

# Development and Spatial Characteristics of Broadband Internet Market in East Central Europe

Gabor Nagy, geographer  
Senior research fellow  
CERS HAS, IRS, Bekescsaba

# Scientific discussions on BB-internet

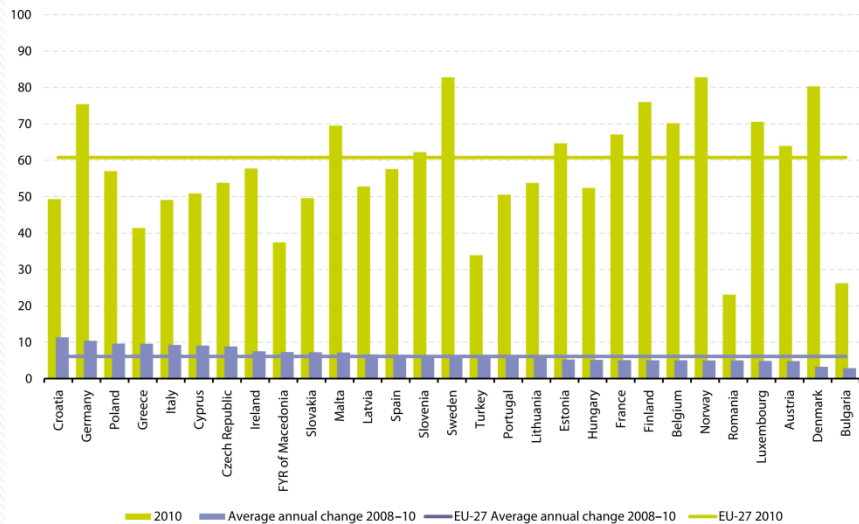
- ***Digital divide*** – on different geographical scales
- ***Inclusion vs. Exclusion*** into information flows – with a special interest to low income social groups / societies, rural areas
- ***Technological platforms and users*** – in the core with diverse internet infrastructures – particularly in the Global South
- ***Increasing mobility*** – the role of mobile networks to decrease the gap between developed and less developed areas

# Research projects

- OTKA 1991-1994; 1999-2001; 2003-2005
- OKTK 2000-2001
- BB-Europe 2006-2011
- OISTU 2010
- BBV<sub>4</sub> 2010-2011
- +
- The results of the new EU-level BB-internet research 2011-2012

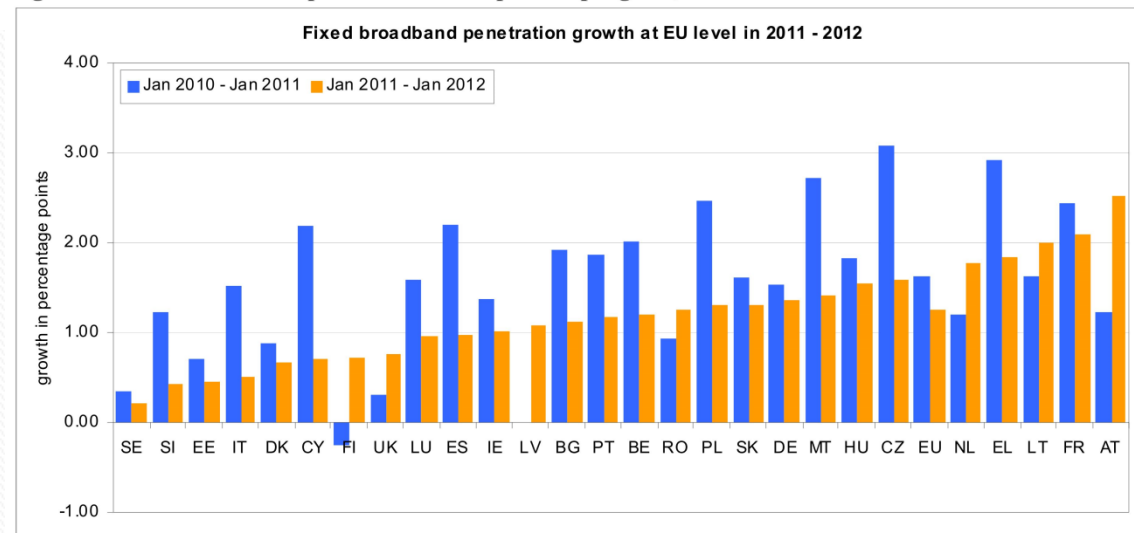
# Increase in BB-users was/is rapid

**Figure 10.1:** Broadband connections in households, 2008–10 (\*)  
(share of households with broadband connection in 2010 and average annual change, in percentage points)



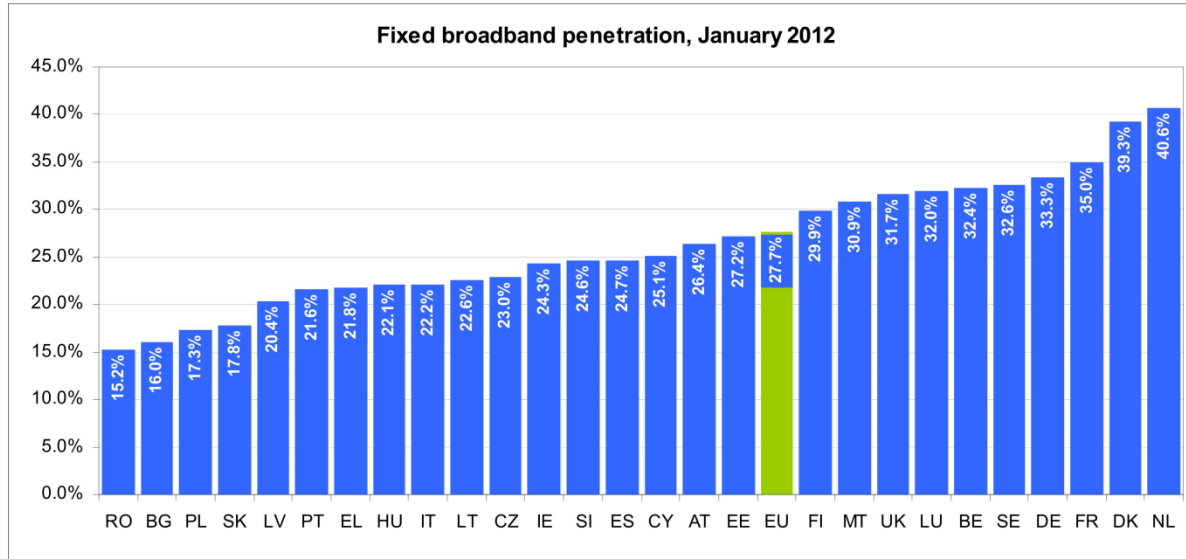
(\*) Netherlands, United Kingdom and Iceland, data not available.  
Source: Eurostat (online data code: isoc\_si\_broad).

**Figure 7: Fixed broadband penetration and speed of progress, 2011-2012**



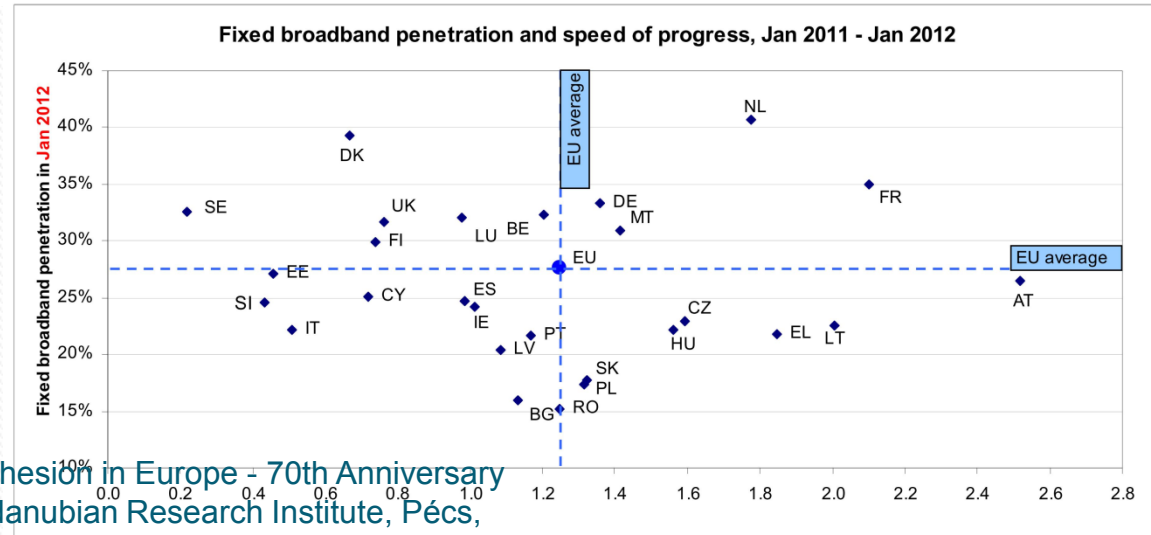
# Share of users under the EU27 average

Figure 5: Fixed Broadband Penetration Rate, January 2012



Source: Communications Committee

Figure 8: Growth of fixed broadband penetration in EU Member States, 2010-2012

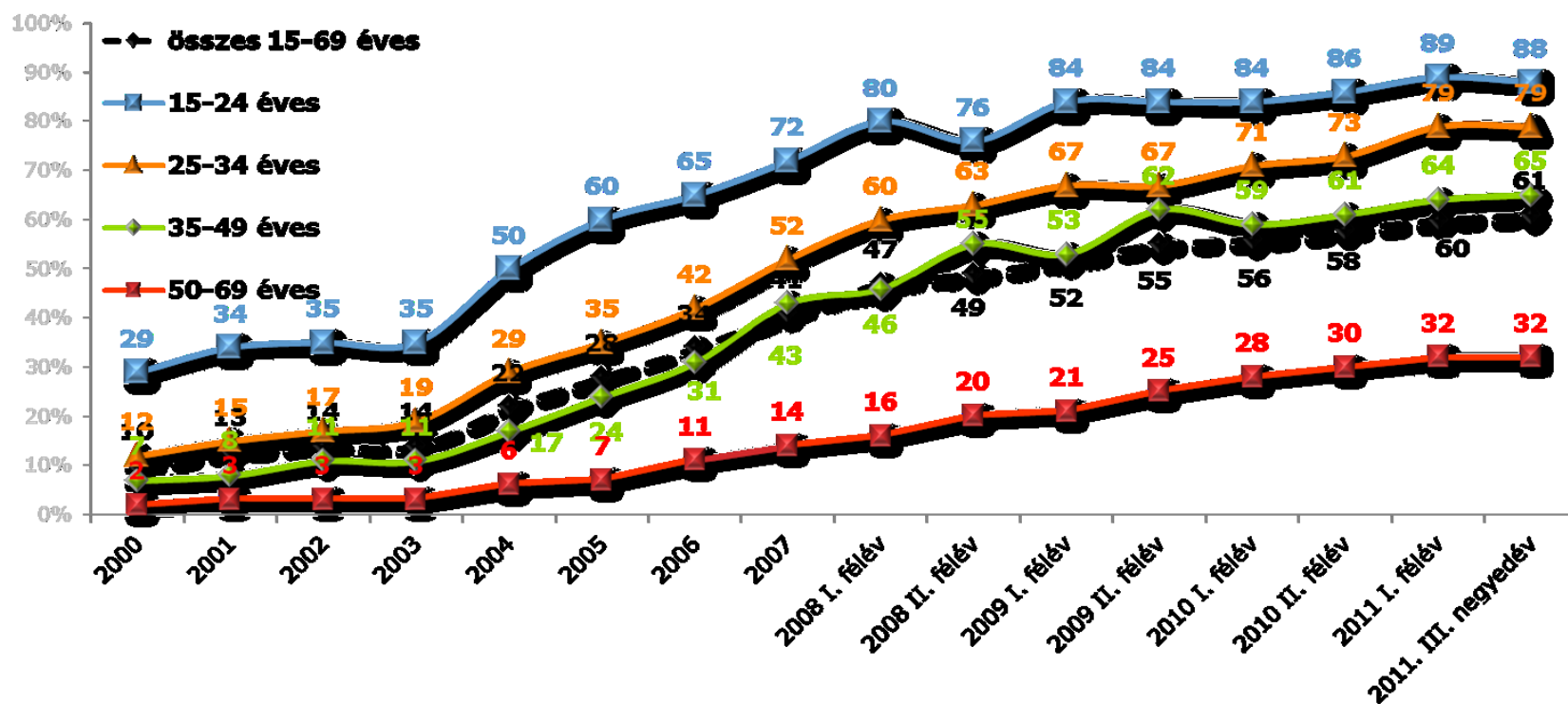


Territorial Cohesion in Europe - 70th Anniversary of the Transdanubian Research Institute, Pécs, 27-28/June/2013

