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HAKOM

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# **Broadband Ecosystem for Rural Areas in the Republic of Croatia**



## Broadband is recognized as:

- An imperative for economic development fostering employment,
- A key factor for improving healthcare system, educational system, science, culture etc.



## Revitalisation of rural areas by:

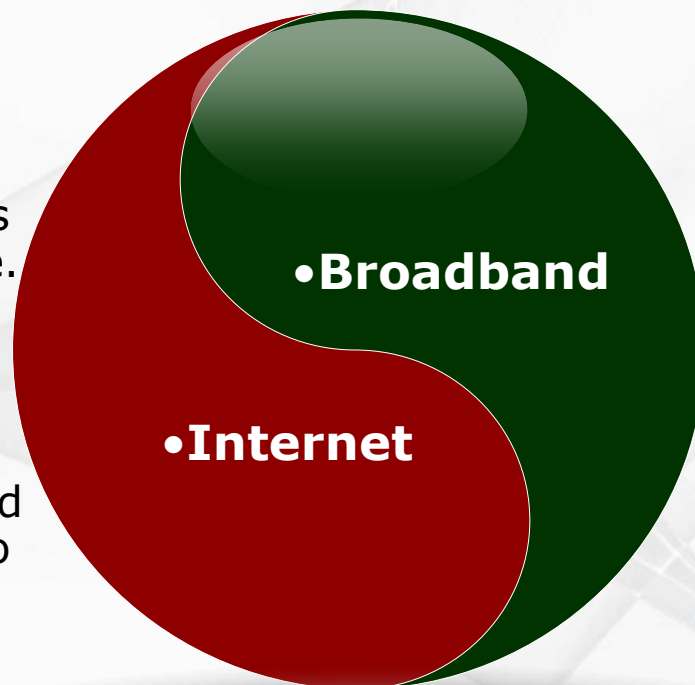
- supporting the development of these areas,
- resulting in less migration of young people,
- return of educated people,
- increase of the intellectual potential.



## Conclusion

- Croatia needs to continue implementing of broadband to underdeveloped regions - capital will not go where there is no direct profit.
- HAKOM: „*Programme for Internet and Broadband Access Development in Areas of Special State Concern, in Highland Areas and on Islands*“.

- The total number of Internet users in the world and in Croatia is growing at a high rate.
- When it comes to Internet use and broadband access, Croatia is not as competitive as it would like to be compared to the EU states.

