e-governance
academy

ICT for Local Government

HANDBOOK

2007

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1. EXECUTIVE SUMMARY

Information and communication technologies (ICTs) and related telecommunication and other digital networks are considered to be a major driving force of building information societies and economies and are increasingly recognized as a new factor in improving existing governance practices.

For those transition countries that have managed to develop relatively stable democracies, notably the EU accession countries, the main benefit of technology-based e-governance systems is seen in the building of a full-fledged open information society by providing a **wide range of on-line public services**, in fostering mutually effective public-private partnerships, in gaining visible economic gains, in enhancing representative democracy by overcoming low levels of electoral participation, and – most importantly – in fundamentally changing present governance practices and models.

There is no one single e-governance model, which would suit all countries that are at different stages of development with varying degrees of democratic principles applied in real or declared governance practices. However, there is a lot of **good lessons** to learn that have been acquired.

At the local level, e-governance and the appropriate use of ICT can enhance and support economic and social development, particularly in empowering officials and municipal representatives, ensuring linkages, networking, timely, efficient, transparent and accountable services. E-local governance means exploiting the power of ICT to help transform the accessibility, quality and cost-effectiveness of public service and to help revitalize the relationship between customers and citizens and the public bodies who work on their benefit.

Main **purpose of the project** „ Local Government ICT Toolkit" is to help local decision-makers to make informed policy choices and understand the practical challenges and opportunities that introducing of local e-government imply. Project is supported by Local Government and Public Service Reform Initiative of the Open Society Institute whose mission is to to support decentralization, democratization and good governance.

Handbook is developed by internationally recognized Estonian experts who have implemented national and local e-governance development projects in Estonia and abroad and it **aims** to give guidelines on how to use ICT development of **modern local governance**. The handbook consists of 4 main paragraphs.

The authors of the Handbook are grateful to the Local Government and Public Service Reform Initiative of the Open Society who supported the development of Handbook „ICT for Local Government". Authors are also thankful for the municipality leaders of Serbia who shared their insights and experiences about implementing the local e-government in Serbia.

2. INTRODUCTION

e-Governance is an instrument of an information society in the form of governance principles, strategies, systems and tools that enable the use of ICTs (Information and Communication Technologies) in mutual interactions between and among the key members of the society – state, citizens, and businesses – to strengthen democracy and support development.

Transferring of competencies from the state to the local level, the municipalities are assuming greater development responsibilities for their communities. All this requires a serious effort and the use of the information and communication technology in this process can and should assist local governments to work more efficiently and provide **better services to the citizens.**

At the local level, e-governance and the appropriate use of ICT can enhance and support economic and social development, particularly in empowering officials and municipal representatives, ensuring linkages, networking, timely, efficient, transparent and accountable services. E-local governance means exploiting the power of ICT to help transform the accessibility, quality and cost-effectiveness of public service and to help revitalize the relationship between customers and citizens and the public bodies who work on their benefit.

Information Society development is in large extent issue of local governments – local governments, compared with central government, are more close to the citizens. As after decentralization municipalities will offer new, wider variety of services for citizens it is great challenge to offer those services in traditional way, but as well as e-services.

According European researches local governments in developed countries are offering up to **77% of public e-services**. Often local government portal is the first stop to reach also central government services.

Implementation of broadband strategy as well as information security basics are important issues for local governments. Building framework for ICT infrastructure development and offering e-services for businesses is making local government central body, influencing development of economy in the region. Competition between local governments in the field of development of information society is the issue of welfare of the region - to offer new workplaces, better place for living, social security, taking account of the needs for services.

Implementation of e-services and broadband strategy is also possibility to overcome problems of different social groups and remote areas. Well-developed ICT infrastructure with intensive offering of e-services by the local government is challenge to engage to the decision-making process large groups of active citizens and supporting development and implementation of e-democracy in the region.

Implementation of local government e-model is utmost important because of overall process of redesign of the functions and structure of local government in Serbia. It is well known that ICT can and should support the innovation and redesign of existing organizational processes, as well in governmental bodies. It is unique possibility to use new methods and possibilities offered by ICT in the process of reforms of local governments in Serbia.

2.1   Abbreviations

AP – Action Plan

BEGIX – Balanced e-Government Index

CIO – Chief Information Officer

DMS – Document Management System

EDMS – Electronic Document Management System

eSEEurope – e-South Eastern Europe

HR – Human resources

HW - Hardware

ICT – Information and Communication Technology

IR – Information Resource

LAN – Local Area Network

LG – Local Government

PC - Personal Computer

PIAP – Public Internet Access Point

SW – Software

TAS – Tax Automation System

VAT –Value Added Tax

WSIS – World Summit on Information Society

2.2   Methodology

In creating the Handbook "ICT for Local Government" the following activities were conducted:

- Different research papers were analyzed in order to get an overall picture of the situation of local e-government in Serbia.
- Study visits to Serbian municipalities were organized and semi-structured interviews with municipality leaders and ICT managers/specialists were conducted.
- Best practices and different case studies on e-governance field were gathered and analyzed.
- First draft of handbook was composed based on the materials gathered during the study visits and on the experience gained by training different official in the basic questions of e-government.
- Organizing the e-Governance training to the Serbian municipality leaders and gathering the feedback to the handbook.
- Modifying and finalizing handbook based on the relevant feedback from municipality leaders and input form other e-governance experts.

2.3   Aim of the Handbook

This handbook is a practical tool for introduction ICT in local government. It is designed to assist local e-government practitioners and those concerned with the modernization and reform of public administrations. It analyses country experiences and good practices, identifies key challenges and impacts, and sets down possible strategies and guidelines as a framework for action by individual local government.

There are no ready-made good or bad e-governance models or strategies. A good model will be a one, which enjoys consensus among all stakeholders and has evolved from a transparent and consultative process. Nonetheless, there are some important benchmarking milestones that underpin the evolution of various e-government initiatives into e-governance as a comprehensive public service and government-citizen communication system.

The **aim of the handbook** is to:

- Introduce the basic principles of local e-government and address the benefits of using ICT potentials in municipalities and identify what needs to change if e-government benefits are to be maximized.

- Introduce a set of basic principles concerning the organizational, legislative and technical framework for implementation of Local e-Government in Serbia, also give realistic recommendations, how to set up effective ICT organization in the municipality.

- Give practical tools (action plan, self-assessment questionnaires) that help to evaluate the current status of e-government in municipalities and map the areas for improvement.

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- Provide best practices/case examples of the successfully implemented e-government initiatives that could be used in Serbian municipalities.

It should be stressed that the main issues in implementing e-government is widely organizational and legislative, not technical.

There is no single path to good governance outcomes via e-government, and each country's action will reflect its individual governance and economic and social circumstances and priorities.

2.4 Outline of Handbook

Handbook consists of 4 main paragraphs.

First paragraph is giving the introduction of the Handbook.

Second paragraph brings out the goals of the handbook and address the benefits local governments gain while implementing e-governance. It also provides an overview about the current situation in Serbia and main areas for improvement.

Third paragraph describes what kind of enabling frameworks (organizational, legislative and fiscal) should be in place for successfully implementing the local e-government. This paragraph also brings out the components of technical model that are important for local government. E-services for citizens and businesses are enlightened and roadmap how to build up these services is described. Other important factors/elements for implementing the e-government at local level are explained, such as the issues related to digital divide, the concept of Public Internet Access Point and privacy and security issues. The whole paragraph is illustrated by different case examples.

Forth paragraph is giving and overview what is important for implementation/delivering the local e-Government. It consist of e-Government Development Planning; gives overview about local e-government self assessment and describes the ICT strategy development process. Concrete action plan format is introduced for helping to implement and monitor the e-government at local level. Also some aspects of e-Government funding are brought out.

2.5 Benefits of implementing Local e-Government

Information Society development is in large extent issue of local governments – local governments, compared with central government, are more close to the citizens.
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Local e-government is about:

- **Transforming services** – making them more accessible, more convenient, more responsive and more cost-effective. It can make services more accessible to people with disabilities. It can make it easier to join up local services (within councils, between councils, and between councils and other public, voluntary

and private agencies). It can help improve the customer's experience of dealing with local public services.

- **Renewing local democracy** – making councils more open, more accountable, more inclusive and better able to lead their communities. e-Government can enhance the opportunities for citizens to debate with each other, to engage with their local services and councils, to access their political representatives and hold them to account. It can also support councilors in their executive, scrutiny and representative roles.

- **Promoting local economic vitality** – a modern communications infrastructure, a skilled workforce and the active promotion of e-business can help local councils and regions promote employment in their areas and improve the employability of their citizens. If you lead a council, or a council service, you should be asking yourself and your organization: do you know how you are going to use e-government to achieve these benefits?

Benefits of e-governance:

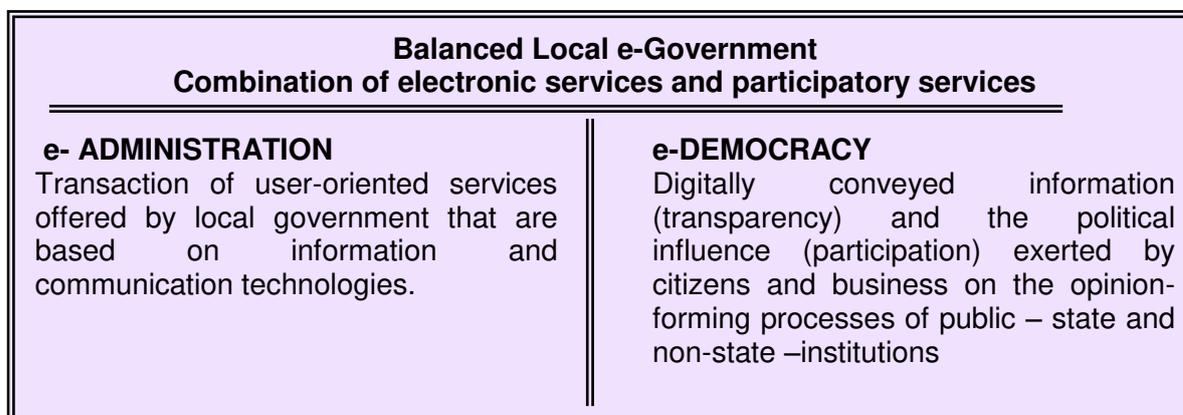There are several benefits that implementing the e-government provides:

▪ **E-government helps improve efficiency in government.** ICTs are a necessary enabler of reforms to the ways in which public administrations work. Improving internal operating systems – financial systems, purchasing and payment arrangements, internal communications and sharing of information – and programme processing and delivery arrangements can generate operating efficiencies and improve performance.

