

Broadband access: perspectives in Poland⁺

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Diffusion of broadband access in rural Poland is critical for the success of the i2010 programme in the European Union. However, the digital gap between Poland and more advanced EU member countries can be closed only if the broadband access growth rate is significantly accelerated in that country. Aid of European Union creates real chances for such acceleration. However, bad experience with other programs co-financed earlier by the EU indicates that it might be very difficult and the programme completion date might significantly be delayed. Huge efforts seem to be necessary to assure that available resources are used efficiently and without delays.

i2010

The European Union set up an ambitious project known as "i2010". According to the project, administrations of every EU member country, including Poland, will assure an easy access to a variety of electronic services for all citizens. It is expected that it will result in huge savings, not mention social benefits. This will be possible thanks to broadband access to modern global information networks.

Poland's place

Poland is one of major EU countries: it ranks sixth in the population size (38 655 000 people). For that reason, how the i2010 project will be carried out in this country will have a decisive impact on the success or failure of the project on the European scale.

Report of the Commission staff, published in May 2006 makes a comparison of the Internet penetration in the EU countries.¹ Figure 1 below is extracted from that report. The vertical axis shows the deployment level of broadband access to Internet and the horizontal axis its growth rate. Each point represents a country. It is a good illustration of the digital divide among countries of European Union. West European countries lead. Poland has the lowest level (2.5%) and the slowest growth rate (2.7% per annum) from among the new EU members.² The penetration level is about 5 times less

⁺ Opinions expressed in this text are personal opinions of the author.

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¹ Commission Of The European Communities, Sec(2006) 604, Commission Staff Working Paper: i2010 - First Annual Report on the European Information Society Brussels, 19.5.2006

² This statement is based on 2006 statistics. After Bulgaria and Roumania joined the EU in 2007, it may be untrue.

than the European average. According to the press, only 10% of public offices are prepared to accept documents with electronic signature.³ This is in spite of the fact that all public offices were legally obliged to do so by August 2006.

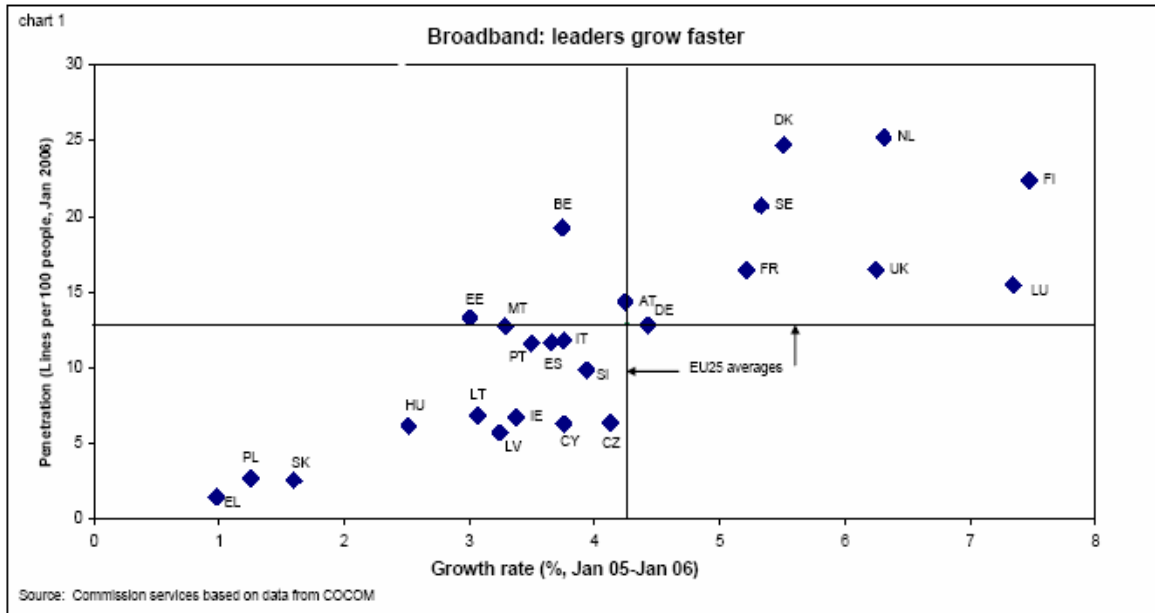


Fig 1. Broadband access in EU countries 2005-2006 [source: 'Commission Staff Working Paper – i2010 First Annual report on the European Information Society COM (2006)215' http://europa.eu.int/information_society/europe/i2010/docs/annual_report/sec_2006_604_en.pdf]