Source: Communications Committee

# Internet penetration by age groups – Lagging behind is just a time gap?

Using internet at least once a month  
15-69 years population (N=7 394 306)



Territorial Cohesion in Europe - 70th Anniversary  
of the Transdanubian Research Institute, Pécs,

27-28 June 2013 Source: TNS Interbus 2004-2010, MillwardBrown - TNS-Hoffmann 2011

# Regional inequalities are sharp the broadband gap tighten slowly

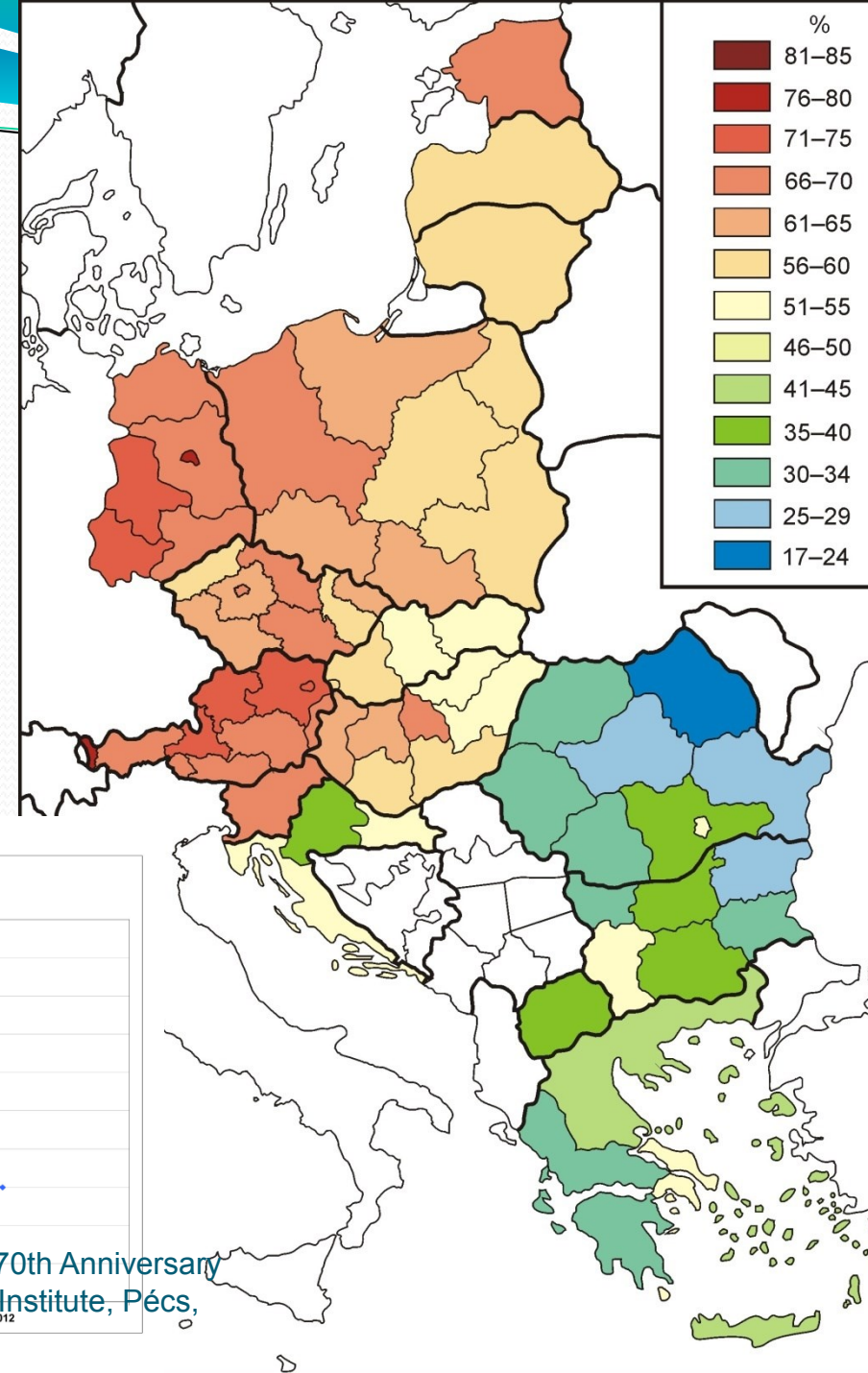
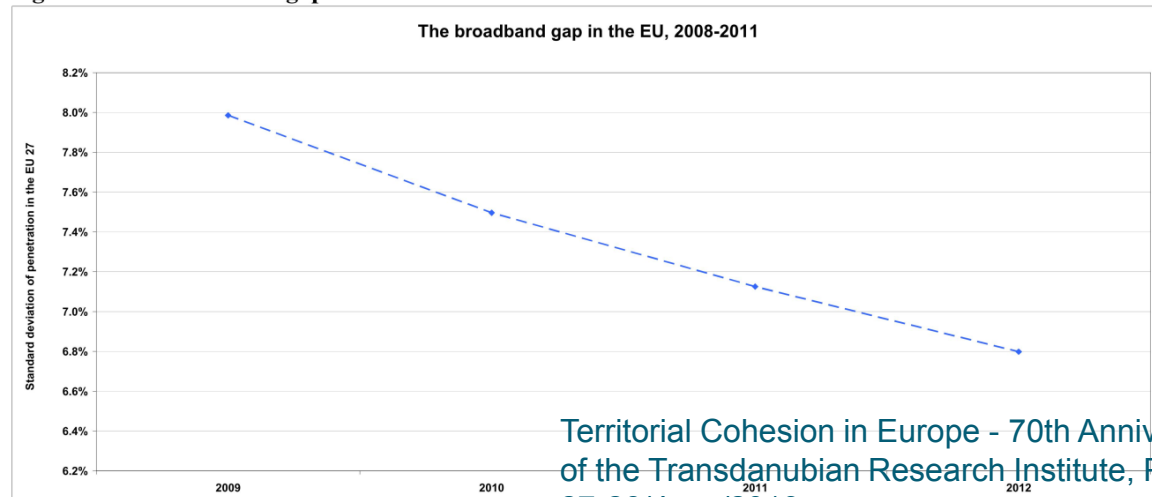


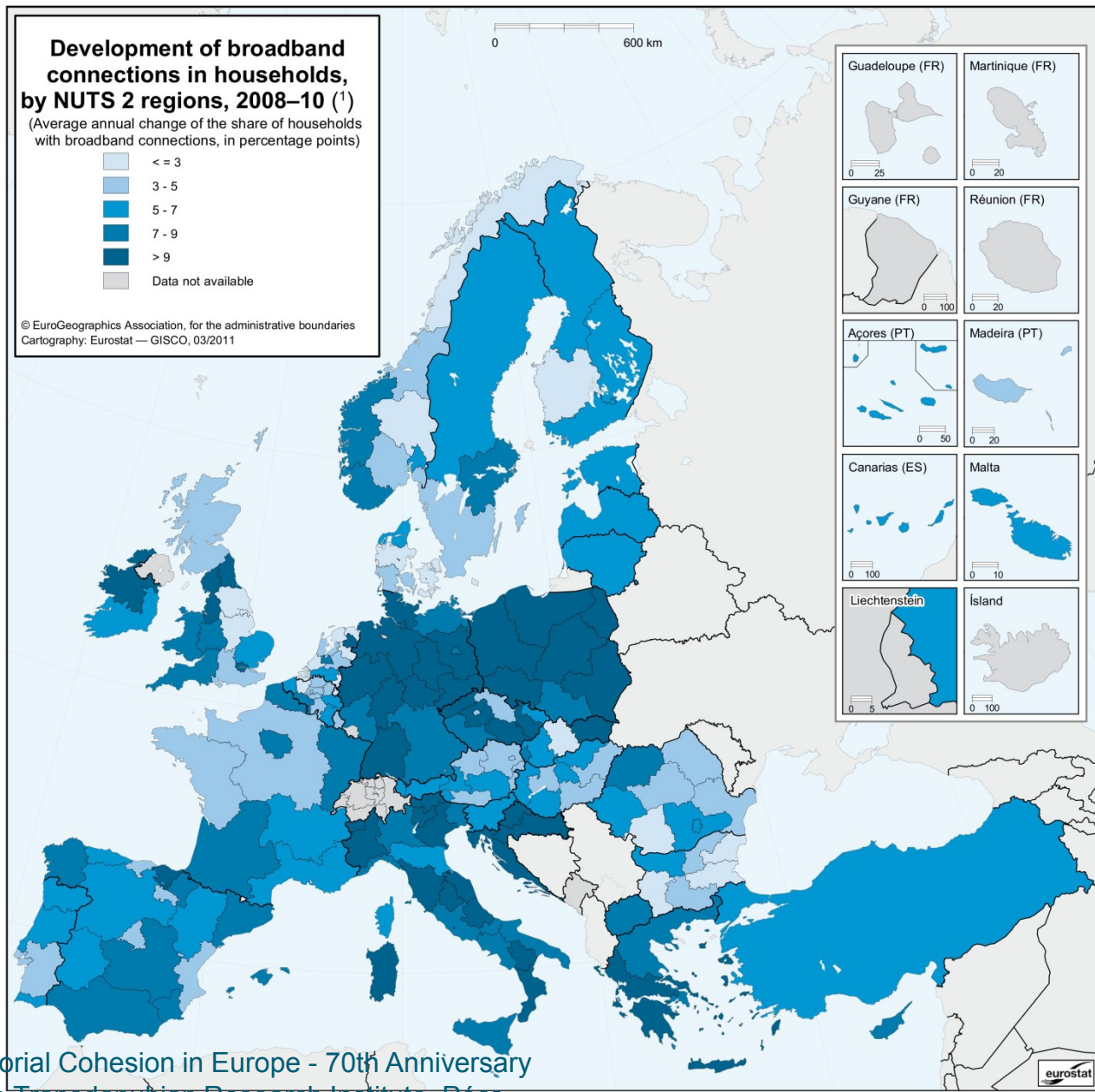
Figure 9: The broadband gap in the EU



Territorial Cohesion in Europe - 70th Anniversary of the Transdanubian Research Institute, Pécs, 27-28/June/2013

Level of increase of BB-market is really high in ECE countries

**Map 10.1:** Development of broadband connections in households, by NUTS 2 regions, 2008–10 <sup>(1)</sup>  
 (Average annual change of the share of households with broadband connections, in percentage points)



<sup>(1)</sup> Netherlands and United Kingdom, 2008–09; Slovenia and Turkey, national level; Germany, Greece, France, Poland, Sweden and United Kingdom, by NUTS 1 regions; Finland, Åland combined



