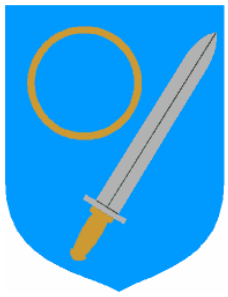
VÕRU COUNTY BROADBAND STRATEGY



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SUMMARY

Võru County Broadband Strategy, as part of county Development Plan, is a first attempt to **describe the current situation of e-Services in the region** and to **fix the priorities of action for coming years**.

The strategy consists of **following parts**: Estonian and regional context of e-Services; Inter-Municipal e-Collaboration; e-Government; e Learning; e-Health and Conclusions. Every chapter analyses the current situation, presents the SWOT analyze, short-term goals and the vision.

The Broadband Strategy is the result of cooperation of all Estonian Baltic Broadband partners, as well as of local broadband steering group consisting of members of all our 13 municipalities. The objective of this Strategy is to **contribute to the regional sustainable development planning process** and to the Baltic Broadband Study as one of the results of Baltic Broadband Project.

The general priorities of the regional development were fixed in a conference in March 2006 with participation of Estonian national and regional politicians, representatives of public and private companies and experts of regional development. **Four development directions** were determined: vocational training and entrepreneurship; Võru Town as the attractive center of the region; Võru county life and Võru unique lifestyle.

The current strategy follows these priorities as the description of one of the essential elements of infrastructure necessary to the sustainable development of the region.

On the national level, **Information Society Strategy 2007-2013** was approved in 2006 by Estonian government. In the same year, the National Audit Office undertook an audit to evaluate the development of the information society and the performance of local governments in carrying out tasks imposed on them by legislation for the provision of e-services to citizens. In addition, citizen expectations were analyzed.

The most important conclusions of this survey were the following:

- Even if the growth of computer and Internet use has been continuous during the five years, the **digital gap between town and country families is widening**;

- **37% of inhabitants aged from 15-74 cannot use computers**; one third of them would be ready to learn if supported by government.

According to this survey, the state has not paid enough attention to the involvement of local authorities in the development of the information society. On the ministerial level no one is responsible for planning and coordinating the development of the information society on local level. This is necessary in order to ensure balanced regional development.

Therefore, one of the objectives of the current strategy is to fix the priorities to "catch up" the slower development of Võru County compared with Estonian towns in general. It is due to the technical Internet access problems in several municipalities, and inhabitants have not yet accustomed to use the information technologies to have a contact with authorities.

1. Estonian and regional context of e Services

1.2. National projects

Nearly ten years ago, in the course of the project "Direct Government" ("Vahetu Riik") a common access point for Estonian government agencies and constitutional institutions was created through an Internet domain riik.ee - **gov.ee** - and virtual Estonian Web Center was established for administrating it.

Together with the powerful development of Internet services the domain riik.ee has become an inseparable part of Estonian e-government and the symbol of Estonia in the Internet. The portal "e-government" **(http://www.riik.ee/en/)** has been time and again changed and supplemented: new headings, databases, links etc have been added. In addition to the role of being the state portal it has acquired also the role of an integrator and coordinator of national information systems. In 2000 the

project went through several organizational changes and new directions for development were prepared.

By now, several virtual servers and websites of state institutions and projects use the domain's resources, e.g.:

www.peaminister.ee (Prime Minister)
www.valitsus.ee (Estonian Government)
www.eesti.ee (Citizen portal)
www.riigiteataja.ee (State Gazette**)**

The fast development of e-Solutions began with the use of electronic cards in Estonian banking system. Rapidly, using different databases and domains, several new projects like "e-citizen" www.riik.ee/ekodanik/ (Estonian Informatics Centre) and information portal "X-road**"** http://x-tee.riik.ee/portaal/ were developed. By **the end of 2006 already 65 databases and 398 institutions have joined this common portal**.
The year 2006 was significant also in the terms of policy-formulation in the field of the information society. The Government of the Republic approved the Estonian **Information Society Strategy 2007-2013.**

The main e-services used among regular internet users in Estonia include **e-mail** and **e-banking** with 75% (83% for email of all internet users), followed by **information search** via both search-motors and browsing internet sites and databases with around 70%, **visiting internet portals** with 67% and **reading online newspapers** with 62%. One of the most popular public e-service in Estonia is **declaration of taxes.** In 2006, more than 80% of people in Estonia declared their income tax in e-environment.
For comparison, only 14% of people had made phone-calls via Internet, and only 15% of people had ordered goods or services via Internet. In general, people are not yet interested in all the different possibilities offered by information society. For example in Estonia, 82% of people have denied any interest in e-commerce. Only about 1/3 of Estonian internet users have visited the main Government portal www.riik.ee, which provides inclusive information and links about all levels and branches of government, including constitutional institutions, regional authorities, local government, civil society, with regular news update in this field.

