The paper deals with the application of e-government framework in Lithuania and the potential role of e-government in the development of the new economy in Lithuania. It is not only concerned with way e-government model can be adapted to Lithuania, but also clearly explains its potential impact to the society’s life, business sector and economy as a whole.

**Introduction**

In the 21st century information is becoming the main driving force for the development in every field of human’s activity. It joins the scale of economic values together with capital, technologies and workforce by partially replacing materials, energy resources and workforce. The possession of the information and knowledge is becoming the principal factor for the growth of economy and the creation of values. Together with stabilisation of principles and the processes of the new information economy, the society’s ability to create knowledge and to use it for any process and activity has a potential to become the base for the development in Lithuania.

For Lithuania as a small country with an open economy and limited resources, the improvement of the level of society’s knowledge, the establishment of the favourable business environment, the development of the advanced infrastructure, the restructurisation of the national economy, the attention to the knowledge and innovation are of the crucial importance.

The public administration sector is being criticised constantly in Lithuania as all over the world: taxpayers everywhere want to see the efficiently functioning and less expensive executive power. This wish of Lithuanian citizens is expressed more clearly as the bureaucracy and the style of work inherited from the former Soviet Union times can be still sensed in the society.

The improvement of services and culture can be already noticed everywhere: in the banks, insurance companies, even trade centres – the accomplishments that public institutions cannot boast yet. People keep wondering why bureaucratic public institutions cannot solve their problems, why they have to visit several institutions in order to get the information, or why they have to make so many phone calls to have their problems solved.

The performance of public institutions in Lithuania raises serious doubts. Very few people trust in the public institutions or in the effective use of their resources. The Government established the Sunset Commission, which set out the public administration reform guidelines in order to solve these issues and outline certain public administration rules.

Therefore, the driving force of the e-government might be the application of business management for public administration purposes and the use of modern information technologies for the effective information management and the establishment of improved relations with consumers, partners and suppliers. This type of public administration reforms could also help to initiate decisions, their implementations and co-operation between citizens and the government, implement transparent management and proper accountability. The application of such a new business model for the public administration as e-government framework will also provide Lithuanians with new opportunities to co-operate and work with the public institutions any time and anywhere. Establishing public sector services and programs online, as well as public procurement is also direct promotion for the competitiveness of the e-competitiveness in the business sector.

At the moment e-commerce promoters define the shortage of on-line purchases and lack of users as key reasons precluding the development of e-commerce. Lithuanian online information is
rather scarce: even some of those companies, that have web pages do not renew information they have on a continual basis, therefore, quickly it becomes useless.

Therefore, the close circle is formed, while a relatively small number of users do not promote e-commerce and, on the other hand, slow business does not produce more users. The implementation of the e-government projects would create the Internet services that facilitate easy access to public institutions. Certainly, very soon there would appear a relatively large number of users willing to receive government services via digital channels and get familiar with these services along the way.

It is reasonable to suppose that Internet users and receivers of government services online would soon expect to receive the same quality of services and from commerce. This would mean the sizeable increase of the number of customers and the demand of Internet services. The increase of customers and demand would lead to e-commerce growth and supply increase. It would encourage people who have no computers to purchase them and start using e-commerce services. Thus, e-government project implementation might help Lithuania to break the closed circle, what would inevitably increase the demand and supply of Internet.

**E-government and e-governance in Lithuania.**

E-government is the ability to obtain government services through non-traditional electronic means, enabling access to government information and to completion of government transactions on anywhere, any time basis and in conformance with equal access requirements. The emergence of e-government offers potential to reshape the public sector and build relationships between citizens and the government. It can be also described as the way for government to use the new technologies to provide citizens and businesses with the convenient access to government information and services, to improve the quality of the services and provide greater opportunities to participate in the democratic institutions and processes.

E-government can improve the quality of government and citizens participation in it in four important ways:
- it can facilitate for citizens to have their say in government;
- people can get better services form the government organisations;
- people can receive more integrated services because of different government organisations are be able to communicate more effectively with each other;
- people can be better informed because they are able to get up-to date and comprehensive information about the government laws, regulation, policies and services.