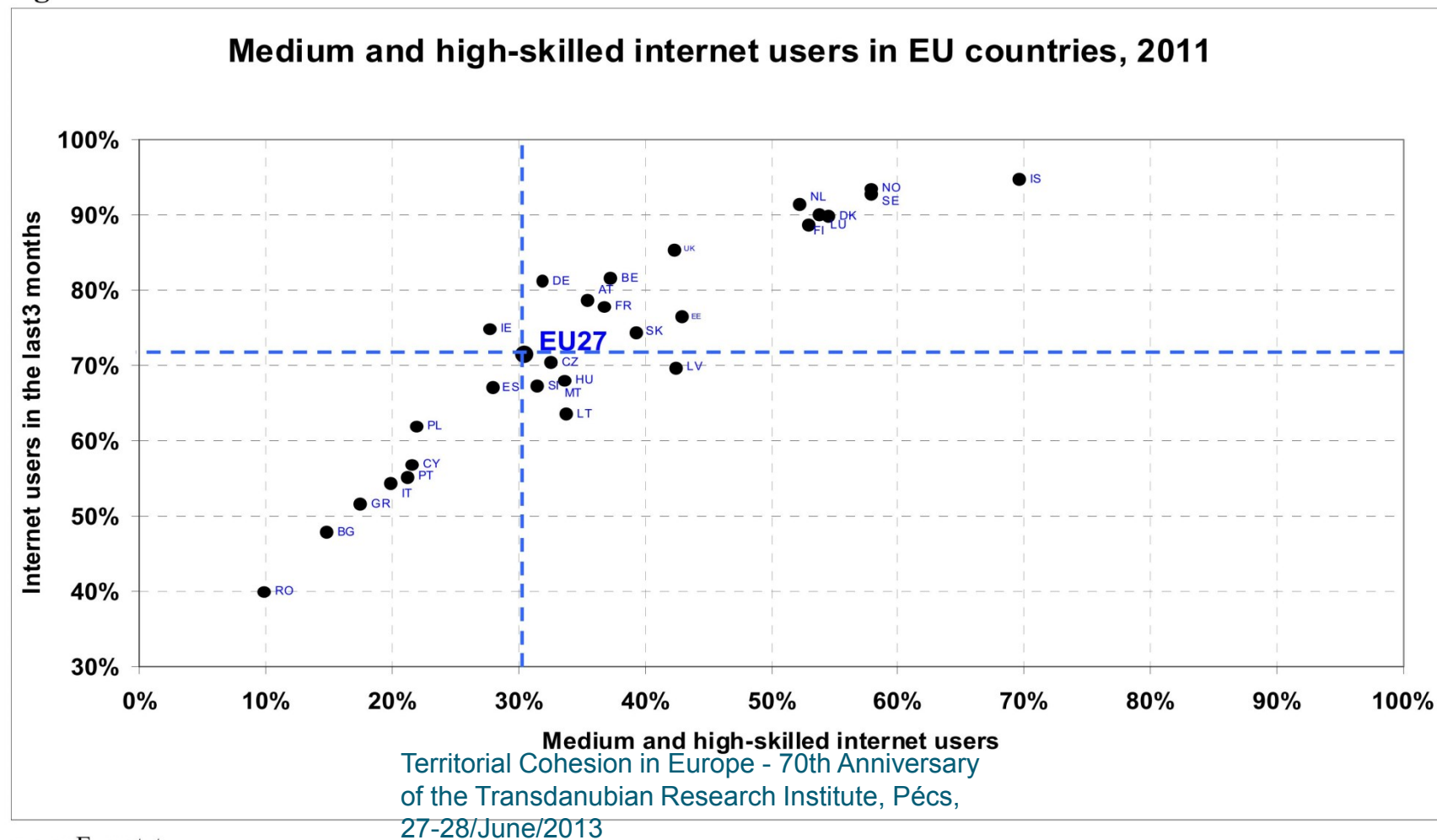
# ICT use and ICT adoption level in ECE region seems moderate



Fig. 2.5 ICT adoption and ICT use in EU25 countries by budget allocation weighting scheme. Source: Wintjes and Dannewijk (2009), p. 70

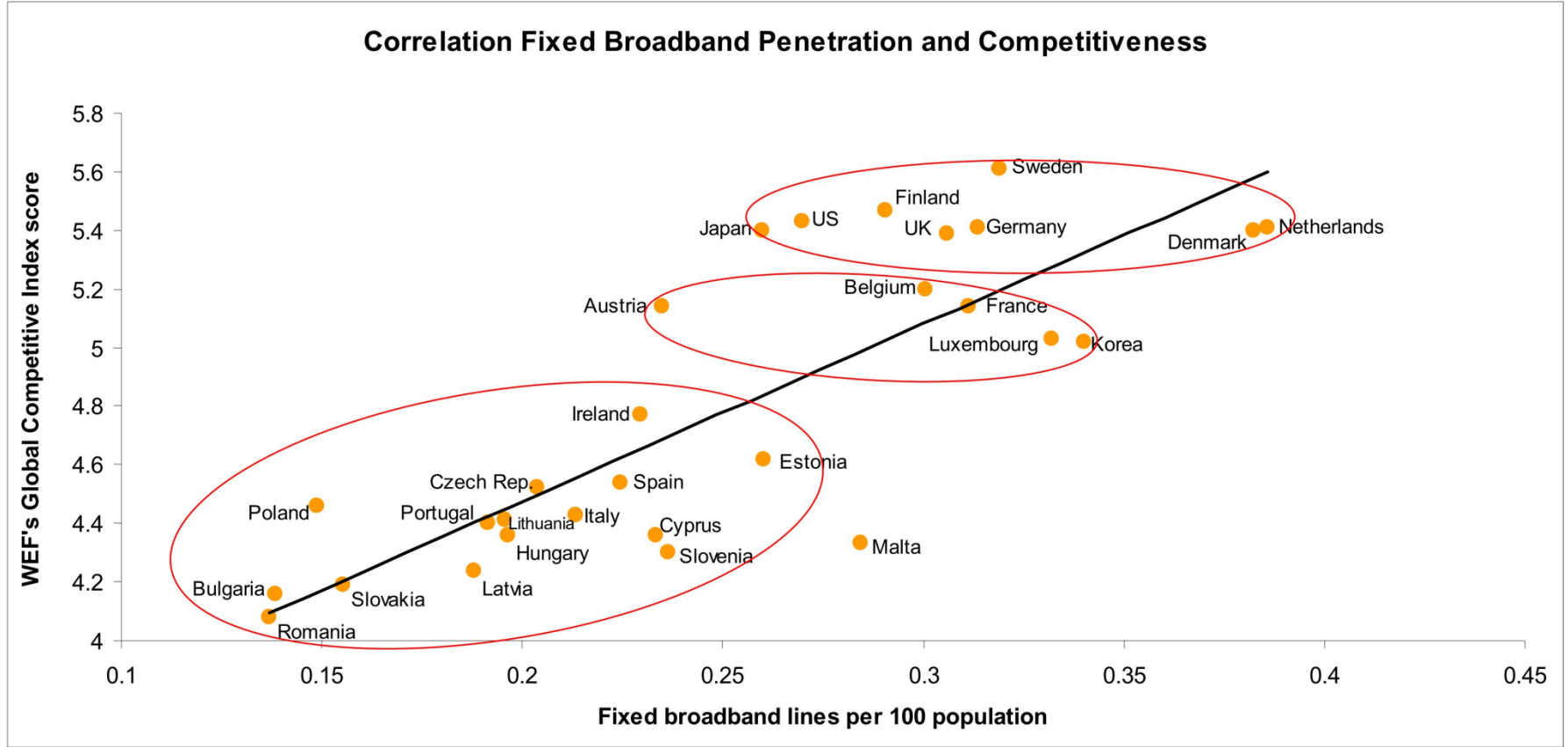
# Connection between digital skills and ICT-use level more or less linear

Figure 5



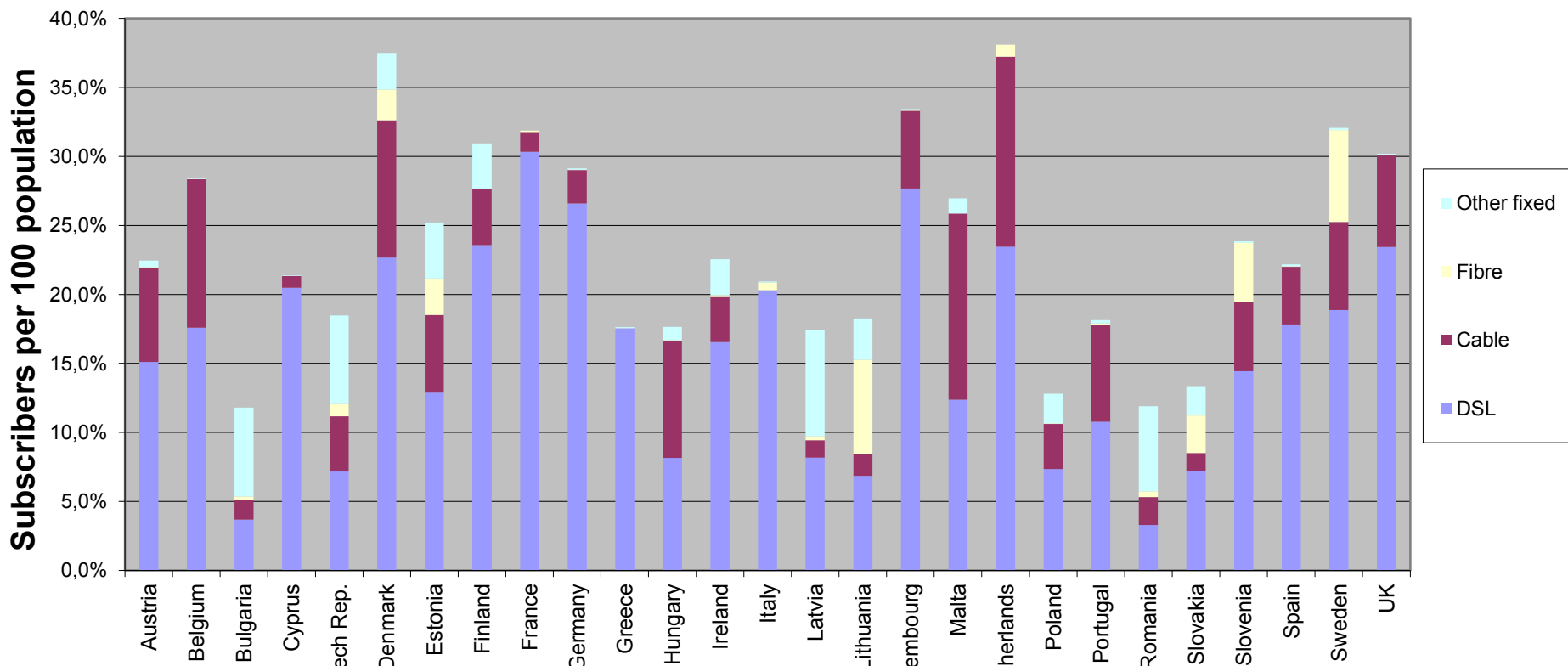
# Moderate level of broadband use implicate low level of competitiveness

Figure 1: Correlation between penetration of fixed broadband and competitiveness



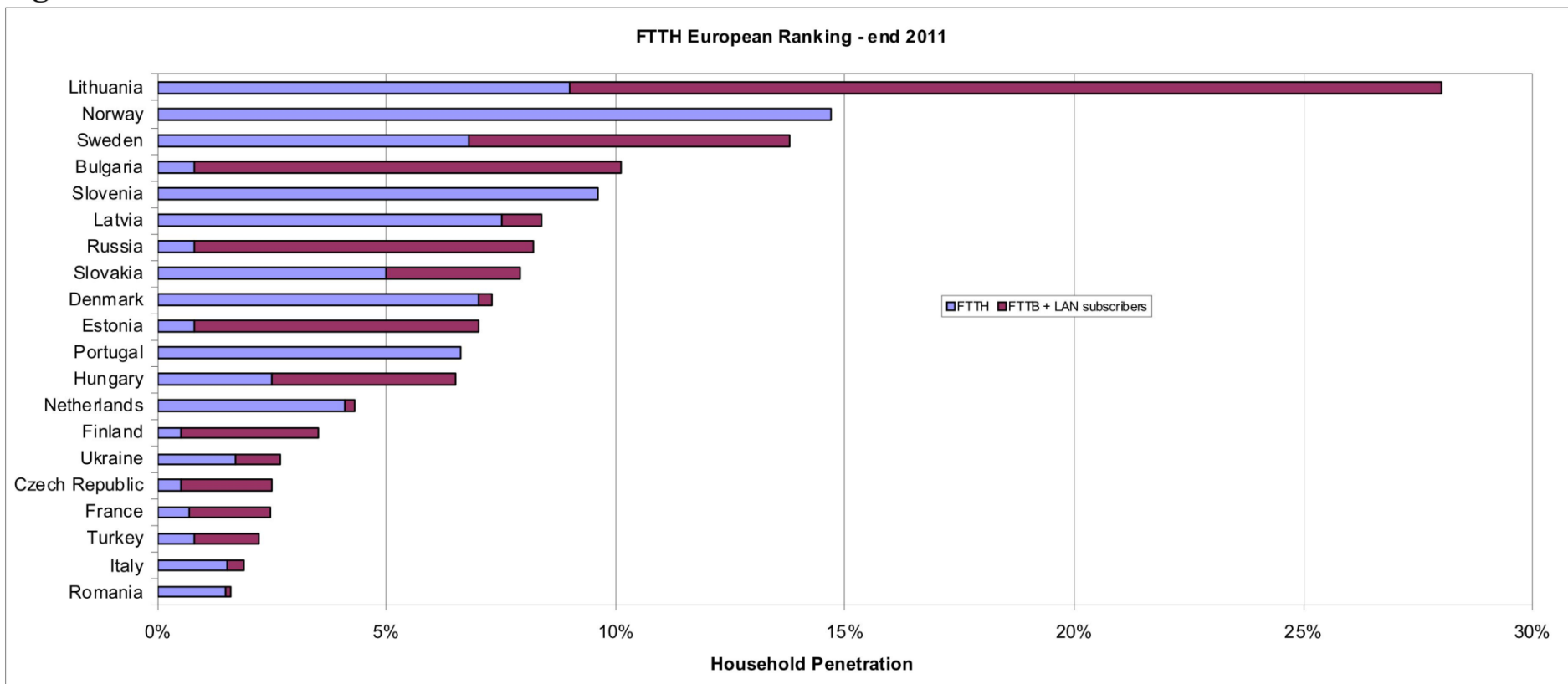
# Various infrastructures – similar development paths

