



THE WORLD BANK

*Best practice options for the implementation of
European Structural Funds for the stimulation of
demand for electronic communications services in
Lithuania*

Final Report

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Chapter 1 is an introduction to the situation in Lithuania, the objectives of the World Bank with this project and the current status of the project

Chapters 2 and 3 provide the reader with relevant background information on European Structural Funds, state aid rules for regional ICT access and the dynamics of supply and demand in rural broadband.

The main findings of our Fact Finding Mission are presented in chapter 4.

Chapter 5 contains a guideline how to use Demand Stimulation for rural Broadband Development with European Structural Funds

Chapter 6 lists our main conclusions and recommendations.

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Executive Summary

In urban areas of Lithuania, 99,8% of the population has potential access to broadband communications. In rural villages and towns with less than 500 inhabitants, only 2% has potential access to broadband. The 'digital divide' in Lithuania will remain a serious problem so long as incentives for the private sector to invest in these rural areas are lacking. Therefore, the Lithuanian Government has defined a broadband strategy for 2005-2010, based upon the Action Plan of the European Commission (Lisbon) and the long term strategy for the development of the Lithuanian economy until the year 2015. The Government has defined two specific objectives under this strategy:

- 100 percent of public administration institutions and offices shall be connected to broadband communication networks by 1 January 2008.
- all the small- and medium sized enterprises as well as the general public shall be given the possibility to connect to existing broadband communication networks covering 98 percent of the country's territory by 1 January 2010.

One of the main programs that the Government has started is the so-called RAIN program. This program plans to implement 3000 kilometers of fiber-optic links in order to bring bandwidth into the rural areas of Lithuania. However, it is not clear whether there is sufficient demand for broadband services in these rural areas.

The European Commission has recently also addressed the issue of rural ICT in its communication "Bridging the Broadband Gap". In this Communication, the Commission announces further action to stimulate deployment of broadband services and networks in less developed areas of the Union.

The World Bank has instructed Conict Consultants, in cooperation with ECORYS Nederland BV, Close the Gap and with the support of the Dutch Ministry of Economic Affairs, to assess whether 'demand stimulation' in combination with the application of European Structural Funds could be an additional, effective broadband development strategy for Lithuania. Demand stimulation is a bottom-up methodology that stimulates demand by increasing awareness of how broadband can be of help to rural communities in their daily lives.

Demand stimulation can be supported by the Leader program and Local Action Group approach of the EU. By establishing Local Action Groups, the EU supports bottom-up developments in (rural) communities and local broadband development

plans also become eligible for support. The Leader program only provides funding for the process of developing plans while actual project funding (i.e., hardware) needs to come from Structural Funds.

Conict undertook a fact finding mission to the rural district of Silute and found that demand stimulation can work in rural Lithuania. People are open to change and –after being made aware that broadband could come to their region in a period of months instead of years- are willing to take action themselves. They understand that broadband could stimulate the regional economy (e.g. tourism) and could also contribute to tackling rural challenges such as taking care of the aging population and stopping the outflow of young people to urban areas. A Local Action Group already exists in Silute.

At a government level, Conict found that European Funds are being used intensively already (e.g. for deploying Public Internet Access Points and for the RAIN program). The main responsibility for EU Funds rests with the Ministry of Finance, but the Ministries of Agriculture, Interior, Education, Transport and Communications and the Information Society Development Committee are leading the planning for their respective areas of interest. When the Leader/Local Action Group approach is adopted for rural broadband development, some of these plans need to be integrated and this will require more cross-ministerial cooperation. For example, a Local Action Group might develop a business plan for ‘last mile’ broadband services, including infrastructure, PC’s for farmers and SME’s and training. This would imply involvement of ISDC and the Ministries of Transport and Communications, Agriculture and Education.

The main conclusion is that demand stimulation could work as a broadband development strategy for rural Lithuania. The first step is to raise awareness and we believe that starting a pilot (e.g. in Silute) could be the start of this process for the whole of rural Lithuania. Demand stimulation can be supported by the Leader/Local Action Group approach of the EU. Optimal use of the Structural Funds requires smart combinations of funds for a single project and since responsibility for these funds rests with several ministries, this requires state-level cooperation as well.

1 Introduction

1.1 Background information on ICT in Lithuania

Lithuania was a signatory and full participant in the e-Europe+ initiative regarding the development of the Information Society. On becoming a full member of the EU, Lithuania graduated to the more ambitious e-Europe 2005 project and now the i2010 project and other recent developments. In effect, the e-agenda of the EU defines, inter alia, the Information Society targets for the country.

The electronic communications market in Lithuania has been fully liberalized and an independent regulatory authority has been established. The regulatory framework for electronic communications is more than 1998 *acquis communautaire* compliant but not fully compliant with the 2002 regulatory package. The Ministry of Transport and Communications is responsible for overall policy in the sector.

The mobile sector has experienced rapid growth while the fixed line business has contracted from 34 lines per 100 population in 1999 to 25 lines per 100 population in 2004. A detailed and comparative picture of ICT in Lithuania has been produced by the European Commission in the context of the e-Europe+ program and certain benchmarking surveys. Generally, ICT diffusion and performance is modest in Lithuania in comparison to its peers. Nevertheless, GDP growth is impressive and the previous study supported by the Dutch CTF noted the vibrancy of the private sector and anticipated that the market will largely respond to the needs for broadband. However, all observers have noted the significant urban-rural divide and relatively expensive Internet access. The focus of this study is demand stimulation in these less well-served locations.

In 2003, the World Bank undertook a Knowledge Economy Assessment of Lithuania which drew attention to the growing access issue and the disparities in access between urban and rural areas. The disparities in access have serious implications for the demand for services and full participation in Information Society developments. Currently, in line with the sales agreement for the previously state-owned incumbent to a strategic investor, the Universal Service Obligation is limited to the provision of a defined number of public pay phones plus directory enquiries and emergency services. The level of access to electronic communications may be insufficient to support an inclusive Information Society, the “e” objectives of Lithuania and the full benefits of EU membership.

1.2 Objectives of the study

The primary objective of this consultancy is to assist the World Bank in the assessment of best practice options to address the disparities in demand (and consequent broadband access) in locations that do not provide sufficient commercial incentives for investment. The best practice options should, as far as possible, provide for a comprehensive, generally applicable and sustainable approach to the issue. The options should take account of the e-targets and the potential optimal role of EU structural funds to ensure their sustained viability. The best practice options will reflect the specifics of Lithuania but will also draw on the experiences of other regions in the EU .

In developing the best practice options, we will assess potential sources of co-finance and partnerships. We will pay particular attention to the co-financing requirements of the Structural Funds in assessing potential levels of financial support for the options considered including private participation and public-private partnerships.

The European Commission has emphasized the importance of the “local dimension” of the Information Society and has noted that concerted action “is required to promote a network of public access points, linked to initiatives to promote the training of users and to ensure that services and content are provided on the Internet which meet people's real needs ”. This raises the issue of demand for services that improve “everyday life”.

Various studies indicate that within countries, all groups, even the poorest, are increasing their access to and use of ICT. But within countries the "information haves" are increasing access and use at such an exponential rate that, in effect, the division within countries is also actually growing. When new technologies are introduced, the digital divide remains because only the "information haves" can afford to acquire, and have the skills to use, the technology quickly, and they derive exponential benefits. Because ICT can reward those who know how to use it with increased income and cultural and political advantages, the resulting digital divide becomes more apparent. Therefore, ICT disparities usually exacerbate existing disparities based on location (such as urban-rural), gender, physical disability, age, and, especially, income level, and between "rich" and "poor" countries. In this context the absence of sufficient demand for new services and the resulting absence of a supply response is a serious challenge to e-inclusion.

1.3 Approach and current status of the project

This section describes the deliverables as requested in the TOR and the approach to meet these deliverables. It also reflects the current status of the project.

Inception Report

We have reviewed the material cited in the terms of reference (especially the previous study supported by the Dutch CTF and the experience in other regions of the EU) plus other relevant material and have undertaken an initial “stock take”. Based on this analysis, we have prepared a brief Inception Report describing the overall situation, as it pertains to the project. This report was delivered to the World Bank in December 2005.

Initial Report

From 9-13 January 2006, we undertook a fact-finding mission to the District of Silute and 3 of its monitorings where we analyzed the prospects for:

- creating critical user mass within the public sector (e.g. local authorities, post offices),
- stimulating demand in types or ‘clusters’ of SME's,
- financing content, including e-government, particularly in local and regional government services,
- raising the digital skills of the population (e.g., training), and
- demand stimulation through forms of voluntary cooperation between businesses and consumers.

We also gathered information on current central government plans aiming at stimulating broadband services and networks in rural areas.

Based on the above and further research from experiences elsewhere, we have prepared an Initial Report. The Initial Report presents the following:

- Best practice options for the stimulation of demand for electronic communications services the definition of locations where there are insufficient commercial incentives to provide adequate electronic communications infrastructure,
- Best practice options for the types of electronic communications services which contribute to “everyday life”,
- Best practice options providing as far as possible a comprehensive, generally applicable and sustainable approach,
- The options to be presented will conform to the modalities of the guidelines.

Draft Final Report

Based on the output of the Inception and Initial Reports and review by the World Bank team, a Draft Final Report was prepared, containing:

- Technologically neutral best practice options regarding types of access to electronic communications infrastructure,
- Best practice options regarding potential sources of co-finance and associated ownership structures, and
- Best practice options regarding mechanisms for the optimal implementation of Structural Funds to provide a comprehensive, generally applicable and sustainable approach to achieving adequate access to electronic communications infrastructure in Lithuania.

Final Report

This Draft Final Report will be presented at a workshop to be held in Lithuania in March 2006, after which we will amend the Draft Final Report into the Final Report.

2 EU and state funding of regional ICT access

2.1 The European Commission's position on broadband

The European Commission believes that broadband access is an essential condition for the achievement of ambitions in the field of economic growth and development. Agreements on the achievement of these ambitions have been made in the so-called Lisbon Agenda¹. Therefore, the Commission actively promotes broadband initiatives in the Member States. The most recent example of this is the “Bridging the Broadband Gap” Communication² on further stimulation of broadband in less developed regions of the European Union. As a consequence, governments throughout the European Union are involved with broadband in some form or other.

However, the European Commission is also the guardian of the free European market (single market). When authorities enter this market, they may disrupt free competition. This may be the case, for example, when Structural Funds are being applied or when state aid is granted. Thus, the Commission is continually striving to find the right balance between the promotion of broadband and the protection of the free market.

Since the focus of this study is on rural areas where Structural Funds can be applied, the main part of this chapter will deal with Structural Funds. This chapter will end with some insights on the issue of state aid and some examples of both the use of Structural Funds as well as state aid.