E-government brings administration closer to citizens and businesses through the use of the Internet. The electronic public administration can make a major contribution to accelerating the transition to the knowledge-base economy in Lithuania by stimulating access to and use of basic online government services. Furthermore, by contributing to a transformation of the organisation of the public sector, e-government can improve public services making them faster, as well as more accessible and responsive.

The business in Lithuania, as EU Candidate Country, can also benefit from less administrative burden which can, therefore, contribute to the efficiency and the economic growth. Even more importantly, a more transparent and interactive government would also stimulate the participation of citizens in the democratic process.

The changeover to electronic interaction involve major changes to the internal workings of administrations which can be complex to manage. The challenge for the administration is to adapt itself and introduce the innovative ways of working, including the proper and stable partnerships with the private sector. (eEurope+ Action Plan 2001)

Lithuania, as EU Candidate Country, should recognise the importance of improving access, dissemination and exploitation of public sector information and ensuring that citizens have easy access to essential public data, as well as promoting online interaction between citizens and the government. The government of the country have to understand that the exchange of good practices with EU Member States in this area is of the big importance. The participation in the European conferences and workshops as well as the association to the existing working groups to benchmark progress on
bringing basic public services online could further enhance collaboration and exchange of best practices. (eEurope+ Action Plan 2001)

In every e-government system four different groups of possible clients should be considered: the government itself (G2G), the employees (G2E), the private sector (G2B) and the citizenship (G2C). As mentioned above, one of the most promising aspects of e-government is its ability to bring citizens closer to their government. While the technology to facilitate this connection is widely available, many government sites in Lithuania have not taken full advantage of its benefits. Enabling conversation between citizens and government is not the only way to bring citizens and government closer together. Making government more easily accessible is another component of this endeavor. There are few features that make this possible. One of them is the ability to search a particular web site. Another is to offer live broadcast or important speeches through the web. Another way is by enabling citizens to cater available information to their particular interest.

The benefits of e-government integration can be described as follows:
- lower costs as well as improved efficiency and quality of service;
- more effective linkages between citizens and government;
- improved efficiency of government workers;
- facilitated transparency and accountability.

Table 1 demonstrates what kind of services are currently provided by the government and the public institutions of Lithuania.

### Table 1: Examples of current online services provided by the government of Lithuania and public institutions.

<table>
<thead>
<tr>
<th>Institution</th>
<th>Online services</th>
</tr>
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<tbody>
<tr>
<td>Economic information centre</td>
<td>Information about customs tariffs in Lithuanian Republic</td>
</tr>
<tr>
<td>Lithuanian development agency</td>
<td>Information for exporters and investors</td>
</tr>
<tr>
<td>National service of Geodesy and Cartography under Government of Lithuanian Republic</td>
<td>Geodetic and Cartographic Control Information System (GCCIS)</td>
</tr>
<tr>
<td>Department of Cultural Heritage Protection</td>
<td>Information about the most attractive investment objects of cultural heritage</td>
</tr>
<tr>
<td>Ministry of Economy of Lithuanian Republic</td>
<td>Information about bankruptcy process, auctions and the property on sale; Import, transit and export control system of strategic goods and technologies</td>
</tr>
<tr>
<td>State Tax Inspectorate under the Ministry of Finance</td>
<td>Information about VAT payers Information about not registered enterprises Information about sold and disappeared special accounting blanks</td>
</tr>
<tr>
<td>Customs Department under the Ministry of Finance of Lithuanian Republic</td>
<td>Information about queue of vehicles on the Lithuanian boarder</td>
</tr>
<tr>
<td>Lithuanian Standards Board</td>
<td>Standards catalogue</td>
</tr>
<tr>
<td>Certification Centre of Building products</td>
<td>List of certified products</td>
</tr>
<tr>
<td>Department of Statistics under the Government of Lithuanian Republic</td>
<td>Main statistic indices about social and economic development of the country; Forms of statistic reports; Statistic indices, published in “Informaciniai pranesimai” Statistic classificatory Statistic classificatory system</td>
</tr>
</tbody>
</table>
In Lithuania as the transition economy case it is very important the concept of e-governance. While e-government is the application of IT to the process of government and it is usually defined as digital information and online transaction services to citizens and businesses. E-governance, however, represent a broader concept. It does not mean only transfer of existing procedures to an electronic medium, but implies a new definition of and approach to public governance. E-governance concept represents a new paradigm shift to the new information age.