These examples show us that even if in Estonia the technological conditions for wider e-service development exist already today, it will take time to **improve the digital literacy and competences, especially among the elderly population.**

1.3. Regional context of e Service development

While looking at the situation of e-society development outside the capital region and **in sparsely populated areas, we have a totally different picture**.

In Võru County, in technical terms, after the installation of 12 WIMAX equipments the availability of the broadband access does not generally pose problems for local authorities. However, the quality and the price of the service sometimes do. Even now, some villages do not have the signal due to the hilly landscape and forests and some additional solutions must be found.

The **main activities of local municipalities** for improving Internet availability in the region have been following:

- Establishment of public internet access points (PIAPs) in libraries,
- Supporting the national Look@World project (finding rooms to be used as computer classes etc.),
- Acquisition of Internet-sharing equipment in co-operation with local IT companies;
- Establishment of public WiFi areas in community houses, libraries or at settlement centers.

Some local companies have created WiFi areas in their cafes, accommodation establishments or other places convenient for their customers. WiFi spots are primarily targeted at visitors/guests.

In spring 2006, the National Audit Office undertook an audit to evaluate the development of the information society and the performance of local governments in carrying out tasks imposed on them by legislation for the

provision of e-services to citizens. In addition, citizen expectations were analyzed.

The most important conclusions of this survey were the following:

- Even if the growth of computer and Internet use has been continuous during the five years, the **digital gap between town and country families is widening**;
- **37% of inhabitants aged from 15-74 cannot use computers**; one third of them would be ready to learn if supported by government.
- Regarding the Public Information Act, administrative forms used for the management of business in local governments need to be published on their websites. This requirement is complied with to a varying degree or not met at all.
- According to this survey, the **state has not paid enough attention to the involvement of local authorities in the development of the information society.**

The provision of state support or the co-ordination of the field has not been assigned to any ministry. The Ministry of Economic Affairs and Communications is responsible for the co-ordination of the development of state information systems and giving direction on the development of information society on a broader scale. The Ministry of Internal Affairs has been assigned the task of coordinating the development of local governments. There is a missing link: **no one is responsible for planning and coordinating the development of the information society on local level**. This is necessary in order to ensure balanced regional development.

2. Inter municipal collaboration

2.1. Overview of present situation, SWOT analyses

Inter-municipal e-collaboration started 10 years ago with the first national project Tiger Leap providing the schools with computers. Followed project Village Road I-III, which contributed to the establishment of Internet access to the municipalities and libraries.

County government provides often technical support to the municipalities (servers, common software administration solutions) and several common projects have been realized due the initiative and leadership on the

government's side. The most important ones are **common personal register database**, **document administrative system Amphora** and **common GIS software**.

Intense cooperation continued also in the framework on **Baltic Rural Broadband Project.** First a local steering committee has been formed at the end of 2005 consisting of representatives of every local municipality. The cooperation has been very fruitful, the local steering committee has participated in **decision making** about the development of county broadband network, in **procurement procedure** and in several regional **strategic planning meetings**.

SWOT analyses

STRENGTHS	**WEAKNESSES**
Long term cooperation experience	Low capability to renew the technical equipment
Transparency in decision making	Difficulties to attract new specialists into the county
All municipalities included in development process	Not enough IT specialists and project managers in the municipalities
Improved technical possibilities	No e-inclusion strategies
OPPORTUNITIES	**THREATS**
National strategy on e-inclusion of sparsely populated areas	Estonian ministries do not develop an effective credit/co-finance system for the public sector in order to continue project-based work
Governmental organizational and financial support to decrease the digital gap between towns and rural areas	Prices of Internet services will be too high compared to the city areas, not enough competition between the providers
Lifestyle trends favoring the come-back of people into rural areas	Continuing policy which does not pay enough attention to the regional development
Broadband technologies favor distant work and cooperation possibilities	Depart of project managers

Short term goals and vision

- To continue the work on technical solutions and to determine the need for the extra Internet access solutions in the municipalities;

- To ensure the technical bases for e-Services development in the county;
- To exchange the experience with other counties and municipalities in order to prepare follow-up project of e-Inclusion
- To work out an action plan in order to involve the inhabitants of the county more actively to the e-society development;
- To cooperate more actively with private companies to create more public-private partnerships.

