

A) Case Study Summary Information

1. Title of case study:

“Rural Internet Access Points” Project

2. Details of the person preparing the case study:

Name and title of person preparing the case study: Rimantas Skinderskis, Specialist of the e.Government Services Division of the Information Policy Department of the Ministry of Interior

Organization submitting the case study: Ministry of the Interior of the Republic of Lithuania

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3. Status of project(s):

Operational

Completed

4. Location and population of the project area

Location (village, district, etc.) Rural areas

Population of the project area 1,3 million

5. Types of projects

Pilots (trials)

Licensed or authorized

Projects funded by USAID

Others

6. Type of application / service (check one or more boxes)

Public voice services

Radio or TV broadcasting

E-governance, e-administration

Support for small business, e-business

E-health

Tele-education, e-learning

ICT training

Disaster preparedness / emergency support / disaster mitigation

Environmental monitoring / protection

Others (please specify) Provide free Internet access

7. Type of technology (Check one or more boxes)

Wired local loop: Copper, optical fibre, etc. (customers' loop)

Wireless local loop (customers' loop)

Fixed wireless access (long distance)

Mobile wireless access

- Satellite two-way communications: VSAT, etc.
- Wireless LANS and IP-based related networks
- Terrestrial voice, data, sound or television broadcasting
- Satellite voice, data, sound or television broadcasting
- Hybrid or combined technologies
- Others (please specify) _____

8. Organizations involved in implementing the project:

Central Project Management Agency

Information Society Development Committee

Sonex kompiuteriai

Labochema

Lithuanian Radio and TV centre

AHT GROUP AG

PRO Management GMBH

Kaunas University of Technology

UAB Noratus

Vilnius University

UAB S4ID

9. -150 word summary of the project indicating its expected social /economic impacts

The „Rural Internet Access Points“ Project was started in 2003 upon initiative of the Government of Lithuania. The Project has got an overall funding support of 3,15 million Euro from the PHARE program of the European Union. The first stage of the Project has established 300 Rural Internet Access Points all over rural Lithuania which included the provision of computers, furniture and Internet connection. The Internet access Centers were mostly established in regions where communication infrastructure is poor. The centers operate in most often visited institutions of rural areas: schools, libraries, community centers, culture houses, etc. They not only provide the access to computers and Internet but also gives the possibility to print, copy, scan and fax.

It should be noted that the Alliance “**Window to the Future**” (established by leading Lithuanian business in 2002) was the initiator of establishment of Public Internet Access Points (PIAP) in Lithuania. In 2002, the Alliance in cooperation with local governmental institutions established 75 PIAPs.

B) Detailed project description and analysis

1. Overview of project's targets, objectives and financing

- a. Brief description of the country/region: geography, terrain, climate, demographics, socio-economic situation,

Time: Lithuania is in the Eastern European Time Zone: GMT + 3 hours (Summer time) and GMT + 2 hours (Winter time)

Climate: With four distinct seasons, the climate is humid continental, with a moderating maritime influence from the Baltic Sea. January temperatures average -5°C (23°F); July, 17°C (63°F). Annual precipitation averages 62 centimeters (24.4 in.).

Population: 3 414 300 (2005)

Urban: 2 275 100

Rural: 1 139 200

Ethnic Composition: Lithuanian 83.4%, Poles 6.7%, Russians 6.3%.

Religion: Roman Catholics accounted for 79% of Lithuania's population, Orthodox (4.1%), Protestant (1.9%).

Languages: Lithuanian; a minority speaks Russian (8%) and Polish (5.6%).

Education: Years compulsory-10 (until the age of 16). Literacy-99.6%.

Health: Infant mortality rate-67.8/1,000. Life expectancy-66.48 yrs. male, 77.85 yrs. female.

Geography:

Territory: 65 200 km²: Lithuania is the largest of the three Baltic countries, twice the size of Belgium (30513 km²) and a wee bit smaller than Ireland (70283 km²).

Borders: Inland borders with Latvia, Belarus, Poland and Russia (Kaliningrad) total 1,747 km. The Belarusian border is the longest, at 724 km. Coastline totals 99 km.

Terrain: lowland, many scattered small lakes, fertile soil

Elevation extremes: Lowest point: Baltic Sea 0 m. Highest Hill: Aukstasis, at 293.84m.