The application of e-governance implies the action of the State and its agencies at two levels: the promotion of information and communication technologies, particularly e-commerce, and the adoption of these technologies for the establishment of the open systems for the government, citizen interaction and the development. The developing countries and the economies in transition need not only a policy and legal framework for e-commerce, but also the resources and infrastructure. They also need a commitment to transparency, citizen participation and democratic functioning. All these needs can be satisfied by the successful implementation of e-governance model.

The conception of e-governance in Lithuania was created referring to the European Commission initiative “e-Europe 2002. Information society for all” publicised on the 19th of June 2000; the conception of Development conception of National information society accepted by government on the 28th of February 2001; and the UK initiative “E-Government: a strategic framework for public services in the Information Age” as well as the other countries’ conceptual documents describing the trends for the development of e-government.

According to the decision No. 164 of Lithuanian Prime Minister, dated 2000.08.14, the working group was created in order to prepare the conception of e-government and the conception of the public Internet pages. The concept of e-government was created by the Information Society Development Commission and submitted to Prime Minister on the 20th of April 2001. The programme identifies the measures that have to be implemented at the highest state level. Every sixth months the Co-ordinator of the Commission has to report to the Strategic Committee and to the public about the development and implementation process of e-Government projects. The government of Lithuania in the short run has to analyse, adjust and approve e-government concept.

Lithuanian version of E-government conception gives the brief outline of strategic guidelines on the nature of changes in the public administration sector once the business management model and IT have been applied and utilised. When creating this conception in Lithuania the centralisation principle was omitted. The conception is oriented to the creation of many discrete and autonomic projects, but not to the large one. This is done in order to solve several problems, like:
- the smaller projects are easier to manage, while Lithuanian specialists lack the experience of large projects management;
- the smaller projects can be implemented in the shorter period of time;
- the realisation of the every small project will give partial functionality. Therefore, the results will be seen already after the first steps. This will increase the trust in the process and the motivation to continue the process.
- the failure of the separate project will bring relatively low financial losses and will not prevent from the total process.
- it will be possible to compare the effectiveness of the separate projects;
- it will be possible to distinguish between the successful and unsuccessful institutions and executors.

The implementation of e-government and e-governance projects should strongly change the existing life style of public institutions. The experience of the other countries clearly shows that changes like that cannot be implemented without an adequate political will and necessary structures which co-ordinate these changes.

In Lithuania to co-ordinate these projects a special co-ordinating institution should be established which would be respectively authorised and would have enough political support to pool the existing and to find new resources for the implementation of the goals set. E-government projects have an inter-institutional dimension and are applicable to all public institutions, therefore, cannot be efficiently carried out by one ministry alone. Participation of business in the development of this concept and its further implementation is among the most important guarantees for the success.

The possible participation of the Lithuanian commercial organisations in the implementation of e-government project can take the following forms:
- delivery of services directly or through co-operation with public institutions. This includes commercialisation of public services, like adjustment of a basket of services to special needs and creation of value added;
- showing an example of good practice to public institution through the introduction of e-business models;
- co-operation with public institutions by creating an infrastructure and services for their needs;
- joint work in implementing e-government projects.

The e-government in Lithuania is implemented on two separate levels that basically differ in the implementation of the execution mechanisms, the necessary funds and the performance. However, the implementation of one level regardless of the other would be ineffective or even impossible.