Vision

ICT and e-Society development contributes to the improvement of the quality of everyday life and social participation of inhabitants, facilitates access to the information, media, services and to enhanced and more flexible job opportunities.

3. E Government

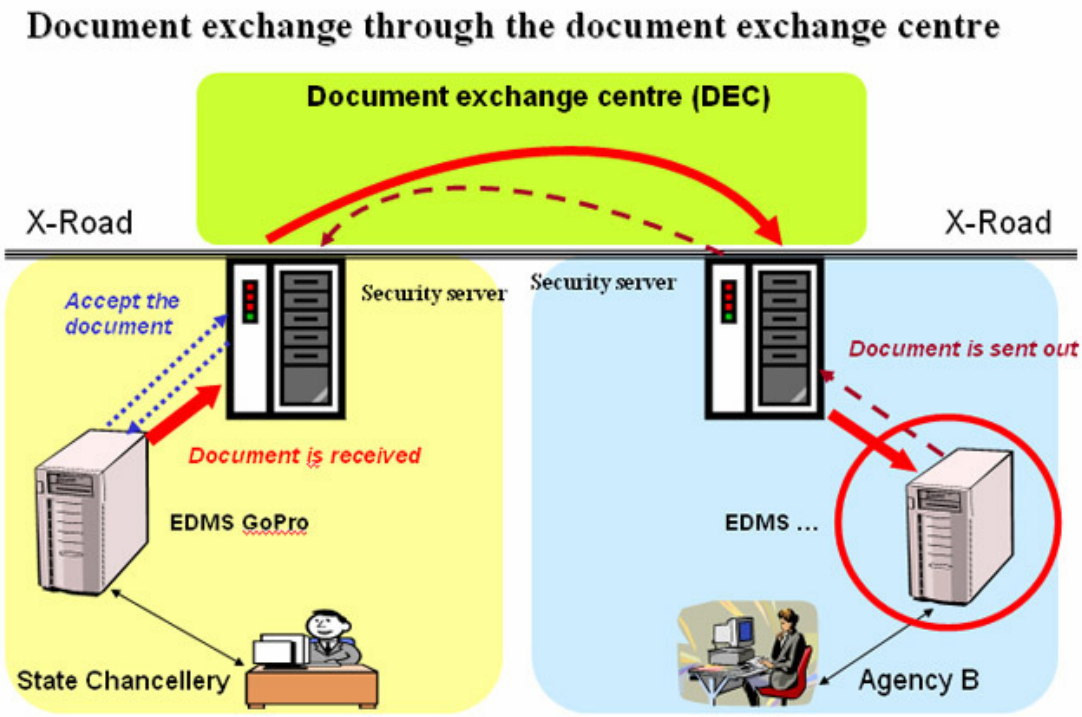
3.1. Overview of Estonian document management system

Within a pilot project carried out in 2005, paperless communication based on a bilateral agreement was tested between document management systems using two different softwares. Agencies involved in the pilot included the Ministry of Defense, the Ministry of Finance, the State Chancellery, and the Ministry of Interior.

In the second stage of the project, during 2006, the rest of the ministries were involved. Automatic and secure document exchange was tested between several different document management systems through the portal called X-Road. The document exchange was based on a multilateral agreement. As a next step, county governments, administrative agencies in the jurisdiction of ministries etc. will be gradually involved in the project.

In 2006, the Estonian Informatics Centre procured and implemented a document exchange centre, which enables secure XML-based automatic data exchange between document management systems over the X-Road.

Document exchange through the document exchange center is shown on Figure 1.



In the longer perspective, the use of the DEC will probably be extended so as to include other types of documents (e.g. financial documents, such as invoices). In addition, evolvement of the DEC into an infrastructure for the transmission of messages with described semantics can be foreseen. The DEC will allow to gradually implementing paperless document exchange in the public sector regardless of document management software used in specific agencies. Such a document exchange will ensure the integrity of transmitted digital documents and create preconditions for their long-term preservation.

3.2. Overview of document administrative systems in Võru County, SWOT analyses

Basic population registry was created in 1991; the same software was used as in town of Tartu. The municipalities in cooperation with county government have chosen to use the Amphora program in order to

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administrate the public documents. In the website **http://avalik.amphora.ee/vorumaa/index.aspx** the following entries can be found:

- **Different legal documents** issued by county government and municipalities (ordinances, decrees, decisions, contracts, permissions);
- **Registry of correspondence** of public institutions (registered letters that have arrived and sent out; their content is not published).