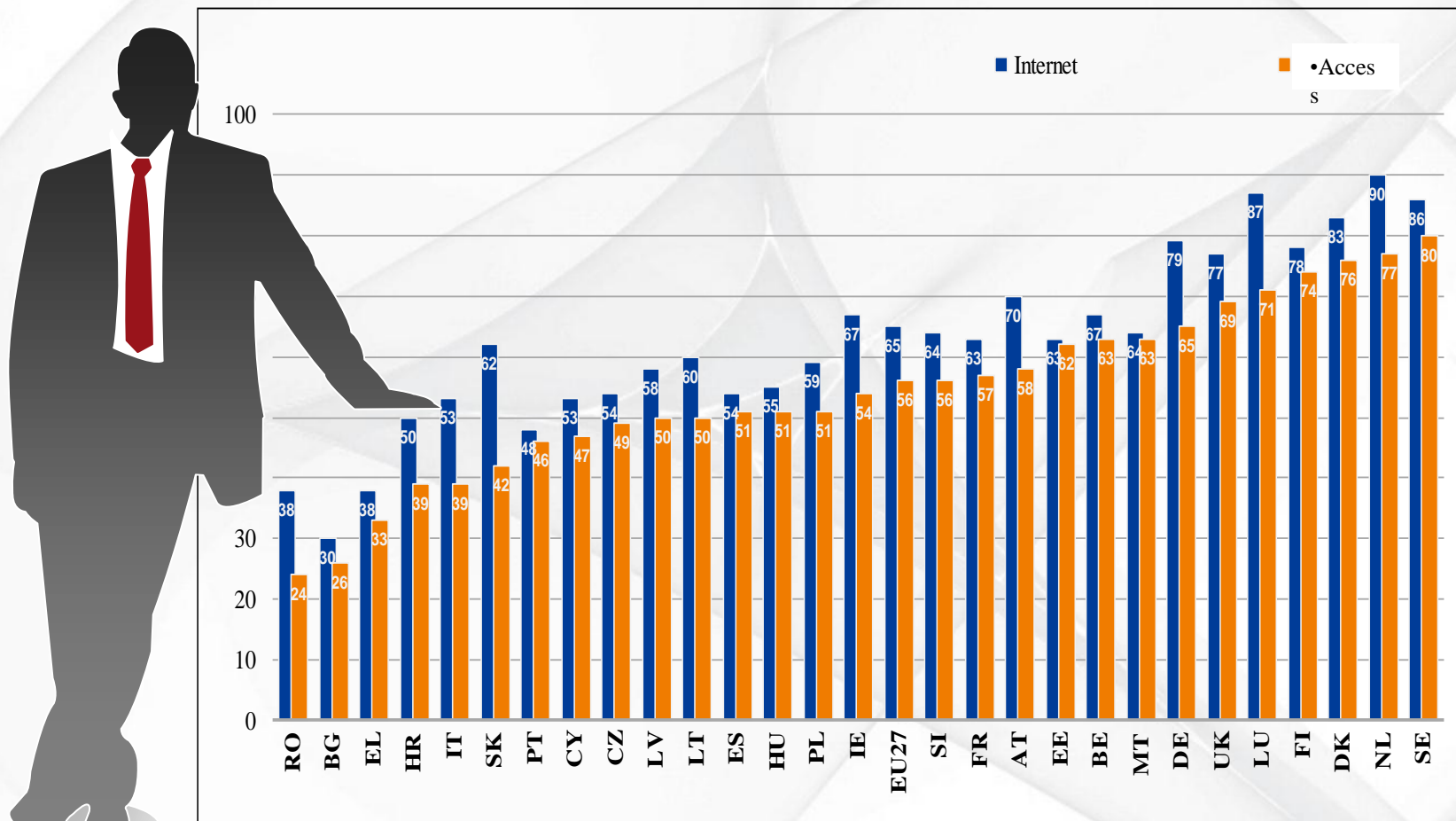


## Main reasons:

- late privatization (2000 and 2005),
- unsuitable concession agreement,
- insufficient investments in fixed network,
- economic crisis (new operators, government).