Perspectives

The number of users of broadband access grows continuously. With the growth rate greater in Poland than in other countries, after some time Poland would outrun them. Is it possible? Figure 1 shows that the growth rate is not uniform: richer countries grow faster. It means the distance between Poland and more developed countries increases with time. Figure 2 illustrates the issue. It shows the historical (2006) and predicted penetration levels of broadband access in Poland and in the Netherlands, under the hypothesis that the growth rate in the years 2007 – 2016 will not change. In 2006, the broadband penetration in Poland was about 9 times lower than that in the Netherlands. In 4 years, in 2010, it will be more than 10 times lower, and in 10 years, in 2016, - 15 times lower. It follows that without significant acceleration of the broadband access diffusion, Poland will never close the gap with the West-European countries. Increased

³ A. Grzeszak: Budujemy druga e-Polskę; Polityka, Nr. 41, 14.10.2006, pp.44-46

disproportion in that area leads to mass migration to cities and wealthy regions and is highly unfavorable in local, national and European scales.

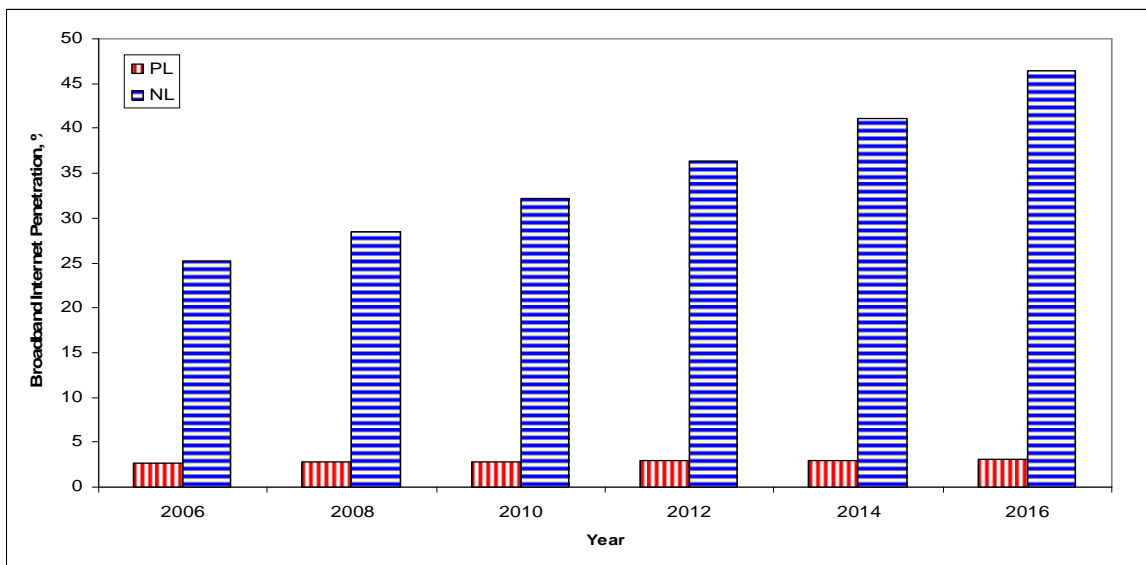


Figure 2. Broadband access in Poland and in the Netherlands, years 2006-2016 based on data from Figure 1 (author’s calculations under the assumption of constant growth rate).

Internet market

The number of internet users above 15 years in Poland reaches 8 to 10 million, see Figure 3.