## Broadband penetration by technology



# Optical cables to the homes – an effective tool of real broadband services

Figure 22

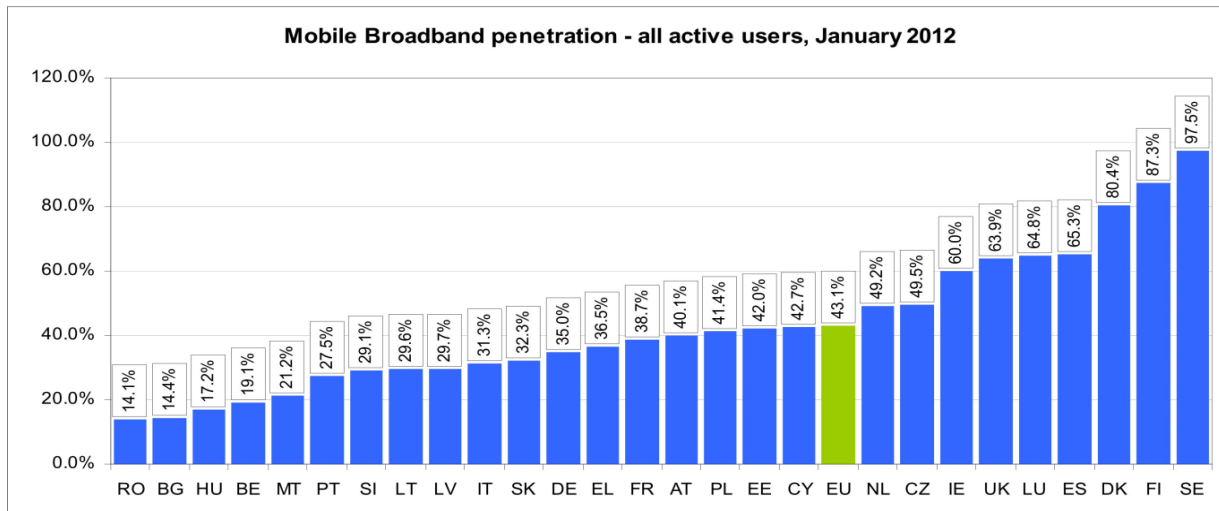


Source: FTTH Council Europe

Territorial Cohesion in Europe - 70th Anniversary  
of the Transdanubian Research Institute, Pécs,  
27-28/June/2013

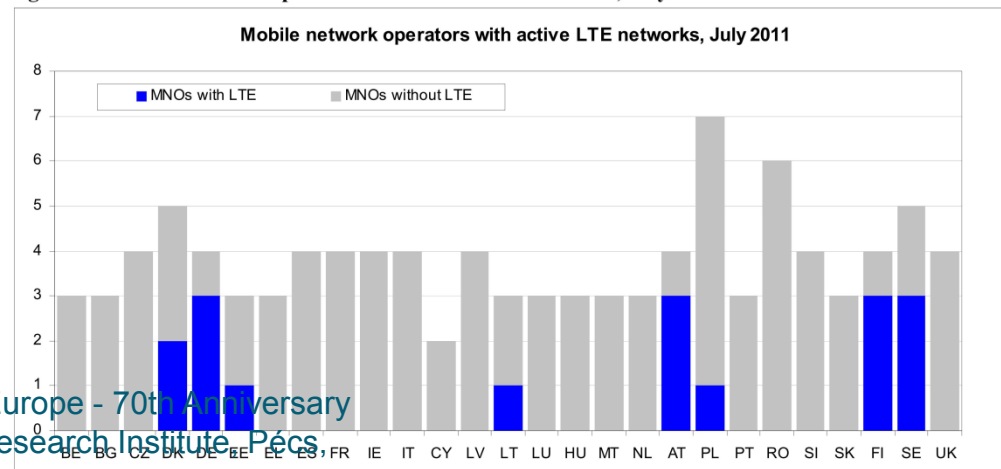
# Increasing mobility – Share of mobile internet users in BB-market emerging

Figure 10



Source: Communications Committee

Figure 48: Mobile network operators with active LTE networks, July 2011



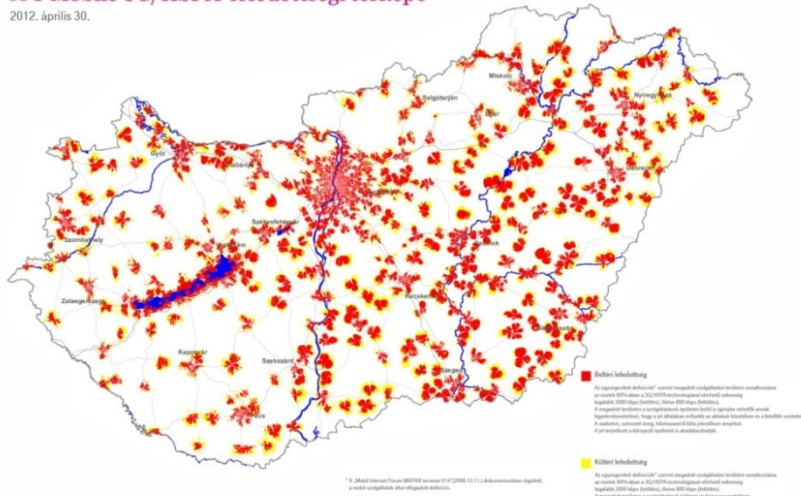
Source: Commission services

Territorial Cohesion in Europe - 70th Anniversary  
of the Transdanubian Research Institute, Pécs  
27-28/June/2013

# To be (present) or not to be...

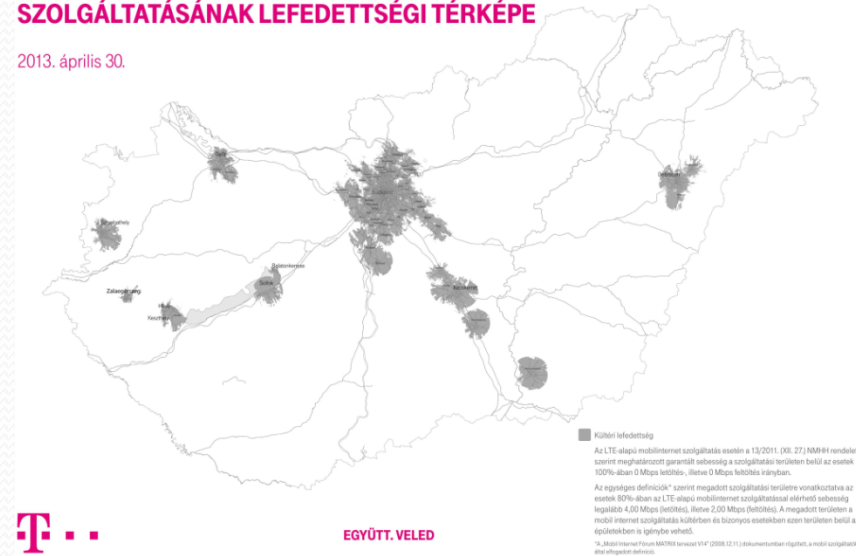
A T-Mobile 3G/HSPA lefedettségi térképe

2012. április 30.



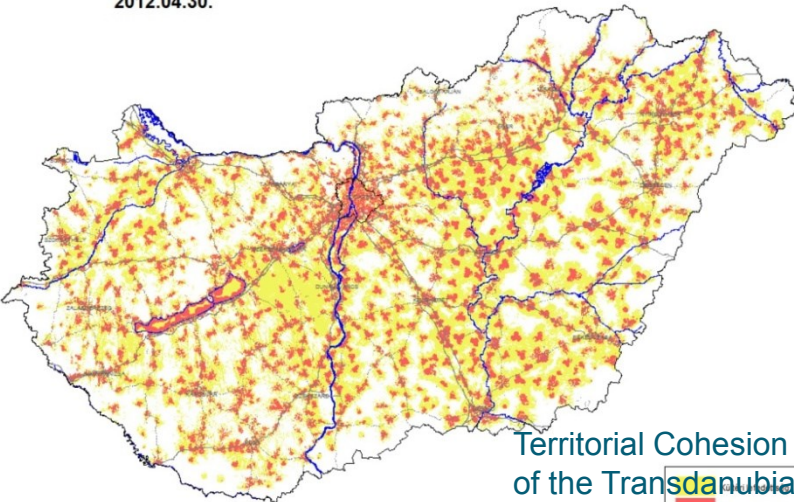
A T-MOBILE LTE-ALAPÚ MOBILINTERNET SZOLGÁLTATÁSÁNAK LEFEDETSÉGI TÉRKÉPE

2013. április 30.



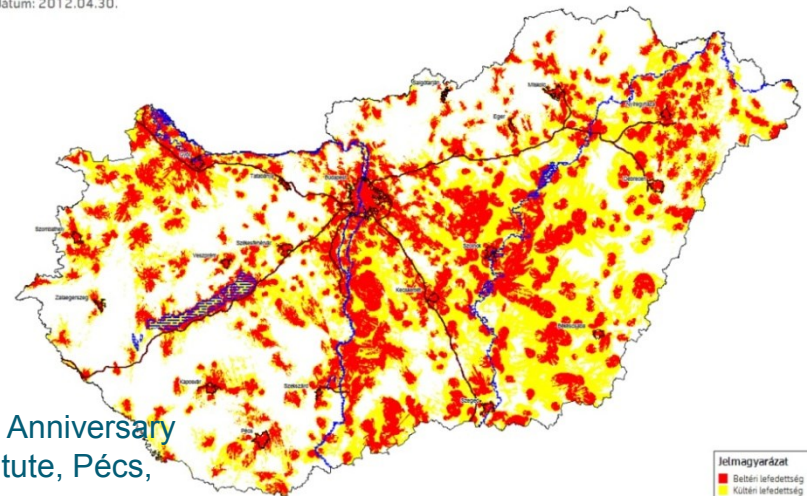
EGYÜTT. VELED

Vodafone országos 3G/HSPA lefedettség  
2012.04.30.