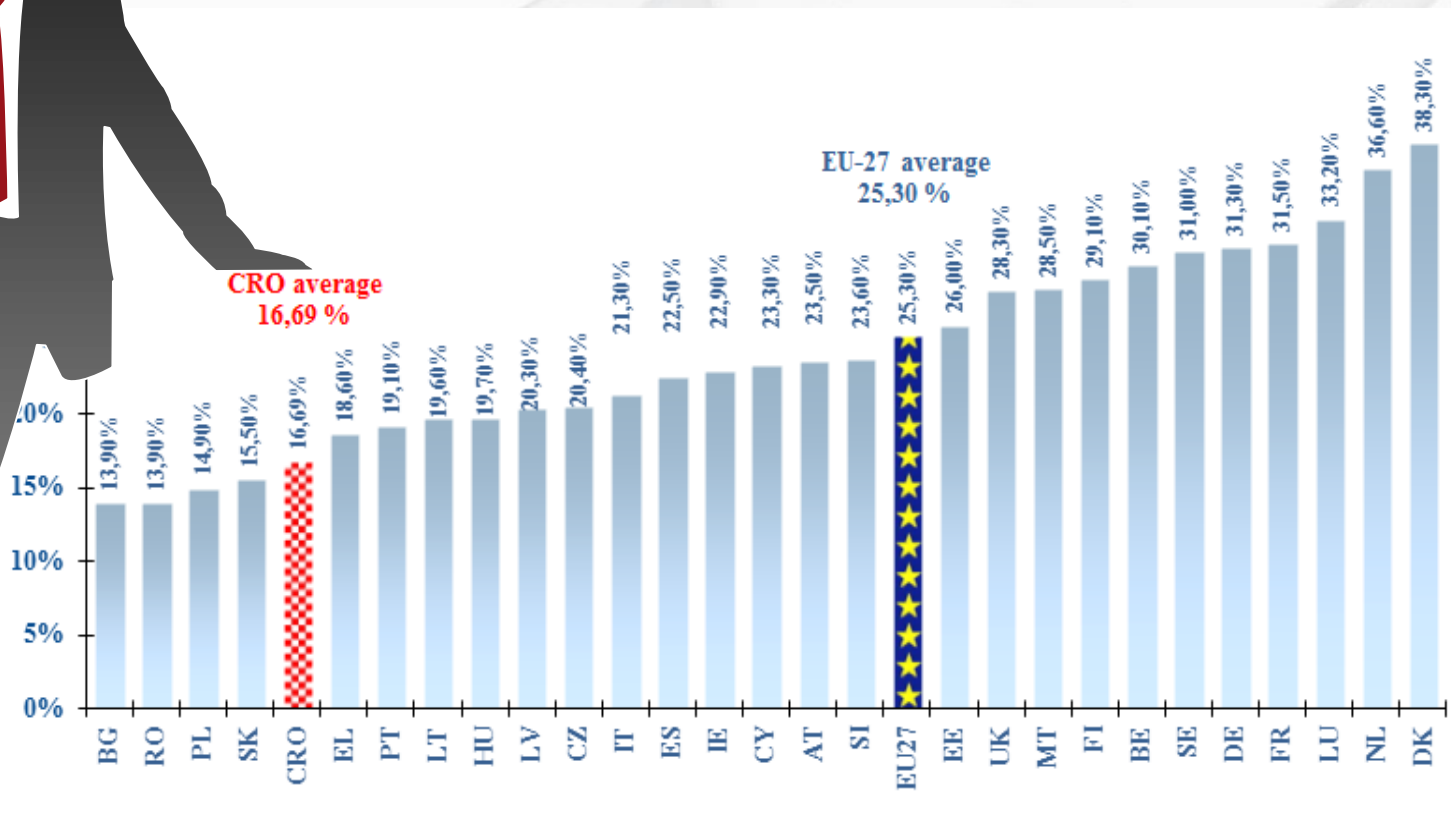
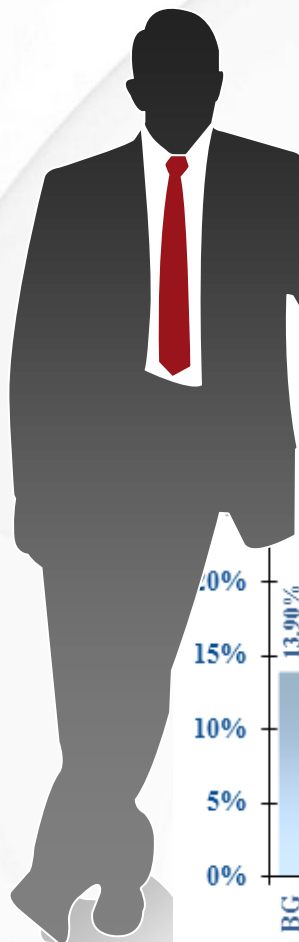