2.2 Reform of the EU structural funds

The structural and cohesion funds in the period 2007-2013 will be administered differently to previous years. The objectives and instruments proposed by the EU commission will undergo a streamlining process, with a reduction of the nine objectives of the 2000-2006 period to just three objectives, and similarly a reduction in the amount of financial instruments (funds) from six to three, i.e. the European Regional Development Fund (ERDF), European Social Fund (ESF) and the Cohesion

¹ This is the strategy agreed upon by the European heads of government, with the object of making Europe the most competitive economy in the world.

² Communication from the Commission to the Council, the European Parliament, The European Economic and Social Committee and the Committee of the Regions: BRIDGING THE BROADBAND GAP, Brussels, 20 March 2006.

Fund. Furthermore, each regional program will now be funded by one fund instead of a mix between, for example, the ERDF and ESF. This will avoid bureaucratic inefficiencies and will make the funding process more transparent. It should be noted that infrastructure programs will be an exception to this rule, with such programs being eligible for funding from the ERDF and the Cohesion fund simultaneously. In general it is clear that the Cohesion fund will become more strategically aligned with the ERDF in the post 2006 period.

For the majority of the new Member States, including Lithuania, funding opportunities will be covered by the convergence objective for those regions whose per capita gross domestic product (GDP) is less than 75 % of the average for the enlarged EU. The convergence objective will also cover Member States whose gross national income (GNI) is below 90 % of the EU average and whom will consequently benefit from the Cohesion Fund. The convergence objective's aim is to speed up the economic convergence of less-developed regions by means of improving conditions for growth and employment by investing in human and physical capital, and encouraging innovation and the development of the knowledge society. The whole of Lithuania qualifies as a convergence objective region and is eligible for structural and cohesion funding under the convergence objective. The projected value of the convergence objective's total funds is EUR 264 billion for the 2007-2013 period.

The new regulations on structural funding provide clearer investment targets by the ERDF and the Cohesion Fund, with the latter no longer financing individual projects but priorities within joint ERDF/Cohesion Fund programs. In addition, cohesion funding priorities will be broadened to include energy efficiency, renewable energy, interpositional transport and urban and collective transport. The contribution of the funds to public expenditure will be subject to limits for the respective program priorities: 85 % for the Cohesion Fund; 75 % for the ERDF or ESF under the convergence objective, which will increase to 80 % for those countries also benefiting from the Cohesion Fund (Lithuania will fall into this category). Furthermore, increases are likely for inter-regional cooperation actions under the convergence and competitiveness objectives of +10%. The projected value of the convergence objective's total funds is EUR 264 billion for the 2007-2013 period.

2.3 ICT investment through Structural Funds

2.3.1 Various EU action plans and regulation

The principal source of financial support to electronic communications development in Lithuania 2007-2013 will come from the ERDF. The e-Europe 2005 Action Plan indicates that new infrastructure and services for ICT may be supported through structural funds in eligible regions, especially in rural and remote areas. The ERDF regulation includes specific provisions for rural areas where ICT access is lagging behind its urban counterparts. Even though Lithuania is entirely a convergence objective region, it is nonetheless important that structural funding should favor rural areas as inter-regional imbalances do exist there (although not as severely as in other EU countries). Co-financing rates for supporting electronic communications will depend on the type of investment. In principle a ceiling of 80% for programme priorities has been established for co-financing from the ERDF, while there is a ceiling of 85% from the Cohesion Fund. A cost-benefit analysis will be needed if the investment is likely to generate net-revenues and if this is judged to be the case, then for Lithuania the maximum aid rate will be 50% of total eligible costs³.

The guidelines on criteria and modalities of implementation of structural funds in support of electronic communications (European Commission, 2003) states that investments through structural funds need to go beyond commercial considerations and must take into account wider issues of public policy. The guidelines add that the role of structural funds is to enable less favored areas to come to the forefront of information society development by accelerating broadband deployment as well as ensuring greater territorial cohesion. The EU guidelines also point out that structural funds should support regions in strengthening the *demand* side of the Information Society, especially the capacity of firms and institutions to effectively use ICT. The guidelines highlight some methods that can be used to stimulate the demand-side of ICT services, including:

- modernizing the public sector and ensuring a critical mass of users in public administrations;
- stimulating demand in the private sector;
- developing content such as e-government

³ This percentage is derived from a ceiling of 40% of the total eligible cost in regions covered by objective 1, which may be increased by 10% in the Member States covered by the Cohesion Fund (EC Regulation on *structural* funds 1260/99, art. 29.4).

These options all have the potential to be financed through structural funding. In addition, the European Investment Bank (EIB) will also part-finance ICT projects that are supported through the structural funds subject to certain conditions.

2.3.2 Conditions for obtaining ERDF co-financing

Even given the importance of the demand side of the ICT development equation, strengthening infrastructure will still play an important part in any coherent strategy to provide access to all users in rural areas in Lithuania. There are a number of conditions for obtaining co-financing of electronic communications infrastructure from the ERDF. The first is that ERDF support should be linked and determined by the information society development strategy of the region. More specifically, infrastructure projects must be connected with the objectives of regional economic development, i.e. economic growth, regional competitiveness as well as a balanced distribution of economic activities. In addition, infrastructure projects should be based on an analysis of regional needs and opportunities identified in consultation with economic and social partners, taking into account specific economic and institutional conditions as well as the pre-existing infrastructure. The new national strategic reference frameworks will need to include an IS strategy describing Lithuania's principal operations that will lead to the drawing up of operational programs as set out in the 'community strategic guidelines on cohesion'.

Geographical targeting, which is a condition for ERDF support applies to regions that are not only physically isolated, but that are sparsely populated. ERDF support can only be given in those areas where there are insufficient commercial incentives for ICT providers to establish infrastructure necessary for advanced ICT applications and services of general interest. This is particularly relevant for rural areas of Lithuania where there is a lack of service content to generate the demand for broadband applications and hence a lack of broadband internet providers.

Another condition of ERDF support is that of technological neutrality, implying no unfair investment in any one particular broadband delivery technology. In Lithuania there are physical limits to the degree in which technologies can compete entirely fairly with each other. However, the fact that there is an incomplete range of technological solutions or limited cost effective technologies does not necessarily prevent competitive solutions for extending internet access.

There is additionally an open access provision, which is intended to ensure competitive conditions and reduce market distortion. ERDF support is granted to projects which comply with the regulatory framework on communications networks and services and competition rules (state aid and anti-trust). In this framework, support should be limited to infrastructure open to all operators and service providers. This also applies to the unbundling of access to the local loop, and hence funding dedicated to a specific final user may constitute state aid if this user is a commercial undertaking.

A number of key implementation rules exist for infrastructure projects that have satisfied the above conditions:

- Contracts should be awarded through open calls for tender,
- organisation should be at the appropriate regional level under the supervision of the relevant authority and with regard to national IS policy,
- financing should be restricted to costs that are inherent in establishing the service provision, and is to be limited to installations and equipment costs,
- the ownership of a subsidized infrastructure must not have a dominant market position, and can be either a public or private body or a partnership between both.
- infrastructure operators will have to develop a transparent method of accounting for all cost elements associated with relevant parts of the network, which will allow the calculation and justification of any compensation and/or subsidy in accordance with competition legislation,
- Regulatory authorities must be legally distinct and functionally independent from access providers,
- Lastly, the selection of appropriate projects should be carried out by the regional authorities.

2.3.3 Types of programmes

The types of programs that will be eligible for ERDF funding are those programs that deliver infrastructure development, as well as those programs that develop service applications and can stimulate demand. Targeted awareness programs aimed at users who can create the next level of ICT value will also be eligible for ERDF co-financing and in the case of rural Lithuania will be an important step to achieving the broadband penetration targets the country wants to see implemented by 2015. Moreover, according to recent studies, the ICT infrastructure in Lithuania is not in need of massive investment, which the structural funds alone would not be able to finance anyway. The situation in Lithuania is such that it is most likely that ICT infrastructures may only be needed in the unbundling of the local loop and therefore small-scale

infrastructure projects and demand-led approaches to ICT access may be more justified. As shall be detailed later in this paper, these types of local initiatives can also be funded through innovative bottom-up approaches based on the Leader programs of the European Agricultural Fund for Rural Development (EAFRD).

The financial support of the European Social Fund (ESF) for ICT access in Lithuania is of less potential value than the ERDF and the Cohesion Fund. The ESF may however, be used for training of ICT users through appropriate organizations at a regional/local level to help them develop the skills necessary to make the most of internet broadband services and to strengthen their employment opportunities. Finding solutions to the problem of the digital divide is a complex area, and the ESF can be used for funding collaborative efforts that may further explore new technologies and solutions, support mechanisms and personal experience and case studies in Lithuania.

2.4 The European Agricultural Fund for Rural Development (EAFRD)

2.4.1 Objectives of the EAFRD

The rural development policy of the EU in the period 2007-2013 will focus on three thematic areas, namely the agri-food economy, the environment and the broader rural economy. These thematic areas will be manifested in three axes:

- a competitiveness axis for agriculture, food and forestry
- an environment and land-management axis
- and a rural diversification axis.

Under the competitiveness axis a series of measures will target human and physical capital in the agriculture, food and forestry sectors and will encourage knowledge transfer and innovation. The environmental axis will offer measures to protect and enhance natural resources, as well as protecting nature values in farming and forestry systems and landscapes of rural areas. The third axis will aim to develop local infrastructure and human capital in rural areas. It also aims to improve the conditions for economic growth and job creation in all sectors and will strive to diversify rural economic activities. In addition to the three axes described, there will be a fourth axis called Leader and will be applied to the other three axes and their respective implementation programs. The Leader axis initiatives will be mainstreamed into the

EAFRD, so that each program will have a Leader element for the implementation of bottom-up local development strategies of Local Action Groups (LAGs).

2.4.2 Financial details and conditions of the EAFRD

The total availability of funds for the three axes and the leader axis will be EUR 96 billion (in constant 2004 prices) for the 2007-2013 period and financing will be based on differentiated appropriations. EU co-financing rates would operate at axis level and be subject to a maximum rate of 75% for axes 1 and 3 (only for those regions defined as a convergence region, including Lithuania), while axis 2 would benefit from a maximum rate of 80% (only applicable for those same convergence regions). There will also be a minimum rate of 10% that needs to be allocated to each of the axes 1 and 3 (25% for axis 2) to ensure there is a balance between the three general objectives. The Leader axis shall have an allocation of at least 5% of the EAFRD total contribution, except in those states such as Lithuania which will have more flexibility and will be able to phase in allocated funds over the programming period in such a way that on average at least 2.5% of the EAFRD total contribution is reserved for the Leader axis.

Examples of eligible activities under EAFRD rules include:

- fostering human capital by providing training and advice to farmers and foresters
- improving and developing infrastructure related to the development and adaptation of agriculture and forestry
- providing support for semi-subsistence farmers in the new Member States to become competitive
- agri-environment measures
- diversification to non-agricultural activities
- support for the creation of micro enterprises
- the encouragement of tourism.