- b. Objectives and implementation details of the project applications (basic telephony, e-business, e-administration, e-education, e-health, ICT training etc),

The main objective of the Project was to establish 300 Rural Internet Access Points (RIAPs) all over rural Lithuania which include the provision of computers, furniture and Internet connection. The Internet access Centers are mostly established in regions where communication infrastructure is poor. They not only provide the access to computers and Internet but also gives the possibility to print, copy, scan and fax.

Second objective of the Project is to strengthen the RIAPs network, to train all staff - the so called "tutors" of the Internet access centers, and to provide relevant electronic services to the small-medium enterprises and general public.

In centers active tutors provide both training and consultations on usage of computer and Internet, e-banking and present other opportunities of ICT. All 300 tutors participated in the medium-term training program. Depending on their level, tutors studied "e-citizen" or "ECDL" programs, Marketing and Project Management Courses.

- c. Consideration of indigenous communities, isolated and poorly served areas, small islands and their particular needs and situations.

- d. New technologies deployed for providing reduced cost capital and operating cost solutions.

Central portal (www.vipt.lt) was developed for provision with centralized services: news and events announcement tools, discussion forums, RIAPs visitors registration facilities, virtual learning environment, catalogue of e-services as well as sub-sites development tools. Provision of e-mail addresses for RIAPs tutors were deployed on Google Apps for Your Domain free service. Additionally monitoring and remote management tools were developed and installed in each computer allowing to track the statistics of computer usage and to connect remotely to any desktop in order to provide with help and technical assistance to RIAPs tutors.

WiFi, WiPLL and pre Wi-MAX networks were developed and expanded, when RIAP network was established. Now WiFi network covers about 10 % of Lithuania, WiPLL covers 90 % and pre-WiMAX, which works on frequency of 3,5 GHz, covers 90 %. Altogether these networks cover 97-98 % of Lithuania.

- e. Financing and partnership aspects of the project, including the estimated total cost of the project and the types of funders (e.g. sponsors' contribution, charitable donations and subsidies from USF).

3,15 million Euro from the PHARE program of the European Union.

- f. Decision-making process to determine the project

N/A.

2. Infrastructure and regulatory environment

- a. Infrastructure components: Pre-existing telecommunication facilities, transport access, electricity supply, distance to the nearest local exchange and/or IP network, human resources, security,

The centers were established in most often visited institutions of rural areas: schools, libraries, community centers, culture houses, etc, where electricity supply, human resources and security had already existed.

- b. Regulatory components: Universal service obligations, licensing conditions, frequency availability (for radio-based projects), other regulatory issues,

Lithuanian Radio and TV centre used licensed 3,5 GHz frequency band and unlicensed 2,4 GHz frequency band.

- c. Other factors which influenced the operating environment (manufacturers, standards etc).

N/A.

3. Technical description and services provided

- a. Architecture, type of systems, main technical characteristics, frequencies (for radio-based projects), power consumption, performances (capacity, reliability, quality of service), network management, etc.,

Internet connection equipment

It is composed of one or more separate devices covering the communication features and the routing features.

Specifications:

Communication:

- 1 Mbps line rate scalable down to 128 Kbps
- availability of data link, on monthly basis, not less than 93% of time
- delay less than 100 ms

Routing:

- One 10/100Base-T autosensing port, RJ-45 terminated, IEEE 802.3 compliant
- Network Address Translation (NAT) support
- Port Address Translation (PAT) support
- Virtual server capability
- Dynamic Host Configuration Protocol (DHCP) server capability
- Microsoft Netmeeting compatibility

Internet access (using the equipment above)

- Minimum guaranteed data rates, from ISP to customer, of 256Kbps
- Overbooking within Lithuania less or equal to 1:10
- Overbooking with the rest of the world less or equal to 1:15

- b. Installation and deployment: network planning, subscriber management, etc.,

N/A.

- c. Interconnection to national networks/backbones,

AB Telecentras has peering connections to all major Lithuanian Internet Service Providers including Academic and Research Network (LITNET)

- d. For each service delivered (POTS, "IP telephony", etc.): mode (data type and bit rate) and quality (voice quality and bit error rate).