# Households – Internet and broadband access users



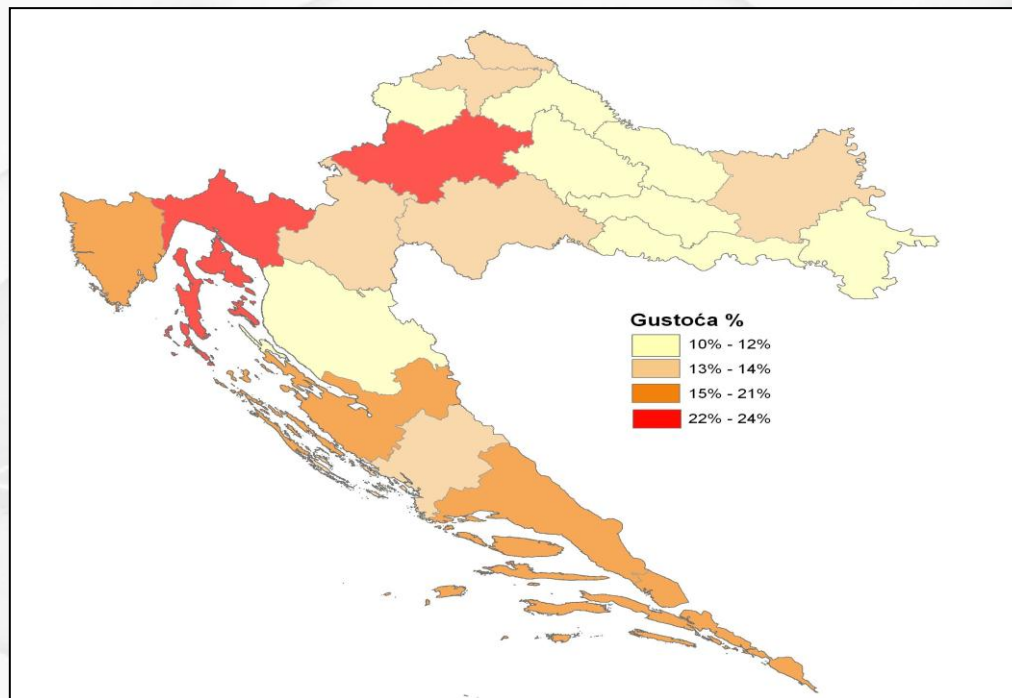


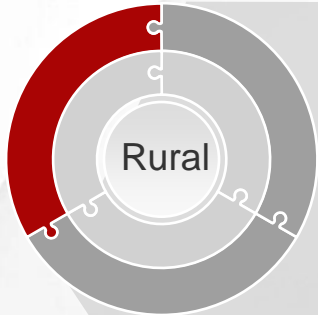
# Overall broadband penetration rate





# Broadband penetration rate per counties in Croatia



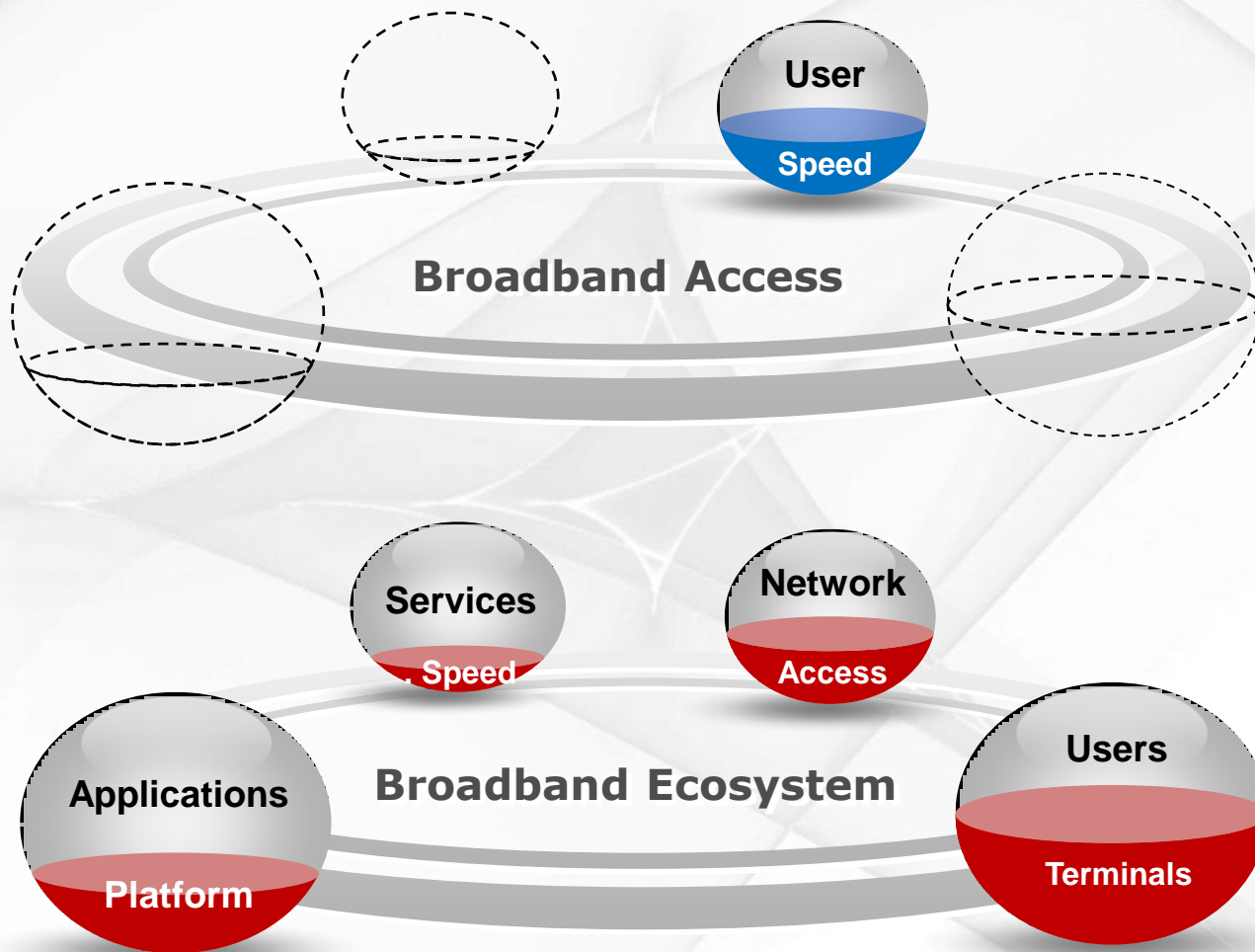


## There are several reasons for lower broadband penetration rate in rural areas:

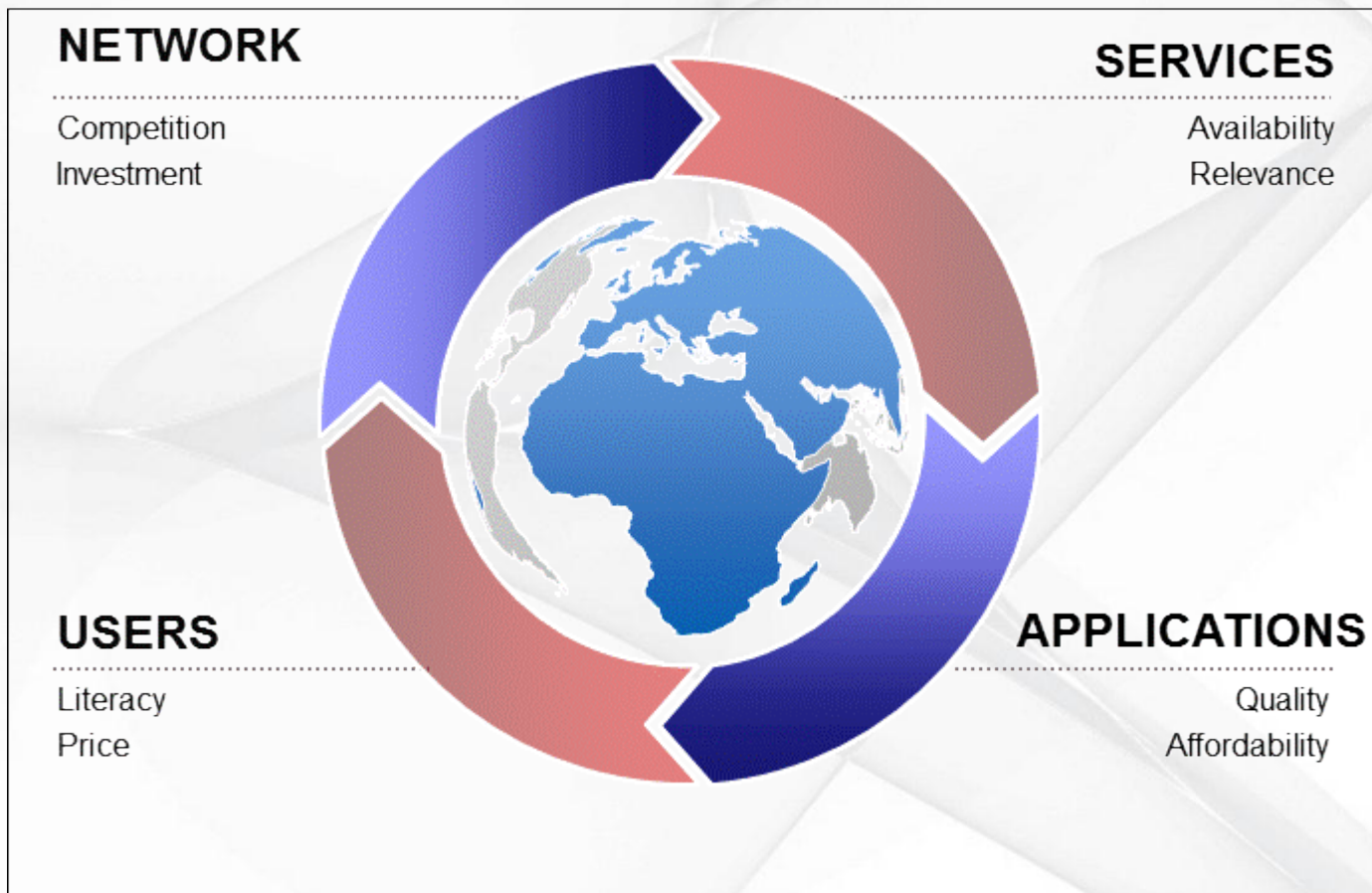
- Potential user density in rural areas is lower and distances greater thus resulting in more expensive implementation. Lower density leads to lower demand, that is, less income per user for operators;
- Age structure of population in rural areas is less favorable. The elderly are less likely to use the Internet. They are unfamiliar with computers and often afraid of technology, or, more precisely, afraid of making a mistake;
- Rural population is often less educated which results in lower IT literacy which, in turn, creates a barrier for Internet use;
- Rural population on average has lower income and cannot afford to buy computers and home broadband access;
- Exclusive focus on broadband access with a modest offer of real applications and services cannot convince rural population of the usefulness of Internet use.