In similar fashion to the EFRD there are conditions that need to be met in order for Member States to obtain co-financing for their operational programs. Each member state should prepare a rural development national strategy plan (NSP) constituting the reference framework for the preparation of the rural development programs in conjunction with Community strategic guidelines. Member States design their rural development programs for 2007-2013 by choosing from the menu of measures grouped according to the three policy axes and should choose the geographic level of

programming, i.e. either one national RD program for their territory or several regional programs covering the entire territory.

Each program will be based on an ex- ante evaluation and a SWOT analysis of the rural areas covered, and should be designed by the appropriate authority taking into account the results of stakeholder consultation. For each axis, quantified objectives should be determined wherever possible and if appropriate. Furthermore, each member state must set out how much it plans to spend on each axis, and the measures it wishes to implement and how they fit in with the national strategy plan. The national strategy plan should also be formed and monitored in partnership with all relevant regional organizations necessary.

2.5 Investment in ICT through the EAFRD

2.5.1 Legal context for ICT development

In the EU Rural Development Regulation (COM(2004)490) which sets out the basis for the operation of the EAFRD, there is specific mention made of the take-up of ICT in agricultural and rural contexts.

- Recital 46 for example states that there is a need to accompany changes in rural areas by helping diversify farming activities towards non-agricultural activities and by improving basic services, which will include local access to Information and Communication Technologies (ICTs)
- Recital 15 points out that the need for the training and specialization of agriculture and forestry will require an appropriate level of technical and economic training, including new information technologies
- the Community Strategic Guidelines (CSG) in guideline 1 encourages the take-up and diffusion of ICT in the agri-food sector while
- guideline 3 encourages take-up and diffusion of ICT for diversification and for encouraging the development of tourism.

2.5.2 National Strategy Plan (NSP) and Leader

Although it is not strictly required, it is advisable for the Lithuanian authorities to draw up a rural development national strategy plan (NSP) with a clear emphasis on IS development, which may form part of a national broadband strategy. Axes 1 and 3 are particularly important for the take-up of ICT as these axes offer the most scope for rural development programs that strive for the goals of competitiveness (axis 1) and wider rural development (axis 3) through increased ICT usage. The CSG also sets

target groups that ICT policy should be geared towards and include smaller businesses and ICT clusters as well as the previously mentioned agri-food, services and tourist sectors of the economy. The NSP should also reflect the unique circumstances of Lithuania's ICT profile and should be adjusted to take into account both supply and demand-side barriers to full-access. As the EU guidance template on "Establishing the National Strategy Plan" points out, EAFRD funding for ICT should be complementary to other commission programmes such as:

- i2010
- e-business, e-commerce, e-learning, e-skills

Each rural development program must include a leader measure for at least axis 3 for which an amount of at least 4% of planned program expenditure is reserved. The Leader axis is a thematic axis and can be applied to all the other axes, and is especially relevant as an approach to axis 3. The leader measure shall support the best integrated local development strategies presented by Local Action Groups (public/private partnerships) in the program area. The use of the Leader axis will be important for stimulating locally relevant, bottom-up and innovative approaches to increasing access to ICT in rural areas of Lithuania.

Axis 1 measures that could stimulate ICT development could be achieved through training rural stakeholders in the use of ICT for their businesses. For example, setting up young farmers will require training, including training in ICT, new technologies and entrepreneurial skills. Further measures may include developing e-business in the agri-food sector and initiating programs to raise awareness of the benefits ICT can provide when applied to rural and agricultural markets. The implementation of axis 3 is encouraged to be achieved as far as possible through local development strategies that may require collaboration between central and local authorities. Based on an analysis of ICT needs, Lithuania would select the measures to be applied and if necessary could choose to concentrate on capacity building for local ICT development. Axis 4 (or Leader) measures should seek to develop private-public partnerships through appropriate ICT applications, promote innovation, improve local governance and stimulate service content in general through bottom-up approaches. To be successful all the measures should try to maximize synergies in and between axes and moreover maximize the complementarity of the EAFRD with the other Community instruments, such as ERDF and cohesion funds. The Information Society Policy Link may be a useful tool for monitoring the synergies of ICT for agriculture and rural development.

2.6 Demarcation between EU funds

As a general rule, EU structural funding for ICT development (including access and demand issues) will be more likely if the programs and measures (infrastructure projects etc.) are on a large scale, whereas smaller scale projects including local development strategy measures will more likely to be successful through the EAFRD. The main guiding principles for which actions should be supported by which fund will be defined at the national level, i.e. definitions can be identified through the national strategic reference framework and/or the national strategy plan of Lithuania. There are also specific examples where a preference has to be made. For example, for two of the four measures in axis 3 of the rural development framework (basic services and tourism and crafts), the member state has to indicate whether it wishes to include them in its rural development programming (EAFRD) or in its Cohesion Objective 1 or 2 programming (EFRD, ESF, Cohesion Fund).

An overview of how the structural and EAFRD funds should work together is given by figure 2-1.

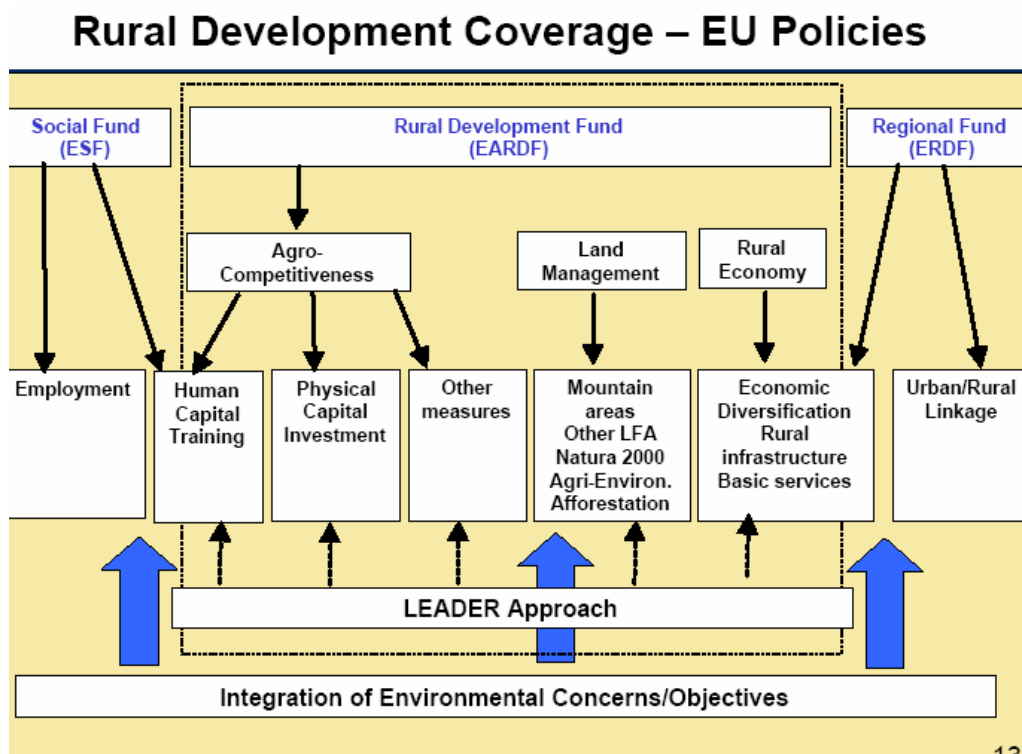


Figure 2-1 (Source: European Commission, 2004)

Under this framework, EAFRD Axis 1 (Agro-Competitiveness) measures in terms of human capital training are also eligible for ESF support. As the diagram further shows, the third axis of the EAFRD regarding rural economic diversification is an area that can also draw from the ERDF. As has been described already, Lithuania should make a decision as to which fund is necessary to finance basic services and tourism and crafts, two specific measures of the third axis of the EAFRD.

Figure 2-2 gives an overview of the funds and measures that should be used by Lithuania under the initiatives and guidelines set out by the EU in order to encourage the establishment of ICT infrastructure and services in rural regions.

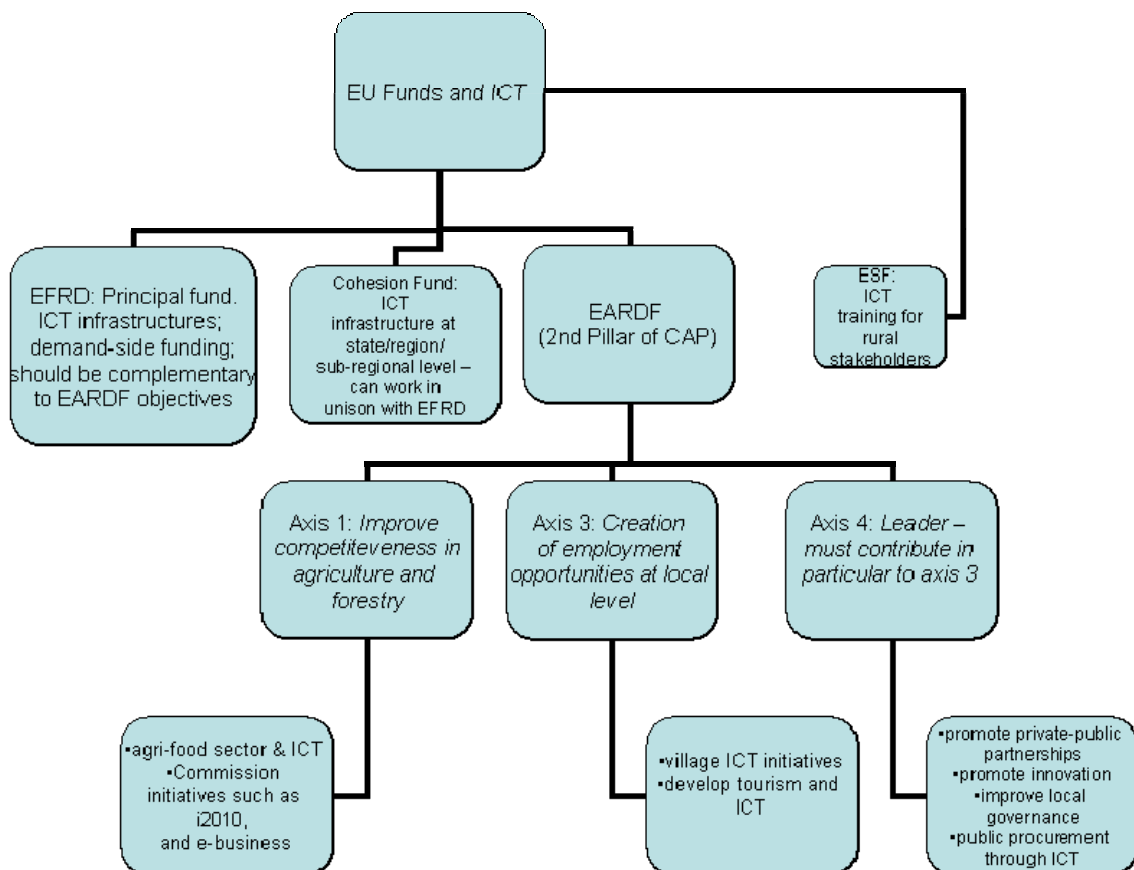


Figure 2-2: Sources of funding for regional ICT access

A clear strategy at the outset of the 2007-2013 period and at a priority level will enable the most efficient funding allocation possibilities for member states. The strategy plan

of Lithuania will be an important focal point for gauging whether the economic, social and environmental situation of Lithuania is aligned with the EU's objectives and guidelines for regional and rural development as set out in the Lisbon and Goteborg agendas and in EU strategic guidelines. Lithuania has to strike a balance between EU and national/regional priorities and clearly identify its strategy in its NSP and national reference framework, taking into account the capacity of the proposed measures with the capacity of the funding available.