The levels of e-government implementation are as follows:

1) The computerisation and integration of the public institutions information. The information system (systems) for the effective use of information available must be put into place. The next step is information integration between institutions. Lithuania has made significant progress in the above mentioned area. A majority of public institutions have been computerised and now use various databases. Institutions usually have a local area network and through the computer network of public institutions have possibilities for the data exchange and Internet access. Some institutions have already installed workflow systems within the framework of the VADIS project, while others are still in progress. On the other hand, there have been no standard data exchange procedures or protocols so far; the security requirements of computer networks have not been met, the integration of the databases in various agencies is still lacking. All of it precludes the wider use of information management. (E-government Concept Development Task Force 2001)

2) The delivery of services for consumers via digital channels outside the institution. The system interface must be developed, which would give access to all the necessary public information for a business company or a citizen and would allow to place an order online and/or receive Internet services. This field is still a novelty in Lithuania. So far the use of Internet has been focused on the information aspect only. Internet services are still very rarely used. Nearly all government services on the Internet are free of charge. However, the mechanism of links with customers (delivery of services) and suppliers (e-purchases) must be developed soon. The execution of the same services model will give the rise to the security and the identification problems (Public Key Infrastructure), essentially
new kind of difficulties in the contacts of public servants with customers, and the need for reducing state involvement in addressing service delivery issues. (E-government Concept Development Task Force 2001)

In order to establish the basic principles of e-government in Lithuania, the development of national integrated information system and the exchange of electronic documents between state and municipal institutions must be intensified. Every citizen and enterprise should have the opportunity to receive personalised and client oriented public sector information and services through Internet. It is important to create the public sector information portal as on-stop access point to every public institution and to every service.

The public servants have to acquire the good understanding of information technology, new knowledge and skills as well as business and project management experience in order to implement e-government framework in Lithuania successfully. Furthermore, the attention has to be paid to the situation of the local administration units.

The assessment of information technologies in Lithuanian municipalities, sponsored by Open Society Fund, showed that general number of computers used in the Lithuanian municipalities has increased for several times comparing to the number of computers used four years ago. Moreover, there have been created new local computer nets, the municipalities started to create their own websites, the number of Internet and e-mail users in the municipalities has also increased significantly.

However, the results of the same research also indicate that there are still many problems that have to be solved. First, most of the municipalities in Lithuania do not make strategic planning of IT development. Priority of IT development is set mainly in the technical and technological level. Furthermore, the information infrastructure of Lithuanian municipalities is rather week. Only 15,3% of municipalities’ personnel have the possibility to use local networks, not sufficient attention is paid to the security of the networks. Only 26% of municipality personnel have personal computers in their working place and only 10,8% of municipality personnel have the possibility to use e-mail. The development of the information systems is also slow: information systems are completely introduced only in 5,9% of the relevant municipalities’ working places. The aspiration for the electronic democracy, the provision of electronic services and the creation of the information systems is hardly noticeable. The information systems are primarily used for the solution of internal tasks. Therefore, it is of vital importance to take into account the real situation in the local municipalities and prepare strategic solutions for their current situation. (Adamonis 2001)

The implementation of e-government projects will not be effective if part of the society will not be able to access the governmental services. The situation like this is possible if part of the society will not be computer literate or will not be able to access to the Internet. In order to ensure an opportunity for all population to access the Internet, it is necessary to focus on the group access – to connect all the libraries, schools, municipalities to Internet and to install public terminals in the near future. A strong attention must be paid to remote and specially supported regions. It is necessary to liberalise completely the market of information and telecommunications services according to the EU principles, encouraging services of increasing quality and availability for decreasing prices.

The IT sector is one of the fast growing sectors in Lithuania. In the period of 1995-2000 it has been growing at an annual rate of 17 %. Although due to an economic slowdown the IT sector shrank by 15.2 % in 1999, it is expected that in 2000 the growth rate will be 15-20 %. According to the INFOBALT association, in 1999 the total value of the IT market was USD 239 millions, and that of the telecommunications market – USD 568 millions. (The National Development Plan for 2001-2003, Republic of Lithuania, November 2000)

The SWOT analysis of IT sector in Lithuania is shown in the Table 2.