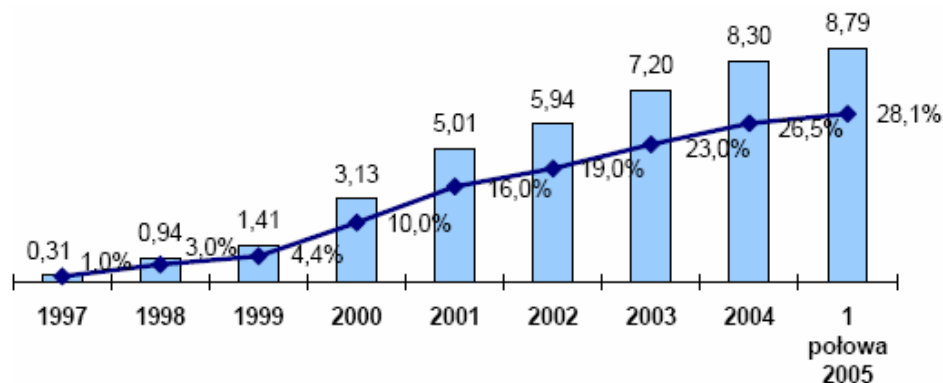


Figure 3. Internet users above 15 years: total number and penetration. [Source: Report on Telecommunication Market 2005, UKE, 2006, p. 62.]

The wire-based ADSL technology is prevailing, but wireless technologies are becoming more and more popular, see Figure 4.

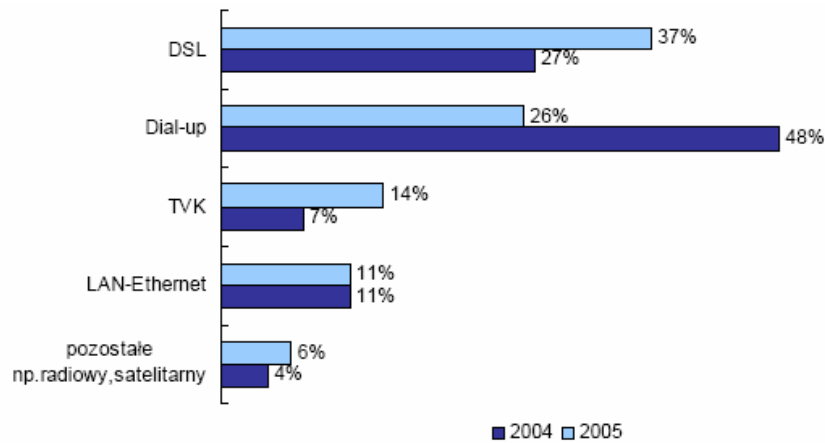


Figure 4. Internet access technologies in Poland. [Source: Report on Telecommunication Market 2005, UKE, 2006, p. 62.]

There are a number of operators offering internet services in Poland, see Figure 5 and Figure 6. TPSA is dominating, with about a million of subscribers.⁴ In 2005, it started offering data, voice and television services over internet.

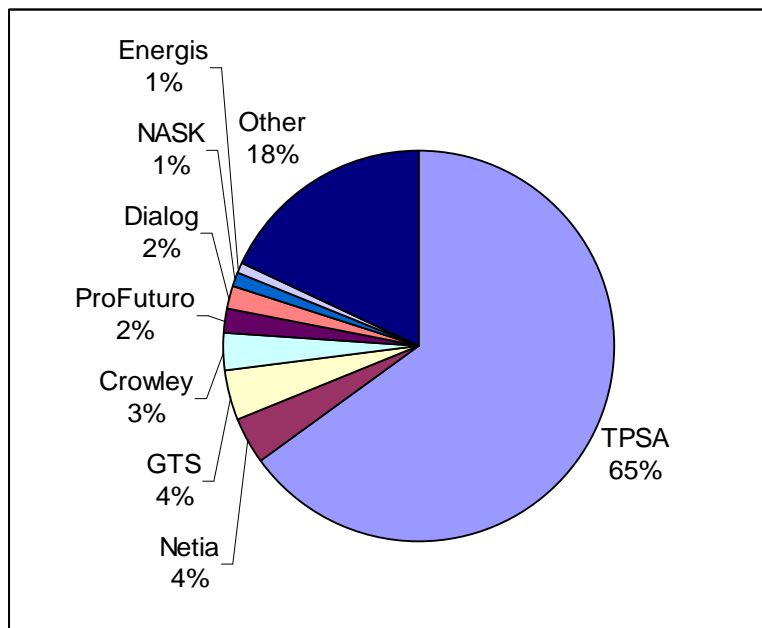


Figure 5. Internet market sharing in Poland. [Source: Zielinski A: O kondycji sektora usług telekomunikacyjnych w Polsce; Telekomunikacja i techniki informacyjne Nr 1-2, 2006, p. 14]

⁴ Zielinski A: O kondycji sektora usług telekomunikacyjnych w Polsce; Telekomunikacja i techniki informacyjne Nr 1-2/2006, str. 15