2.7 Example European rural broadband projects

Since European Structural Funds may not cover all investments required for a rural broadband project, state aid may sometimes be required. Therefore it is important to look at the state aid rules of the Commission. As soon as an authority invests in a broadband project, state aid may apply. Whether or not this actually is the case, and whether or not this aid can be approved, will be decided by the European Commission (and, ultimately, the European Court of Justice). This paragraph lists some of the projects and decisions taken by the Commission in rural broadband projects in the recent past⁴.

Cumbria Broadband Project – demand stimulation

Under the Statutory responsibility of the North West Development Agency, a contractor would be chosen through an open tender procedure for a period of three years for the provision of broadband services through Cumbria and parts of North Lancashire. Both areas are characterised by mountainous topography and a general lack of densely populated villages. Payments for the provision of services under the project are provided by the public-funded regional development agency.

The project combines two elements of demand stimulation in order to generate the critical mass of demand to attract potential service providers:

- Provision broadband services to public buildings including local authority buildings, museums, libraries and fire-stations.
- A service contract for the provision of broadband services to residential users

The selected service providers will provide a number of broadband services to public authorities in the region and broadband services to residential users of at least the same scope, content and quality supplied on a national level to end-users.

⁴ Source: European Commission Digital Divide Forum Report, Broadband access and public support in under-served areas, 15-7-2005

When requested by any other potentially interested ISP, the selected provider shall provide the ISP with wholesale services allowing it to provide broadband services to end-users.

Services to the end-users will be provided at a capped rate equal to the cheapest available rates for the specific broadband service being offered on a retail basis to a majority of users at a national level.

Commission decision:

The Commission determined that, in this project, aid was being provided to service providers and end users. This aid scheme was declared compatible with the common market for a number of reasons, including the fact that the scheme met the criteria laid down in the Transparency Directive, as measures had been taken to counteract overcompensation and cross-subsidization, and because the project for which aid was provided promoted the development of remote and rural areas.

Spanish national broadband strategy (N 583/2004)

By means of an aid scheme called “Programa de extensión de la banda ancha en zonas rurales y aisladas”, Spain aims at supporting the provision of broadband services, at conditions and prices similar to urban areas, in certain rural and remote areas, which are currently not served and where there are no plans for coverage in the near future. The notified measure is part of the Spanish National Broadband Strategy. The measure is partly funded by structural fund and partly by resources of the Spanish central government

The Spanish government envisages covering approximately 203,000 households and businesses, at an average cost per user of € 1,000. According to the calculations of the authorities, the overall cost for achieving this coverage will be in excess of € 203m (€ 175m of which in objective 1 regions), of which most is to be borne by the selected service providers.

State funds will contribute to the overall costs via direct grants and interest-free loans. Both instruments can be applied in specific projects, depending on the request by the proponents, based on the financing characteristics of each project.

As a result of the State contribution, the selected providers are likely to build or upgrade new or additional infrastructure and communications equipment necessary to offer the retail broadband service connecting end-users in the concerned areas.

Commission decision

In this case, the European Commission approved the Spanish National Programme for the roll-out of broadband in rural and remote areas. Although state aid was involved, this was considered compatible with the Treaty, since the subsidy granted was considered necessary to ensure that rural and very remote areas gained broadband services. The program met the starting points laid down in the Lisbon Strategy (for the first time, reference was made to the i2010 initiative, which succeeds the eEurope Action Plan 2005) and was proportional. Selection by means of invitation to tender, technological neutrality and non-discriminatory access for third parties are elements that contributed to a positive assessment.

Regional Innovative Broadband Support in Wales

The Regional Innovative Broadband Support scheme aims at supporting the provision of first generation broadband services to connect end-users (households and businesses), at conditions and prices similar to urban areas, in the so called “blackspot” areas of Wales. These areas are currently not served and there are no plans for coverage in the near future. The measure is part of the Broadband Wales Program, which feeds into the National Broadband Strategy of the United Kingdom.

The project aims at service provision and does not prescribe any technology. It is up to the service providers to build, buy or lease the necessary infrastructure and to provide the necessary equipment to provide the service.

The selected providers will have to offer wholesale access on a non-discriminatory basis to other operators and service providers wishing to connect customers.

The measure is partly funded by structural funds and partly by resources of the Welsh Assembly Government. The selected providers are expected to contribute a sizeable amount of the total project costs, including 50% of the capital and all the operating costs. Moreover, a rebate mechanism, under which a progressive reimbursement of the public funding is expected to take place as demand for services picks up, ensures that only the minimum necessary public funds are used.

Commission decision:

The aid scheme for broadband was approved. Again, this scheme involved an area without any existing broadband capacity. The Commission applauds the fact that the project will provide electronic access to this area. Naturally, this includes a freely accessible network and technologically neutral procurement. The objectives of the program are in line with the Lisbon Strategy. A new aspect is the approval of the aid granted under the so-called regional aid framework (rules for aid to underdeveloped

regions). In addition, the Commission indicates that the schemes are being (correctly) co-financed from the Structural Funds.

2.8 Summary

European Structural Funds can be used to start infrastructure deployment projects in Lithuania on the basis of the “Guidelines on criteria and modalities of use of Structural Funds for electronic communications”. The guidelines are based on competition rules and on a regulatory framework to ensure that public support does not distort competition. Public investment in the supply of open access broadband infrastructure in Lithuania should also go hand in hand with national strategies for demand-side solutions. The initiatives to stimulate demand for broadband services in Lithuania should include measures such as demand aggregation and connecting all public administrations, which improve certainty for investors. This also increases usage by the general public and will help remove barriers to the development of new innovative content.

Developing demand-side policies at a *local* level in Lithuania should also be a priority so that commercial incentives for broadband providers are more quickly realised and to encourage relevant service content. The Leader methodology of the new EU rural development regulations with the support of the European Agricultural and Rural Development Fund (EARDF) will play a key role in sustaining local strategies and implementing measures to this effect.

At the *national* level it is possible to use the Structural Funds and the EAFRD for various purposes, if Lithuania wishes to do so. Structural Funds regulations provide the possibility for investments in IT-infrastructure, in hard- and software for farmers and enterprises, in training, in e-services etc. All these investments can be to the benefit of the rural areas.

3 Supply and demand in rural broadband

3.1 Introduction

Demand and supply of rural broadband is a classic ‘chicken and egg’ dilemma. The private sector will be of the opinion: “why should I invest in broadband services in rural areas; there is no demand anyway?”. If you ask citizens in rural areas to imagine what they could do with broadband they will say: “Why think about it, we cannot get it here anyway?”. National and local governments can play an important role to break through this discussion and, as can be concluded from the previous chapter, the European Commission wants to stimulate breakthroughs as well.

This chapter elaborates on supply and demand side mechanisms and the roles governments can play.

3.2 Potential roles of the government in supporting supply and demand

In case the market fails, governments may want to stimulate the supply-side (top-down), the demand-side (bottom-up), or both.

Supply side

A typical supply-side approach is to implement a broadband backbone, interconnecting the main centers of the rural areas from which these rural areas can be connected. The main challenges of this approach for a government are:

- How to solve the ‘last mile’ problem, connecting all houses and businesses at reasonable cost?
- Opposition from incumbent operators
- Convincing citizens that broadband can contribute to their quality of life and that it is worthwhile to subscribe (and overcome barriers like buying a PC)
- Convincing other end users like hospitals, schools and businesses that broadband applications can reduce their costs and may provide additional opportunities

Demand side

The demand side approach is at this moment less widely used, but gaining popularity. It fits the EAFRD Fund’s LEADER program very well (see chapter 2), supporting

Local Action Groups. The role of the Government is more supportive in this case. Examples of demand side initiatives:

- Initiatives to connect the public sector (schools, public administrations, hospitals) or the private sector (SME's, citizens) by demand aggregation. The Government can provide funds (e.g. via LEADER) and/or technical assistance for Local Action Groups.
- Financial stimulation to end users for e.g. broadband services, PC's (or other devices to access broadband services and/or training
- Initiatives aiming at increasing usage in the public sector (e-government, e-health, e-learning)

In this document, we will use the term 'demand stimulation'⁵ for this approach. The main advantage of the bottom-up approach is that –given that a sufficient number of citizens and businesses indicate they want broadband- they can go to the private sector and request offers for broadband services. If the private sector does not want to offer, further action may be required. In practice, Local Action Groups have gone as far as building their own network (i.e. in Sweden and The Netherlands) as the private sector was not willing to invest.

Supply and demand side

The supply and demand side approaches can be highly complementary for rural areas. The supply side approach pushes broadband to rural areas and the demand side approach pulls broadband into the rural areas.

It is impossible to give a general approach for bringing broadband into rural areas and to predict where supply and demand will meet. This very much depends upon the local market situation. In practice, several approaches have developed in the EU for rural broadband. The next section will provide an overview of best practices in broadband networks and in section 3.4 we will elaborate on broadband services.

⁵ We use the term "demand stimulation" in this document for the principle that potential end users of broadband services are being identified or even virtually subscribed to a service before it can be delivered. The purpose of demand stimulation is to create a user group in a certain geographical area that is large enough to justify the investment to actually start offering the service in that area. Demand stimulation is a "bottom-up" mechanism, often driven by citizens, local governments or social organizations. In literature, this principle is also referred to as "demand bundling" or "demand aggregation".

3.3 Best practice models for broadband networks

Every broadband project is different. Political ambitions and policy objectives may vary, as well as regional context and local supply and demand.

There are a wide range of broadband projects, in which the extent and form of municipality, community and private sector involvement varies considerably.