# Broadband development approaches

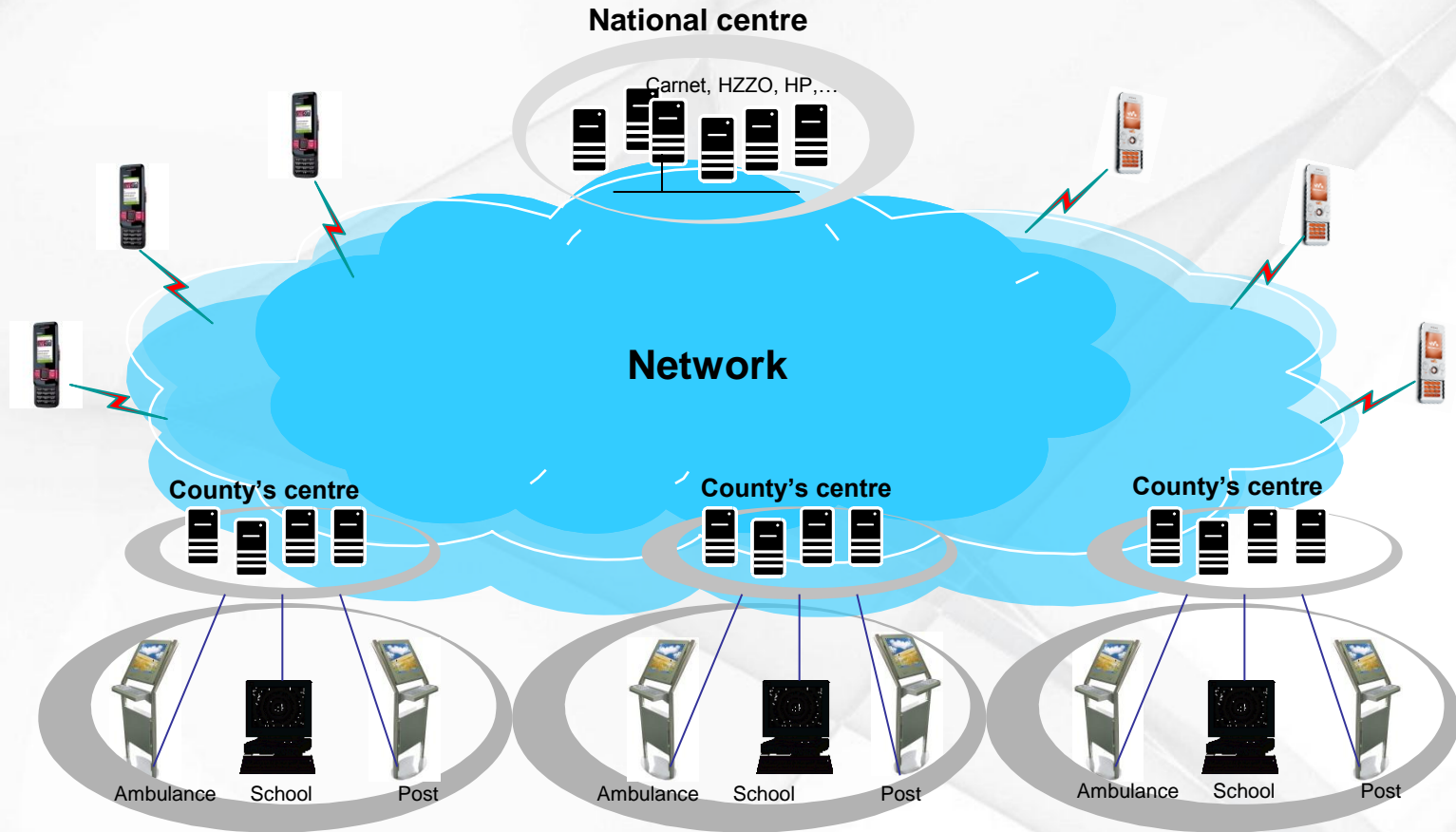








# Programme – Rural Broadband Ecosystem



- 0** HAKOM's Broadband Ecosystem Programme
- 1** Connect all unconnected schools, healthcare institutions, premises of community
- 2** Ensure technology neutral requirements based on network topology
- 3** Install appropriate terminal equipment (PC or IK)
- 4** Install information infrastructure in regional centres
- 5** Install simple, intelligible e-learning software about Internet use
- 6** Ensure access to informative and educational applications and contents for all schools
- 7** Ensure access to informative, advisory and healthcare applications and contents
- 8** Install software for exchange offer, demand and distribution of agricultural products
- 9** Install software for exchange offer and demand of tourist services
- 10** Install software that will permit access to contents from mobile network



# Commercial broadband applications



1

**Telemedicine** – allows to professionals and patients to save time and money and upgrades healthcare. Applications allow the creation of an on-line clinic, the sending of results for analysis and diagnostic, consultations of doctors of general medicine with specialists and other.

2

**Distance work** – makes possible working from home, hotel, etc. Applications reduce travel and office costs. Permits uninterrupted work in case of bad weather, for example, a storm. People can live and work where they want.

3

**e-Government** – enables all levels of government to give information to citizens. Saves paper, travel time, waiting in lines, “prolongs working hours”.

4

**Agriculture** – in addition to instructions and advice, the greatest advantage is connecting offer and demand for agricultural products, controlling prices, available means of crop protection, veterinary advice, etc.

5

**e-Teaching** – permits distance learning regardless of the location and age. Applications allow distance and lifelong learning, learning from materials of non-profit organisations etc.

6

**Alerting** – allows communication in case of disasters such as fire, storm and earthquake. Instructions for users, transmission of images, managing no-pilot aircraft, evacuation maps,



7