▪ **Enhanced quality of service** has been a major component of public administration reform over the past two decades, and the use of ICTs to generate improvements in services has been a primary driver for e-government activity. In particular, the use of the Internet has given a major boost to customer focused, seamless services, which aim to transcend the structure of public administrations. Online services are increasingly seen as part of a broader services strategy, with important customer and efficiency benefits. As users of public services are often obliged to interact with government, user dissatisfaction with the quality of government services can quickly become a major political issue.

▪ ICTs can support **more effective outcomes** in key policy areas such as health, welfare services, security and education. Ultimately, governments and public administrations exist to deliver policy outcomes, and ICTs are a major enabler across all major policy areas. The use of the Internet to deliver value in these areas is a major preoccupation in member countries.

▪ Better governance arrangements in themselves will **promote economic policy objectives**. More specific effects may range from impacts on ICT production, e-commerce diffusion and business productivity to indirect effects such as reduced fiscal requirements owing to more effective programmes and efficiencies flowing through to the broader economy.

▪ E-government can help **forward the reform agenda**. When aligned with modernization goals, implementing e-government can help administrations focus on the additional changes needed to meet service delivery and good governance concerns. At the same time, it provides some valuable reform tools and builds support from high-level leaders and government employees for achieving those objectives.

▪ Through citizen engagement**,** e-government can **improve the overall trust relationship** between government and public administrations. E-government, by

improving information flows and encouraging active participation by citizens is increasingly seen as a valuable tool for building trust between governments and citizens.

These objectives may involve trade-offs between efficiency and effectiveness, efficiency and openness, accountability and customer focus. When this is the case, priorities will need to be set, but it should not be assumed that such trade-offs are inevitable. Several Nordic countries have put in place specific offices (ombudsmen) to handle citizen complains with regard to privacy and citizen trust, this supports both privacy protection and efficient use of data.

Key objectives of local e-government:

- ▪ **more 'joined up'** - by linking services across organisations in the region, through improved communications, shared information systems, access points and delivery methods. This includes **delivering services jointly** with central and local government agencies and departments, the health service and the voluntary sector in particular;
- ▪ **more accessible** - from home, libraries, offices, community centres - indeed anywhere for the convenience of the public rather than from council offices at the end of a queue. Equal access for all and social inclusiveness are key. Services will be available at times and in ways which suit the public – not constrained by normal office hours or specific technology to access the service (access channels);
- ▪ **delivered or supported electronically** – creating more responsive, better value and faster services and information access, for example, through joint contact centres and web sites, and simplifying access to services for "life episodes" such as changing school, setting up a business, or moving home. Seamless delivery and the removal of unnecessary bureaucracy are key aims;
- ▪ **open and accountable** - providing more information about plans, priorities and performance, encouraging public consultation and supporting councilors in keeping in touch with the people they represent;
- ▪ **used by 'e-citizens'** – we need to support and encourage members of the public to adopt electronic services where appropriate, especially where this reduces transaction costs and allows us to focus scarce resources on those in our communities who need it most. Though it is hard to know what the public will expect from electronic public services in the future, and we recognize that not everyone will want or be able to access services electronically, careful design and continuing consultation will help avoid costly investment mistakes.

Balanced Local e-Government Combination of electronic services and participatory services	
e- ADMINISTRATION Transaction of user-oriented services offered by local government that are based on information and communication technologies.	**e-DEMOCRACY** Digitally conveyed information (transparency) and the political influence (participation) exerted by citizens and business on the opinion-forming processes of public – state and non-state –institutions

Figure 1 Concept of Local e-Government

2.6   Current situation in Serbian Municipalities

Large numbers of municipalities work with digital data. Enormous number of evidences about inhabitants, economy subjects etc. are done electronically. Nevertheless the problem is that gathering information activity is not coordinated or related to each other. Therefore information gathering in practice is in internal use of each municipality. Many institutions have separate evidence on the same data. It means that Serbian government has **significant information potential** which is still not utilized in maximum way.

There are significant activities in usage of modern ICT in Serbian municipalities. In some municipalities **big efforts** have been made towards development and constituting information systems and tools towards in order to improve public service. For example municipality Indjija that is technologically most advanced municipality in Serbia, is offering comprehensive e-government services accessible through its web site, raging form issuing basic registry documents to providing licenses and permits. Also the municipality has well functioning Citizen Assistant Center that has been successfully replicated in dozens of municipality across the country.

Generally, the existing municipality profile is without a strategy for improvement of ICT usage. Nearly all municipality decision-making persons have heard about ICT but there are no concrete action plans for implementation. ICT development is depending on **mayor's priorities**. At the same time there is a growing understanding among majors that the use of ICT is unavoidable in future. If local leading government structure consists of people, who understand and accept the importance of ICTs in modern government, then activities in this field are included in plans of municipality and will be supported. Bigger development projects are mainly dependant of foreign aid and executed with assistance of foreign ICT companies.

The percentage of budget spent on ICT and its development of municipalities is very low. There are no mechanisms/fixed procedures for ICT budget planning. Mainly this low budget is spent to the phone communications and in very rare cases to the IT.

Very few databases and information systems exists in the municipality. Also the information is **not integrated with the data-bases** of the branches of the ministries. After the implementation of the decentralization process it is very important to pay great attention for establishment and integration of the data-bases and improvement/development of ICT software infrastructure. Electronic document management and workflow should be developed to improve the efficiency of the municipality.

Particularly there is a lack of offer of online services, and there only some cases of one way download of certain forms from the web sites. Some of the web sites provide an opportunity for citizens to ask questions form the municipality leaders and employees but there is a lack of internal procedures and general regulations what kind of data should be accessible for the public.

Telecom liberalization process has given first good results (prices are going down, availability of internet in urban areas is growing) and first projects of rural broadband will connect better rural remote municipalities. Central government, municipalities, business and citizens use more computers and there is rising demand for e-services. Often computerization of governmental and municipal offices is not systematic: it is quite common that computers are not networked and not connected to internet, even if internet connection in the office exists.

3. ICT FOR LOCAL GOVERNMENT

3.1 Enabling Frameworks

There are often some misunderstandings among political and administrative leaders of municipalities which reflect in the information society development of the region.

- The role of the ICT component is overstated. In fact the technological component is most easiest part of the development and implementation of the ICT systems.
- There is sometimes understanding that it is possible simply to transfer ICT systems from one country or even from one municipality to another. This is in most cases impossible because of complexity of procedural and organizational matters
- There are often arguments that ICT systems are very expensive and because of lack of budget the ICT development is not possible. Often the systematic approach in ICT budget planning is even more important than amount of money. It helps save money and even with the use of limited resources to guarantee the sustainability of development and implementation..
- There is no-one to translate the difficult technology related language to the language, understandable for top managers. Because of that some fear that ICT companies are using the situation and trying to sell something expensive and not suitable
- There is sometimes understanding that top managers have no role in this development process: Everything is fixed by the legislation and main problem is to find company who will make the programs according to the existing

legislation. The ICT development process is widely change management process where leadership issue is most important. For that some basic knowledge of ICT and organizational support of the managers of the municipality is needed.

The solution of most of these problems is well **functioning enabling framework**. To guarantee the smooth planning, development and implementation of ICT systems, organizational, regulative and fiscal frameworks should be in place. Following paragraphs will give some descriptions, explanations and recommendations in establishing these frameworks.

3.1.1. Organizational Framework

Contrary to what is often thought, the biggest challenge when developing an information society does not lie in how to get the information technology together, but in shaping the organizational, legislative and fiscal framework of the local government to support the development of e-governance.

The organizational model offers the local governments a framework in which to situate the decision-making processes and project management activities, related to introducing e-government.

As stated above, the organizational model can differ according to the size and the level of organization organisation of the local government it is to be applied to. A further division is made between the internal (applying to the back-office of the local government) and the external aspects (applying to the interaction with central government) of organization

3.1.1.1 "City-type" municipalities – internal dimension

Even if the basic responsibility of ICT development remains in the hands of the city mayor or head of administration of the municipality, in local municipalities that can allocate sufficient resources, the responsibility concerning ICT projects should be delegated to a specialised ICT manager.

The ICT manager, which we will refer to as "CIO" or "**Chief Information Officer**", should be placed at a sufficiently high level within the municipality (usually at the level of head of department). He or she will be responsible for:

- creating and implementing an ICT action plan on the level of the municipality;
- planning and preparing the annual ICT budget, in line with both the municipality and the central government ICT action plans;
- implementing projects, including procurement, the organization of supervision and answering to the municipalities training needs;
- maintenance of the ICT architecture and user support;
- participation in an ICT task group of municipalities, to be lead by the Central Coordination Unit of the Ministry of Local Governments.

Benefiting from the supportive, advisory and preparatory activities of the CIO, a city **ICT council** should be established to assist the mayor in overall strategic decision-making.

Such an ICT Council

- is headed by the city mayor or head of administration;
- consists of the key persons in the main departments and sub-units of the municipality;
- coordinates the efforts of all actors involved in the ICT projects and integrates the changes in the internal working of the departments;
- benefits from the preparatory work of the CIO;
- has the authority to approve all the strategic initiatives concerning the development of ICT in the municipality, including propositions to initiate new projects, the annual ICT budget[1], intermediate reports on ongoing projects and measures needed to implement re-engineered processes.

The tasks of the ICT Council can, depending on the size and specialisation and on the existing organization within the municipality, be taken up by the City Council itself.

In bigger municipalities and municipalities with a more complicated division of tasks, ICT **Correspondents** can be appointed. Preferably, they have a better knowledge and understanding of ICT issues. They support the implementation of new technology in the department and act as contact persons for the CIO. IT Correspondents need to be offered more intensive training on ICT and can be rewarded for their extra efforts using financial and non-financial incentives.

With ICT comes the issue of data protection. Where at first basic physical and procedural security measures can be sufficient, a comprehensive security policy has to be developed over time. The need for such a policy grows with the development of different systems and the exchange of data, enlarging the risk of unauthorized use of information.

The issue of data protection should be tackled by a **Data Security Officer**, who can be especially appointed and trained or whose tasks can be observed by a senior official within the municipality. The Data Security Officer implements organizational, physical and technical data protection measures after analysing the risks connected to the implemented mechanisms of information gathering and exchange.

Ideally, the work of the Data Security Officer is supported through feedback gained from regular external security audits.