The development of other e-services in Võru County has been slower than in Estonian towns in general. First, it is due to the technical Internet access problems in several municipalities, and second, the county inhabitants have not yet accustomed to use the information technologies to have a contact with authorities. However, we can observe a constant growth in visiting the county's principal website **www.werro.ee** where **following documents** can be found: public documents issued from the county government and the municipalities, strategies, maps and studies of Võru county, information about public transport, regional funds, cultural and other event organized by county government and cooperation partners. We can also find links to different websites as schools, municipalities, tourist information and important private companies of the county. In addition, there are links for two web cameras observing constantly the weather conditions in Võru and Haanja Natural Park.

While looking the performance of local governments for the provision on e-services to the citizens only 7 websites of 12 contained **different forms**, however none of them had a possibility to submit the forms by Internet. Only 4 websites included a **link to the e-service environmen**t of the X-road. Half of the websites contained the link to the **Amphora document administrative system** where the inhabitants can read local documents issued by municipality and regional administration.
All the websites included the **local development strategy**, approximately half a local **newsletter**. All local authorities have a development plan, but ICT development plans have not been elaborated.

SWOT analyses

STRENGTHS	WEAKNESSES
Good cooperation between municipality and county level	Not all the members of the society have the possibility to access e-services
First common experience of developing document administration program	Lack of necessary competences in the municipalities to develop e-services
Widened access to digital information	Low public awareness about e-services
Growing number of people using e-services	Not enough possibilities to upgrade the knowledge of all members of society in order to ensure their ability to cope in the information society
OPPORTUNITIES	**THREATS**
Improved technical possibilities	Not enough of political cooperation (regional-national)
Cooperation with other BB project partners on the e-services development	Transitional period (from paper based to more e-services oriented systems) lasts too long
Continuing e-Society development	Opposition of certain officials/employees to the changes
Cooperation with Estonian public and private institutions	Internal capacity not sufficient for sustainable development

Short term goals and vision

In increasing the efficiency of the public administration, the most important objectives are the following:

- Continue the document administration program development together with municipalities;
- Purchase a regional server for Amphora program in order to fasten the data transfer;
- Involve other partners to the e-government developments (schools, elderly care institutions);
- Attract specialists to the region to continuously upgrade the knowledge and skills of program users in municipalities and other public institutions;
- Raise public awareness about the possibilities and threats, including those concerning IT security and intellectual property, related to the information society;

- Widen opportunities for inhabitants of participation in decision-making processes (*e*Democracy).

Vision

e-Government information system will be service-oriented and function in accordance with user needs, not based on institutional structure. The key words are: cost-effective and rational use of resources, simplification of administrative processes, increased availability and quality of services, and improved interoperability of document management systems.

4. E Learning

4.1. Overview of e Learning possibilities in Võru County, SWOT analyses

E-learning is implemented using of ICT tools, the Internet, digital learning materials, correspondence courses, etc, with the aim of enhancing the quality and efficiency of teaching and learning process, developing more flexible ways of learning, more effective cooperation between learners and new teaching methods.

The systematic development of e-learning in Estonia started since 2003, when the **Estonian e-University** (http://www.e-uni.ee/index.php?main=120), a consortium of e-learning related universities, was established. In 2005, a consortium of vocational and applied higher education establishments, **Estonian e-Vocational School**, (http://www.e-vet.ee/) was founded.
In addition to these two institutions, the e-Learning Development Center was established as a separate structural unit under the Estonian Information Technology Foundation on 2 May 2006.

In Võru County the e learning is in actual use in two educational systems: in 2 secondary schools of Võru town and in Võru Vocational Training Center. The other schools in Võru County (there are 10 secondary schools and 16 elementary schools) have only tested e learning or participate in some national e-learning projects. In the 2 schools that use **e-learning**

environment, several courses and other learning materials are in the Internet portals, the most important e-learning portal being: http://miksike.ee/
In these schools the studying progress (notes, tasks, comments) is communicated via Internet, as most of the parents have Internet access at home.

