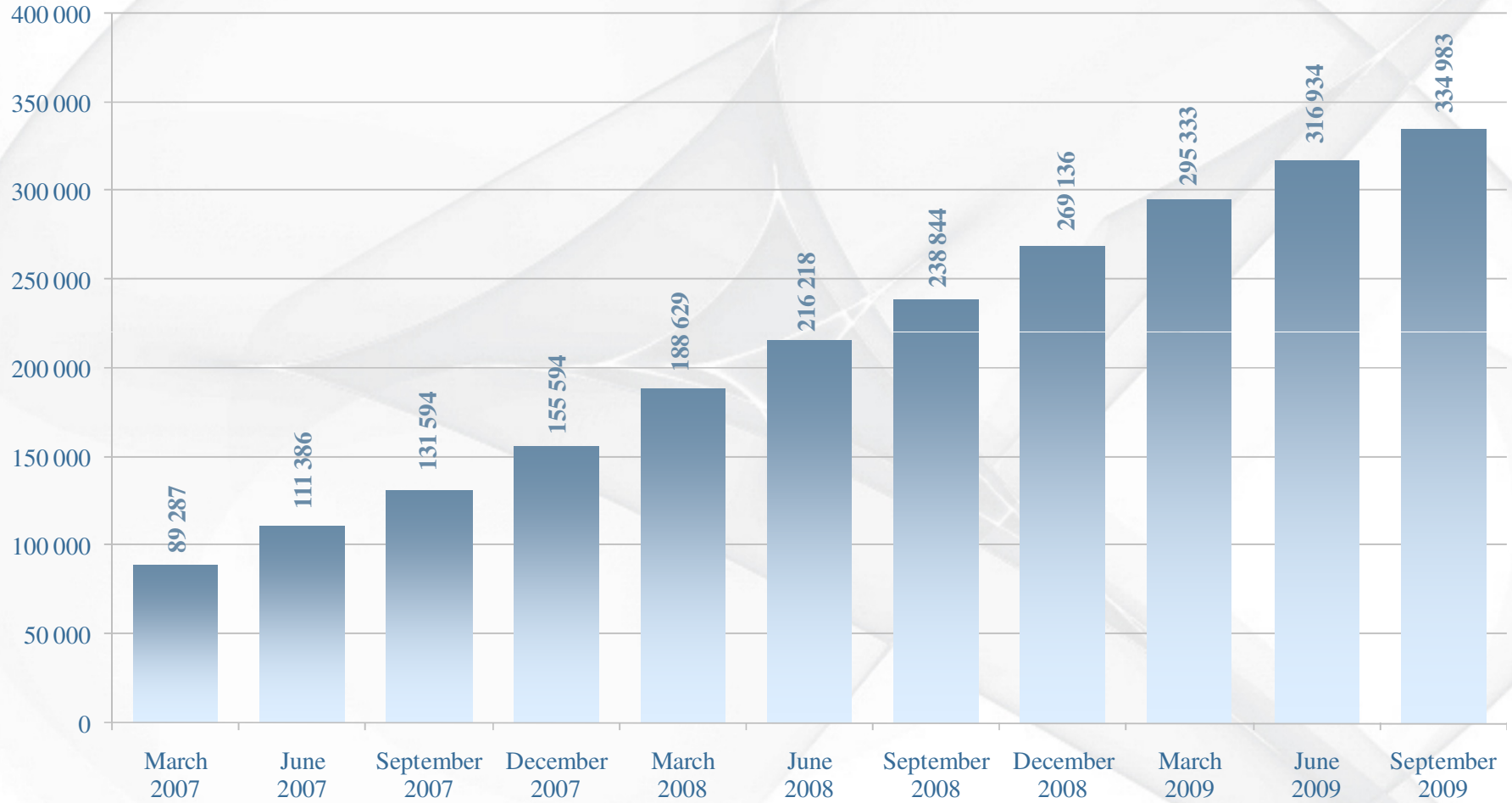
# PosTel 2009

**Thank you  
for your attention !**

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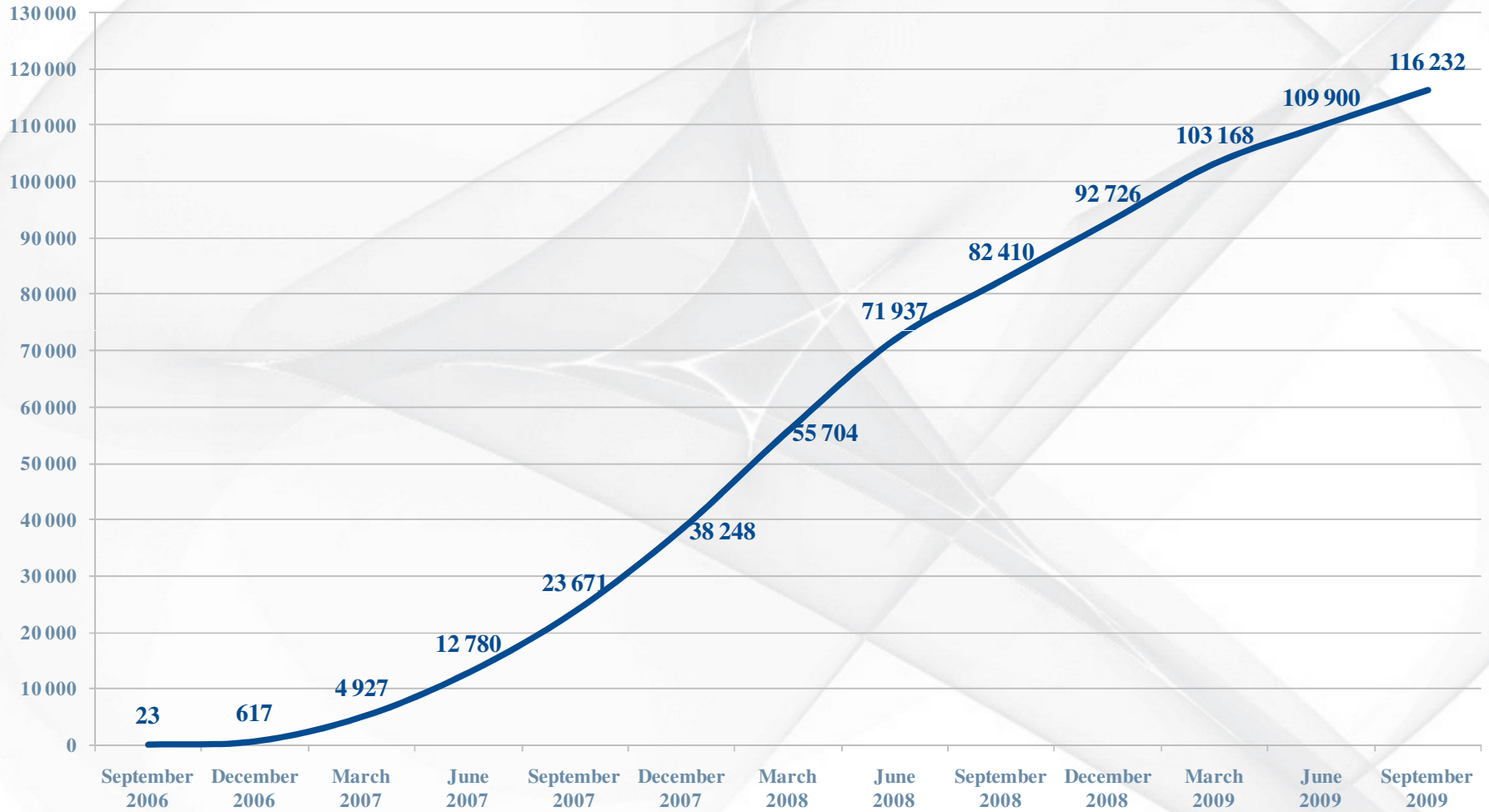
## Fixed Ported Numbers







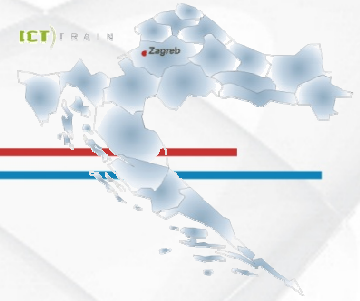
## Number of Unbundled Local Loops







# Digital Television Switchover



- ❖ “Analogue to Digital Television Broadcasting Switchover Strategy for the Republic of Croatia” was adopted by Government on 31st of July, 2008
- ❖ Strategic goal is full analogue to digital TV switchover by the end of 2010
- ❖ Switchover concept, region by region (9 “digital” regions)
- ❖ In April 2009 HAKOM granted the license for the use of radiofrequency spectrum for providing electronic communication service managing two DTV broadcasting networks countrywide (MUX A and MUX B) to Odašiljači i veze d.o.o.
- ❖ Test operations for HDTV and DVB-H have been started
- ❖ Analogue to digital switchover is completed → DIGITAL DIVIDEND