N/A.

4. Cost aspects

- a. Cost of the equipment, cost per line and cost of the operation of the system,

Cost of the Internet connection equipment and internet access: 621 205, 00 EUR

- b. Cost of each terminal and cost of the service for the user.

Internet access is provided for free

5. Effectiveness and sustainability of the project

- a. Effectiveness and benefits of the project for the targeted user groups,

According to the tutors of RIAPs the number of visitors is growing constantly, more and more elder visitors are being attracted. In some of the centers more active tutors provide both training and consultations on usage of computer and Internet, e-banking and present other opportunities of ICT.

- b. Profitability of the project and/or its contribution to local entrepreneurial activities,

People can use various e. services.

- c. Specific strategies to respond to the needs of women, youth, handicapped, indigenous people and other marginalized or socially disadvantaged groups

Help and consult everybody, who encounters with problems.

- d. Aspects of the project, which could be strengthened to enhance its effectiveness or sustainability maximizing the benefits of telecommunication infrastructure in rural and remote areas.

N/A.

6. Social and human development impacts

- a. Overview of key social and human development needs of the population in the project area,

Improving e. inclusion and reducing digital divide.

- b. Role and commitment of the project to addressing these needs,

The role is to ensure internet access and internet usage skills for more inhabitants of rural areas.

- c. Socio-economic benefits for, and impacts on the community(ies) and/or at a wider level, including support for gender equity, promotion of community participation and the needs of marginalized and disadvantaged populations

Most of the people living in rural areas – from representatives of local government to farmers, teachers and unemployed people – are happy with the establishment of RIAPs centers. According to their opinion, finally, they are provided with opportunities and access to modern technologies like inhabitants of big cities.

- d. Means foreseen to enhance the project's future contributions to human and social development.

7. Other observations

a. Unexpected results and lessons learned,

All equipment should be insured.

b. Anticipated near/long-term project challenges and reorientation.

N/A.

c. Additional information considered useful

N/A.

THANK YOU FOR YOUR COOPERATION

A) Case Study Summary Information

10. Title of case study: Rural Area Information Technology Broadband Network RAIN

11. Details of the person preparing the case study:

Name and title of person preparing the case study: Project leader Laimutis Telksnys

Organization submitting the case study: Institute of Mathematics and Informatics

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Website: www.mii.lt

12. Status of project(s):

Operational

Completed

13. Location and population of the project area

Location (village, district, etc.) Rural areas of Lithuania

Population of the project area 1 million

14. Types of projects

Pilots (trials)

Licensed or authorized

Projects funded by USF

Others

15. Type of application / service (check one or more boxes)

Public voice services

Radio or TV broadcasting

E-governance, e-administration

Support for small business, e-business

E-health

Tele-education, e-learning

ICT training

- Disaster preparedness / emergency support / disaster mitigation
- Environmental monitoring / protection
- Others (please specify) Broadband infrastructure wholesale services

16. Type of technology (Check one or more boxes)

- Wired local loop: Copper, optical fibre, etc. (customers' loop)
- Wireless local loop (customers' loop)
- Fixed wireless access (long distance)
- Mobile wireless access
- Satellite two-way communications: VSAT, etc.
- Wireless LANS and IP-based related networks
- Terrestrial voice, data, sound or television broadcasting
- Satellite voice, data, sound or television broadcasting
- Hybrid or combined technologies
- Others (please specify) Fiber-optical infrastructure for broadband services

17. Organizations involved in implementing the project:

Institute of Mathematics and Informatics

Ministry of Transport and Communications of the Republic of Lithuania

Ministry of Education and Science of the Republic of Lithuania

Public Institution "Placiajuostis internetas"

18. -150 word summary of the project indicating its expected social /economic impacts

The project schedules the building of fiber-optical network infrastructure to all local administrations in the territories of rural local administration centers of Lithuania that do not have broadband internet connectivity. It will decrease the difference of availability of broadband internet services between rural and urban areas. The total length of this infrastructure will amount to 3 000 kilometers. The speed of the channels will initially reach no less than 100 Mbps. Optical channels will open up the possibilities of employing, to one's own needs, not only texts but sounds, images and video, with these possibilities being continuous, reliable and safe. The network is designed in such a way that its speed is subject to increase without involving considerable costs.