Therefore, each project is unique to a certain extent. The projects vary in terms of the role played by the authorities involved and in terms of project management, organization and implementation. The way in which projects are embedded within the local environment and context varies too. Although, ultimately, each project opts for its own specific structure and organization, four main models can generally be distinguished⁶:

1. the demand stimulation carrier-owned model ;
2. the demand stimulation customer-owned model ;
3. the partnership model or public-private partnership model (PPP);
4. the public, managed dark fiber model .

Model	Explanation
Demand stimulation carrier-owned model	1. Municipality : The municipality stimulates demand, but does not invest in the infrastructure.
	2. (Semi-)closed user group: A user group attains user rights within the carrier-owned model, often geared towards public institutions. This user group usually initiates demand stimulation.
Demand stimulation customer-owned model	1. Together, various public (and private) parties construct a managed network for their own use. The participants themselves are responsible for the development of the active infrastructure layer and the service layer ⁷ .
	2. Cooperative ownership, as part of which the members construct a network.
Public-private partnership model (PPP)	A government is a co-investor, launches an open tender for the construction and management of the active layers and regulates (open) access to the services layer.
Public managed dark fiber model	A government institution instructs the construction of a dark fiber network and leases access to customers and operators in the active layer. In practice, there are many variations on this model.

⁶ Source: "Goed op weg met breedband", Netherlands Ministry of Economic Affairs et al., 2005

⁷ In the section below, the layers will be explained in the layers model.

Different roles and its effects on the value chain

In theory, there are various roles that initiators of broadband projects can take upon themselves, such as a driving role, or the role of initiator, demand aggregator, director, investor, operator, etc. The specific role chosen will directly influence the organization of the value chain for broadband networks. The competitive environment in the value chain may vary considerably at different levels: from full competition to monopolization. Thus, the specific role within the value chain influences market relations. For example, when a municipality invests in the passive network, it actually becomes a player in the market for infrastructure providers.

To be able to determine the appropriate role and the corresponding broadband model, it is useful to distinguish between the various functional layers. Three functional layers can be distinguished (Figure 3-1), which together form the value chain for the network:

1. The 'passive infrastructure' layer. This is the first and lowest layer, and comprises the underground cables (pipes), dark fiber optic cables and equipment rooms;
2. The 'active infrastructure and switching' layer. This second layer uses transmission capacity from the first layer and supplies transmission services to the third layer. The second layer contains the active equipment set up in the local exchanges, such as optical ports, switches ('exchanges') and routers;
3. The 'access services and applications' layer. This third layer comprises (access) services, such as the activities of Internet Service Providers (ISPs). Service Providers provide access services to the suppliers of applications, such as access to the Internet, television, Video-on-Demand or telephony. So-called content providers supply the actual content and end-user services.

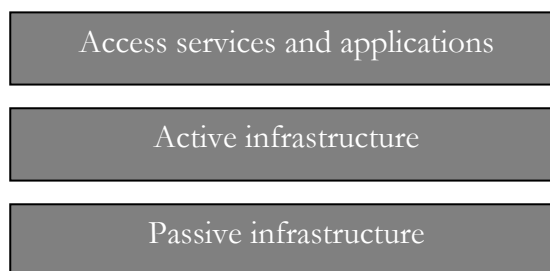


Figure 3-1: Three functional layers in the broadband value chain

In general, as much competition as possible should be achieved in and between the various layers of the value chain, and indicates that primary responsibility for investments lies with the market. In practice, this results in the recommendation that different independent parties be active in the various layers and in competition with each other. This does not mean that one party cannot be active at more than one layer. This competition facilitates an optimum price-quality ratio for consumers. The situation in which one party is active in a number of adjacent layers of the value chain is also referred to as ‘vertical integration’.

In practice –and especially in rural areas- competition is not always achievable at every layer of a broadband project. Where this situation arises, granting a concession to just one party in certain layers is an option. When granting a concession, sufficient guarantees should be built in, for example concerning the price level (cost-oriented) and access conditions (open standards).

3.4 Best practices in rural broadband services and applications

The EU has emphasized that “services and content should be provided on the Internet which meet people's real needs”. This raises the issue of demand for services that improve “everyday life”. Since “everyday life” is different for everyone, it is impossible to provide a full list of services interesting for everyone. This section will provide some examples of services and applications that might be suitable for rural areas.

We strongly believe that it is important for any demand stimulation project to focus on visionary individuals and communities (teachers, religious community, etc.) in rural areas that see the opportunities broadband services can bring. These individuals and communities need to be made aware that they can be in control of their service. Practice (e.g. in the Nuenen project) has shown that if a handful of individuals (maybe including the priest, head of the school, chairman of the basketball club, local doctor, etcetera) start advocating their service, the demand stimulation process really works.

Education

Sick children or children in remote areas could benefit from e-learning. Children in rural areas could virtually visit specialized schools in urban areas.

E-government

Municipalities can provide online multimedia information, making the municipality better accessible and more transparent. The national government could do the same. This will make the citizen better informed and might save traveling or phone calls.

Culture and tourism

With a broadband network everyone in a rural community can start a TV station. Video content from the own country and even the whole world becomes more and more available on the internet. Tourists will increasingly find it important to be connected during their holiday as if they were home.

E-business

For businesses and many public institutions (i.e. banks, insurance companies, shops), it is not efficient to have representative offices in rural areas. These virtual shops can be visited online and may save travel costs and time.

On the other hand, having broadband enables knowledge intensive businesses to operate in rural areas with apparent benefits for the local economy.

Care

Elderly people living alone can feel safer if they can rely on an alarm service where they can have visual contact with a nurse.

Health

Patients can have remote video contact with their local doctor or specialist in a far away hospital.

Religion

Religious people can virtually visit the church mass or any other mass where a webcam is recording. When found appropriate, local weddings and funerals can be seen all over the world.

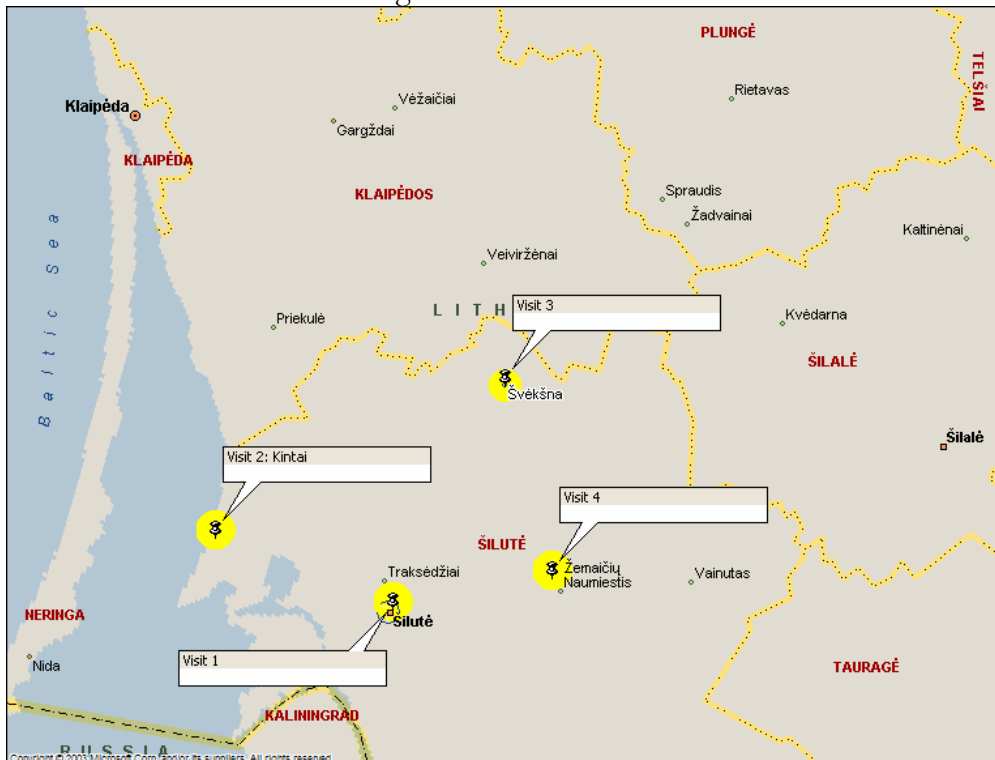
4 Fact Finding Mission

4.1 Approach

The team undertook a fact finding mission to Lithuania during the period of 9-13 January 2006. The main objectives of the fact finding mission were:

- 1) To gather data on current plans of the Lithuanian government concerning rural broadband services and networks and the use of European Structural Funds for broadband.
- 2) To gather data on current plans and ideas on broadband networks and services in a selected rural area (the district municipality of Silute), with a special focus on demand stimulation

Map 4-1 indicates where these villages are situated.



Map 4-1: Villages visited in the Silute district

For the rural visits, we requested (and obtained) an audience representing not only the local municipality administration, but also citizens representing groups with various social interest like doctors, teachers and priests (see picture 4-1). Our idea was to test whether the idea of demand stimulation would attract special interests from some of these groups. We expected the concept of demand stimulation to be a new concept for most of the audience. Therefore we decided to present a successful case of demand stimulation to the audience for inspiration purposes. We used the example of the village of Nuenen in the Netherlands. This project was initiated and executed by Close The Gap, one of the partners in our consulting consortium.



Picture 4-1: Workshop in Kintai (Silute)

The Nuenen case: the Connected Community

The Nuenen case is a successful example of demand stimulation in the Netherlands. The situation in Nuenen is not comparable to any of the villages visited in Lithuania, in the sense that there was no market failure in Nuenen. Both the incumbent telephony operator (KPN) and cable operator (UPC) were offering broadband services to the village. Inspired by a subsidy of the Ministry of Economic Affairs (that wanted to create a test bed for real broadband services requiring Fibre-To-The-Home (FTTH)) and growing unhappiness with the services and attitude of the incumbent operators, the citizens of Nuenen joined together to create their own local fibre-based infrastructure.

The initiators of the project saw that it was of crucial importance that the citizens of Nuenen co-own the network to create maximum participation. Therefore they chose for the customer-owned, demand stimulation, business model. Another crucial element for maximum participation was to communicate not only to 'Internet-haves', but especially to 'Internet-have-nots' like elderly people and explain to them in simple terms how broadband can help them in their personal lives, i.e. in communication with doctors, watching church masses, etcetera.

Nowadays, 100% of Nuenen is connected via FTTH and 80% of the citizens have subscribed. The municipality, including the priest, sports clubs and teachers are starting to think how they can use the network for their purposes and volunteers have started a local TV service. Large companies like banks and insurance companies are showing great interest for improving the interaction with their customers. And last but not least, the incumbent operators are forced to re-think their strategies.