**Tourism** – It is possible to obtain information, see or book or buy an apartment as well as buying products, renting recreational, sports and cultural facilities and events.

8

**e-Trade** – most frequently related to entertainment. It is possible to obtain information, make reservations or buy tickets as well as buying books, goods, films, music.

9

**Persons with special needs** – enables communication with the deaf, the blind and the disabled in the manner acceptable to them, communication with their careers, learning etc.

10

**Consultancy services** – assistance to small and medium-sized enterprises for the carrying out of their activities. Advice to entrepreneurs when starting businesses, market analyses, searching for or offering work...

11

**Maintenance** – permits remote surveillance of buildings, vehicles and goods. Applications allow detection of fire, flood, burglary and other to responsible services.

12

**Safety** – similar to alerting, includes cybernetic security, databases....

## Broadband as part of development strategy

Since development of Croatia requires the development of its regions, Croatia needs to continue implementing the programme for the promotion of broadband access introduction in underdeveloped regions aware of the fact that capital will go only where there is direct profit involved.

## A qualitative change: Broadband ecosystem

Former aid programmes were focused on increasing broadband access not to the effects of Internet use on the economy and quality of life. A qualitative change in approach is proposed: the broadband ecosystem access, applications, service, and equipment with special attention to contents and training of population on Internet use.

## Programme objectives: long-term public interests

- balanced regional development,
- support to the development of areas,
- inclusion of population into information society,
- support to development of healthcare, agriculture and tourism,...
- support to development contents, applications and services,
- support to development of a free competition.

# The Electronic Communications Regulatory Challenges: Looking to the Future Project



**Thank you!**