Telenor UMTS lefedettségi térkép

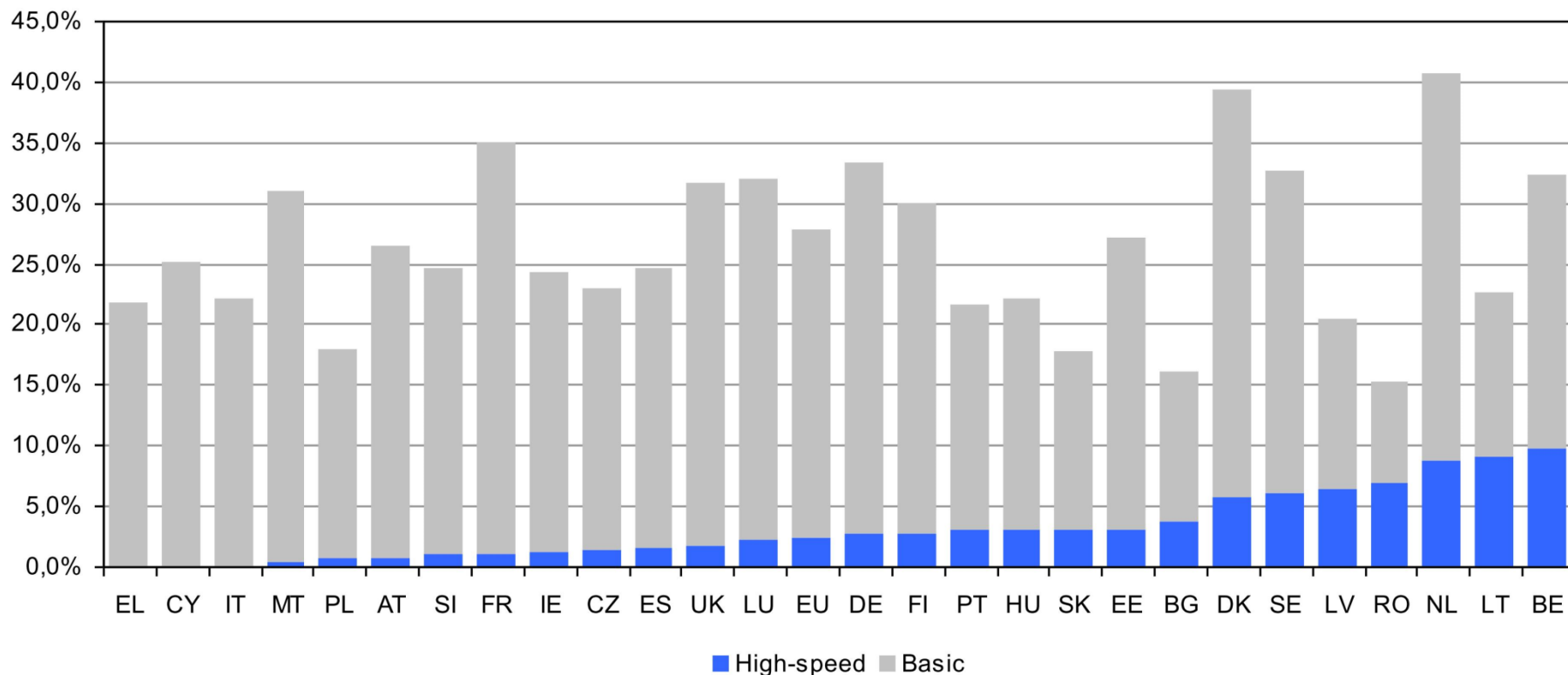
Dátum: 2012.04.30.



**Jelmagyarázat**  
 ■ Belső lefedettség  
 ■ Külső lefedettség

# Fastening networks – far from i2020 - I.

Basic and high-speed (at least 30 Mbps) broadband penetration, January 2012



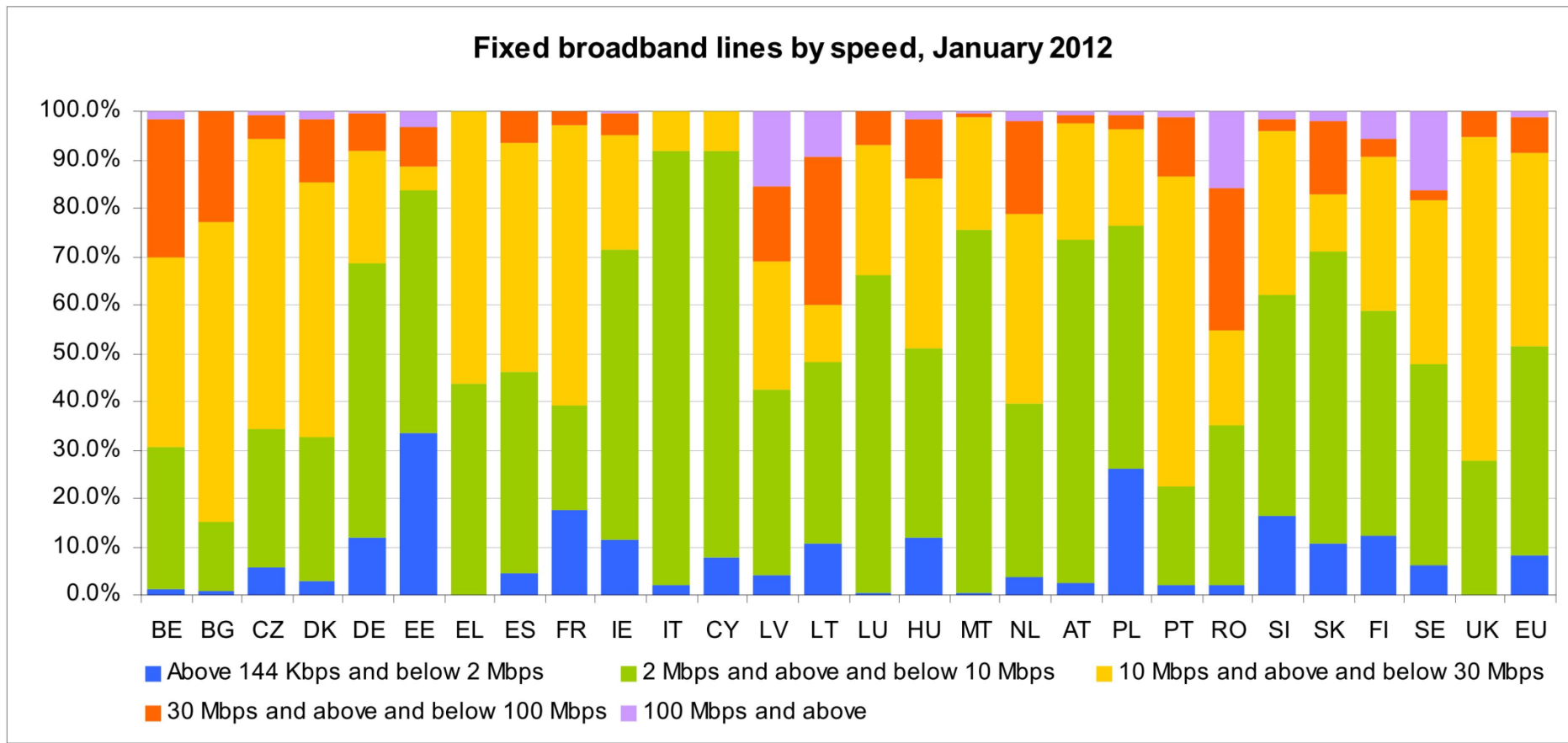
Source: Communications Committee

Territorial Cohesion in Europe - 70th Anniversary  
of the Transdanubian Research Institute, Pécs,  
27-28/June/2013

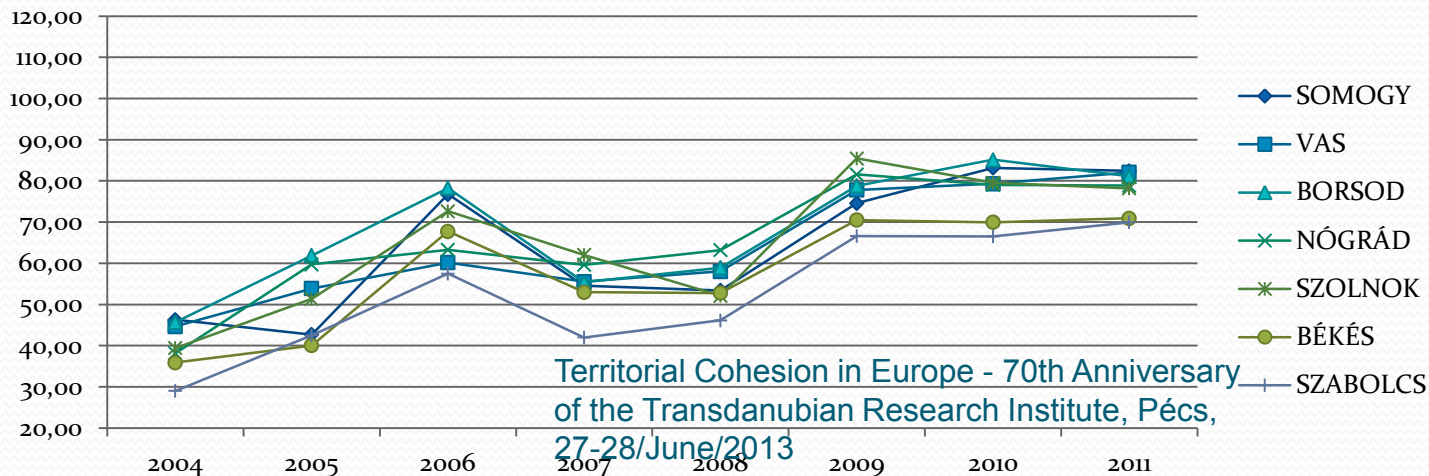
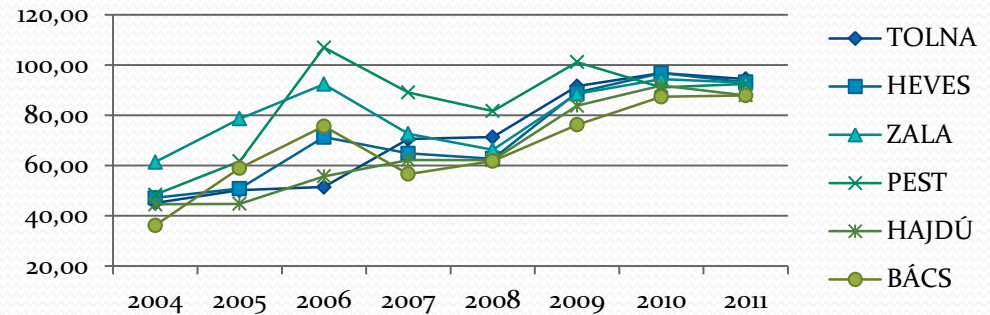
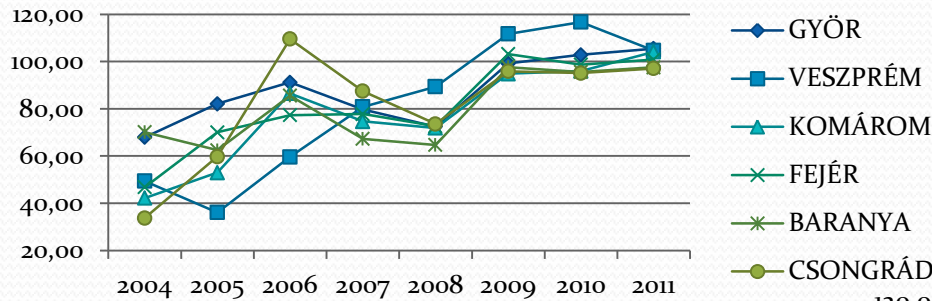