B) Detailed project description and analysis

Please address each of the 7 elements indicated below, providing 1-2 single space pages for each, and treating separately each sub-element (e.g. 1.a.) which is appropriate. Preferably, please provide the description and analysis in electronic format.

8. Overview of project's targets, objectives and financing

- a. Brief description of the country/region: geography, terrain, climate, demographics, socio-economic situation,

Lithuania, officially the Republic of Lithuania (Lithuanian: Lietuva; official — Lietuvos Respublika), is a country in Europe. The largest of the three Baltic States situated along the Baltic Sea, it shares borders with Latvia to the north, Belarus to the southeast, Poland and the Russian exclave of the Kaliningrad Oblast to the southwest. Lithuania has been a member state of the European Union since May 1, 2004.

Lithuania has around 99 kilometers of sandy coastline. Lithuania's major warm-water port, Klaipėda, lies at the narrow mouth of the Curonian Lagoon (Lithuanian: Kuršių marios), a shallow lagoon extending south to Kaliningrad.

83.5% of the Lithuanian population are ethnic Lithuanians who speak the Lithuanian language (one of the two surviving members of the Baltic language group), which is the official language of the state. Several sizable minorities exist, such as Poles (6.7%), Russians (6.3%), and Belarusians (1.2%). Poles are the largest minority, concentrated in southeast Lithuania (the Vilnius region). Russians are the second largest minority, concentrated mostly in two cities; they constitute sizeable minorities in Vilnius (13%) and Klaipėda (20%) and a slim majority in the town of Visaginas (55%).

In 2003, prior to joining the European Union, Lithuania had the highest economic growth rate amongst all candidate and member countries, reaching 8.8% in the third quarter. In 2004 - 7.3%; 2005 - 7.6%; 2006 second quarter - 8.4% growth in GDP reflected impressive economic development. Most of the trade Lithuania conducts is within the European Union.

- b. Objectives and implementation details of the project applications (basic telephony, e-business, e-administration, e-education, e-health, ICT training etc),

The project's scope is limited to implementing the infrastructure for broadband services and creating the environment for various e-services.

- c. Consideration of indigenous communities isolated and poorly served areas, small islands and their particular needs and situations.

The table below shows broadband service availability level in different geographical areas in 2005:

Category	Number of residents	Number of terrains	Possibility to use broadband services			
			Number of residents	%	Number of terrains	%
Towns	2281398	103	2,276,835	99.8%	98	95%
Rural areas	1,143926	21,826	183,054	16%	199	1%
Villages/small towns (>500 residents)	370,222	393	166,373	45%	133	34%
Villages/small towns (<500 residents)	773,704	21,433	14,143	2%	61	0.3%
TOTAL	3,425,324	21,929	2,474,730	72%	292	

- d. New technologies deployed for providing reduced cost capital and operating cost solutions.

The chosen technology for infrastructure building is fiber-optics. This technology assures longevity of the network for at least 20 years.

- e. Financing and partnership aspects of the project, including the estimated total cost of the project and the types of funders (e.g. sponsors' contribution, charitable donations and subsidies from USF).

The value of RAIN project is 73 million Litas (21,14 million EUR). The project is funded by the European Funds and the Republic of Lithuania.

- f. Decision-making process to determine the project

Three partners are involved in project implementation: Institute of Mathematics and Informatics, the Ministry of Transport and Communications of the Republic of Lithuania and the Ministry of Education and Science of the Republic of Lithuania. The Ministry of Transport and Communications established a public enterprise "Placiajuostis internetas" for project implementation. The supervisory committee, involving members of all partners and other concerned ministries was found for decision-making in project implementation.

9. Infrastructure and regulatory environment

- a. Infrastructure components: Pre-existing telecommunication facilities, transport access, electricity supply, distance to the nearest local exchange and/or IP network, human resources, security,

Broadband infrastructure is well deployed in main cities and other urban areas, but missing in rural areas of the country because of the lack of economical attractiveness. The main broadband service operator in rural areas is incumbent operator TEO LT, JSC.