Part of the activities, such as training and software development, can be separated from the municipality government and can grown into independent companies.

Other tasks and activities can be performed in cooperation with ICT departments of other municipalities, either through direst cooperation or through the creation of a specialized (non profit) entity, working primarily or exclusively for the municipalities that control it.

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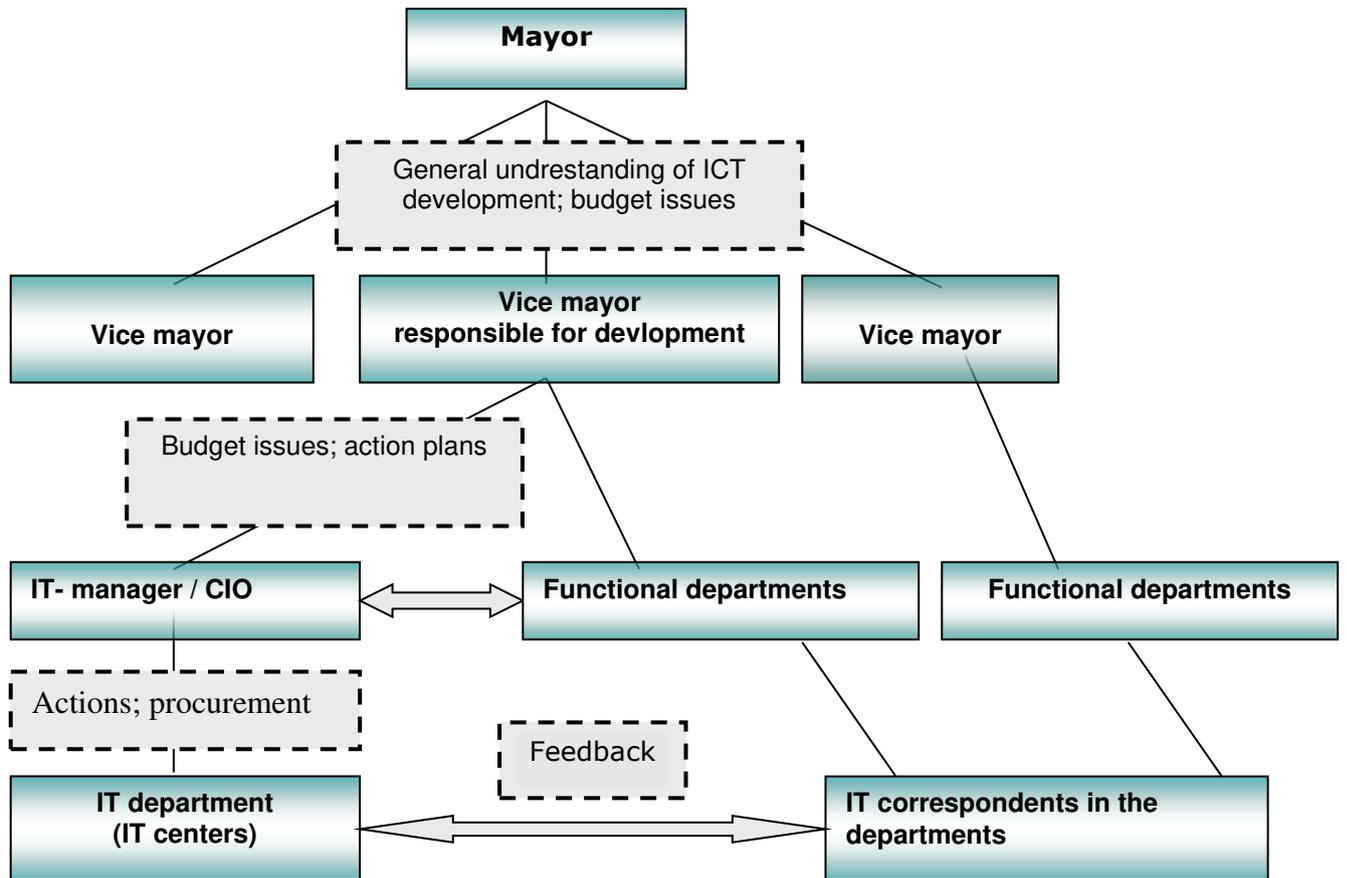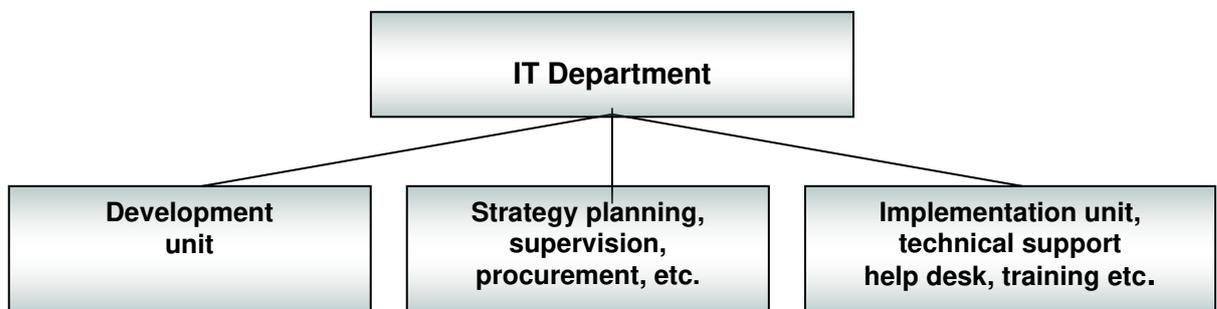
Figure 2: Sample of possible structure of bigger city-type municipality

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│ Development  │  │ Strategy planning,│   │ Implementation unit, │
│    unit      │  │   supervision,    │   │  technical support   │
│              │  │ procurement, etc. │   │ help desk, training etc.│
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Figure 3: Possible structure of IT-department

3.1.1.2 "Small" municipalities - internal dimension

ICT manager in small municipality is not necessarily working full-time for municipality. His/her working time could be shared with other institutions – school, government institution or private company.
The responsibilities of ICT manager also could be outsourced and bought from the company/ entrepreneur. The main role of the person is to have clear vision of the future developments and understanding of the municipality needs – as well in the office and broader.
All services could be outsourced as well. But there is dangerous moment - somebody from the municipal organization should be wise subscriber and contractor for the outsourcing partner.
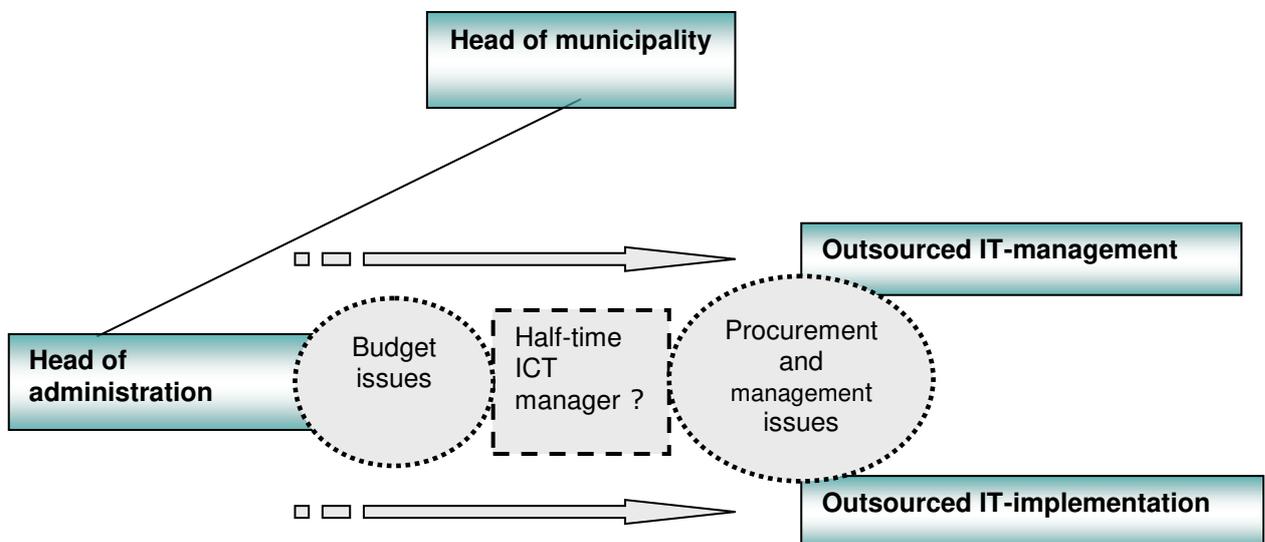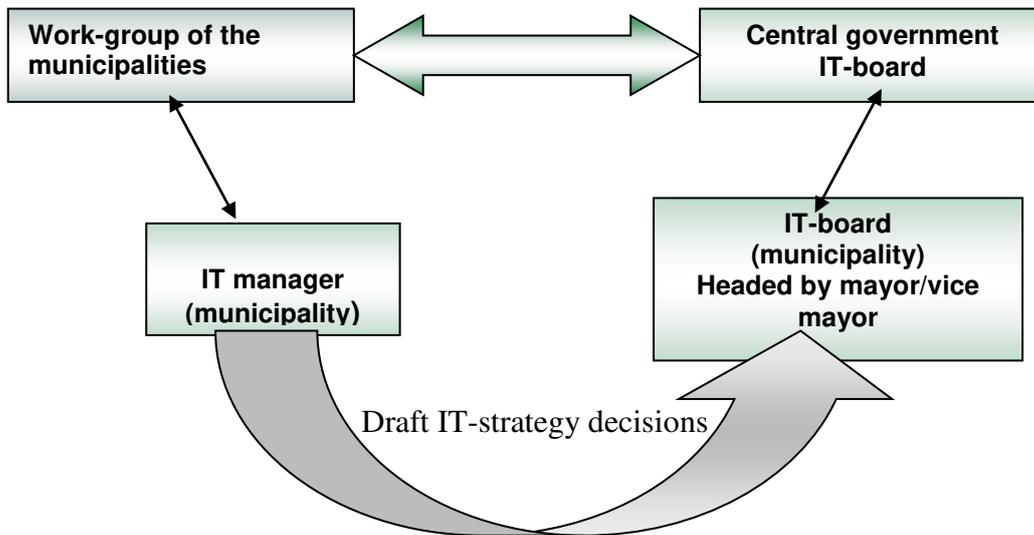

Figure 4: Organizational structure of IT-management and implementation in small municipalities

3.1.1.3 External dimension – big city-type municipalities

Central IT strategy of Serbia should be taken into account on the municipality level. Local government strategies and action plans should reflect the basic issues of central IT-strategy. Organizationally, the strategic questions of ICT development are discussed in the government-founded, nation-wide IT-board.