# Fastening networks – far from i2020 - II.

**Figure 20: Fixed broadband lines in the EU Member States by speed**

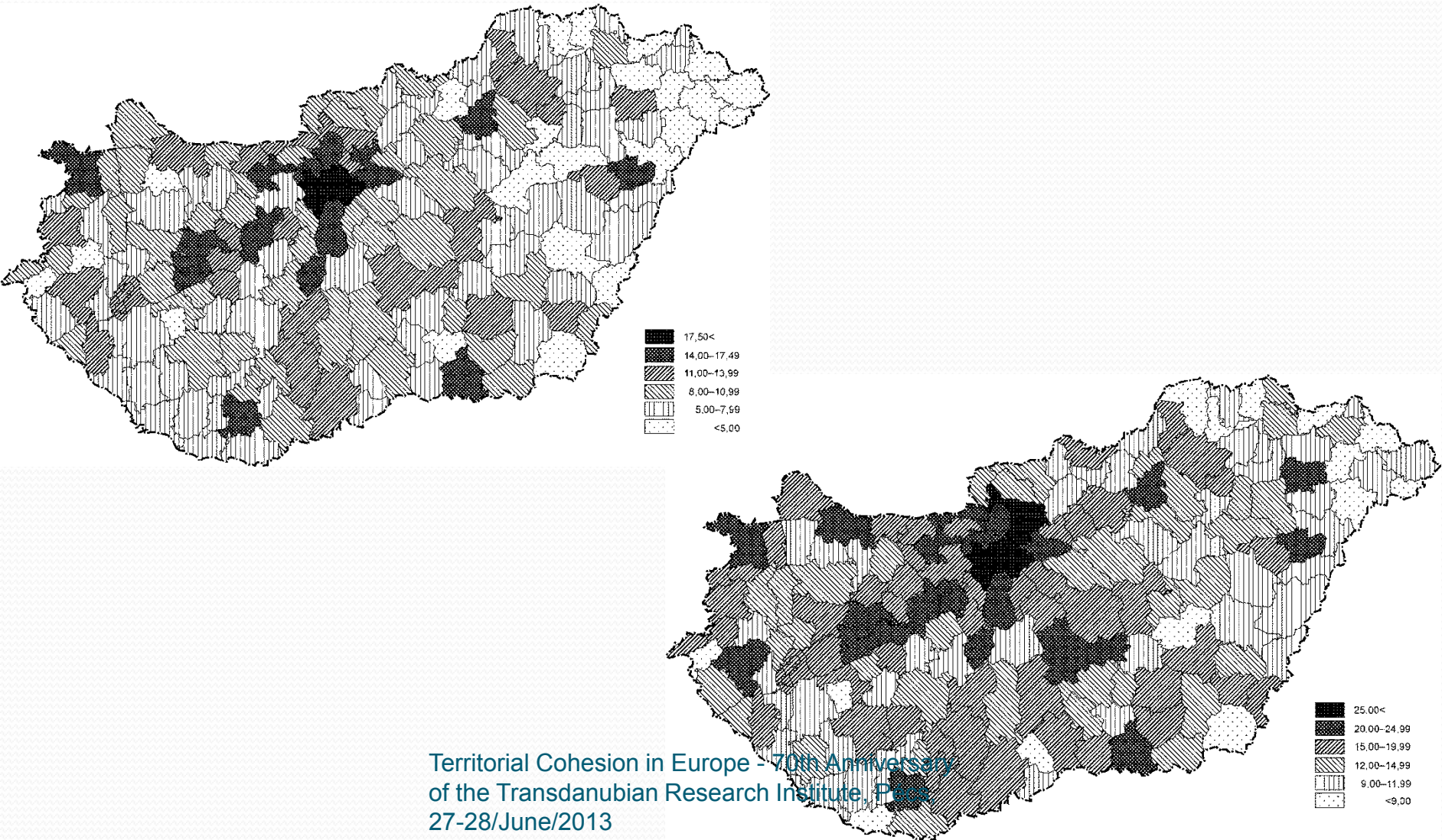


# Spatial differences – Hungary, Limits of convergence (crisis?)



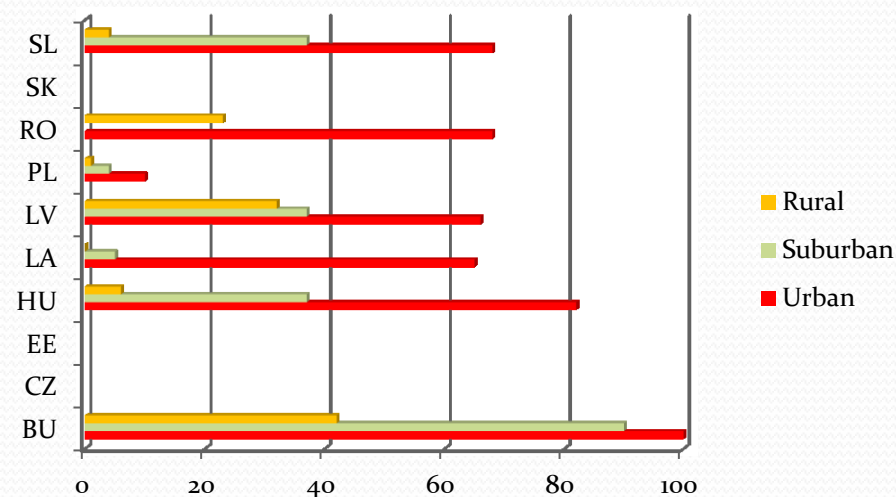
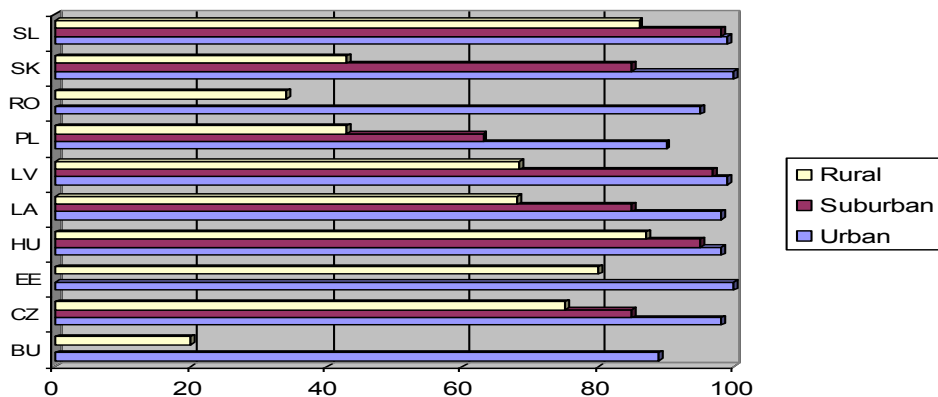
Territorial Cohesion in Europe - 70th Anniversary  
of the Transdanubian Research Institute, Pécs,  
27-28/June/2013

# Spatial structure of BB-internet users change moderately (2006-2010)

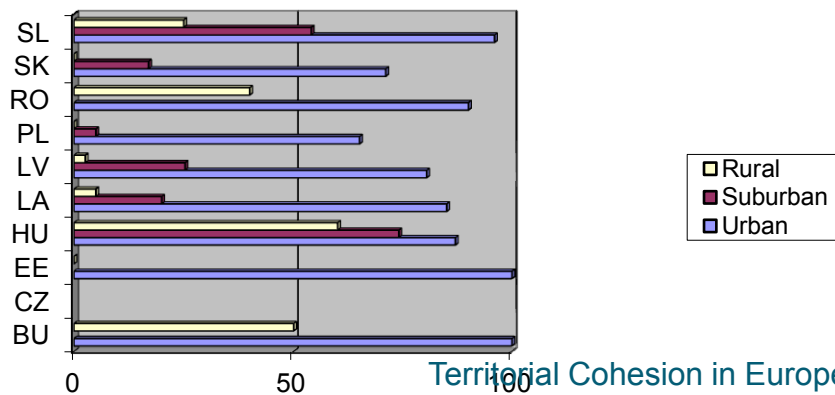


# Urban-rural divide in coverage is existing

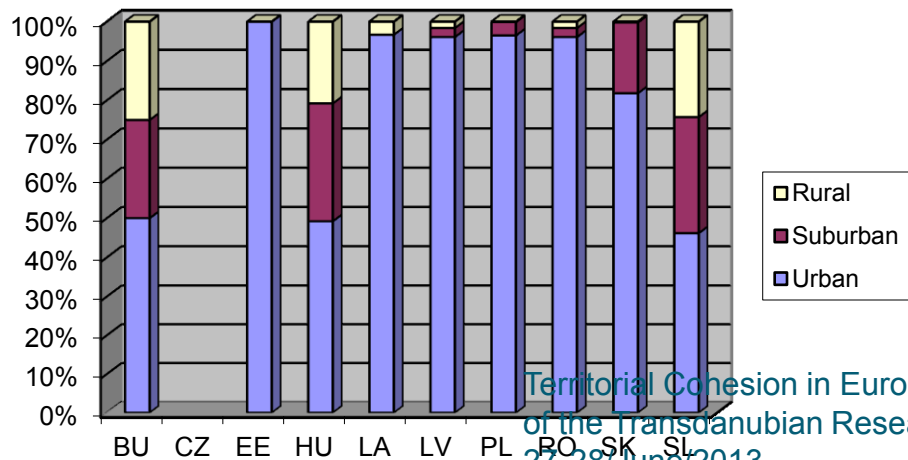
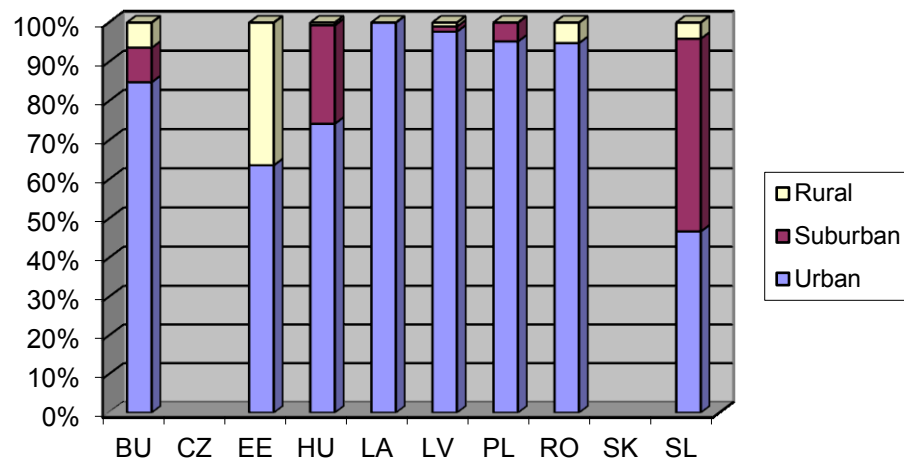
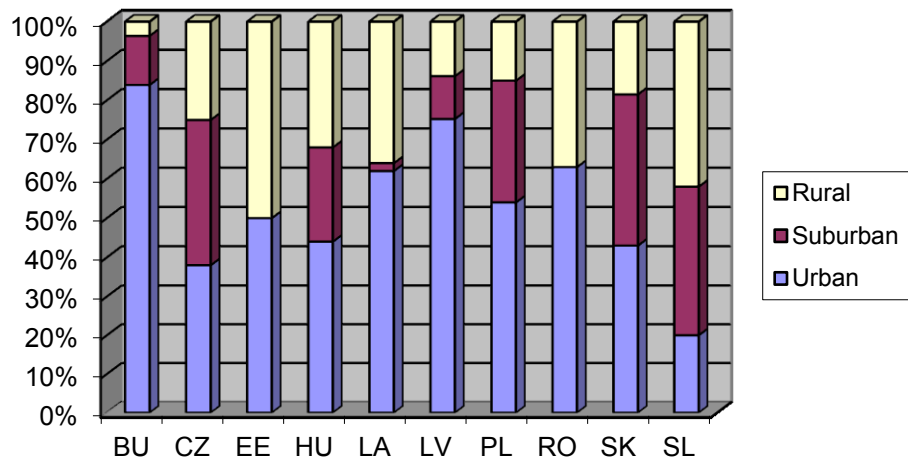
DSL coverage by settlement types, 2008