In Võru Vocational Training Center the aim of the development of the e-learning environments and projects is to turn studying into a very open process, making lifelong education possible for everyone irrespective of their age, profession, geographical location, or physical disabilities.
Therefore the Center takes part of a national project "Development and introduction of e-learning into vocational schools and applied higher education institutions" (e-VÕTI/**e-Key**) coordinated by the e-Learning Development Center. 33 Estonian vocational schools and 2 universities take part of this project and it is financed by the ESF.
In the framework of this project the Võru Vocational School:

- Offers to the students more flexible and varied studying possibilities;
- Modernizes the learning process;
- Organizes trainings for the teachers;
- Develops the content of e-learning materials;
- Develops the cooperation with Estonian schools.

So far, several studying materials have been produced about, for example: Estonian national cuisine, Cooking, Services for clients and examples of job interviews.
All these materials can bee found: **http://www.vkhk.ee/opi_obj.html**
They have been presented via videoconference to the project partners.

SWOT analyses

STRENGTHS	WEAKNESSES
● Participation in the national e-learning project	✘ Not very high public awareness about the information society
● First development of e-learning supports	✘ Not enough of promotion of Internet-based learning environments
● Excellent technical possibilities for exchange of experience (modern classrooms, video conference, Smart board)	✘ Most of school cannot join e-learning development because of the poor quality of the Internet access in the countryside
● Active participation of teachers and students in the projects	✘ Not enough of qualified IT specialists in the countryside
OPPORTUNITIES	**THREATS**
● Modernization of national e-learning curricula	✘ Not enough cooperation (regional-national)
● Ensured technical-technological competences necessary for coping in the information society	✘ Number and qualification of Estonian IT specialists will not correspond to labor market requirements
● Constant revision of state-commissioned education	✘ Potential of e-learning not used in state institutions
● Growing number of Estonian computer scientists and IT professors	✘ Internal resources not sufficient for the e-learning development

Short term goals and vision

- Modernize vocational school curricula;
- Develop the content of e-learning and give support to the teachers and learners;
- Develop national and international e-learning cooperation;
- Distribute information about e-learning possibilities.

Vision

Contribute to the improvement of the quality and efficiency of learning in Võru region and vocational school via large-scale application of e-learning methods and ICT tools in the learning process with the aim of making these an integral, day-to-day part of learning. In other words, the letter “e” should disappear from the concept of e-learning.

5. E Health

In order to coordinate the use of modern ICT in health care and to analyse the processes in health care, the Ministry of Social Affairs created the Estonian Foundation of eHealth. At the moment the **following national projects are being developed:**

- Digital patient records,
- Digital patient registration,
- Digital photos,
- National patient databases,
- Publications about e Health developments in Estonia.

In Võru County, family doctors and the central hospital South-Estonian Hospital have developed some eHealt solutions. Radiographical information system purchased within the framework of Baltic Broadband project, is a great possibility to exchange digital X-ray photos. It works within the network of family doctors as well as with our radiologist who works actually in another county. For some remote areas, the good quality of internet connection is still a problem.

For the patients, the most important informaion portal is the website of hospital, http://mail.vh.ee/index.php, where following informatio can be found:

- general information about hospital, its structures, location and the public transport possibilities;
- reception hours and possibility to register for doctors visit;
- information about weekly events in hospital;
- information about medical students about the internship possibilities;
- possibility to make write comments and opinions about hospital and website.

5.1. SWOT analyses

SWOT analyses

STRENGTHS	WEAKNESSES
Good cooperation with Estonian hospitals	Good doctors leave the county
Technical investments	Not all the family doctors have reliable internet connection
Existing network of family doctors in the county	Lack of sufficient knowledge about eHealth and not enough IT specialists
Projects with Finnish hospitals	Weak capacity to renew the equipment
Improved efficiency in health services	Weak capacity to make the investments
OPPORTUNITIES	**THREATS**
Common and clear e-health policy	Uneven development of hospitals
Follow-up projects with Estonian and foreign hospitals	Unclear health policy
Governmental support for the regional development	Not enough cooperation with hospitals and technical developers of e-health environments
Status of the only regional hospital in South-East Estonia	Hospital looses its position as a regional hospital
Cooperation with Tartu university in order to attract young doctors	Enormous privacy needs which may slow the technical improvements

Short term goals and vision

- Continue the cooperation with family doctors – exchange of medical data by Internet – in order to improve the accessibility and quality of health care in rural area;
- Develop the national priorities in eHealth solutions as web-based patient record and digital recipes;
- Develop national and international e-health cooperation: share knowledge and resources;
- Develop the web-based ECG records transmission;
- Distribute information about eHealth solutions and perspectives among doctors and patients.

Vision

Better quality and availability of health care in the remote areas and improvement of medical information exchange. Contribution to the development of eHealth solutions on the international level.