Representatives of big municipalities should be members of nation-wide IT-board. Basic and strategic information society questions of the municipalities are presented for the opinion of central IT-board. To harmonize the development levels of municipalities, working group of municipality-level ICT managers should be formulated. This task-group is focused to solve common issues of ICT development in the municipalities. This is also a good organizational mechanism to harmonize local government views to be presented to the central level of IT-board.

Municipalities' ICT working group could be the body that provides advice, opinions and decisions of nationwide cooperation of municipalities.
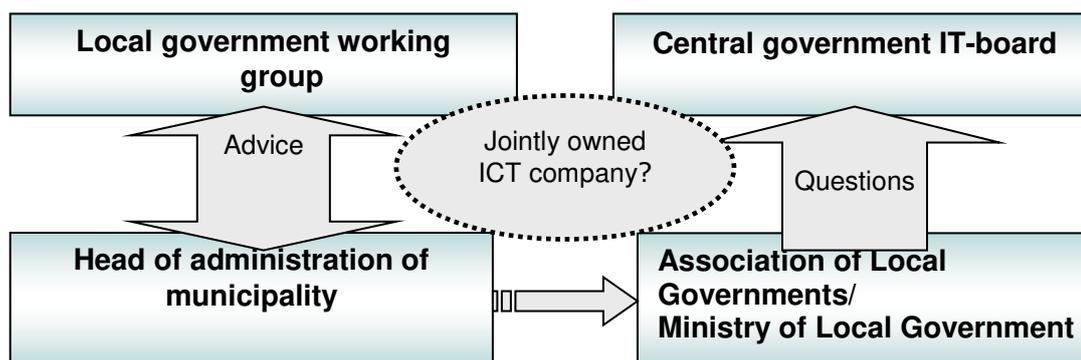

Figure 5: Organizational structure of big municipalities for cooperation with central government IT-management structure

3.1.1.4 External dimension – small municipalities

Small municipalities should cooperate in the framework of local government associations. Small municipalities are usually not capable to run their own IT-strategies and projects. This is the reason why for small municipalities common strategy (information policy document) should be developed.

Another option is to establish jointly owned (by municipalities or Association of Municipalities) ICT company that provides services for municipalities – document management system, financial system, e-mail system, etc. The same role can also be assigned to the association of the ICT Centers.

Figure 6: **Organizational structure of small municipalities for cooperation with central government IT-management structure**

3.1.2 Legislative/regulative framework

ICT is the most important development component of modern world and valuable foundation of information society. In developed countries its use and implementation is based on optimally arranged regulations and international standards that create stable and predictable legislative environment with laws that are clearly formulated, transparent, non-discriminatory and technologically neutral.

Legislative, policy and regulatory environment of Serbia which is necessary for lawful and proper ICT application in all segments of industry and economy is yet to be completed. The legal system must be brought in line with the EU law.

Privacy protection and data handling, intellectual property rights, contract law, electronic signature law, electronic commerce law, telecommunications law and many others, need to be enacted to provide a secure and stable environment attractive. On the other hand, some modern and well-written laws, such as those providing for intellectual property protection, have been tabled already, but they still lack enforcement mechanisms. This means that changes of existing legal system are necessary if Serbia is to become modern state with the characteristics of information society.

Key Steps to a New e-legislation are harmonization with EU legislative, fulfilling the obligations from eSEEurope Agenda and WSIS Action plan, amending existing laws and adopting new laws and by-laws.

3.1.3. Fiscal framework. Structure of budget.

ICT budget planning is part of general municipality budget planning. From several best-practice examples, it is important to fix the structure and methods of ICT budget planning by internal regulation of Municipality. It is recommended to describe ICT related expenses clearly in Municipality budget. Ideally, half of the IT-budget is used for running and maintenance costs and half for development and investments. From

international experience, the share of ICT expenses from the general budget is 1-2%. In parallel with financing possibilities from municipality budget, often international donors are supporting development projects. The choice of possible development projects is depending on the strategic tasks of these organizations. Quite often this financing is aimed to support the projects related to the civil society development, transparency, e-Democracy and anticorruption issues. In these cases the mechanism and rules of financing depends on the regulations of these international organizations. Despite of these external possibilities, ICT budget from municipality budget is one of the priorities not depending on how much the share of this money is from general budget. This is important because of sustainability of the work of these systems, the possibility to use the process for general coordination functions etc.

ICT budget is often divided into:

- Running costs of systems and infrastructure. There is the need to renew ca 20% from infrastructure every year.
  The calculation formula can be used to evaluate the need for this renovation: $c=a*b*0.2$ (c - need for infrastructure renovation budget, a – number of ICT workplaces in municipality, b – estimated cost of unit of infrastructure, usually 2-3 000 EUR). In addition to the renewal of the infrastructure some other costs should be estimated – cost for Internet connectivity service, cost of soft- and hardware maintenance, cost of software licenses, cost of staff ICT training etc.
- Cost of development projects. This cost is often evaluated used the expert method.

3.2 Technical Model

Technological model for municipalities consists of two basic parts:

- IT- infrastructure
- Information systems

Basic components of both parts are similar, since most of functions that municipalities are called to perform are common and established by the law. There are some differences between city type of municipalities and small rural municipalities but they are relatively minor and will be dealt within the text.

3.2.1 ICT infrastructure

The ICT infrastructure for the municipality is the physical part of the e-model for municipalities. The equipment and the connectivity whether wired or wireless are the backbone of information exchange both within a municipality and between the municipalities. Since ICT equipment is also the most expensive part of the e-model that has to be implemented with very scarce resources, one has to be very careful in the planning process. A general recommendation is to aim at harmonious development of the infrastructure in order for not to create artificial bottlenecks that do not allow to use the obtained resources efficiently.

The ICT infrastructure for a municipality consists of personal computers, local area network(s), user identification and authorization systems and basic software. For the uninterrupted flow of data that is a precondition of data exchange between administrations, one needs to aim at developing a broadband Internet connection in

every local authority. Since this is also a need on behalf of central government, it is advisable to create a centrally launched and financed project to reach that aim whereby the central government will pay for the initial setup of the broadband connection and municipalities would be responsible for the running costs. Such a layout will set a basis for sustainable functioning and development of municipal ICT systems.

It is strongly recommended that every person who needs to have a workstation, would have it connected to Internet and equipped with basic set of software tools. Local governments should themselves develop a fixed standardized list of necessary software for an ordinary workstation of their municipality in order to facilitate the exchange of information and keep track on proprietary issues of the software.

The introduction of an ICT system at local level would typically go through the following steps[2]:

- Systemic analysis of processes and procedures of local self government
- Feasibility analysis of the information system
- Design of the network
- Installation of the information system
- Training of users
- Implementation of a monitoring system for model usage

In order to have a fully functioning information system, the following basic technical preconditions should be met:

- Local network - all the computers in the local administration should be networked, or at least one computer in each department or office should be in the network
- Central server - is required to host the model and supporting software
- Internet connection - according to the needs of the local government network and its financial capacity. Large municipalities might use a dedicated line, providing twenty-four hour connection with Internet. Smaller local governments may only be able to afford a more limited connection

For the implementation of the local information system, the following infrastructure is needed:

- Minimum informatics equipment of the local government is one computer in each department or office. One high quality computer will function as server.
- Knowledge of Windows and Internet by employees who will perform the interactive work with clients.
- An appropriate software package including users' manual.
- A team of experts to conduct the basic systemic analysis, install the model, and train the users.

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[2] Based on the report "Capacity Building of Local Governments-Development of Model Macedonian Municipality

In order to provide for better comprehension of the process of development of e-government and for a competent demand for electronic administrative services, it is necessary:

- To carry out regular monitoring of the perceptions for the consumption of electronic administrative services.
- To organise and implement an awareness programme for the utilisation by businesses, citizens and administration of electronic services.
- Using the capabilities of e-government the traditional channels for service delivery must be preserved, developed and organised according to the "one-stop-shop" concept in order to avoid the "digital divide" between the different target groups.
- To carry out a periodic evaluation of the advancement in the implementation of electronic services.

3.2.2 Information Systems

A municipality is having normally the following information systems:

- **Document management system** (DMS) – document management processes are deeply connected to the core duties of the municipality. In big city-type municipalities document management with approval/digital signature mechanism is core information system. Document management system should follow the basics of state IT-architecture, document semantics and to be able to communicate with state ICT basic infrastructure.

> **CASE EXAMPLE:**
> ***Document Management System GoPro in Tartu City Government, Estonia***
>
> City of Tartu implemented digital document management system GoPro in Tartu City Government. The performance of the city officials was increased: officials can use online document and cases database; have different views - by client, by case, by office worker, by institution, etc. The speed of the workflow has dramatically increased. Earlier one approval takes approximately one day, now it is common that all 5-6 approvals are given in 1-2 days. It is easy to monitor the status of the document or case. Distant use of the system is possible in any time and from any location with Internet connection. The full functionality is available for distant work. It is possible to create, edit, approve, monitor and manage documents.

- **E-mail systems**. There is wide variety of commercial e-mail systems in the market. Also open-source solutions are available. It would be advisable to integrate e-mail system to the document management and resource planning system of municipality.

- **Finance and personnel management systems**. It would be good to reach the situation where basic finance and personnel management information systems

are developed together – with unified interfaces for simplifying data transfer to the central institutions, statistics etc.

CASE EXAMPLE:

Giurgiu Local Council, Romania - Document Management and Tax Automation Systems (DMS & TAS) project.

Using the new Document Management and Tax Automation Systems the Giurgiu City Hall is now open around the clock for businesses and citizens, providing efficient services. Documents are no longer handled on paper and taxes are collected with a new application that solved all the problems generated by the old system The Giurgiu City Hall developed a portal which can be accessed at www.primaria-giurgiu.ro and provides FREE services for businesses and citizens, including:

    - Registration online
    - Schedule Appointments online
    - Electronic archive with Local Council Decisions
    - Forms and services online
    - Information about the tax debts on the Internet
    - Electronic payment of local taxes and fees
    - Questions and answers online (forum)
    - Useful information on the Internet

The DMS/TAS project has already had significant impacts on the businesses and citizens of Giurgiu and on the Local Council, including:

    • More efficient tax payment and document management processes;
    • Substantially reduced waiting time for taxpayers to make payments;
    • Easy and quick access to public documents and information;
    • Increased transparency in the budgetary process;
    • Greater involvement by citizens in the decision-making process.