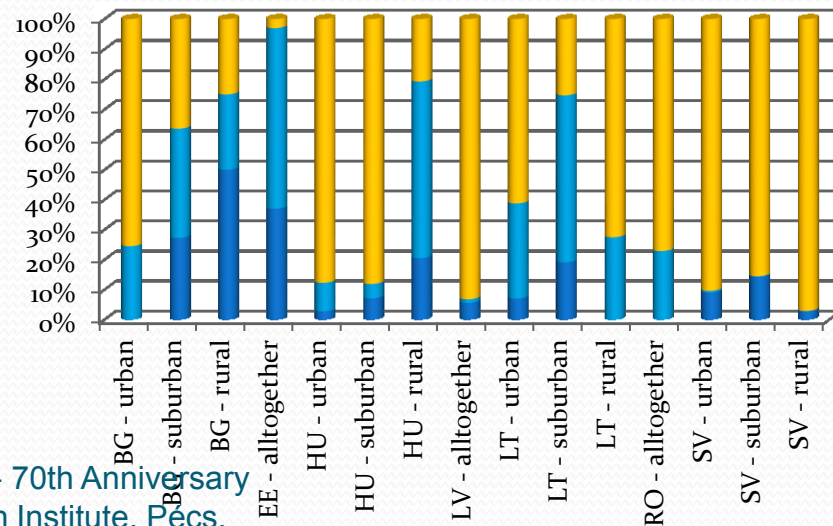
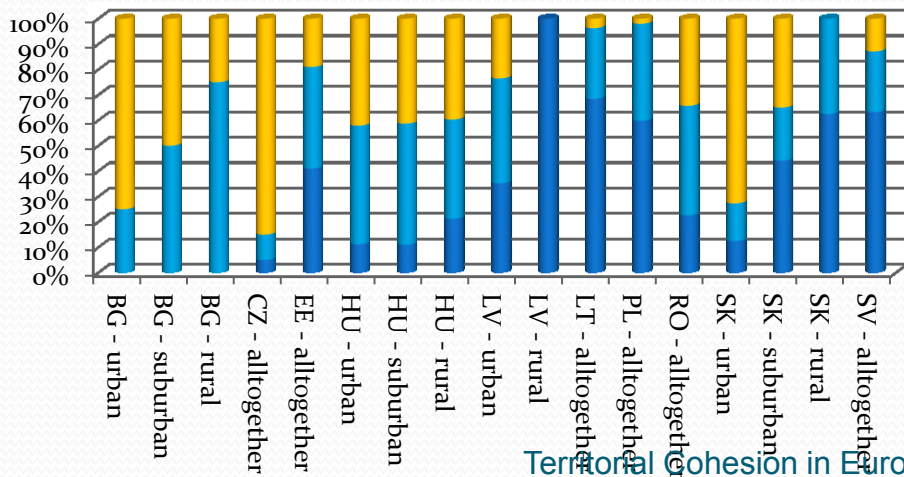
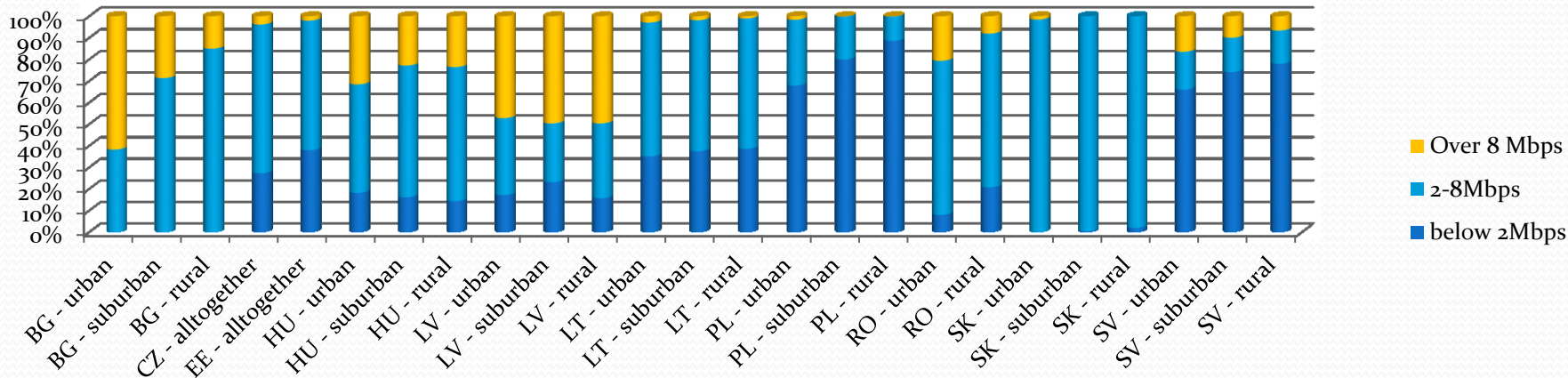
CM coverage by settlement types, 2008



# Urban-rural divide in users seems sharper

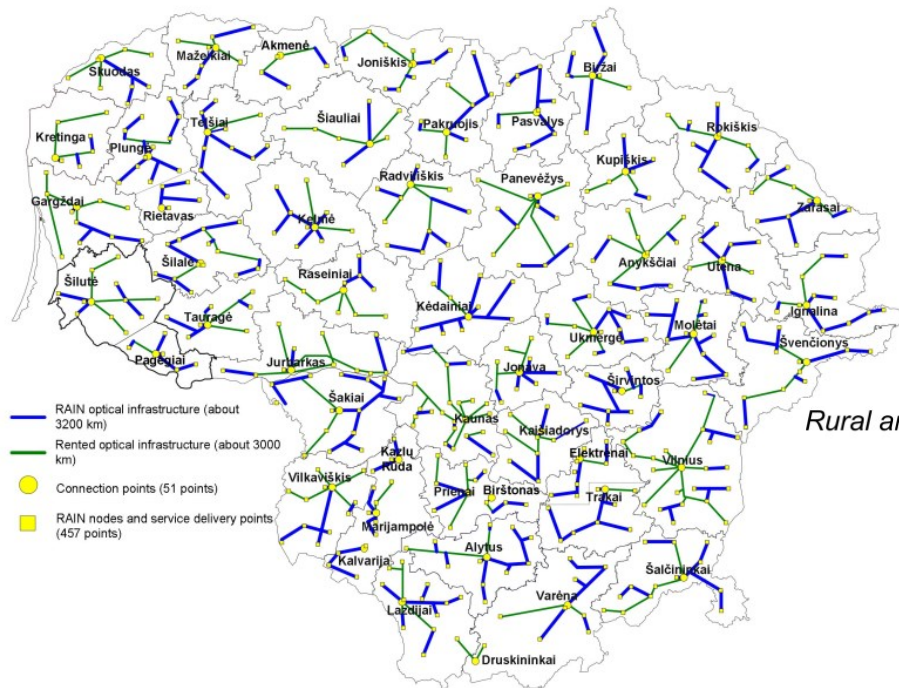


# Urban-rural divide in speed of downloading – xDSL, CM, FTTx – less radical differentiation

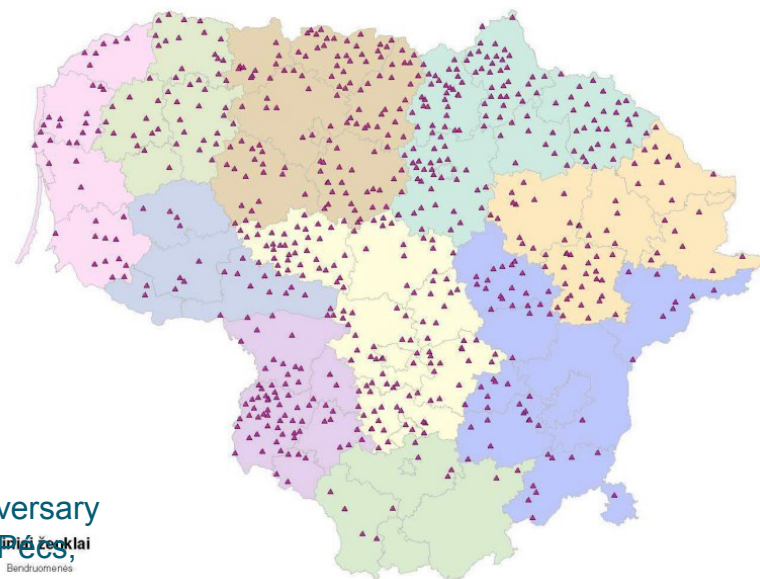


# How to solve urban-rural dichotomy? Lithuanian best practise – RAIN Programme

Figure 37. The Network Created in RAIN

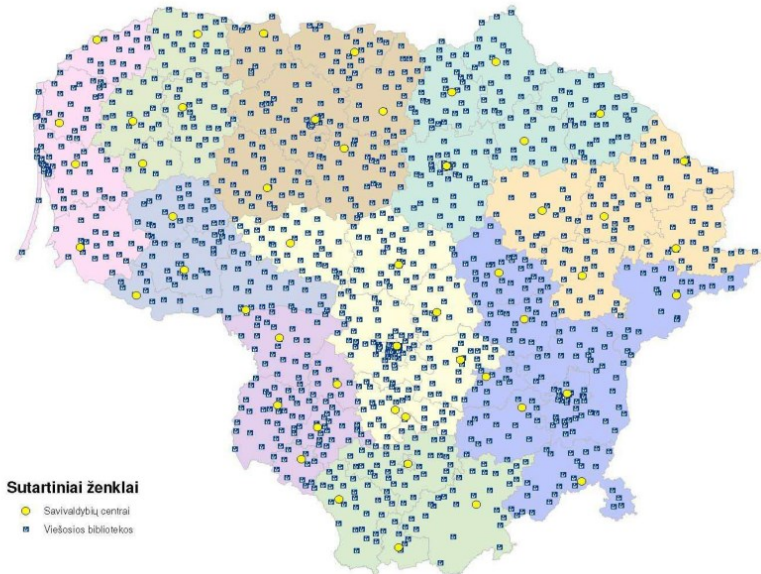


Rural area communities with the demand for broadband communications

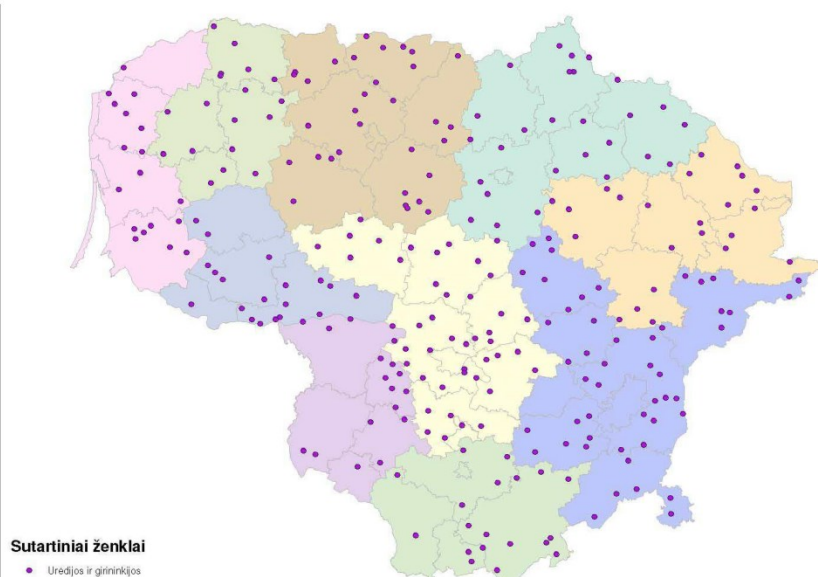


Information source: Public company "Plačiajuostis Internetas"

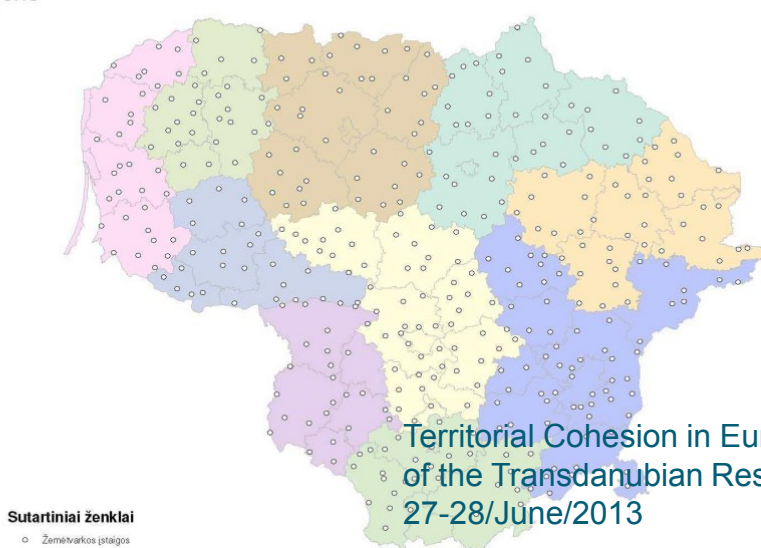
Rural area libraries with the demand for broadband communications