- b. Regulatory components: Universal service obligations, licensing conditions, frequency availability (for radio-based projects), other regulatory issues,

There is an independent government institution, Communications Regulatory Authority (RRT), set up under the Law on Telecommunications and regulating communications activities in Lithuania. RRT plays a significant role in:

- implementing general communications strategy and developing information society in Lithuania;
- promoting long-term investments and the development of the communications sector;

- promoting the development of new electronic communications technologies;
 - liberalizing electronic communications and postal services market;
 - ensuring non-discriminatory conditions to all market players and promoting competition in the communications sector;
 - ensuring an effective use of electronic communications resources, e.g., radio frequencies, telephone numbers, Internet addresses;
 - protecting the rights and legal interests of service users, including consumers, and postal service users;
 - ensuring the assessment of conformity of equipment and devices used in Lithuania to the obligatory requirements, electromagnetic compatibility of the equipment and devices.
- c. Other factors which influenced the operating environment (manufacturers, standards etc).

World's technological open standards play a significant role in selection of technological aspects of implementation and equipment.

Other infrastructure holders have an impact on the project implementation because of the idea not to build fiber-optical infrastructure where it already exists. Those parts of the infrastructure network should be rented.

10. Technical description and services provided

- a. Architecture, type of systems, main technical characteristics, frequencies (for radio-based projects), power consumption, performances (capacity, reliability, quality of service), network management, etc.,

The fiber-optical infrastructure will connect all local administrations in the territories of rural local administration centers to appropriate municipalities forming 51 separate non-interconnected networks. The capacity of fiber-optical lines will ensure the planned demand of data transmission services for a period of at least 20 years. All technical characteristics of the cable and equipment corresponds to most modern technical standards.

- b. Installation and deployment: network planning, subscriber management, etc.,

The planning of the infrastructure was based on the shortest path available between the nodes ensuring cost-effective finance use. Upon the installation of rural area broadband infrastructure, the latest broadband possibilities will reach the residents, farmers, businessmen, community organizations, schools, libraries, museums, health organizations, all the self-governance and public bodies in all the rural areas.

- c. Interconnection to national networks/backbones,

The infrastructure interconnection will be done with the main other fiber-optical infrastructure holders in the country. There is also a possibility to interconnect with any other infrastructure holders.

- d. For each service delivered (POTS, "IP telephony", etc.): mode (data type and bit rate) and quality (voice quality and bit error rate).

Two main wholesale broadband services will be provided: connection services via a pair of optical fiber and data transmission (text, voice, images, video) services at the rate of 100Mbps (Ethernet based). The services will be provided for service operators and organizations, but not for the end-users of the service.

11. Cost aspects

- a. Cost of the equipment, cost per line and cost of the operation of the system,

Because public enterprise “Placiajuostis internetas” is a non-profit organization, all income, gained from service provision will be spent on compensation of infrastructure operational costs. At the start-up period tariffs for broadband services are: 2000 Litas (579,2 EUR) per month for 100 kilometers of data transmission at the rate of 100 Mbps and 10000 Litas (2896,2 EUR) per month for 100 kilometers of data transmission via a pair of optical fibers. These tariffs will be recalculated when income will overstep operational costs.

b. Cost of each terminal and cost of the service for the user.

In general, one of the aims of the project is to enable users in rural areas to gain services at the same level of prices as those in urban areas. As planned in project’s feasibility study, the cost of broadband internet service for households will vary from 30 to 50 Litas (8,7 - 14,5 EUR) per month and from 100 to 200 Litas (29 – 57,9 EUR) per month for business customers and other organizations. The exact service cost will depend from service quality parameters.

12. Effectiveness and sustainability of the project

a. Effectiveness and benefits of the project for the targeted user groups,

Broadband infrastructure is built for open public usage, so there is no need for user division to separate specific groups. Project’s targeted group – users in rural areas. They will:

- accumulate greater funds of knowledge;
- take a more active part in public life;
- get more successful results in developing competitive activities;
- improve their situation in the areas of social security, health protection, cultural life, public administration.

b. Profitability of the project and/or its contribution to local entrepreneurial activities,

As already mentioned, public enterprise “Placiajuostis internetas” is a non-profit organization and there can not be any direct profit. Positive impact of knowledge society will be noticeable for all organizations of government, public sector, business and private users.

c. Specific strategies to respond to the needs of women, youth, handicapped, indigenous people and other marginalized or socially disadvantaged groups

Upon the installation of rural area broadband infrastructure, the latest internet possibilities will reach the residents, farmers, businessmen, community organizations, schools, libraries, museums, health organizations, organizations of social care, all the self-governance and public bodies in all the rural areas of the country.

d. Aspects of the project, which could be strengthened to enhance its effectiveness or sustainability maximizing the benefits of telecommunication infrastructure in rural and remote areas.