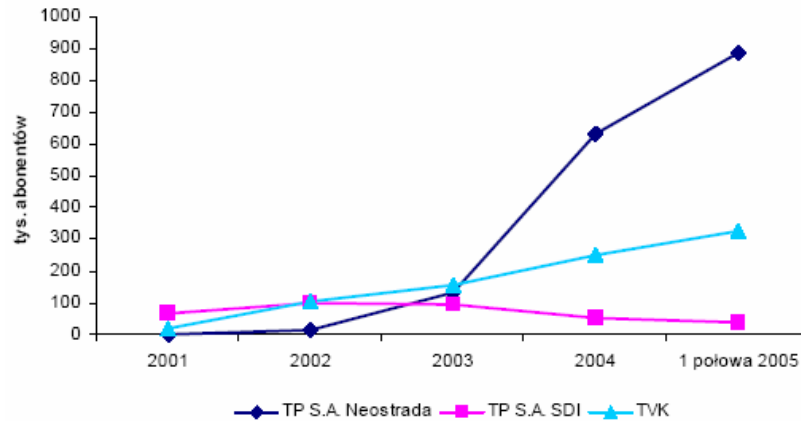


Figure 6. Users of broadband internet in Poland, 2001 – 1st half of 2005. TPSA SDI offers speed <115 kb/s; TPSA Neostrada, ADSL-based offers >115kb/s; TVK uses cable television networks and offers >115kb/s. [Source: Report on Telecommunication Market 2005, UKE, 2006, p. 64.]

Figure 7 shows penetration level of broadband internet access (there may be difference between national and European of numerical values due to different definitions of "broadband").

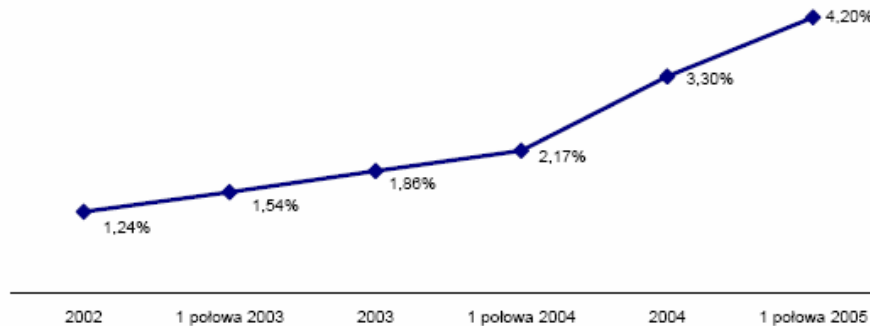


Figure 7. Penetration of broadband internet access in Poland. [Source: Report on Telecommunication Market 2005, UKE, 2006, p. 66.]

Urban – rural gap

The differences between urban and rural regions in Poland are significant. Whereas large cities in Poland are more or less comparable to West-European cities as concerns telecommunication services in general and internet access in particular, the difference between rural areas in these regions is immense. In Poland, the households computer penetration is 2 times lower in rural areas than in cities and penetration of main (fixed) telecommunication lines is 2 times and ISDN lines 7 times lower.⁵

⁵ "Program Upowszechnienie Szerokopasmowego Dostępu do Internetu na lata 2004-2006" przyjęty przez Rade Ministrów 31.08.2004 html □

Whereas the number of fixed line subscribers has increased recently by 3.2% in cities, it has decreased by 2.1% in rural areas. This is because mobile (GSM) services are replacing those based on fixed (wired) networks.⁶ This trend may hamper the diffusion of broadband access there as using present mobile networks for broadband services is more expensive than using the existing wired networks.

Data presented in Figures 1, 2 and 3 are averaged across the country. They embrace the rich and densely populated urban regions and the poor and sparsely populated rural areas. There are 56'536 rural settlements in Poland, inhabited by about 50% of the total population, roughly 20 million people.⁷ Six of the 16 Polish provinces have been classified as the poorest regions of the European Union.^{8,9,10} Analytical and statistical data on broadband access in rural areas and in small cities in Poland have been unavailable, according to A Zielinski.¹¹ Understanding of complex processes involved in the diffusion of broadband access requires complex research to be undertaken.

Cost factor

High cost is often indicated as a major reason for slow diffusion of the broadband access in rural areas. Figure 4 shows that cost in the EU member countries. In Poland, it is the highest - 5 times higher than in Ireland.