To provide efficient services for businesses and citizens, the Giurgiu City Hall employees attended several computer trainings.

- **Web pages of municipalities and e-democracy tools**. Basic tools for e-democracy are reasonable to develop together under the "umbrella" of local government association or other common institution. There are several recommendations in the IT-architecture of state, which are setting standards for web development. Several open source tools are available to manage municipality information in the web. Public Information Act should regulate the list of information for all municipalities that should be set up on their web sites.

The Canadian government stands out due to exemplary integration of users. For example, information and services are not provided along the administrative structures but are instead offered according to user needs (subdivision into three so-called gateways: "Canadians", "non-Canadians" and "Canadian business").

CASE EXAMPLE:
Local e-Democracy Project (United Kingdom),
http://www.e-democracy.gov.uk/projects

The local e-Democracy National Project was launched in 2005 in United Kingdom to explore how new technologies can change the way in which Councils engage and work with their Citizens.

The aim of the project is to deliver improved service and efficiency savings as well as helping local governments to meet their more strategic e-government targets.

The Project has developed strategy guides, route maps and business case templates to help authorities develop their own strategies whilst drawing on the Project's experiences.

It has created an easily manageable format within which to sit all this knowledge and consolidated its findings on this website.

The local e-Democracy National Project has provided authorities with the products and tools they need to develop effective local e-democracy strategies of their own.

The project was awarded the best e-Democracy Project in 2005 in the World.

- **State registers**. Most functions, related to the registration of population, real-estate, businesses and cars are centralized to the central level state register. At the same time, different municipalities have different needs for information. It should be discussed in which amount enlargement of existing state register data set certain municipality should enlarge registers. There are possible IT-mechanisms which allow integrate data sets of state registers and municipality level important information. From the beginning clear understanding should exist about ownership of data and cross-use of data by central government and municipalities (use of data for analysis, privacy, financial issues).

CASE EXAMPLE:
X-Road, Estonia - one of the cornerstones of the state information system

The X-Road enables secure access to nearly all Estonian national databases; ensures the necessary availability, integrity and confidentiality of electronic document exchange; serves as an environment through which Estonian information systems can be potentially joined with similar systems to be built in the EU, etc. All the above-mentioned characteristics have already successfully been put into practice. Hundreds of services provided by information systems of different institutions work over the X-Road on the 24/7 basis and all Estonian residents with the national ID card or a contract for the use of Internet banking codes can make use of its enquiry services targeted at citizens.

The aim and the technical solution of the X-Road project do not lie in the transition of databases to a huge data management system, but in the development of standardized interfaces for the already existing databases and the creation of a data exchange layer called the X-Road. The X-Road allows officials as well as legal and natural persons to search data from national databases over the Internet within the limits of their authority. The system ensures sufficient security for the handling of enquiries made to databases and responses received.

3.2.2 Front office

The term "front office" refers to government as its constituents see it, meaning the information and services provided and the interaction between government and both citizens and business. Implementation of e-government initiatives concerns two areas regarding the front office: implementation of online services and engagement of citizens.

CASE EXAMPLE:
Citizen Assistance Center, The One Stop Shop for all Administrative Services, Municipality Indjija, Serbia

Municipality Indjija has come a long way in making its administrative services for citizens and businesses more accessible and more convenient. The Citizen Assistant Center is an integrated part of Indjija's municipal administration designed to provide easy access to the most important municipal services and is the first of this kind of Serbia.

This center supplies citizens with adequate and timely information regarding their government, and functions as a one-stop location for obtaining civil documents, ranging from birth and marriage certificates to construction permits. It also provides for government transparency and efficiency by enabling employees to offer their services in a faster and more consolidated manner. The established Citizen Assistant Center has been very successful.

Aside form these municipal services, The Citizen Assistant Center is housing the representative bodies, namely tax administration and cadastre services, as well as bank booth for customer convenience. Indjija has set an example with its model of Citizen Assistant Center which later successfully replicated in dozens of municipalities across the country.

3.2.3 Back office

The term "back office" refers to the internal operations of an organization that support core processes and are not accessible or visible to the general public. The implementation of e-government goes hand-in-hand with a number of back office reforms. On the one hand e-government will help bring about these reforms, while on the other hand e-government requires such reforms in order to be successful
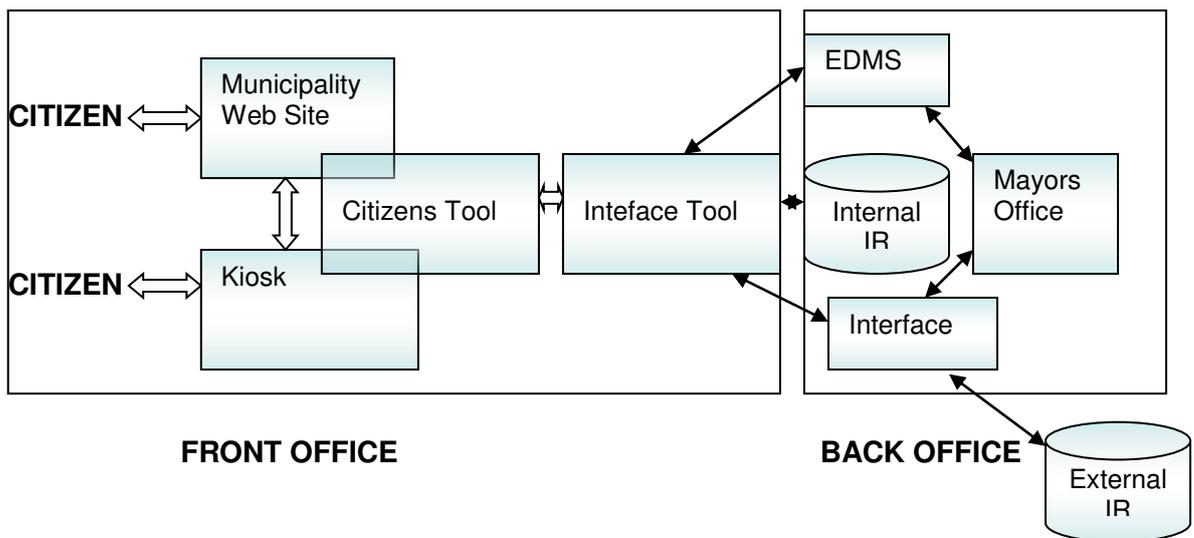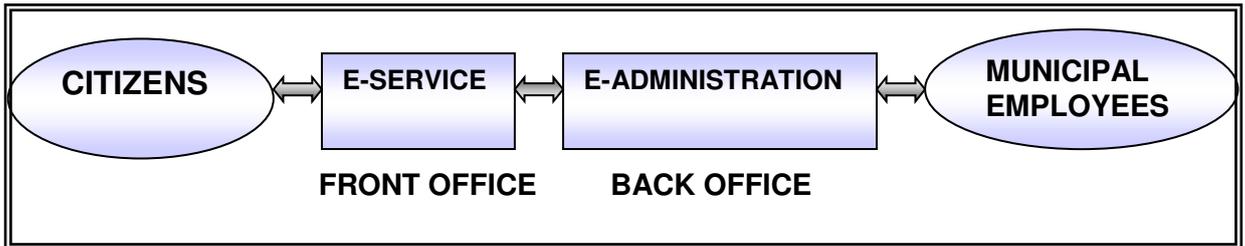

Figure 7: **System Architecture of front and back office in municipality**

CASE EXAMPLE:

Information technologies as interface in the municipality of Gdansk, Poland

The website of the municipality is oriented to citizens, investors and tourists. It comprises a database, and is characterised by attractive web structure and design. Citizens and business can easily find the latest local news on the web: everything about the City Authorities, the organisational structure of the City Hall, the municipality's annual budget, legislative acts, resolutions of the City Council, a detailed guide on how to get about in the City Hall, offers for investors, public tenders, City Hall publications, on-line chat with officials, and an interactive map of Gdansk.

The objectives of the webpage are to reduce bureaucracy and offer on-line service also to special groups like tourists, elderly people and to disabled people. They can find a lot of useful information and services on the thematic websites of Gdansk.

An integrated computer management system was created for all the information and services available to citizens in the City Hall of Gdansk. The site contains GIS-digital maps and map applications, files on buildings, citizens, cars, legal subjects, City finances and taxes.

3.3 E-services for citizens and businesses

As after decentralization municipalities will offer new, wider variety of services for citizens, it is great challenge to offer those services in traditional way, but as well as e-services. According to European researches local governments in developed countries are offering up to 77% of public e-services. Often local government portal is the first stop to reach central government services

CASE EXAMPLE:
System 48, Municipality Indjija (Serbia)

System48 is a comprehensive management and accountability system allowing municipality leadership to monitor the work of its department and public utility enterprises, make informed decisions and improve the overall quality and cost effectiveness of service delivery.

It requires all municipal departments and public utility enterprises to prepare detailed operational and financial reports, presenting them in regular weekly public meetings. The **mayor himself**, assisted by a team System48 analysts, is presiding over each session demonstrating his commitment to accountable and **transparent management** of public resources.

System48 has recorded **significant results** in improving the efficiency of municipal services, significantly increasing citizen satisfaction and saving approximately 10% of municipal annual budget.

A vital component of the system is **Call Center**, allowing citizens and businesses to report their concerns and problems related to the variety of issues related to provision of municipal services. The local government guarantees a response to each request within 48 hours.

The application of the ICT in the public sector has generally three dimensions:

- G-to-G or the use of the information and communication technology to improve the functioning of the administration,
- G-to-C or the provision of services to the citizen and
- G-to-B or the provision of services to the businesses.

Since Serbia is also aiming at the European Union membership, one can use framework proposed by the European Commission to think about the types of services one can and should aim to provide electronically. The European Commission has defined a list of twenty basic public services. For twelve of these services, the citizens are the target groups and for eight of them businesses are the target groups. The 20 services are brought out in Appendix 3.

In order to measure the "availability of public services online", a four-stage framework has been defined[3] and widely accepted. This framework provides basic guidelines of how to proceed with the development of various services to the citizens and businesses.