The main parts of modern knowledge society are: infrastructure, attractive and useful e-content and the ability of IT usage. All of them are equally important. Absence of any of them will stop the development of knowledge society. The aim of RAIN project is to build an infrastructure, needed for broadband service delivery. To develop knowledge society to an acceptable level, other projects are or planning to be implemented.

Further development of broadband infrastructure will be followed by the building of broadband internet delivery channels from the RAIN communication nodes to the

people's dwellings, business enterprises, communities, self-governance and public bodies, these channels often called last kilo/meter or last mile channels.

The length of such channels in the territories of local administrations may vary from several or more than 10 kilometers, from several tens to several hundred meters.

For the implementation of these works, the RAIN 2 project is being drafted, with the design works being under way. The feasibility study for the RAIN 2 project is scheduled to be completed in May 2008.

The broadband infrastructure is planned to be used by different departments for the promotion and development of various activities in rural areas. These issues are scheduled to be discussed within the framework of the project RAIN 3.

13. Social and human development impacts

- a. Overview of key social and human development needs of the population in the project area,

There is a need for the inhabitants of rural areas to have possibilities to employ modern ICT instruments for the purposes of education and development of skills, creativity and entrepreneurship.

- b. Role and commitment of the project to addressing these needs,

Furthermore, without fulfilling the defined needs, another project's objective is to develop a model for Central and Eastern Europe countries presenting the practical way of involving the rural areas' inhabitants into modernization of their activities by the use of ICT instruments.

- c. Socio-economic benefits for, and impacts on the community(ies) and/or at a wider level, including support for gender equity, promotion of community participation and the needs of marginalized and disadvantaged populations

It is planned that the completion of the RAIN project and the resulting substantial improvement of the possibilities for the inhabitants of rural areas to use internet connectivity will create considerably more favorable conditions for economic and cultural activities, the development of alternative activities and partnership, as well as education, learning, prequalification, reception and provision of services, communication with self-governance and public bodies.

- d. Means foreseen to enhance the project's future contributions to human and social development.

The built broadband infrastructure will allow the residents of rural areas to save their time and costs that are now necessitated by their frequent travelling to municipal, local administration bodies or institutions located in the capital of the country and meeting the officers in dealing with different matters. This will enable the rural area residents to declare their crops, provide the information on the animals kept, pay the taxes or make an appointment with the doctor from their houses or local administrations. The infrastructure also enables creating remote working places.

14. Other observations

- a. Unexpected results and lessons learned,

As the feasibility study of the project was prepared a few years before the start of implementation, planned prices of labor and oil have increased dramatically over the period. There was a lack of finance resources in the period of project implementation. Additional funding was done by the Republic of Lithuania.

Project's feasibility study analyzes various technological and longevity aspects of different data transmission technologies. The analysis involved solutions from wireless

to fiber-optical connectivity with their specific plusses and minuses. Today it is obvious that long-term solutions like fiber-optics are to be the choice of preference.

b. Anticipated near/long-term project challenges and reorientation.

It is expected that upon the creation of the rural area information technology broadband interconnection to network RAIN, the number of broadband internet users in rural areas during the initial years of its use will reach no less than 30 percent. The broadband connection infrastructure built within the framework of the implementation of the RAIN project will lay the foundations for the long-term and high-quality further informatization of the Lithuanian rural areas, in addition to accelerating it and considerably reducing its costs.

The plans suggest that in the 10-year period perspective Lithuania's level of informatization will approximate to those of Sweden and Finland that are considered to be well-developed countries in this respect.

c. Additional information considered useful

The project intermediate body is Information Society Development Committee under the Government of the Republic of Lithuania.

The project implementing agency is the Central Project Management Agency.

THANK YOU FOR YOUR COOPERATION