<table>
<thead>
<tr>
<th>Strengths</th>
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<tr>
<td>Well developed infrastructure of communication and data transmission network in the cities</td>
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<tr>
<td>High percentage of students in IT field</td>
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</table>

Table 2: SWOT analysis of IT sector in Lithuania
Cheap and professional IT labour force

**Weaknesses**

- Small percentage of IT users among Lithuanian population
- Weakly developed IT infrastructure in the country side
- Relatively high price for Internet access
- IT teaching base is not sufficient in secondary and high schools
- Shortage of the qualified IT specialists
- Slow development of E-business
- Shortage of the public access to Internet
- Slow data interchange (transmission)
- Insufficiently developed IT as economy sector
- Unsatisfactory functioning of State information system and registers
- Low computer literacy of public and municipality servant
- Almost impossible to get government and municipalities services using IT
- Shortage of IT regulatory base
- Data security problems

**Opportunities**

- Rapid growth of IT sector
- Growth of demand for e-business
- Use of e-signature
- Decrease in hardware and software prices
- Export of IT services
- Attraction of foreign investments
- Broader application of IT in the business, public administration, education and other spheres

**Threats**

- “Brain flowing”
- Diminishing opportunities to complete in the European and world markets
- Threat for Lithuanian language, cultural identity

Despite the fast growth in recent years, Lithuania is lagging behind in the IT sphere compared to the EU Member States as well as even Estonia and Latvia. There is a risk that accelerating IT development will widen the IT gap between Lithuania and other countries.

In 2000, the number of personal computers was estimated to be 260 thousand, whereas the number of computer users was estimated to be 540 thousand. The number of computer users increases by an estimated 50-60 thousand every year. It is estimated that in Lithuania 100 share 6 computers, and 4 % of the residents are Internet users, compared to 6 % in Latvia and 21 % in Estonia.

The IT gap is particularly evident in public schools: 76 pupils share 1 PC in Lithuanian schools, compared to 10 pupils in Western Europe, 28 pupils in Estonia and 1 PC for 47 pupils in Latvia.

Computer science and IT specialists are currently being trained in at least six universities, in several colleges and professional schools. The University of Vilnius and the Kaunas University of Technology (KTU) have the longest traditions in this respect. Lithuanian universities score better in terms of PCs per student, but business surveys illustrate that graduates from Lithuanian universities have shortages of IT skills.

Data transfer networks cover the whole Lithuanian territory. The communication capacity accessible from every phone is up to 2 MB/s. Both local call and Internet charges are applied to the Internet users.

High Internet costs hinders the development of IT services and technology. This can be illustrated by the fact that Lithuania is lagging behind in terms of the number of domain names (or devices connected to the Internet): there are 16265 domain names in Lithuania, compared to 33286 in Estonia and 19724 in Latvia. (The National Development Plan for 2001-2003, Republic of Lithuania, November 2000)
There are 7 Internet service providers and several backbone Internet providers (LITNET, VIKT, Delfi, Omnitele, Lithuanian Telecom, Eunet, 5ci) in Lithuania. The number of secondary Internet service providers is estimated to be about 23, but this figure is subject to constant growth.

The qualitative connection to the information and telecommunications networks for each individual and business on the whole territory of Lithuania for affordable prices is one of the basic preconditions for the development of the information society. The existing price for the Internet connections is too high for individual users and even for municipalities, as well as for small and medium size enterprises. Therefore, access to the Internet information resources is still unsatisfactory used.

Moreover, it is necessary to increase the level of Internet security. State must eliminate the existing legal incompleteness and must encourage fair competition in the provision of Internet services. It is important to establish the Internet regulation in order to ensure protection of the information resources accordingly to the security requirements for the information systems.

Results and Conclusions.
The changes brought by implementation of e-governance projects in Lithuania and modernisation of the public administration will be very significant. The application of the information technologies and the use of their possibilities will strongly change society’s understanding about administration, ways and means of control, the ways of reporting for the results and the assessment of the efficiency of staff work.

The changes in understanding will strongly influence private and public institutions. These changes would be significant both in the client service field and the information management as well as in decision-making areas.

The potential role of e-government in the development of the new economy in Lithuania can be well described by the changes for the society, business and the public sector.