- **Stage 1- Information**: The information necessary to start the procedure to obtain this public service is available on-line.
- **Stage 2- One-way Interaction**: The publicly accessible website offers the possibility to obtain in a non-electronic way (by downloading forms) the paper form to start the procedure to obtain this service. An electronic form to order a non-electronic form is also considered as stage 2.
- **Stage 3- Two-way Interaction**: The publicly accessible website offers the possibility of an electronic intake with an official electronic form to start the procedure to obtain this service. This implies that there must be a form of

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authentication of the person (physical or juridical) requesting the services in order to reach stage 3.

- **Stage 4- Full electronic case handling**: The publicly accessible website offers the possibility to completely treat the public service via the website, including decision and delivery. No other formal procedure is necessary for the applicant via "paperwork".

It is important to note that first, primary and most used service for both the citizens and the businesses is simple information provision. By using its own web site a municipality can and should provide both information about its own setup and activities as well as various local information. One should not forget that web-sites will become quickly the front windows or gateways for not only the local population but also for people from other localities and tourists.

3.3.1 Online development
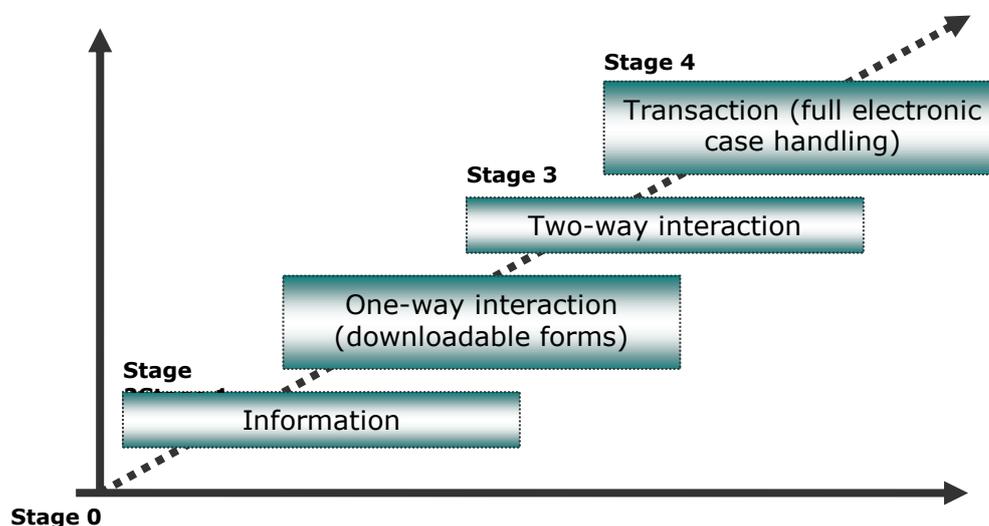
Figure 8: The different stages of e-services

It should be aimed to reach the situation where 20 services for citizens and businesses, fixed in the eEurope action plan will be offered at least on the second-stage of service delivery. It is recommended that these services are developed and implemented centrally but in many cases used and supported by each municipality. It should be mentioned also that in most cases the precondition for development of e-services is well-functioning back-office systems of municipality as well as operational central basic registers.

It should be analyzed which of these services are in the circumstances of Serbia wise to implement in the e-world within 2 years action plan
- Information services
- Municipal data
- Community data
- Downloadable application forms (.doc; .rtf; .sxw; .pdf)
- Printable application forms (.doc; .rtf; .sxw)
- On-line forums
- Q & A (Citizen – official)

3.4 The digital divide

The digital divide is a barrier to e-government in that people who do not have access to the Internet will be unable to benefit from online services.

While e-government can also improve services to citizens through other channels (notably by improving back office procedures), the inability to provide online services to all citizens can hold back e-government projects.

Additionally, the groups in society with lower levels of access tend to be those that are already disadvantaged. For example, lower income groups have less access to the Internet than higher income groups. Such disadvantaged groups are often the targets of government interventions and have a higher level of ongoing interaction with government. Many of their interactions with government are complex – establishing identity, entitlement for assistance, complex medical or social intervention – and they are not all well suited to online provision. While access to government information and services would be important for such groups, they may not benefit from enhancements to service quality and greater choice through online services.

E-government services may by their very existence encourage individuals to access the Internet. However, for most citizens, transactions with government are relatively rare and will not generally provide households with the main incentive to purchase a PC and Internet connection. However, government information and opportunities for consultation and participation, particularly at the local level, may be important in conjunction with other factors such as educational uses, access to e-mail and messaging and home PC use. It is thus important, on e-government grounds alone, for governments to continue policies and specific interventions to reduce the digital divide. A specific focus on frequently used government services with value to groups with low access, along with overall marketing of online government services, could be an important element of digital divide policies.

CASE EXAMPLE:
Look@ the World Project, Estonia

The Government and a number of private companies announced a project in 2001 (Look @ the World project, www.vaatamaailma.ee), as a result of which the percentage of Internet users in Estonia should increase from the present numbers to over 90%. The project focuses on further improvement of access to the Internet in Estonia. Private companies have announced that they are willing to invest a sum equal to the Government's yearly IT. Primary aim of Look@World project was **to provide of equal opportunities** for access, skills and motivation to use Internet.

The main focus areas of Look@ the World Project were:
To provide basic computer and Internet training for 100'000 persons (current non-Internet users);
- During 1,5 years total 11'000 trainings which makes over 50 trainings every day;
- Involves creation of 17 new computer classes with 30 full-time lecturers and about 200 part-time lecturers at schools;
- Target group blue-collars, servants, older population.
- Training involves 4 hours basic computer and 4 hours Internet course.

To train other organization leaders and opinion leaders
- Additional training for school teachers (to use more ICT in curriculum);
- ICT possibilities training for Municipality leaders ;
- ICT possibilities training for Small- and Medium Enterprise leaders;

3.5 Public Internet Access Points (PIAPs)

When planning and reviewing the ICT infrastructure of a municipality, one should keep in mind not only the needs of the administration but also the question of access for the citizens. In larger towns one can at least partly rely on private sector solutions but in small communities these might not be economically sustainable, at least in the current level of development. However, there is no sense to develop e-services in the circumstances where only a tiny fraction of people can potentially have an access to the Internet.

> **CASE EXAMPLE:**
> *Public Internet Access Points, Estonia*
>
> People all over the country can access the Internet from over 700 Public Internet Access Points (PIAP), 51 per 100 000 people - one of the highest numbers in Europe. The PIAP has special traffic sign, with the @ symbol, showing its location. Most of PIAPs are located in libraries and other municipal buildings across the country. One can easily locate the nearest PIAP by accessing this website www.regio.delfi.ee/ipunktid There are more than 380 areas (city squares, hotels, pubs, airports etc.) that currently provide high-speed wireless Internet

3.6 Privacy and security

Citizens are unlikely to use e-government services without a guarantee of privacy and security. Governments also have a strong interest in maintaining citizens' trust (*e.g.* that information provided will not be misused). The difficulty of protecting individual privacy can be an important barrier to e-government implementation. Ensuring that e-government initiatives are in step with society's expectations in this area is a crucial means of building trust. The challenge facing e-government coordinators and implementers is to respect accepted privacy principles while allowing the benefits of the Internet and other technologies to flow to citizens. This balance is of particular importance when considering seamless government services involving data sharing among agencies.

Government has a responsibility to provide leadership in developing a culture of privacy protection and security. ICT should provide this leadership through its roles in the development of public policy, as owner and operator of systems and networks, and as a user of such systems and networks. As a user of information systems and networks, government shares a role with businesses, other organisations and individuals for ensuring secure use of the system and network.

Question about what mechanism for authentication is used is widely related on the security level of the applications. In this regard, e-services offered by municipality should be analyzed taking into account the needs for data security and basics of personal data protection.

ICA survey stated that most countries electronic ID systems are based on national ID numbers.

Key Motivating factors for having such an identification numbers are:

- Enhanced security and integrity in the delivery of services;
- Accurate means to uniquely identify Individuals, leading to more efficient and effective inter-administrative exchange of data; and
- Facilitation of public service delivery, leading to easier access and greater convenience to Individuals.

Most of EU countries have already some form of citizens electronic authentication systems, several are planning to implement in near future and only small minority is not planning. General conclusion from here is that the possibilities to use national level eID-s instead of municipality ones are rising.

Taking into account these motivation factors more municipality e-services are based on the mechanisms of national eID in future.

4. DELIVERING LOCAL E-GOVERNMENT

4.1 e-Government Development Planning

Besides of building of sustainable enabling environment e-government development planning is important. The planning should be systematic, stable and sustainable. In this planning process, organizational, legislative and fiscal environments are having important roles. Quite often there are two types of plans – strategic and long run plans and operative, one-year action plans. The methods to define these plans are different, also depending on the size of the municipality. It should be also said that sometimes the strategies and action plans are not in the paper and having more "ad hoc" nature but thise plans normally exists despite they are on paper or not.

4.2 Where We Are - Indicators and Benchmarking.

For strategy and action planning reasons it is important to know what is the ICT situation of municipality. One example of an assessment that **balances** efficient administrations with responsive democracy is the BEGIX (Balanced e-Government Index) tool focused on measuring 'balanced e-government' by combining electronic and participatory services.

The self-evaluation tool BEGIX (Balanced E-Governance Index) is based on the concept of balanced e-government according to which a "correct" e-government is a balanced combination of electronic services and forms of electronic participation that is developed within change management framework. The concept was developed in the course of a benchmarking survey carried out by Bertelsmann Foundation and BoozAllenHamilton.