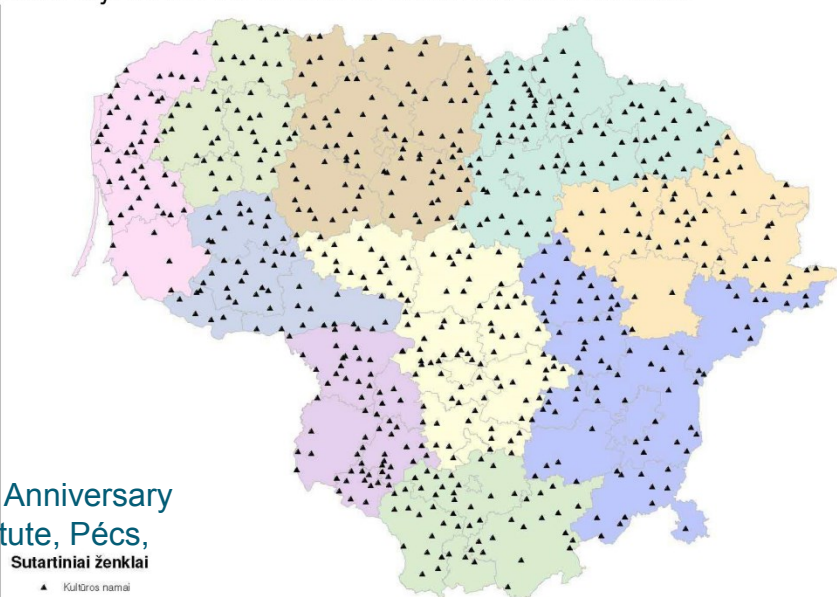
Rural area forestries with the demand for broadband communication



Rural area land survey institutions with the demand for broadband communications

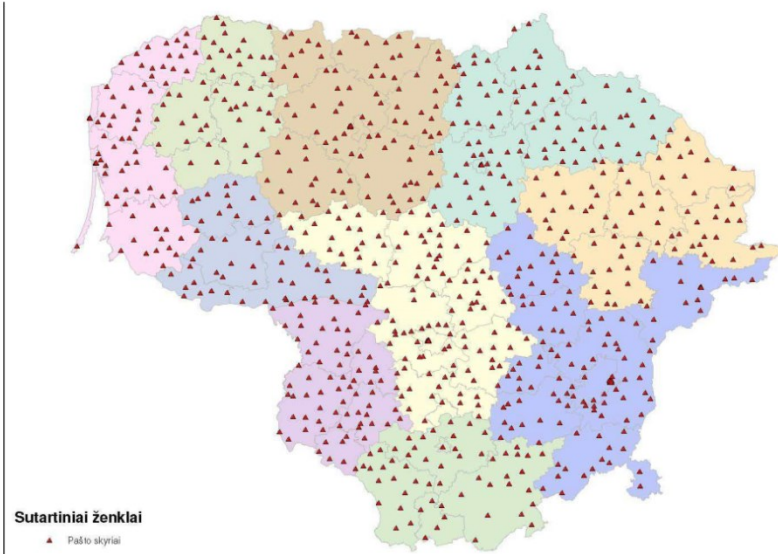


Rural area cultural objects with the demand for broadband communication

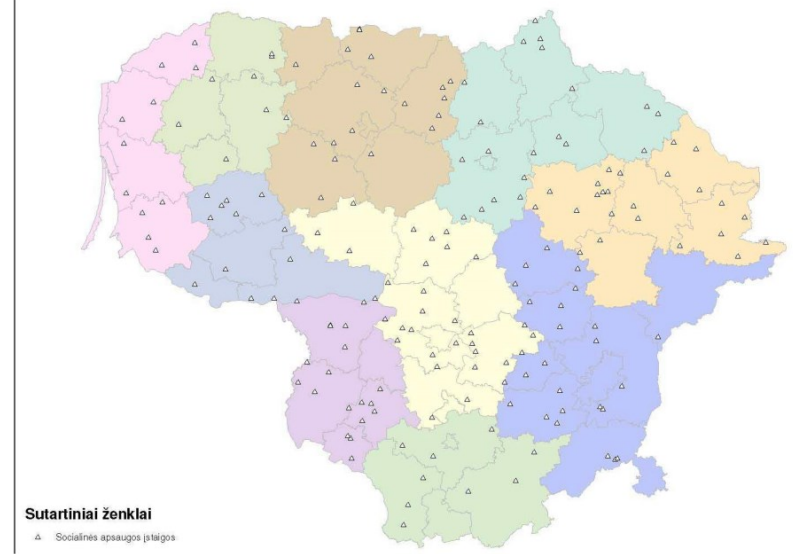




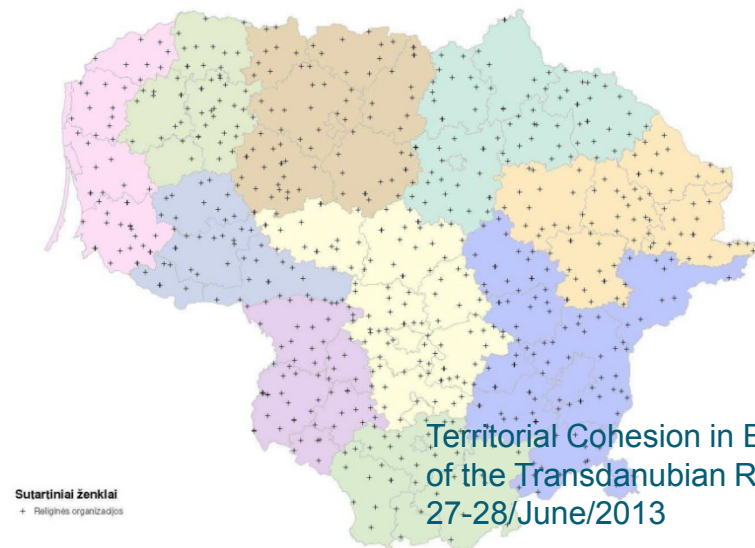
Rural area post offices with the demand for broadband communication



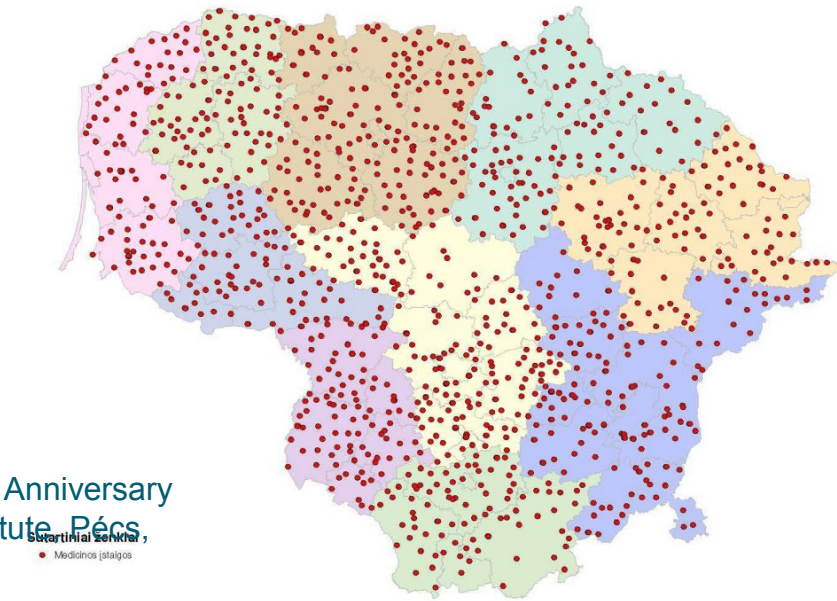
Rural area social security institutions with the demand for broadband communications



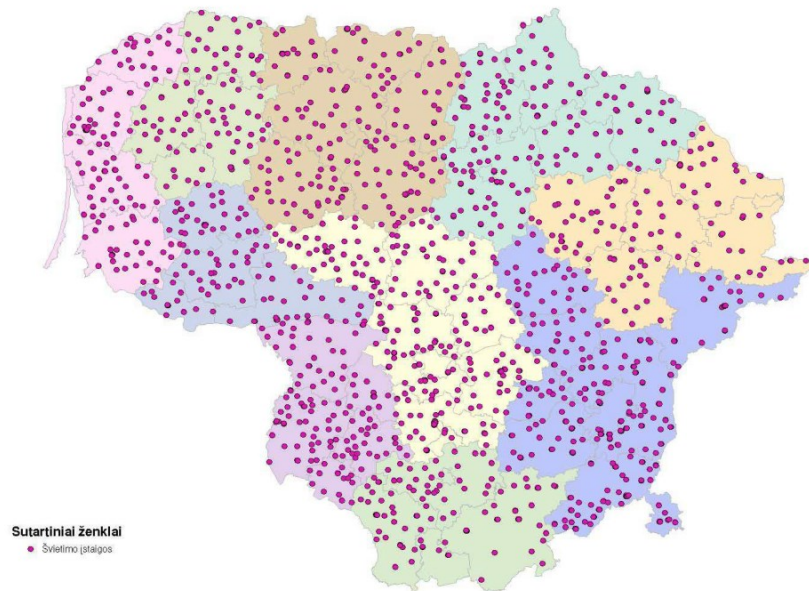
Rural area religious organisations with the demand for broadband communication



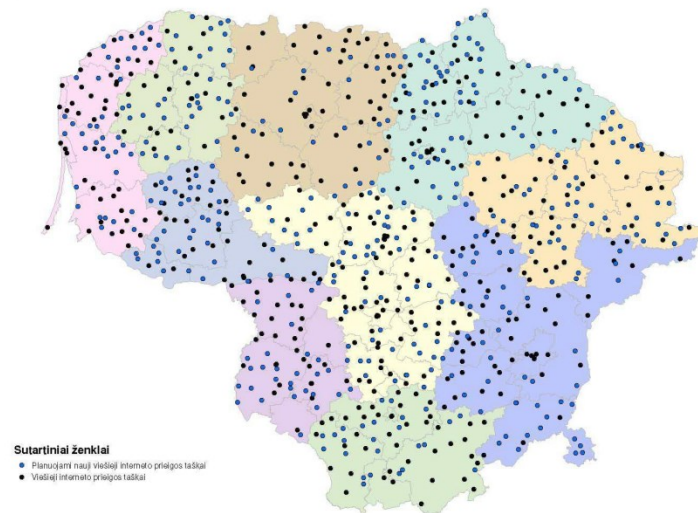
Rural area health care organisations with the demand for broadband communications



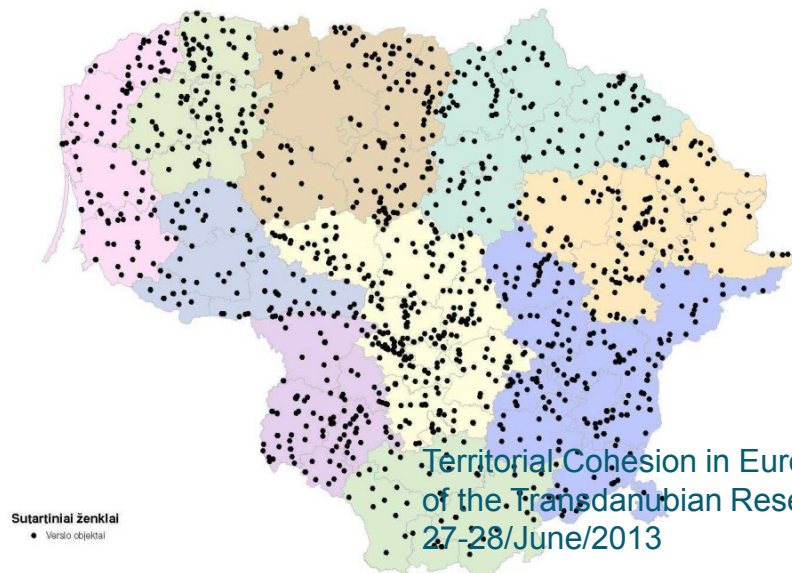
Rural area educational institutions with the demand for broadband communications



Rural area public Internet centres with the demand for broadband communications



Rural area business objects with the demand for broadband communications



Rural area public order institutions with the demand for broadband communications