4.2 Main findings on Lithuanian Government plans

4.2.1 Rural Broadband in Lithuania and goals of the Government

Compared to other EU countries, broadband penetration in Lithuania is quite low, as can be concluded from figure 4-1. But in areas in Lithuania where broadband is available, penetration is increasing rapidly. For example, former fixed line monopoly operator Lietuvos Telekomas (LT) announced in a press release that it has signed up 100,000 DSL subscribers by end 2005, up from 50,000 a year ago, which means a 100% increase.

EU25 Broadband penetration rate - January 2005

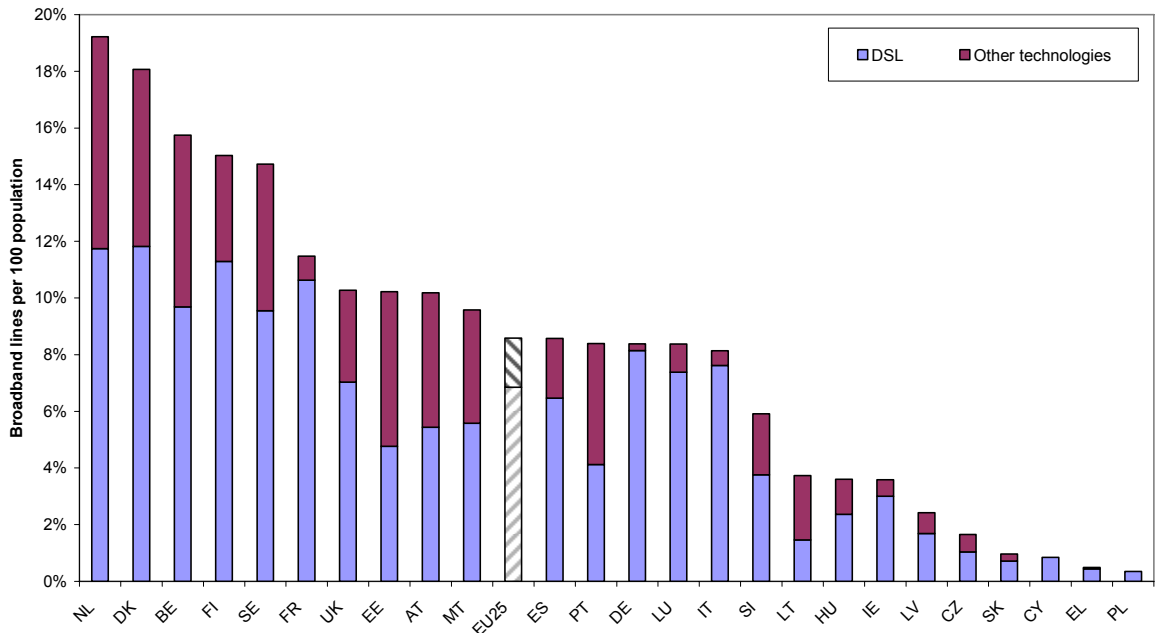


Figure 4-1: Broadband penetration rates in EU25 (Source: European Commission Digital Divide Forum Report, 2005)

However, this growth in broadband connections is mainly caused by an uptake in urban areas. Broadband is still not present in rural areas. Therefore the digital divide in Lithuania is not decreasing – on the contrary. For the incumbent operators, rural areas are not appealing to invest because of geographical spread of people and limited spending power, leading to high costs and low revenues for these areas.

Table 4-1 clearly shows the difference in potential broadband access between urban and rural areas in Lithuania where broadband is available for 99,8% of the population in the cities, only 45% of rural villages with more than 500 inhabitants and only 2% of the population in villages with less than 500 inhabitants.

Category	Number of inhabitants	Number of localities	Potential access to broadband communication			
			Number of inhabitants	%	Number of localities	%
Cities	2,297,635	103	2,292,669	99,8%	98	95%
Villages	1,148,102	21,826	182,061	16%	194	1%
<i>Villages/ towns > 500 inhabitants</i>	371,779	393	166,373	45%	133	34%
<i>Villages/ Towns < 500 inhabitants</i>	776,323	21,433	15,688	2%	61	0,3%
TOTAL	3,445,737	21,929	2,474,730	72%	292	

Table 4-1: Broadband in Lithuania (source: Ministry of Transport and Communications)

The Lithuanian Government's broadband communications strategy for 2005-2010 is based on:

- The objectives defined in Lisbon as well as the Action Plan of the European Commission "eEurope 2005: an Information Society for All"
- The goals specified in the long-term strategy for the development of the economy of Lithuania till the year 2015, approved by the Decision No. 853 of the Government – to create a knowledge society by means of developing the informational structure, the infrastructure of state governance and self-rule institutions as well as by reforming the provision of public services in such a way that the information needed for business and the activities of the inhabitants were accessible through computer networks.

The Government has defined two specific objectives under this strategy:

- 100 percent of public administration institutions and offices shall be connected to broadband communication networks by 1 January 2008.

- all the small and medium enterprises as well as inhabitants shall be provided with the possibility to connect the existing broadband communication networks covering 98 percent of the country's territory by 1 January 2010.

The move towards a more knowledge-based economy is now one of Lithuania's priority objectives. To support this move, it is important that the digital divide between urban and rural areas is gradually eliminated. The Government has foreseen that public intervention is required to reach this goal.

4.2.2 Rural/regional ICT access

In 2002 a private business initiative "Windows to the Future" has started to put up Public Internet Access Points (PIAP's) in rural areas. In three years time, through this initiative some 175 PIAP's have been established, mainly in libraries or other public buildings in rural areas. The aim was to ensure that rural residents don't have to travel more than 8-10 km. to the nearest PIAP, and thus internet access would be possible for every citizen of Lithuania. This initiative has been followed up by Lithuanian government, using the PHARE 2003 Social-Economic Cohesion Program. With the help of PHARE-means another 300 PIAP's have started their operations through an investment of approximately € 3 mln.

Under the 2004-2006 Structural Funds Program 400 more PIAP's are foreseen, bringing the total by the end of 2008 to 875.

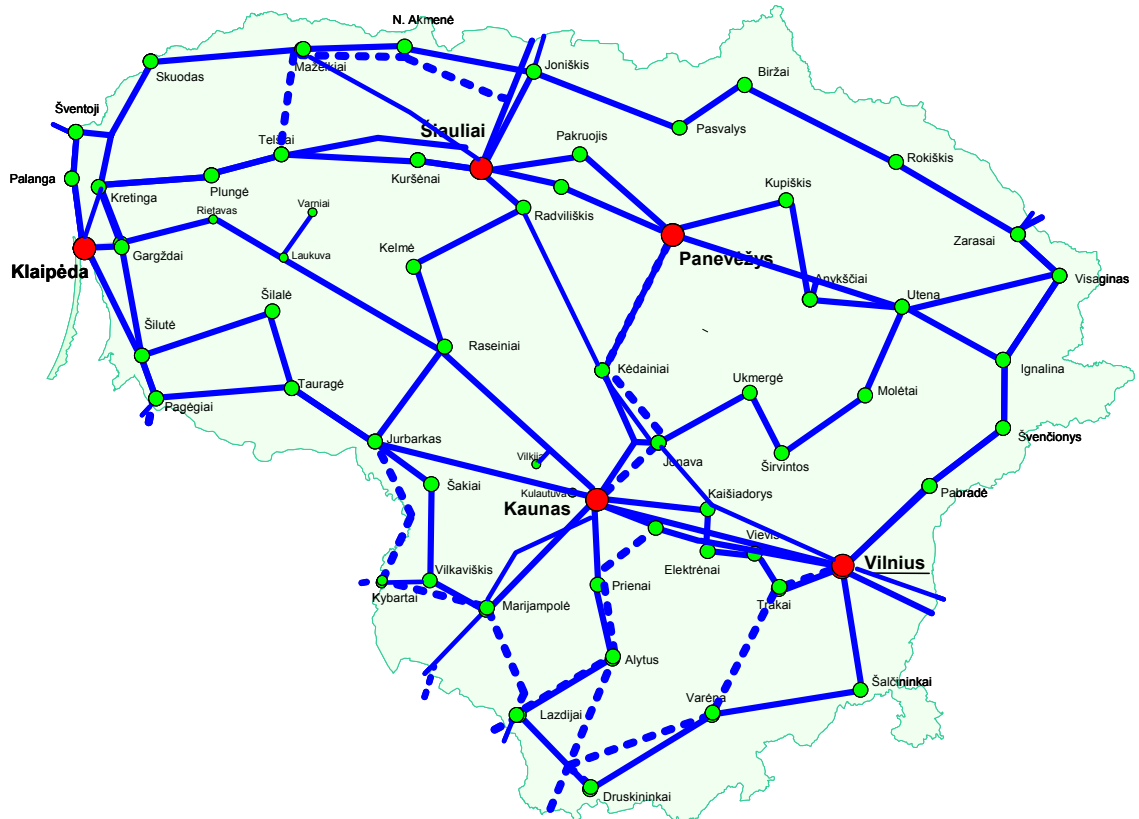
At the moment (February 2006) a survey is being conducted to the use of PIAP's in practice. Results are expected shortly after finalization of this report.

In order to meet the policy objectives for rural ICT, the Lithuanian Government has established 'Placiajuostis internetas' in September 2005. This public company (100% owned by the Government) has the following main goals:

- "To meet public interests by connecting public sector institutions in rural areas and creating possibilities for connecting members of communities of rural areas to broadband infrastructure by effectively and suitably using investments"
- "To present, collect, analyze and publish social economical information, arrange trainings, publish information, methodical and similar publications, prepare and administrate projects"
- "To implement project RAIN according to agreement No. MII-SMM-SM-Nr.1/5-17-3-53/SUT-463, 26 May 2005"

The RAIN project (last bullet) stands for Rural Access Information Network. It is a plan to bring high speed optical links into rural areas of Lithuania. The RAIN project uses as much as possible existing optical infrastructures of incumbent operators and builds its own infrastructure where required. In total, the project will add 3000 km to

the existing 5000 km already available in Lithuania (see also map 4-2 for existing optical infrastructures). The project is partially subsidized by EU funds for a total amount of 53 million Litass (approximately 15 million Euros).



Map 4-2: Current optical infrastructures of Lietuvos Telekomas, Lietuvos Energija and Lietuvos Gelezinkeliai

4.2.3 Plans for using European Structural Funds

As stated before, the use of Structural Funds for improving internet access in rural areas is already a practice in Lithuania. The PIAP's and the RAIN project are partly financed through EU Structural Funds. For agricultural development it is possible under the present Agricultural and Rural Development program to subsidize farmers to buy PC's and software.

As PHARE has come to an end and the 2004-2006 Structural Funds Program is being implemented, focus should now be on the upcoming Structural Funds programming period 2007-2013. In Lithuania, preparations for this new programming period are now in full swing. Lithuania has prepared a draft of the National Strategic Reference Framework⁸ (NSRF) 2007-2013. In this draft-NSRF the following description can be found (page 27): “When developing ICT infrastructure, the main attention will be accorded to the needs of the “last mile” of the broadband connection, its accessibility in peripheral territories of the state characterized by lower competitiveness”. Thus, the supply of broadband in rural and peripheral areas should be taken up in the Program.