The *balanced e-government scorecard* served in the recording and evaluation of the various dimensions of e-democracy and e-government services (Figure 9).
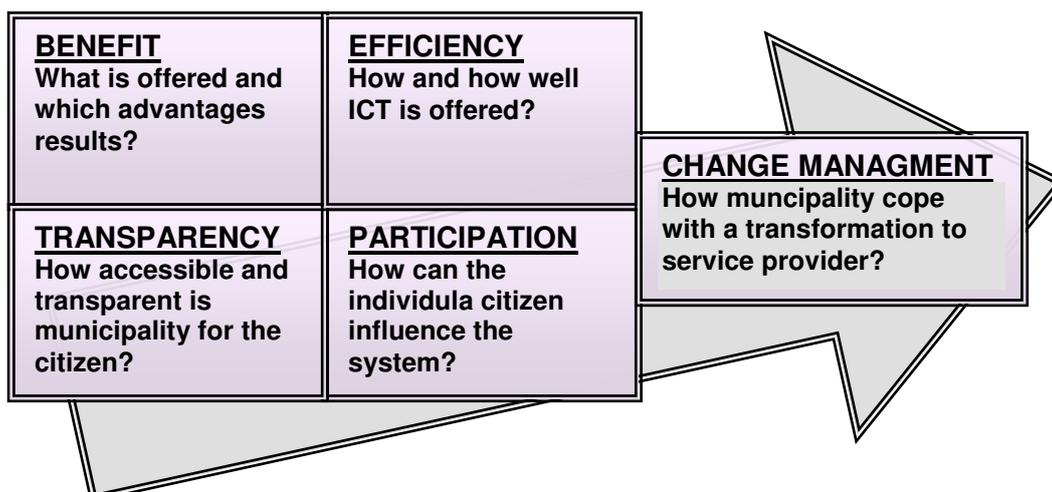
Figure 9: The Balanced e-Government Scorecard

Scorecards permit the uniform checking of different objectives within the framework of a higher order strategy. The matrix which forms the basis for the e-government scorecard comprises a dynamic and a static component – with a total of five fields – as follows:

Benefit: This first scorecard area relates to the quality and quantity of the services and therefore to the benefit that the citizens derive from the service offering e.g:
- The range of services that have already been implemented:
- The realization of the "one-stop shop" (accessibility of all services via one portal).
- User-friendliness of the services

Efficiency: The extent to which actual improvements in efficiency are realized, e.g.:
- Availability of a process, application, system and database architecture
- Elaborated finance and resource planning (business case)
- State of the utilized ICT infrastructure and platform technologies
- Quality and scope of the training and qualification programs for staff and managers

Participation: This part of the matrix is concerned with the question of whether the services are designed so as to promote political communication and enable a higher degree of citizen participation:
- Direct user access to relevant contact persons via e-mail or the web
- Consideration of user wishes
- Influence and consultation of citizens in decision-making processes
- Possibilities for debating public topics (chat rooms, forums etc.)

Transparency: Whether e-government contributes to the realization of the transparent state is recorded here. Inter alia, the following aspects are measured:
- The amount of information on executive and legislative processes (such as, for example, committee meetings, press conferences, local meetings)
- The extent to which the processing of a query can be traced – i.e. real time information for the clients about ongoing queries or applications

- The topicality of information

Change management: The course of the planning and implementation process in the e-government program is determined via this section of the scorecard. For example:
- Strategy development, e.g. the degree to which regular comparisons are made with other e-government programs
- Monitoring and controlling
- Inclusion and motivation of the employees

The self-assessment questionnaire is in Annex 1 and can be found online www.begix.net.

For **strategy and action planning purposes** it is important to know what is the ICT situation of municipality. Often once a year the questionnaires about IT situation should be filled. Example of these forms are given in the Appendix 4.   There are questions about infrastructure (not only internal municipal government but also about the situation in the territory of municipality). Also databases, hardware and software of the muncipality is analyzed.

4.3 ICT Strategy of Municipality

In theory ICT strategy should be developed according to the general development strategy of the municipality and not vice versa. Bigger municipalities often have some general strategy papers while smaller ones often do not have. In most cases the strategy is build in combination of bottom-up (development needs proposed by the different units of municipality according to their everyday needs) and top down (from some strategic considerations of development, incl. tasks set by the national Information Society Strategy) planning. The strategy development is collective work of all of the staff of municipality but specially ICT organization. The time horizon of strategy is often 4-5 years and this is the bases of operative plans – annual action plans.

There are often following parts or building blocs of the strategy:

- To increase efficiency in administration, benefiting both the business sector and the citizens of the municipality in everyday life – activity, directed to the external dimension
- To increase efficiency and transparency (questions about anticorruption etc.) of the business of the municipality itself – this activity is focused to internal dimension, to improve back-office processes of the municipality;
- To support democratic processes through the tools of e-democracy - focused to the external processes
- To increase access to Internet and public information. Questions about e-inclusion, broadband strategy.

The focus on the top leaders of the municipalities is maid with the intention to explain in pragmatic way most important issues of the information society development. It is utmost important that this strategic development is managed by the top leaders of the municipality. There are several reasons:

- The implementation of the ICT systems cause changes in organization and processes. These changes can not be managed by ICT managers. These are general top management questions.

- ICT development are derived from general development plans of the municipality. This is the issue of top management of the municipality.
- Efficiently functioning ICT systems are establishing environment for economic development, increase of foreign investments, transparency of local government etc. Personal leadership in these developments will give political credibility and reliability.
- Well managed and functioning ICT systems will build ground for growth of financial stability of municipality. This will give clear message to the voters of the community about positive changes and stability.

The ICT strategy of the municipality should be clearly documented and should be based on rules and regulations. Concerning ICT, a set of basic documents has to be created over time.

Document	Priority
Rules of use of the ICT system	1
Web content management rules	1
Hardware assets management rules	1
Software assets management rules	1
ICT action plan (2-3 years)	1
ICT budget (current year + forecast for 2 years)	1
ICT strategic plan for municipality (for 5 years)	2
Rules for starting, running and implementation ICT projects	2
Document management rules (adding Digital document management rules)	2
Rules to create backup copies	2
Data protection policy	1

The tools for coordination of ICT development in public administration are money and regulations. The usage of both of these tools are prerogative of top managers.

4.4 Action Plan for Implementation of ICT

Annual action plans are more concrete project description where in parallel with the strategic aims, several more concrete aspects are defined. Usually these are specific aims of the project, expected time-frame, responsible persons or organizations, general methods to proceed with the project, predicted budget and human resource needs and main deliverables. Action plans are normally prepared by the CIO and approved by the ICT Council. In small municipalities where CIO and Board does not exist, the plans are prepared by ICT advisor and approved by the head of municipality. ROI and profitability is one aspect which is often under discussion when action plans are prepared.

Action plans consists often benchmarks to measure the success of development with the special focus on projects in Action Plan. Benchmarks consists also fiscal issues.

The supervision of the planning process is the duty of top management of the municipality. This is in many cases accompanied with fiscal and ICT auditing processes.

The goal of the action plan is to define the priority activities in each municipalities for introduction and implementation of the e-governance at local level.

Action plan format is a matrix that involves all the necessary aspects of e-governance and can be used by each municipality.

The matrix consists of the following components:

- Actions – the activities that should be taken by municipality for achieving the development of e-governance at local level.
- Expected results – end result/target of the activity
- Person/department – who is responsible for the fulfillment of an activity?
- Required resources – what is needed for completing the activity?
- Funding source – from where the funding should/ can come (municipality budget, donor organization etc).
- Success criteria – the precondition that is needed for implementation.
- Deadline – when the task should be completed?
- Status – status description after each 3rd-6th months
- Financial resources – what is the financial measure for the activity.

The activities are divided into 5 action lines. Action lines are important components for the successful implementation of the e-governance in the municipalities. Each action lines have several sub-activities and municipalities can continuously add new necessary activities.

Action plan could have following major action lines:
1. Organization related
    a. Human Resources
2. IT Systems
    b. IT Infrastructure
    c. Information Systems
3. Security
4. E-services and e-democracy
5. Other

In order to ensure the implementation of the action plans, the following activities should be focused/considered:
1. Each municipality should point the person who is responsible for the implementation and revision of an action plan.
2. Action plan should be active document and it should be reviewed and modified by municipalities at least after each 3-6 months.
3. Monitoring the progress of the action plan. The assistance should be provides to municipality. It is good to involve outside expertise for measurement the implementation of the action plans – the municipalities also can be consulted about the further necessary activities.

4. Develop a network between municipalities – to organize regular meetings between the municipalities during which the action plans are discussed and ideas can be discussed.

Proposed action plan format is brought out in Appendix 1.

4.5 e-Government Funding

Spending for e-Government can provide immediate results, as faster workflow, better data, better information and municipal website, transparent municipality. Also we need to consider that in many cases the spending is in the municipality side and the win is in the citizen's and businesses side – by using electronic services citizens save time, transportation costs and other resources.

A number of features of budgetary arrangements can work against efficient implementation of e-government. Current budgetary frameworks provide financing for individual projects, but do little to account for the shared responsibility inherent in many e-government projects.

E-government funding:

● To the extent that an explicit choice is made, the implementation of e-government is often unlikely to win out in competition with other compelling public policy objectives such as education, security and health.

While most e-government proposals will be argued for in terms of programme outcomes rather than in terms of advancing e-government *per se,* the **level of resources** devoted to e-government is ultimately a matter for governments to determine in the light of their overall priorities.

● The difficulty of measuring costs and potential benefits for e-government projects makes it hard to develop funding cases for projects and compare alternatives in a budget-setting context.

● The treatment of certain ICT spending as capital rather than recurrent expenditure is a major challenge. Not all ICT expenditure is of a capital or investment nature, but involves maintenance, associated recurrent staffing costs, or small-scale projects. However, if major projects are not considered as investment, they will need to compete with other more pressing recurrent funding proposals, and in this context will seem to involve large levels of expenditure.

● Budget time horizons can pose problems for e-government. Many e-government projects will be multi-year in nature, and thus require commitments to spend resources over a long period, sometimes well beyond the annual or multi-year budgeting horizon. Such projects represent a commitment to spend future revenues, and governments are understandably reluctant to tie up future spending. Projects that do not require such a commitment may be favored.

E-government collaboration:

● There are a number of **budgetary rigidities** that prevent shared funding arrangements. The vertical nature of current arrangements means that it can be difficult to request joint funding, to pay into a project being done by another agency, or to pool funds. There are few mechanisms for shared funding, and it can be difficult to assess the extent to which agencies are benefiting from (and hence should contribute to) a shared project.

● The use of **performance-based budgeting** can create disincentives for collaboration, by rewarding independent behavior at the expense of shared projects (see section on legislative and regulatory barriers).

● There is no framework for **profit sharing**. Agencies have no incentives to eliminate redundant systems by sharing systems with other agencies unless they can share in some of the savings generated.

Possible solutions

A number of steps can be taken to help overcome the aforementioned budgetary barriers. **E-government funding** can be assisted by the following measures:

● Major ICT projects could be usefully **classified as capital investment**, involving a single or a series of up-front capital outlays, with a consequent stream of benefits. This would enable a fairer comparison of such proposals with recurrent spending alternatives, or in some systems remove the capital project from recurrent budget frameworks. Classifying such major projects as capital investment help with funding of e-government projects. This will also help with problems of budget time horizons.

● In a number of countries, spending on e-government requires **separate** approval by the e-government coordinating office to ensure that there is no duplication or inconsistency with broader strategies and architectures.