International aid

European Union has offered a huge financial aid to reduce disproportions between Poland and more advanced EU member countries.¹² Will that opportunity be exploited? Other projects co-financed by the EU have encountered a number of problems. For instance, in spite of all governmental efforts, the EU financial contribution allocated for development of Polish national transportation system could be used only in 0.63%,

⁶ Zielinski A: O kondycji sektora usług telekomunikacyjnych w Polsce; Telekomunikacja i techniki informacyjne Nr 1-2/2006, str.3

⁷ Powierzchnia i Ludność w Przekroju Terytorialnym w 2003 r.; GUS 2003, str.10

⁸ 'Zwycięzamy w kategorii bieda', Gazeta Wyborcza 20-21.05.2006 Nr 117.5125, str. .32

⁹ 'Rozwój Polski Wschodniej 2007-2013' Ministerstwo Rozwoju Regionalnego Warszawa 9.03.2006, str. 7

¹⁰ This statement is based on 2006 statistics. After Bulgaria and Roumania joined the EU in 2007, it may be untrue.

¹¹ Zielinski A: Stan obecny i perspektywy rozwoju społeczeństwa informacyjnego na wsi; Wieś w społeczeństwie informacyjnym – szanse i wyzwania; V Krajowa Konferencja Telekomunikacji Wiejskiej – Kielce 2002, str. 18

¹² „Upowszechnienie Szerokopasmowego Dostępu do Internetu na lata 2004-2006” przyjęty przez Rade Ministrów dnia 31.08.2004,

according to the press.¹³ More than a half (53%) of Poles believes that the use of the EU assistance has been extremely ineffective.¹⁴ All this indicates that the operation of international aid in this country should be improved and some assistance in this area is needed.

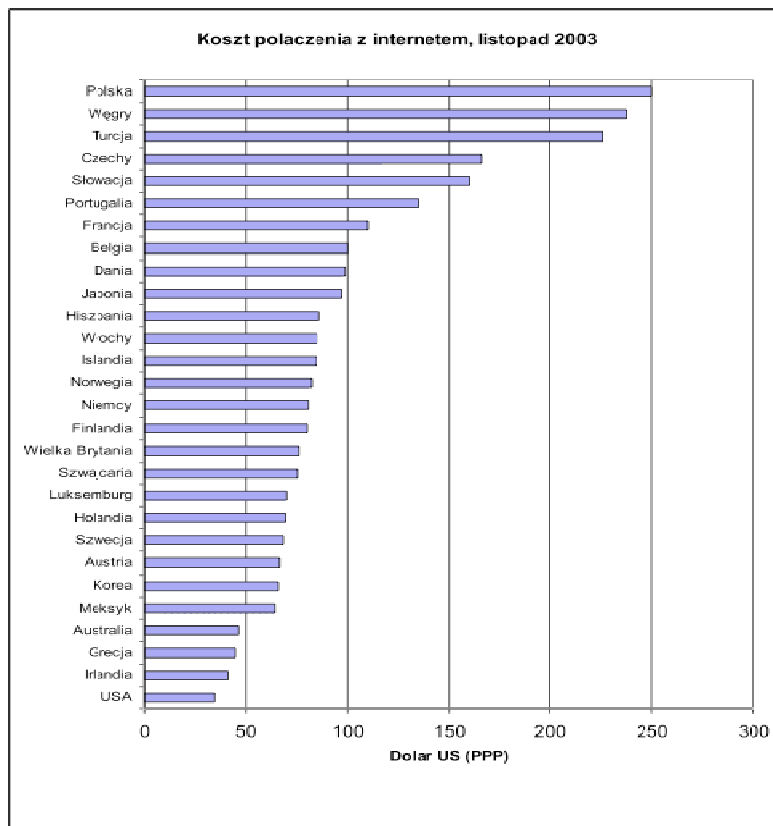


Figure 4. Monthly cost of internet access in comparable (PPP) US dollars.
 [Source: "Program Upowszechnienie Szerokopasmowego Dostępu do Internetu na Lata 2004-2006" przyjęty przez Rade Ministrów 31.08.2004]

Other critical elements

In spite of many initiatives, the issue of diffusion of broadband access in rural areas has not found any satisfactory solution. Key factors involved here have been discussed elsewhere.¹⁵ The governmental programme for