The main structures and models for IT-investment under Structural Funds (ERDF, ESF and (though formally not a Structural Fund anymore) EAFRD) were described in chapter 2. This paragraph deals with the current plans and ideas from the most relevant institutions on the state level in Lithuania. It is based on interviews and documents from the Ministry of Transport, the Ministry of Internal Affairs, The Ministry of Agriculture and the Information Society Development Committee (ISDC).

Administrative structure

Attention to IT development in rural Lithuania and the possibilities to use Structural Funds has certainly increased when compared to the situation about 2 years ago. A World Bank study on the Knowledge Economy has noted the absence of overall leadership in for ICT and the Knowledge Economy. Lithuania (the ISDC) has made some progress since then, but there is still some way to go to achieve optimal results for Lithuania. Therefore the general impression is that the EU-funds offer various opportunities to stimulate IT-access in rural areas, and that is more a matter of organizing ‘smart combinations’ on the State level through cooperation between ministries than a matter of finding the EU-money.

The rural development angle

The EC places great emphasis on a more competitive agricultural sector and on a wider development of rural areas. For both objectives IT is an important instrument, and the new regulations offer ample opportunities for funding (see 2.5). For the 2007-2013 period the Ministry of Agriculture intends to allocate most of the EAFRD-budget (around 16 billion Litas/4,8 billion €) to the restructuring of the agricultural sector (competitiveness axis, 41%) and the environment axis (42%). For wider rural development (axis 3) the ministry intends to allocate the EC’s minimum requirement of 10%. For Leader the Ministry reserves 5%. It should be noted that this allocation has not been finally decided yet. More specifically regarding IT-

⁸ National Strategic Reference Framework, Lithuania, 2007-2013. Draft 14 March 2006

investment support the Ministry is focusing on subsidizing IT-investments under the measure 'creation of micro-enterprises'.

IT-investments and more specifically Internet access are being regarded by the Ministry as means to improve the quality of life in rural areas. This is confirmed by the strategies that have been developed by the Local Action Groups (LAGs) under the LeaderPlus initiative. Out of the total of 33 LAGs covering most of Lithuania, 27 LAGs have submitted a rural development strategy for their area in the hope to get further support for implementation. There's budget for 7 LAGs, which might be increased to 10 LAGs. Under the 2007-2013 program there may be more opportunities.

One should realize that the lack of proper IT-infrastructure in rural areas is not the only reason why IT-development is lagging behind. It is also a question of income levels. These tend to be lower in the rural areas, meaning that only a limited number of inhabitants is able to purchase hardware and software, notwithstanding the stimulating tax rules on this (such purchases can be deducted from personal income tax once every three years). Therefore, rural and regional development policy should not only focus on IT-accessibility but also on raising the level of income in general, which is the ultimate objective.

The IT angle

The ISDC and the Ministry of Internal Affairs approach this topic more along the IT-line. The Ministry of Internal Affairs is mainly concerned with e-governance and all that comes with it. At the moment for instance feasibility studies are in progress on possibilities to use IT for the registration of residence, personal documents, e-identification and birth certificates and so on. If these feasibility studies come up with a positive result, the idea is to allocate means from the Structural Funds for these purposes. This should also apply to municipalities in rural areas, possibly through the RAIN-project.

Another important initiative in this respect is awareness raising in all of Lithuania. For this, in each of the ten districts of Lithuania, a coordination centre will be established.

The ISDC is in charge of the future Information Society sub-program under the 2007-2013 Structural Funds Operational Program. At this time it is expected that there will be a budget of approximately 800 million Litas (around € 240 mln.). This sub-program will be further elaborated by a working group in which all relevant ministries are involved (including Ministry of Agriculture).

Three priorities are defined for this sub-program:

1. e-content and e-services;
2. infrastructure (RAIN-2, last mile);
3. innovation

The budget allocation is not known yet, but it is expected that a major part of the budget will be allocated to the first priority, whereas in the second priority the last mile in rural areas (through RAIN-2) will be most important. The sub-program has to be finalized by July 1st.

Bringing it together

As can be seen from the previous, there are various initiatives and ideas to use the EU-structural funds for IT-development in Lithuania's rural areas in particular and raising income levels in general. All three major weaknesses of the rural areas (insufficient IT-infrastructure, lack of awareness and income level) can thus be addressed, and through the LEADER-axis bundling of demand can be organized. One can always argue about the exact allocation of budgets, but the fact remains that in principle the EU-funds will be used.

More important is how this will be organized. The main challenge for the upcoming period is to bring it all (demand and supply) together. This will require good cooperation on the local regional level (with the LAGs in charge), the state level (with ISDC as the most likely coordinating body) and between the local level and state (with a central role for RAIN). This will be elaborated further in the next Chapter.

4.3 Main findings in rural areas

During the fact finding mission, we have had 4 sessions in the Silute region

- One session with the administration of the District Municipality of Silute
- Three sessions with the 'monitor' and representatives of local community (teachers, priests, doctors, etc.) in Kintai, Sveksna and Zemaiciu Naumiestis (picture 4-2).

We learned that broadband is hardly available in Silute district. Internet access is available for the public in around 50 public internet access points mainly in schools and libraries. The Silute Municipality administration has a 2 Mbit/s internet connection and some companies are connected. The municipality has a website and is welcoming about 2000 digital visitors per week. Some of the villages in Silute District like Zemaiciu Naumiestis have no public internet access point at all.

There are 39 schools in Silute with 10.000 pupils and 35 of them have (limited) internet access and are actively using it for education purposes. For every 19 pupils, one PC is available. We learned that the PC hardware is generally old and relatively expensive. It costs an average Silute citizen about three months typical salary (which is 1000 Litas per month) to buy a PC. This forms a major threshold for further PC penetration in the region.



Picture 4-2: Zemaiciu Naumiestis

Our goal was to get a feeling for the current demand for broadband services and whether a bottom-up approach, using demand stimulation could potentially work in rural Lithuania. By presenting the Nuenen case, we hoped to inspire the participants with the idea that demand stimulation and support from the government and EU can help them to get broadband into their community, if they really want it. Mr. Liaugminas of 'Placiajuostis internetas' also introduced the RAIN program to the participants. The main message we tried to get across was: The government is pushing broadband into rural areas, if you help by pulling it towards you this will definitely speed up the process.

We were positively surprised by the enthusiasm and feedback we got from our presentation. We found the participants in the sessions very open to change and eager to take control of their own situation (the enthusiasm in Kintai was striking). When we explained the principle of demand stimulation and the help the community could get from both the EU and the Lithuanian government via RAIN to support broadband in their community, this was very well received. In Kintai, the “local action group” was formed on the spot.

Although our initial idea was to get some feedback on the broadband services that participants would find useful for their community, we found that the audience was not yet ready to contribute to feedback. We had taken the audience through the first step, which was to make them aware that a connected community is possible in Silute, but it was too early to take the next step and talk about services immediately. However, we did receive some questions and ideas:

- Most of the questions were about costs. What will a broadband service cost and will it not be too expensive? People in Lithuania want good value for money.
- One teacher in Sveksna immediately saw the possibilities of broadband for tele-education. Her school has about 30 children that are not able to attend school regularly, so the teachers visit them. This workload could be reduced if they could use tele-education.
- The question: “We see the benefits of broadband and like what you showed us, so what do we do now?” was asked during two sessions and is a clear indication of the willingness to act.

Last but not least, the audience in general seemed to be very much aware how broadband services could contribute to solving some of the challenges of a rural society, like:

- Supporting care services for elderly since the rural population is aging
- Provide more perspective for young people in rural areas in order to stop their migration to urban areas
- Make life a bit more comfortable by connecting to Open Digital Society and profit from the benefits this can bring to the community
- Make the region more interesting for tourism

4.4 Main conclusions from the fact finding mission

The Lithuanian Government has started the RAIN project to bring broadband into rural areas. We believe that the demand stimulation mechanisms can increase the success chance of the RAIN project in the sense that penetration rates can grow more rapidly.

We found a sense of enthusiasm and urgency for broadband services in the Silute region and believe therefore that the main ingredients for local initiative and demand stimulation are present. The citizens of Silute are aware that rural broadband can be instrumental in solving some of the typical problems of rural societies.

Given the income levels in rural Lithuania, the costs for broadband should be kept low and government policy should not only focus on broadband, but also removing other cost barriers like hardware (PC's etc) and training.

Lithuania intends to use the possibilities the EU-funds offer for IT-development. However the rural economy focus seems to be more on the agriculture sector and land use rather than on modernization of IT-infrastructure. Through the LEADER-axis, bundling of demand at the local level should be possible as this has already been demonstrated in other countries.

The major challenge for the future is more about organizing this process than about the use of EU-funds. And organizing means at state level and local levels as well as between state and local level. It seems to us that all relevant institutions are well placed, and that it comes down to the willingness to cooperate.

5 How to use Demand Stimulation for Rural Broadband Development with EU Structural Funds

5.1 Introduction

As concluded in the previous chapter, Lithuania intends to use EU Funds for broadband development in rural areas. For example, the Funds are already being used for the RAIN program, bringing bandwidth into rural areas. Lithuania is also aware that demand for rural broadband is currently limited and that the challenge is to stimulate demand in these areas.

In the Silute District we have found great interest for broadband services and ideas what broadband could mean for everyday life. However, since people are not aware that broadband services are within their reach, these ideas are not converted into action.

This section of the report describes a “bottom-up” process of demand stimulation. In this process, the Leader-funded Local Action Groups can be instrumental, as it is one of their tasks and interests to enhance the quality of life in rural areas. Please note that we assume in this chapter that the private sector is not interested in pursuing rural broadband in the present situation.

5.2 The process (Local Level)

Figure 5-1 shows the sample process that a Local Action Group (LAG) could follow.

In Silute Region, the Local Action Group organization exists and is funded through the Leader initiative. It is currently not active in the area of rural broadband development. The first step is that the LAG adopts the idea of rural broadband development by stimulating demand. The adoption assures that LEADER funds can be used for process support and technical assistance.