Clear rules and structured consultation processes will help maintain agency confidence in this approach.

Public-private partnerships can be used to bypass budgetary constraints and thus respond to a number of barriers, including obtaining capital, budget-time horizons and disincentives for innovation and collaboration.

For example, using a private partner to build the required infrastructure, and then leasing it, or otherwise paying on a user-pays basis will reduce the need for up-front capital, but with the risk of greater long-term cost.

● Specific central **funding for innovation** can be used to fund innovative and high-risk demonstrations that otherwise would not receive funding.

Arrangements could be used to augment this funding though linked (or matching funds) from other agencies, private partners, or by using seed financing from a central fund with the expectation that the investment will be repaid (in part or in full).

● An agreed approach to the **assessment of costs and benefits** of e-government can help evaluate and fund successful projects (see section on Monitoring and Evaluation).

● The ability of agencies to **retain savings** generated from e-government initiatives will be important as an incentive for agencies to look for efficiencies. The linked nature of many e-government projects across traditional programme and organisational lines means that shared budgetary arrangements are essential. On the basis that the bulk of funds for e-government will (and should) be provided through agency budgets, the budget process can be used to promote co-ordination of e-government initiatives. **E-government collaboration** can be aided by the following measures:

● A **central register** of e-government initiatives seeking funding would enable agencies and e-government coordinators to see the range of new proposals and identify potential duplication.

● **Central funds** can be used to encourage certain activities, such as collaborative initiatives by agencies.

● Under the **lead agency model**, an agency funds a project that benefits other agencies as well as itself.

● Another possibility is that a number of **agencies co-ordinate their approach** to obtaining funds. This may be done, for example, by dividing a project into segments. (However, this approach can lead to implementation problems regarding the division of the project, especially as some agencies may be successful in obtaining funding while others fail.)

● Under **pooled funding** arrangements, agencies share funding for a common project. It is important to be able to formalise such arrangements in contractual arrangements, to provide clarity for all parties and to allow for a unified project management and implementation approach.

Action Plan Format

Action	Expected result	Person/ department responsible	Required Resources	Funding source	Success criteria	Deadline	Status
Action line I: Organization-related							
Human Resources							
Action line II: ICT systems							
IT Infrastructure							
Information Systems							
Action line III: Security							
Action line IV: E-services and e-democracy							
Action line V: Other							

BEGIX (Balanced e-Governance) QUESTIONNAIRE

1-no evidence
2- an approach is planned
3- an approach is planned and implemented
4- an approach is planned, implemented and reviewed
5- an approach is planned, implemented and reviewed on the bases of benchmarking and fully integrated into the organization

Criteria - EFFICIENCY	1	2	3	4	5
1. Are all the relevant administrative services of your organisation available on-line?					
2. Is it possible in your e-government solution to provide all significant services completely (up to on-line payment)?					
3. Are the offers of different organisations being gathered to a common user level and presented in a common web site (so-called „One-Stop-Shop" principle)?					
4. Will the users find thorough, self-explanatory help functions in your web page?					
5. Is your on-line solution characterised by homogeneous design?					
6. Is there a full technical description of the process architecture of your e-government project?					

Criteria - EFFICIENCY	1	2	3	4	5
7. Is it possible to use a standard program (such as Word or Outlook) at all workstations in your organisation?					
8. Do you practise current financial planning and resource planning (so-called „business case") to increase the efficiency of your organisation by means of e-government?					
9. Is the software used in your Internet solutions extensively integrated with programmes belonging to your internal ICT structure (integration with front office and back office systems)?					
10. Can your colleagues use extensive help and support functions in the field of ICT and e-government to enable quicker solution of problems?					

	1	2	3	4	5
11. Is your organisation sufficiently equipped with PC-s, notebook computers and Internet connections?					
Criteria - PARTICIPATION	**1**	**2**	**3**	**4**	**5**
12. Do the users have immediate access to all relevant dialogue partners of your organisation (e.g., by e-mail)?					
13. Are citizens and companies so actively engaged in your plans that their needs have been taken as a basis for further development of e-government (focus on queries and users)?					
14. Are citizens fully able to influence the decision-making processes of your organisation (possibility of "consultation")?					
15. Are public relations actively maintained in the framework of your e-government activities (e.g., by PR-campaigns)?					
Criteria - TRANSPARENCY	**1**	**2**	**3**	**4**	**5**
16. Do the citizens have an opportunity to participate in the political life of the commune by way of communication offers such as Internet forums or guided discussions?					
17. Is your web-site daily updated so that the information in the web is up-to-date and corresponds to the need?					
18. Is it possible for citizens to obtain current information from the Internet about the status of their query (so-called „track and trace functions")?					
19. Is the course of relevant legal proceedings of your organisation transparent and understandable to citizens and companies?					
20. Can you ensure extensive protection of privacy by application of technical measures and security standards („Privacy Policy")?					
21. Is there a complete and comprehensive list of all offices and your colleagues available for users of your Internet solution ("yellow pages")?					
Criteria – CHANGE MANAGEMENT	**1**	**2**	**3**	**4**	**5**
22. Do you take the results of other e-government projects into account in your processes and try to implement them					

(focus on Best Practice and Benchmarking principles)?					
23. Are your e-government activities a permanent part of your organisation's general strategy?					42
24. Do you engage outside experts and consultants systematically in the development of e-government activities?					
25. Do you have professional project management staff to be used for consistent development of e-government activities?					
26. Do you have an extensive marketing strategy to inform all participants and stakeholders about the objectives and progress of your e-government project?					
27. Are your colleagues actively involved in change management processes of an organisation?					

Appendix 3

Public Online Services defined by European Commission in the framework of eEurope Action Plan 2005

Citizens	Businesses
Income Taxes	Social Contribution for Employees
Job Search	Corporate Tax
Social Security Benefits	VAT
Personal Documents	Registration of a New Company
Car Registration	Submission of Data to the Statistical Office
Application for Building Permission	Custom Declaration
Declaration to the Police	Environment-related Permits
Public Libraries	Public Procurement
Birth and Marriage Certificates	
Enrolment in Higher Education	
Announcement of Moving	
Health-related Services	

Data about the ICT potential in municipality		
		Table 1
Name of the municipality		
The web page of the municipality		
Contact person who fulfilled the table		

General data about the municipality

No	Name		Number
1.	Number of employees		
2.	The need of computer workstations (nr)		
3.	The existing number of computer workstations		
3.1.	including computer workstations that have internet connection		
3.2.	including the permanent computer workstations, also the number of laptops		
4.	The percentage of computer workstations		#DIV/0!

Table 2

The ICT Structure and Specialists of Municipality

1.	The name of the department/unit that deals with ICT questions (if that exists), the name of the manager, telephone and e-mail		
2.	The name of the council, committee etc. who deals with ICT questions in municipality, the name of the chairman, telephone and e-mail.		
3.	Number of fully employed IT personnel in municipality		

Table 3

STRATEGY, ACTION PLANS AND AVAILABILITY OF INTERNET

1.	Does municipality has development strategy		YES	Web Address
			NO	
2.	Does municipality has ICT development strategy/plan		YES	Web Address:
			NO	
3.	Is there are activities launched or planned for improving the availability of the Internet in the area of local government?		YES	Description of activity:
			NO	
4.	Does local government have the free access WiFI network?		YES	Where:
			NO	
5.	Is there are on the territory of local government Public Internet Access Points?		YES	Where:
			NO	

The Hardware and Operation Systems in Municipality

Table 4

		Workstations	
			Number
6.		Existing Workstations	

7.	Existing workstations by operation systems		**Number**
		MS Windows XP	
		MS Windows 2000	
		MS Windows 98	
		MS Windows NT	
		Linux	
		Other operation systems, please name them	
		1	0
		2	0
		3	0
		Total:	0
			Number
8.	Existing computers connected to the LAN		
9.	Existing computers that are *lap-top* computers		
	Servers	Servers	
			Number
10.	Existing server computers		
11.	Existing server computers by operation systems:		**Number**
		- Windows	
		- UNIX	
		- Linux	
		-Other server computers, please name them:	
		1	0
		2	0
		3	0
		Total:	0
			Number
12.	Existing servers connected to LAN		
		Comments	

Software Usage in Municipality

Table 5

	Office Packages		Users		Expected users in the year 200X
13.	602 PC Suite				
	MS Office 2000				
	MS Office 2003				
	MS Office 97				
	MS Office XP				
	OpenOffice.org				
	Star Office				
	Corel WP Office				
	Other office packages, please name them				
	1				
	2				
	3				
	4				
	Databases		Users		Expected users in the year 200X
14.	Delphi				
	FoxPro				
	MS Access				
	Oracle				
	PosgreSQL				
	Progress				
	MySQL				
	Sybase				
	Other data bases, please name them				
	1				
	2				
	3				
	4				
	Self developed data bases				

	1			
	2			
	Group work Tools	Users		Expected users in the year 200X
15.	Lotus Notes			
	MS Back Office			
	Novell GroupWise			
	Oracle Inter Office			
	Other tools, name them!			
	1			
	2			
	3			
	4			
	Financial Software	Users		Expected users in the year 200X
	1			
16.	2			
	3			
	4			
	Personnel Accounting System	Users		Expected users in the year 200X
17.	1			
	2			
	3			
	4			
	Document Management System	Users		Expected users in the year 200X

18.	1			49
	2			
	3			
	4			
	Virus Protection Programs	Users		Expected users in the year 200X
	AVG			
	F-Secure			
	McAfee			
	Norton Antivirus			
19.	Other Virus Protection Programs, please list them!			
	1			
	2			
	3			
	4			
	GIS, Geo Info Systems	Users		Expected users in the year 200X
20.	1			
	2			
	3			
	4			

Appendix 5

List of documents reviewed

- Balanced e-Government, A Study by the Bertelsmann Foundation (2001)

- Capacity Building of Local Governments-Development of Model Macedonian Municipality, UNDP (2004)

- E-Democracy Around the World A Survey for the Bertelsmann Foundation by Phil Noble & Associates (2001)

- Estonian Local Government Online 2013, White Paper (2007)

- Final Report „Preparation of the Plan for Introduction of e-Governance at Local Level, UNDP Project "Capacity Building of Local Government – Development of Model Macedonian Municipality (2005)

- Local e-Government Application – An Example from Romania, RITI Access Project (2005)

- National Startegy for an Information Society in Serbia (2005)

- Study of e-Government actions in Europe - Best European e-practices (2006)

- UK National Strategy for Local e-Government (2002)