The changes for citizens. The downturn of prices for using the Internet and hardware/software, their availability will speedily change the lifestyles for many people. New services will be offered, the existing services will be delivered using new methods. Right application of information technologies will allow establishing:
- better access to the information and services;
- better delivery of services via different channels (over the counter, via call centre, online, etc.);
- distribution of services according to market demand by responding to the needs of various target groups;
- more efficient reaction to clients notifications concerning the quality and content of services;
- grouping of services according to life cycles and general events;
- involvement of users into the restructuring and improvement of services.

The application of the information technologies and emerging possibilities to deliver government services via electronic channels will open wide avenues for the better services of customers. A necessity to wait in queues and to arrive to a public institution will be no longer needed. It will not be necessary to follow the working time of various public institutions as the services will be delivered round the clock seven days a week from everywhere. Citizens will have access to services from public institutions at the time and place of their convenience, as all these possibilities will be opened via Internet.

The changes for public administration. E-government is and will remain a tool for the implementation of public administration reform. Its ideological foundation is orientation towards a customer and application of business models in the daily work of public institutions, as this can be efficiently achievable through the use of information technologies.

More transparent public administration, personal responsibility of civil servants, clear-cut reporting system, transparent decision making mechanisms – all these are just a few examples of the benefits directly related with administration.

The implementation of e-government projects will allow public administration to introduce significant structural changes. Administration structure will change and the better quality services as well as higher production capacities will be demanded from public servants. The implementation of
the projects will avoid the increase in payment funds for the staff, but would rather be done through the redistribution.

The implementation of the projects will be a great challenge for public administration sector. Inevitable difficulties might emerge in the fields of changing models of decision making, insufficient skills, and problems of information and communication infrastructure. Public institutions will have to closely co-operate with private sector by creating business models, infrastructure and by providing services to end-users. These goals will demand substantial public investment. Project financing will require finding new alternative financial models especially with a view to involve the business into co-operation with the public sector. Public administration sector will need to put lots of efforts to become adjusted to all these changes, however, the results to be achieved should excessively pay off the efforts and the resources invested.

The changes for business. Implementation of e-government framework in Lithuania will create new possibilities to raise the efficiency of business to government communication. The aim will be to increase communication between business and governmental institutions via Internet to the extent possible, that means any time convenient or a businessman without any time waste.

However, these changes will demand for new challenges in the business world. Information technologies change the business environment – principles of work organisation, understanding of teamwork and methods of reaching a customer and ways of goods purchasing. A notion of “production” in many cases will be also changing.

The implementation of e-government model will increase a demand for services offered on the Internet in Lithuania. The customers will assess their quality of services delivered via the Internet, convenience and will demand new better quality, new thinking and additional investment from Lithuanian business community that offers services on the Internet. European and American business has already gone through changes like these and have accommodated themselves to it to a lesser or greater extent. This can be a difficult challenge for the Lithuanian business, though reorientation results will allow participating on the global markets of goods and services in more simple and efficient way.

Moreover, the introduction and the promotion of Internet-based services by government provide opportunities for collaboration and joint projects. The commitment of the government and the provision of funds for this purpose will send positive signals to investors in IT and e-commerce. When it extents to procurement, the benefits to businesses will be very significant. The government promoting e-governance will also promote e-commerce in terms of the infrastructure (telecommunications and connectivity) and e-literacy, e-services and e-friendly framework for e-commerce as well. Therefore, this will encourage investment in e-commerce and the infrastructure required for it as well as it will help to create a better environment for business and trade competitiveness in the new information economy.

Finally, the greater the use of the information technology by the public sector, the more conductive the national environment will be to the development of e-competency within the business sector. The implementation of e-government model would contribute directly to Lithuania’s international competitiveness. The services of the government is expected to become more easily and quickly accessible. The implementation of e-government and e-governance concepts would promote the development of e-commerce, society computerisation and the use of Internet. Development of e-commerce will be furthered and strengthened, because government promoting business online will facilitate the delivery of information, goods and service. That will in turn encourage further infrastructure development. Moreover, the implementation of e-government is closely related to the creation of better business environment and trade competitiveness of Lithuania in the new digital economy.

References