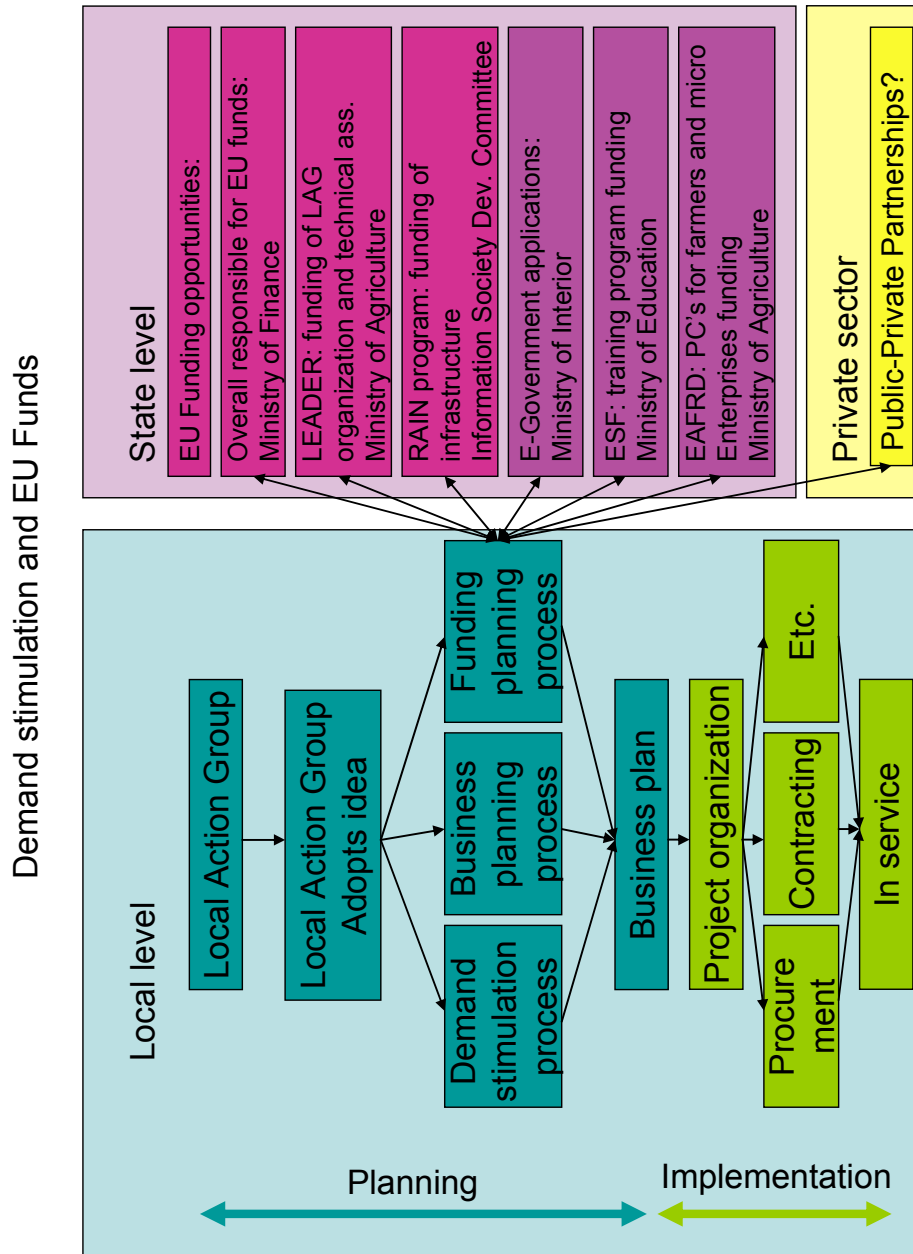


Figure 5-1: Demand Stimulation and EU Funds

After adoption of the idea the LAG should follow three parallel paths:

- a. Start the demand stimulation process. Make the citizens of Silute aware that broadband can be realized against acceptable costs with the help of EU Funds and involve them in the process. The purpose of this sub-process is to get an idea on the acceptance of broadband services in the region in terms of a percentage of population. An effective methodology is to involve representatives of important social groups the community in the LAG (priest, medical doctor, and municipality). They are a sounding board for development of services for their community and act as advocates towards the groups they represent.
- b. Start the business planning process that will scope the total project. Based on indications of user acceptance the total costs of the project can be estimated and matched against the project revenues which are the product of user acceptance and tariffs for broadband services.
- c. Start the funding planning process. This process provides the LAG with a clear insight which parts of the project can be financed, to what extent they can be financed and by which Fund.

In order to execute these sub-processes, the LAG requires Technical Assistance (engineering, business, legal, marketing expertise) which can be funded by LEADER. The LAG also requires extensive interaction with various parts of the National Government for (EU) funding options. It is also possible to involve the private sector in a public-private partnership although it has to be made sure that there are no conflicts with procurement rules and procedures.

These activities finally lead to a business plan summarizing revenues, costs and project funding. In case the business plan is positive and funding can be arranged, the project can go into the implementation phase.

The first step in the implementation phase is to establish a project team responsible for the implementation. This team will procure hard- and software and services required for the project and report to a steering committee which is likely to consist of funding partners, LAG representatives and representatives of the Region.

5.3 Funding (State Level)

For investigating the funding on State Level, the LAG has to deal with several Ministries. One important subsidy is LEADER which funds the LAG's and is the responsibility of the Ministry of Agriculture. The second important subsidy is for infrastructure via the RAIN program, which is the responsibility of the ISDC.

Through RAIN it is possible in the upcoming 2007-2013 period to invest in the last mile.

It becomes more complex if the scope of the LAG project entails E-government applications, education and/or PC subsidies for farmers. In this case the LAG has to interact with 2 additional Ministries (The Ministry of Interior and the Ministry of Education, and for the PC-subsidies again with the Ministry of Agriculture). However, this is of course depending on the actual needs and wishes and in practice it will be local authorities and the individual farmers that should apply. The LAG's in this case have to present their case to the local authorities (whom by the way should be represented in the LAG) and raise awareness with the local farmers.

It is important to note that it is not possible to 'staple' EU-funds in one and the same project. In this step-by-step approach this is not the case: the funds for Leader (coming from the EAFRD in 2007-2013) are meant for organisational purposes and technical assistance. The investment in the last mile is a project by itself, which can be financed through RAIN2 (EAFRD, Objective Convergence), if possible in a public-private partnership if the demand stimulation is successful. Regarding e-governance, e-education etc. these are also separate projects, whereas the subsidies for hard- and software investments for farmers are eligible under (again) EAFRD, but a different axis. Furthermore it should not be forgotten that the Convergence-objective in general has the ambition to increase welfare in Lithuania, including the rural areas. This is a pre-condition to ensure growing demand for IT-services in rural areas.

The lesson from this exercise is that Structural Funds can be widely used to support IT-accessibility in rural areas if one looks at the possibilities to combine various sources through different projects. This means that if all authorities involved are willing and able to actively support this sort of 'ministerial cross-border cooperation' in close cooperation with local authorities and Local Action Groups, Lithuania can indeed realise its "e" objectives.

5.4 Suggested action list for Silute

This section contains a suggested action list for continuing the process of demand stimulation in Silute from the moment of finalization of this report (March 2006).

	Suggested action	Status
1	Ensure political approval	Done
2	Engage with the community and seek support from key stakeholders	Done
3	Develop formal action group to represent the above plus representatives from government	Done
4	Identify priority applications	Ongoing
5	Identify priority locations such as schools, churches, municipal facilities	Ongoing
6	Produce feasibility study	Done
7	Obtain funding (estimate euro 50k) and identify consultancy to develop business case	Ongoing (Action of World Bank to look at feasibility of providing funds)
8	Develop business case by estimating metrics such as (example http://www.pbbroadband.org/admin/contentx/default.cfm?PageId=1) <ul style="list-style-type: none"> a. Population density in key locations b. Take up in first and subsequent years c. Similarly with businesses and government d. Choice of technology and required investments 	Open
9	Review business case and identify funding gap	Open
10	Submit applications for funding and review other sources of grant and loans which would reduce the total cost of operation and ownership	Open
11	Obtain funding from government and private sector within the framework of a PPP	Open
12	Identify funding sources to implement infrastructure and reduce total cost of ownership (see subsection on funding below)	Open
13	Implement phased approach to awareness raising / training starting with key stakeholders moving on to consumers (business, domestic and govt.) closer to availability dates	Open
14	Plan intense campaign three months prior to going live using events, postal information, kiosks, demonstration centre, local television etc. Include information on availability by geographic postal code	Open

Funding

One of the most important activities for the local action group will be to bridge the funding gap for the project. This section provides a non-exhaustive list of funding opportunities for the local action group. Some of these opportunities currently exist; others need to be developed by the government (within the framework of EU guidelines) in the coming months:

- Purchase of PC's: fiscal incentives (existing);
- Funding of infrastructure and connectivity: through ERDF /RAIN
- Process support for local action group: through EAFRD/Leader
- Stimulating take-up of services: end user incentives from government or EU funds
- Funding of equipment, content and e-services for farmers and micro-enterprises: through EAFRD/Ministry of Agriculture
- Funding of equipment, vocational training, content and e-services for schools: through ESF/Ministry of Education
- Funding of business support measures for SME's: through ERDF/Ministry of Economy
- Funding of equipment, content and services for e-government: through ERDF/Ministry of Interior
- Local Community: the local community can decide to perform activities themselves instead of subcontracting in order to keep subcontracting costs at a minimum. For example: digging of trenches (if required) is a costly activity that can be performed by the community.

6 Conclusions and recommendations

6.1 Conclusions

- Lithuania is advancing rapidly with rural ICT/broadband development. The RAIN program started by the Lithuanian Government is aiming at bringing broadband into rural areas. We believe that in addition to the push strategy, a bottom-up, pull strategy can be beneficial to stimulate take-up of broadband in rural areas. The European Commission in March 2006 launched a communication “Bridging the Broadband Gap” which will further support Lithuania’s rural ICT development goals.
- During the fact finding mission in Silute we have met with representatives of social organizations that recognize that broadband can really contribute to daily life in Silute and contribute to solving some of the problems of rural societies. People are generally open to change which forms a good starting point for demand stimulation.
- European Funds are being used by various parts of the Lithuanian Government. Applying demand stimulation in combination with further rollout of the RAIN program requires a smart combination of both LEADER and Structural Funds.

6.2 Recommendations

- Start a pilot (e.g. in Silute) where the RAIN program is planning a point of presence and apply demand stimulation via the Local Action Group. This pilot can show the rest of rural Lithuania that broadband in rural Lithuania is within reach. Make sure the focus of the pilot is not on infrastructure, but on developing services that contribute to everyday life.
- Reduce thresholds for LAGs to get access to available funds. This can easily be done by producing instruction material which funds are available, against which conditions they are available and where to apply. A more drastic, but “LAG-friendly” way is to organize a one-stop shopping point or center of expertise for rural broadband related funds.
- Last but not least it would be helpful if, on the State level, Lithuania would apply ‘ministerial cross-border cooperation’ regarding ICT-development and e-services. The ISDC can be a catalyst in this respect. The Structural Funds offer a lot of possibilities; it is the up to the Lithuanian authorities to use these possibilities in a smart way.