¹³ Bruksela doceniła wysilek i czeka na efekty [meeting of Mr Luis Riera Figueras (EU) and Ms Grazyna Gesicka (PL); Rzeczpospolita, 24 July 2006, p. B6; see also Ten rok nie przyniesie zasadniczych zmian w informatyzacji administracji publicznej [Dodatek Rzeczpospolitej](#) [1000] Nr 228 - piątek, 29.09.2006 p. B

¹⁴ *Dumni z męczeńskiej przeszłości*; Gazeta Wyborcza, Kraj, z dn. 20 czerwca 2006, str. 4

¹⁵ Struzak R: Internet na Wsi: czy nauczyciele fizyki gotowi są pomóc?
http://draco.uni.opole.pl/moja_fizyka/menu14.html

the years 2004-2006 assumed significant progress.¹⁶ Every public office and every public school was to have internet access. In addition, a number of public (community) access points were to be put into operation.

The government assumed that the major part of the programme would be realized by private entities participating in telecommunication market. However, the private sector is motivated by profit and rural and sparsely populated areas are not attractive enough to justify investments there. To which degree the goals of the 2004-2006 governmental programme have been achieved has not been clear in time of this writing. It is, nevertheless, clear that delays in legalizing the e-signature has holdup a wide variety of business applications that could generate significant demand for broadband access.

A wider perspective

Poland is not unique with its problems with broadband access. All 'new' member countries of the European Union seem to have more or less similar difficulties due to their retard in comparison with the 'old' members. It is clearly seen in Figure 1. As mentioned, the most difficult problems arise in sparsely populated rural areas. Market mechanisms fail there and the level of education and awareness of local agricultural societies is low. It happens that a major part of people employed in agriculture in new member countries live in Poland, see Figure 5. Without adequate access to the Internet, they have been isolated from the mainstream of Information Society and cut off from the global market causing socio-economic problems.

¹⁶ „Upowszechnienie Szerokopasmowego Dostępu do Internetu na lata 2004-2006” przyjęty przez Rade Ministrów dnia 31.08.2004,

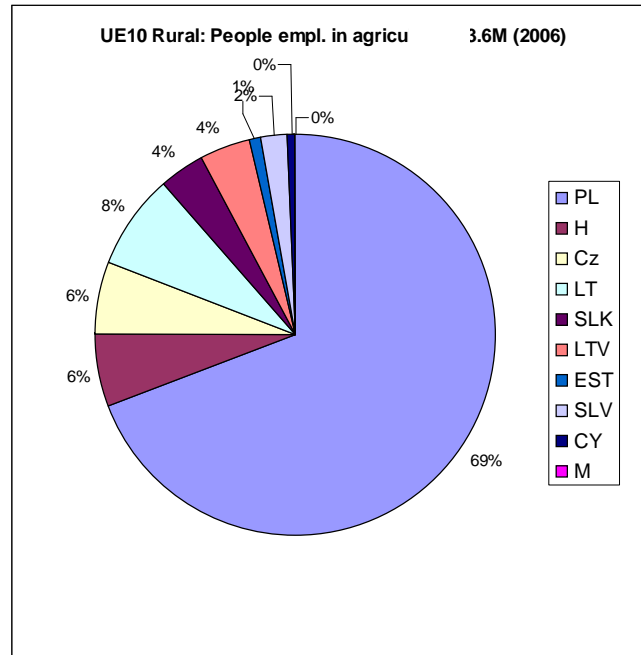


Figure 5. Relative size of agricultural employment in 10 'new' EU members

From a wider perspective, taking into account also neighbouring countries that belong to the Central European Initiative, there is about 100 million people living in rural regions, a huge market and a big social problem. When focusing on Poland, one should keep in mind also the needs of all its CEI neighbours and opportunities there. Sharing ideas, experience, and best practices will result in a better use of the limited resources available.

Conclusion

The i2010 programme is a huge unprecedented undertaking involving all EU member countries. Poland ranks sixth in the population size among the EU countries. For that reason, how the i2010 project is carried out in this country will have a decisive impact on the success or failure of the project on the European scale. The i2020 cannot successfully be finalized without diffusion of broadband access in rural Poland, which is an immense and difficult task. New technologies, new business models and new regulations are urgently needed, as there are no examples to be replicated there.